



County Hall
Cardiff
CF10 4UW
Tel: (029) 2087 2000

Neuadd y Sir
Caerdydd
CF10 4UW
Ffôn: (029) 2087 2000

AGENDA

Committee ENVIRONMENTAL SCRUTINY COMMITTEE

Date and Time of Meeting TUESDAY, 21 JANUARY 2020, 4.30 PM

Venue COMMITTEE ROOM 4 - COUNTY HALL

Membership Councillor Patel (Chair)
Councillors Derbyshire, Owen Jones, Lancaster, Jackie Parry, Owen, Wong and Wood

Time approx.

1 Apologies for Absence

To receive apologies for absence.

2 Declarations of Interest

To be made at the start of the agenda item in question, in accordance with the Members' Code of Conduct.

3 Minutes (Pages 5 - 10)

To approve as a correct record the minutes of 20 November 2019.

4 Cabinet Response to the Environmental Scrutiny Committee Report Titled 'Improving Cardiff's Air Quality' (Pages 11 - 198) 4.40 pm

An item to consider the Cabinet response to the Environmental Scrutiny Committee report titled 'Improving Cardiff's Air Quality'. During this item Members will be able to review the overall response to see which recommendations and key findings from the report were supported by Cabinet.

5 Cardiff's Transport White Paper (Pages 199 - 260) 5.25 pm

An item to consider the content of Cardiff's Transport White Paper. During this item Members will be able to discuss the various proposals contained within the report to gain a better understanding of how the

By receiving this Agenda Pack electronically you have saved the Authority approx. £7.92 in printing costs

This document is available in Welsh / Mae'r ddogfen hon ar gael yn Gymraeg

Council and its partners propose changing how people move around this growing city.

- 6 Education Campaign to Support Improving Recycling Performance (Pages 261 - 280)** 6.55 pm

An item to consider a Cabinet paper titled 'Education Campaign to Support Improving Recycling Performance'. This will provide the Committee with the opportunity to carry out pre decision scrutiny on the proposed strategy called 'Working together to improve recycling for Cardiff', and to review details of the wider educational campaign.

- 7 Urgent Items (if any)**

- 8 Way Forward** 7.40 pm

To review the evidence and information gathered during consideration of each agenda item, agree Members comments, observations and concerns to be passed on to the relevant Cabinet Member by the Chair, and to note items for inclusion on the Committee's Forward Work Programme.

- 9 Date of next meeting - Monday 17 February 2020 at 2.30pm in Committee Room 4, County Hall.**

Davina Fiore

Director Governance & Legal Services

Date: Wednesday, 15 January 2020

Contact: Graham Porter, 02920 873401, g.porter@cardiff.gov.uk

WEBCASTING

This meeting will be filmed for live and/or subsequent broadcast on the Council's website. The whole of the meeting will be filmed, except where there are confidential or exempt items, and the footage will be on the website for 6 months. A copy of it will also be retained in accordance with the Council's data retention policy.

Members of the public may also film or record this meeting.

If you make a representation to the meeting you will be deemed to have consented to being filmed. By entering the body of the Chamber you are also consenting to being filmed and to the possible use of those images and sound recordings for webcasting and/or training purposes.

If you do not wish to have your image captured you should sit in the public gallery area.

If you have any queries regarding webcasting of meetings, please contact Committee Services on 02920 872020 or email [Democratic Services](#)

This page is intentionally left blank

ENVIRONMENTAL SCRUTINY COMMITTEE

20 NOVEMBER 2019

Present: Councillor Patel(Chairperson)
Councillors Boyle, Derbyshire, Owen Jones, Lancaster,
Jackie Parry, Owen and Wood

34 : APOLOGIES FOR ABSENCE

Apologies were received from Councillor Peter Wong.

35 : DECLARATIONS OF INTEREST

The following declarations of interest were received in accordance with the Members Code of Conduct:

Councillor Derbyshire Agenda Item 7 Chair of Local Access Forum

36 : MINUTES

The minutes of the meeting held on 1 October 2019 were approved by the Committee as a correct record and were signed by the Chairperson.

37 : SHARED REGULATORY SERVICES - FOUR YEAR PROGRESS UPDATE

The Committee received a progress update report on the Shared Regulatory Service (SRS). The report provided the Committee with an opportunity to consider the performance of SRS since it was established in May 2015; consider the SRS Annual Report 2018/19; and to consider the finding and actions of the Wales Audit Office report entitled 'Delivering with Less – Environmental Health Services'.

The report provided an overview of the formation of SRS, which formed between the partner authorities of Bridgend, Cardiff and Vale of Glamorgan and which delivered a fully integrated service under a single management structure for the Trading Standards, Environmental Health and Licensing functions. Members were advised that formation of the partnership was driven by the need to address the reduction in Council budgets. The report included a summary of the range of services provided by SRS.

The SRS Annual Report 2018/19 was appended to the report. The Annual Report was received by the Cabinet on 10 October 2019. The key aspects of the Annual Report in terms of operational performance were set out. Members were asked to note:

- Sickness absence levels were 7.55 days per FTE which is below the Council's average of 11.53 days. The absence rate for the previous year was 6.89 days per FTE.
- The Gross Revenue Budget position for 2018/19 was a £496,000 overspend against a gross revenue budget of £8.504 million.

- SRS has consolidated service delivery in accord with agreed standards and delivered the requisite savings.
- Operational performance has been reported to both the Joint Committee and to Council.
- Agile working continues to be deployed to allow maximum flexibility.
- The Annual Report sets out the successful interventions through the Courts during 2018/19

The Chairperson welcomed Councillor Michael Michael, Cabinet Member for Clean Streets, Recycling and Environment, Councillor Lynda Thorne, Cabinet Member for Housing and Communities, Councillor Norma Mackie, Chairperson of the Licensing and Public Protection Committees and Dave Holland, Head of Regulatory Services. The Cabinet Members were invited to make statements. Dave Holland delivered a presentation on the SRS.

Members were invited to comment, seek clarification or raise questions on the information received. Those discussions are summarised as follows:

- Members asked what efforts are being made to bring empty properties back into use. The Head of SRS advised that owners of properties are liable for Council Tax if the property is unoccupied for more than 6 months. In 2018/19 there were 1568 empty properties in Cardiff. In 2019/20 the figure is 1451. This information is gathered from the Council Tax register, however properties in disuse are not included on that list. The Council has a target list of approximately 150 of the worst problem vacant properties.
- The Cabinet Member for Housing and Communities stated that the Council Tax premium was starting to have an effect. A Welsh Government empty properties scheme was also helping. Under the Welsh Government Scheme Councils are able to bid for funding to get empty properties back into use and also address homelessness. Small grant/interest free loans are available to enable properties to meet the relevant standards and Welsh Government will meet any management costs.
- Members asked whether the taxi marshals scheme was still operating in the City Centre. The Committee was advised that service formerly provided by City Centre Management was no longer operated following a cut to the budget agreed in 2018. A reduced number of marshals are funded by For Cardiff at peak times in the evenings/late nights on the busiest days of the week. Member raised concerns regarding the potential for illegitimate taxi drivers operating in the City. Officers stated that the taxi marshals did not have any enforcement powers and were primarily there to manage ranks and assist customers.
- Officers were asked to comment on measure being undertaken to target unlicensed Houses in Multiple Occupation (HMOs). Officers stated that not all HMOs are necessarily licenced. A report to Cabinet in July 2019 set out the position. The HMO licensing scheme in Cathays and Plasnewydd has approximately 2700 premises registered with more awaiting approval. Rent Smart Wales also requires anybody renting a property to register.

- The Cabinet Member stated that the authority has made a bid to Welsh Government to extend the Cathays/Plasnewydd scheme. It was considered that HMOs are being displaced into other areas. The Cabinet's ambition is to bring HMO licensing in for the whole of the City.
- Members asked whether there was any evidence to show how effective Rent Smart Wales has been in improving housing quality. The Cabinet Member for Housing and Communities stated that Rent Smart Wales aims to improve the quality of the landlord, not housing quality. The majority of landlords are now registered.
- Members raised concerns regarding the Pest Control service and its ability to compete with private sector contractors. The Cabinet Member for Clean Street, Recycling and Environment stated that efforts were being made to improve public 'buy in' for the service, including a new brochure and webpage development. The Cabinet Member stated that the Pest Control team do a great job, and more needs to be done to get that message out to the public.
- Members considered that the Food Hygiene Scheme was working well. Officers were asked whether inspections were being undertaken as scheduled. The Head of SRS stated that all premises were fully inspected during 2017/18. Food hygiene ratings provide a valid picture of food businesses in the City. Members were asked to note that there have been more prosecutions in the last two years than in the previous 10 years.
- Members noted that whilst sickness levels are low, a number of staff are leaving the service. Officers were asked to explain this. The Head of SRS stated that staff attendance is good and they enjoy what they do. Some officers have moved on and this has opened up opportunities for trainees and apprentices. A number of officers have moved to other agencies, e.g. 3 food hygiene officers have moved to the Food Standards Agency. Others have moved to other agencies on secondment. This reflects well on SRS.
- Members asked for comments on the use of cladding on high-rise properties in the City. The Cabinet Member for Communities and Housing stated that she has met with the South Wales Fire Service who have real concerns regarding the changes made in construction over recent years. Welsh Government has provided extra resource for inspections to be undertaken and discussions with the Fire Service are ongoing regarding 'collective' inspections. The question would then be how to undertake any remedial works required.
- Members welcomed the fact that SRS invests in its staff in terms of their professional development. The Committee asked whether the authority has measures, or plans to have measures, in place to protect their assets. The Head of SRS stated that there is provision for the Council to seek to recover funding. However, staff who leave under secondments often return to the authority and bring back greater experience and knowledge.
- Members asked if SRS were addressing the issue of unlicensed dog breeders. The Head of SRS stated that there were. An illegal breeder was recently

prosecuted and received a £50k fine.

- Officers were asked to comments on the cleanliness of taxis. Officers stated that all taxis are expected to comply with vehicle standards. Spot checks are undertaken and members of the public are encouraged to make complaints.
- The Committee discussed the former operation of cold calling zones in some wards.

RESOLVED – That the Chairperson writes to the Cabinet Members on behalf of the Committee to convey their comments.

The Chairperson welcomed Sam Clements of Wales Audit Office and Martin Ellender of Grant Thornton to the Committee. Sam Clements introduced the WAO report entitled 'Delivering with Less – Environmental Health Services'. Martin Ellender provided a summary of the main finding in the report.

Members were advised that the findings in Cardiff were positive. The base budget has been reduced by 20% without compromising services to the community. KPIs are also moving in the right direction.

Responding to questions from the Committee, Martin Ellender described SRS as an effective and mature shared service. Governance was robust yet there was some space for independent oversight and assurance. This should be reflected upon. There were also some opportunities to explore greater commercialisation.

38 : DRAFT TASK & FINISH REPORT - MANAGING BIODIVERSITY & NATURAL ENVIRONMENT IN CARDIFF

The Principal Scrutiny Officer presented the draft 'Managing Biodiversity and Natural Environment in Cardiff – Task and Finish Report'. Members were asked to consider and comment upon the draft report.

Members discussed the 'Section 6' obligation to build biodiversity into the decision-making process, tie in with the Well Being of Future Generations Act and the extent to which the planning authority will need to consider Section 6. The Principal Scrutiny Officer advised that Planning Policy Wales Version 10 will require that resilience will need to be built in to the Local Development Plan and the LDP will need to be revised to take account of the Wellbeing of Future Generations Act.

The Chairperson asked Members to note the supportive comments received from Welsh Government and Swansea Council on the report.

39 : NATIONAL DEVELOPMENT FRAMEWORK - MEMBER BRIEFING NOTE

The Committee received a briefing note on the National Development Framework Consultation. Member were asked to note the contents.

RESOLVED – That the report be noted.

40 : PUBLIC RIGHTS OF WAY IMPROVEMENT PLAN - MEMBER BRIEFING NOTE

The Committee received a briefing note on the Public Rights of Way Improvement Plan. Members were asked to note the contents.

RESOLVED – That the report be noted.

41 : ENVIRONMENTAL SCRUTINY COMMITTEE - DRAFT WORK PROGRAMME 2019/20

The Principal Scrutiny Officer presented the Committee's draft Work Programme 2019/20.

Members noted the request for the Committee to scrutinise the use of fireworks in the City, and agreed that a Member Briefing note should be added onto the March 2020 agenda to provide further information on the topic.

42 : URGENT ITEMS (IF ANY)

No urgent items were presented.

43 : DATE OF NEXT MEETING

Members were advised that the next Environment Scrutiny Committee is scheduled for 3 December 2019.

The meeting terminated at 7.00 pm

This page is intentionally left blank

**CYNGOR CAERDYDD
CARDIFF COUNCIL**

ENVIRONMENTAL SCRUTINY COMMITTEE

21 JANUARY 2020

CABINET RESPONSE – IMPROVING CARDIFF’S AIR QUALITY

Background

1. The Environmental Scrutiny Committee agreed as part of their work programme to undertake an inquiry titled Improving Cardiff’s Air Quality. As a result, the Committee agreed to set up a task & finish group inquiry. The terms of reference were agreed as follows:

The aim of the inquiry is to provide Members with the opportunity to explore and consider how the Council can help to improve air quality in Cardiff. This will include reviewing:

- **Current Air Quality Position** - to include a report and analysis of the worst affected areas; the major contributing factors to air pollution in Cardiff; resources, monitoring arrangements & statutory responsibilities; the impact on public health; consider any existing air quality action plans for Cardiff; to consider air quality responsibilities placed on the Council.
- **Development of Cardiff’s Clean Air Strategy** – to include a report on the aims and objectives of the strategy; associated policies that support the development of the strategy; resources and timescale for delivering the strategy; desired impact of the strategy and the main areas that the strategy will target.
- **Welsh Government Position on Air Quality** – to gain a better understanding of the policy objectives of the Welsh Government in terms of air quality; to understand the applicable timescales and consequences of the Council not

meeting these policy objectives; to identify the key areas that Welsh Government believes should be targeted to achieve the best outcomes for air quality.

- **Transportation** – *to understand the positive and negative impacts that transport (and transport systems) can have on air quality in Cardiff; to establish a hierarchy of transport pollution sources and evaluate what can be done to better manage the worst polluting sources; to review transport schemes and infrastructure planned for development or in the process of being delivered in Cardiff; to explore the benefits of sustainable fleet management in Cardiff; to consider the impact that changes in technology and public perception can have on air quality.*
- **Other Pollution Sources** – *to consider a range of pollution sources (excluding transport) and the impact that these have upon air quality in Cardiff; to establish a hierarchy of pollution sources (excluding transport) and evaluate what can be done to better manage the worst polluting sources; to review proposals currently being developed or delivered (excluding transport) to reduce pollution in Cardiff.*
- **Planning & Development** – *to understand how the planning and development process can be used to improve air pollution in Cardiff; to consider the current planning processes / policies and how these impact upon air pollution; the impact that the growth of the city might have upon air quality.*
- **Sustainable Fuels** – *to understand the challenges and opportunities that the growth of sustainable fuels can have upon air quality in Cardiff; to consider the role of the Council in terms of helping to establish the local market for sustainable fuels; to consider what the Council and its partners can proactively do to support the move to sustainable fuels.*
- **Clean Air Zones** – *to understand how Clean Air Zones work; the impact that a Clean Air Zone could have upon air quality in Cardiff and the wider implications for the city; the costs and opportunities of setting up a clean air zone; best practice in delivering Clean Air Zones (to include domestic and international examples).*

2. The task group Inquiry was informed by evidence and advice from the following:

- Councillor Michael Michael, Cabinet Member for Clean Streets, Recycling & Performance
- Councillor Caro Wild, Cabinet Member for Strategic Planning & Transport
- Councillor Susan Elsmore, Cabinet Member for Social Care, Health & Well-being
 - Gary Brown, Operational Manager – Assets, Engineering & Operations
- David Lowe, Operational Manager – Operations
- Jane Cherrington, Operational Manager – Strategy & Enforcement
- Simon Gilbert, Operational Manager – Development Management, Strategic & Place Making
- Paul Carter, Head of Transport
- Gareth Harcombe, Commercial Manager – Energy & Sustainability
- Gladys Hingco, Researcher – Scrutiny Services
- Richard Jones, Fleet Manager, Commercial Services
- Tim Walter, Senior Planning Officer
- Craig Lewis, Specialist Services Officer– Environment (Enterprise and Specialist Services), Shared Regulatory Services
- Jason Bale, Team Manager – Environment (Enterprise and Specialist Services), Shared Regulatory Services
- Helen Picton, Operational Manager, Enterprise & Specialist Services, Shared Regulatory Services
- Dr Huw Brunt – Public Health Wales
- Dr Tom Porter - Consultant in Public Health Medicine, Cardiff & Vale Local Public Health Team
- Stuart Cole, Professor of Transport, University of South Wales
- Huw Williams, Emeritus Professor of Transport and Spatial Analysis, Cardiff University
- Sukky Choongh- Campbell, Society of Motor Manufacturers
- Peter Renwick – Premier Taxis
- Ryan Owen – Dragon Taxis
- Kieran Harte – Uber
- Desmond Broster – Dragon Taxis
- Dr Claire Beattie – University of the West of England
- Gareth Mole - Cardiff Bus
- Margaret Everson - Bus Users Cymru

- John Pocket – Confederation of Passenger Transport
 - Roger Herbert – Welsh Government
 - Martin McVay – Welsh Government
 - Steve Lloyd Brennan – New Adventure Travel
 - David Conway – Stagecoach Bus
 - Dr. Ji Ping Shi, Senior Technical Specialist, Air Quality Modelling and Risk Assessment Team Leader, Natural Resources Wales
 - Professor Alun Guwy, Head of the Sustainable Environment Research Centre, University of South Wales
 - Dr Paul Nieuwenhuis, Centre for Automotive Industry Research & Electric Vehicle Centre of Excellence, Cardiff University
 - Adrian Field, Executive Director, Cardiff BID (For Cardiff)
 - Will Lane – Shared Regulatory Service
3. The report was presented to Cabinet on the 20th September 2018; a copy of the report has been attached to this report as **Appendix 1**. A full response was agreed by Cabinet on the 21st November 2019; a copy of the full response has been attached to this report as **Appendix 2**.

Cabinet Response to Recommendations

4. The scrutiny report made a series of key findings and 34 recommendations that required a Cabinet response; 25 of the recommendations were accepted, five recommendations were partially accepted and four recommendations were rejected. The key findings and recommendations were based around seven themed areas that are listed below:
- Public Health;
 - Clean Air Strategy – The Next Steps;
 - Planning;
 - Transport;
 - Sustainable Fuels;
 - Council & Public Sector Partner Responsibilities;
 - Consultation & Engagement.

5. Full details of the response and future actions are contained in **Appendix 2** of this report.

Way Forward

6. Officers from the Planning, Transport & Environment Directorate have been invited to attend the meeting. They will provide a summary of the Cabinet response and answer any questions that Members may have.
7. Members may consider the response contained in the attached **Appendix 2** and provide any comments, advice or recommendations relevant to the contents of this report.

Legal Implications

8. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not making policy decisions. As the recommendations in this report are to consider and review matters there are no direct legal implications. However, legal implications may arise if and when the matters under review are implemented with or without any modifications. Any report with recommendations for decision that goes to the Cabinet/Council will set out any legal implications arising from those recommendations. All decisions taken by or on behalf of the Council must (a) be within the legal powers of the Council; (b) comply with any procedural requirement imposed by law; (c) be within the powers of the body or person exercising powers on behalf of the Council; (d) be undertaken in accordance with the procedural requirements imposed by the Council e.g. Scrutiny Procedure Rules; (e) be fully and properly informed; (f) be properly motivated; (g) be taken having regard to the Council's fiduciary duty to its taxpayers; and (h) be reasonable and proper in all the circumstances.

Financial Implications

9. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not making policy decisions. As the recommendations in this report are to consider and review matters there are no direct financial implications at this stage in relation to any of the work programme. However, financial implications may arise if

and when the matters under review are implemented with or without any modifications. Any report with recommendations for decision that goes to Cabinet/Council will set out any financial implications arising from those recommendations.

RECOMMENDATIONS

10. The Committee is recommended to consider the Cabinet response, the information presented at the meeting and then provide the Cabinet Member with any comments, concerns or recommendations.

Davina Fiore

Director of Governance & Legal Services

15 January 2020



Scrutiny Report of Cardiff's Environmental Scrutiny Committee

Improving Cardiff's Air Quality

May 2018



Cardiff Council

CONTENTS

Contents – Page 2

Chair’s Foreword – Pages 3 to 4

Inquiry Methodology – Pages 5 to 6

Inquiry Terms of Reference – Pages 7 to 8

Recommendations – Pages 9 to 31

Key Findings – Pages 32 to 157

Witnesses to the Inquiry – Pages 158 to 159

Legal Implications – Page 160

Financial Implications – Page 161

Appendices

- **Appendix 1** - Cardiff’s Air Quality Management Areas
- **Appendix 2** - 2016 Nitrogen Dioxide source apportionment analysis for each of Cardiff’s four Air Quality Management Areas
- **Appendix 3** – Euro Emissions Standards
- **Appendix 4** – Welsh Government Statement – Air Quality in Wales
- **Appendix 5** - Improving Air Quality Initiatives – Best Practice Examples
- **Appendix 6** - Public Sector Vehicle Fleet in Cardiff - Comparative Figures

CHAIR'S FOREWORD

Clean air is essential. It has a direct impact on our health, our daily activities and our overall quality of life. For the sake of our friends and loved ones, it is something that we should not take for granted.

Since 2010 the United Kingdom has struggled to respond to and meet the targets set by the EU directives on air quality. This ongoing failure has triggered a number of successful legal actions by Client Earth against the United Kingdom Government and more recently the Welsh Government. All of this now means that Cardiff, as a local authority in breach of the targets, is now legally bound to meet compliance with EU air quality directives “in the shortest time possible”. A significant challenge.

In response to this challenge the Environmental Scrutiny Committee identified improving air quality as one of its priorities for 2017/18 - not just for the Committee, but for the Council and Cardiff as a city. To reflect this priority the Committee decided to run this inquiry to review current air quality standards, to scrutinise the development of Cardiff's Clean Air Strategy and to explore the challenges and opportunities around 'Improving Cardiff's Air Quality'.

The inquiry included nine task group meetings that supported seventeen separate witness sessions, dealt with 38 expert witnesses and made 31 recommendations designed to help improve Cardiff's air quality. The exercise was designed to support the wider development of Cardiff's Clean Air Strategy and was structured around the following eight key topics - the current air quality position; development of Cardiff's Clean Air Strategy; the Welsh Government position on air quality; transportation; other pollution sources; planning & development; sustainable fuels and clean air zones. Having considered each of these areas the report made a number of key recommendations including:

- Putting public health at the heart of Cardiff's Clean Air Strategy;
- Creating a low emission zone in Westgate Street by focusing on reducing NO₂ emissions from diesel buses;

- Pushing for more sustainable fuel infrastructure for Cardiff to support the growth in the use of low emission vehicles;
- Accelerating public transport and active travel infrastructure, for example, more bus and cycle lanes;
- Using short term initiatives within the Council's control to drive modal shift, for example, 20 mph zones and increasing the number of 75% residential parking schemes.

To conclude I would also like to thank everyone who has taken part in the task & finish exercise. This includes the members of the Environmental Scrutiny Committee members, Cabinet members, external witnesses and Council staff. Without your help this inquiry would not have been possible. My hope is that the contents of this report are helpful to the Cabinet and that the recommendations provided play a part in helping to improve Cardiff's Air Quality.



Councillor Ramesh Patel
Chairperson – Environmental Scrutiny Committee

INQUIRY METHODOLOGY

Cardiff's Environmental Scrutiny Committee reviewed the development of Cardiff's Clean Air Strategy and considered a number of areas that had the most significant impact on air quality in the city. In doing this it explored the key themes that formed the basis of the Cardiff's Clean Air Strategy, for example, the current air quality position; the Welsh Government position; transportation; planning & development; sustainable fuels and clean air zones. In reviewing the information the task group drew upon a number of witness contributions and information sources including:

- Cabinet Members from Cardiff Council;
- Officers from Cardiff Council including representatives from Planning, Transportation, Energy & Sustainability, Highways, Waste Management and Fleet Management;
- Officers from Shared Regulatory Services;
- Public Health Wales;
- Cardiff & Vale Local Public Health Team;
- University of South Wales;
- Society of Motor Manufacturers;
- Representatives from local taxi companies including Premier Taxis, Dragon Taxis and Uber;
- University of the West of England;
- Bus industry representatives including Cardiff Bus, New Adventure Travel, Stagecoach Bus, Bus Users Cymru and Confederation of Passenger Transport;
- Welsh Government;
- Natural Resources Wales;
- Cardiff University;
- For Cardiff (Cardiff BID).

From this body of evidence the Members drew key findings and the 31 recommendations made in this report. The Environmental Scrutiny Committee Task & Finish Exercise will report to the Environmental Scrutiny Committee on the 17th April 2018, and subject to approval of the draft report it will be commend to Cardiff Council's Cabinet for consideration and response.

INQUIRY TERMS OF REFERENCE

The aim of the inquiry is to provide Members with the opportunity to explore and consider how the Council can help to improve air quality in Cardiff. This will include reviewing:

- **Current Air Quality Position** - to include a report and analysis of the worst affected areas; the major contributing factors to air pollution in Cardiff; resources, monitoring arrangements & statutory responsibilities; the impact on public health; consider any existing air quality action plans for Cardiff; to consider air quality responsibilities placed on the Council.
- **Development of Cardiff's Clean Air Strategy** – to include a report on the aims and objectives of the strategy; associated policies that support the development of the strategy; resources and timescale for delivering the strategy; desired impact of the strategy and the main areas that the strategy will target.
- **Welsh Government Position on Air Quality** – to gain a better understanding of the policy objectives of the Welsh Government in terms of air quality; to understand the applicable timescales and consequences of the Council not meeting these policy objectives; to identify the key areas that Welsh Government believes should be targeted to achieve the best outcomes for air quality.
- **Transportation** – to understand the positive and negative impacts that transport (and transport systems) can have on air quality in Cardiff; to establish a hierarchy of transport pollution sources and evaluate what can be done to better manage the worst polluting sources; to review transport schemes and infrastructure planned for development or in the process of being delivered in Cardiff; to explore the benefits of sustainable fleet management in Cardiff; to consider the impact that changes in technology and public perception can have on air quality.

- **Other Pollution Sources** – to consider a range of pollution sources (excluding transport) and the impact that these have upon air quality in Cardiff; to establish a hierarchy of pollution sources (excluding transport) and evaluate what can be done to better manage the worst polluting sources; to review proposals currently being developed or delivered (excluding transport) to reduce pollution in Cardiff.
- **Planning & Development** – to understand how the planning and development process can be used to improve air pollution in Cardiff; to consider the current planning processes / policies and how these impact upon air pollution; the impact that the growth of the city might have upon air quality.
- **Sustainable Fuels** – to understand the challenges and opportunities that the growth of sustainable fuels can have upon air quality in Cardiff; to consider the role of the Council in terms of helping to establish the local market for sustainable fuels; to consider what the Council and its partners can proactively do to support the move to sustainable fuels.
- **Clean Air Zones** – to understand how Clean Air Zones work; the impact that a Clean Air Zone could have upon air quality in Cardiff and the wider implications for the city; the costs and opportunities of setting up a clean air zone; best practice in delivering Clean Air Zones (to include domestic and international examples).

RECOMENDATIONS

The recommendations for this report are set out in this section of the document. They based on seven separate areas that the task group believe should be the basis for the development of Cardiff's Clean Air Strategy. The seven areas are set out below:

- Public Health;
- Clean Air Strategy – The Next Steps;
- Planning;
- Transport;
- Sustainable Fuels;
- Council & Public Sector Partner Responsibilities;
- Consultation & Engagement.

The recommendations are based on the evidence received during the task & finish exercise and the key findings that are documented on pages 31 to 156 of this report.

Public Health Recommendation

- **Recommendation 1** – It is clear that poor air quality is a significant health issue and that it has a negative impact on people living in Cardiff and across the wider region. It is estimated that it contributes to approximately 40,000 premature deaths in the United Kingdom every year and that some doctors believe that this is just the tip of the iceberg. Given the scale of the problem the task group recommends that improving public health should be documented as the primary reason for introducing a Clean Air Strategy in Cardiff. Ultimately nothing should be more important to the Council and its partners than improving public health.

Clean Air Strategy – The Next Steps

- **Recommendation 2** - During the task & finish exercise it became apparent that achieving the EU air quality standards by 2022 was virtually impossible by using and / or accelerating existing practice, for example, by improving sustainable transport infrastructure and driving widespread public behaviour change. Not one of the many witnesses we asked was confident that the EU air quality target would be achieved in the short timescale available by carrying on with or accelerating the current approach. It was also clear in the evidence sessions that reaching the challenging target ‘in the shortest time possible’ would almost certainly involve the creation of some kind of clean air zone or low emission zone. That said, working out what is best for Cardiff in terms of air quality is an evidence based scientific exercise that will be delivered in the form of a feasibility study. Such a study will review a range of alternative options for achieving the air quality standards and assess which is most likely to achieve the change needed ‘in the shortest time possible’. There are many different ‘Clean Air Zone’ options and variations, for example, congestion charging zones, low emission zones and low emission neighbourhoods. These are further complicated by geographical boundaries, emission levels, vehicle types, financial implications and time / date restrictions. Working out the best option to take is a significant challenge that will require time, expertise, clear guidance and financial resources - unfortunately based on the evidence provided Cardiff appears to be short on all four. With all of this in mind the task group recommends that the Council:
 - Continues to work with and lobby the Welsh Government for a clear direction and guidance on the next steps to take in terms of achieving air quality compliance ‘in the shortest time possible’;
 - Ask the Welsh Government to provide financial assistance to undertake the feasibility study and to deliver the option identified to

improve air quality in the feasibility study;

- Employ suitably qualified experts to deliver the feasibility study and help implement the option identified in the feasibility study to improve air quality;
 - Consider, evaluate and scrutinise the advice before taking a final decision as to the way forward;
 - Waste no further time in carrying out the feasibility study – the EU air quality limits need to be addressed by either 2022 or in the soonest time possible. The evidence presented suggests that feasibility studies take about two years to deliver and at the point of writing this report the Council had not started its feasibility study for Cardiff.
- **Recommendation 3** - All evidence presented to the task group identified nitrogen dioxide produced my motor vehicles to be the single biggest air quality pollutant in Cardiff - with diesel vehicles being the major offender in this category. As we are ultimately looking to reduce air pollution in the city the task group recommends that the new clean air strategy cites the reduction of nitrogen dioxide from diesel vehicles as one of its key aims, and that whenever possible actions resulting from the clean air strategy specifically reflect this aim.
 - **Recommendation 4** - The task group believe that Cardiff on its own cannot fully address the air pollution issues facing the city. As has been explained in the report nitrogen dioxide is Cardiff's largest pollutant and privately owned cars, particularly diesel, predominantly produce this. It is estimated that there are 81,800 commuter journeys into Cardiff each day from neighbouring local authorities and this volume of traffic undoubtedly has a negative impact on air quality. The two sections of road that when modelled breach EU emission limits and mandate that action is taken are located on two of the main commuter routes into the city. In addition to this Cardiff is the main commercial hub for the South East Wales region, this means that a significant number of public transport journeys occur from neighbouring local authorities into the city. Understanding this

relationship means that we have to work with our neighbours to address the air quality problem, therefore, the task group recommends that we consult and work with neighbouring local authorities to develop the Clean Air Strategy and supporting action plan to improve air quality. It is important to remember that air pollution from motor vehicles does not start at the city boundaries and so any regional transport initiatives that encourage modal shift into Cardiff should in some way feature in any evolving air quality improvement action plan.

- **Recommendation 5** - It was noted during the task and finish exercise that the introduction of clean air zones, congestion charging zones and low emission zones tended to have a dramatic impact in increasing modal shift, for example, the London congestion charging scheme increased bus patronage by 14% in a very short period of time. Cardiff has in recent years worked hard to increase modal split and has the proud ambition of achieving a 50:50 modal split by 2026. Should the feasibility study recommend some type of clean air zone, congestion charging zone, or low emission zone as the way forward the Council should not be afraid to implement the decision as it will ultimately help achieve its biggest existing transportation target.
- **Recommendation 6** - A low emission neighbourhood is an area-based scheme that includes a package of measures delivered within a specific area and is focused on reducing emissions and promoting sustainable living locally. Such schemes have been implemented in five areas across London and have focused on locations with high pollution. They aim to reduce pollution levels through local measures and reducing the number of local journeys undertaken. Key to their success is the partnership and involvement of the local community, businesses and the local authority to jointly identify and deliver a common set of goals. Relevant projects could include working with major landowners to improve emissions from buildings; better management and reduction of freight movement and service vehicles entering the area, for example, the consolidation of deliveries and use of shared supplier scheme; the implementation of

emissions based on street parking charges and the introduction of electric vehicle charging infrastructure. The task group recommends that the Council look into the feasibility of creating a low emission neighbourhood in an area of Cardiff with the worst air pollution levels. It could act as a pilot for trialling air quality improvement initiatives and would be a first of its kind for Wales.

- **Recommendation 7** - Evidence provided and research gathered for the task & finish exercise clearly indicated that the cities that made the biggest improvements in terms of air quality also made the largest investment in terms of resources for dealing with the problem. In addition to this, the cities that have been the most successful in reducing air pollution received significant support from central government – both financial and policy guidance terms. For example, three of the top twelve performing European cities in terms of reducing air pollution were in Germany. Germany is also responsible for 55 of the 225 European low emission zones - in contrast the United Kingdom has only created two low emission zones. On this basis the task group recommends that the Council continues to lobby the Welsh Government for clear direction and financial support, and that it invests as much money and effort as possible to drive air quality improvements across the city.

Planning Recommendations

- **Recommendation 8** - Cardiff has a well-established planning system that is able to assess, consider and deal with any air quality issues that might arise through the planning process. The Shared Regulatory Service is able to act as a consultee on any specific air quality planning matters and other public sector bodies such as Natural Resources Wales can provide specialist expertise on the topic should a complex case arise. However, the numerous factors that impact on our relationship with air quality standards is constantly changing, and means that we continually need to review our planning process to ensure that they keep pace with changing demands. For example, Newport City Council has recently created supplementary planning guidance for dealing with air quality issues, while other local authorities have developed supplementary planning guidance for dealing with emerging issues such as sustainable fuel infrastructure. As a result the task group recommends that the Planning Service reviews its existing supplementary planning guidance in relation to managing air quality and implementing sustainable fuel infrastructure alongside the development of the Clean Air Strategy. If the Planning Service identifies any significant gaps in statutory planning guidance provision then an appropriate document(s) should be commissioned to ensure that such matters are properly addressed.
- **Recommendation 9** - When assessing planning applications the wider knock on effect on air quality should always be thoroughly considered. For example, the creation of a new housing development might accidentally create a traffic driven pollution problem several miles away that had not been properly considered by the planning process. The task group acknowledges that such assessments are sometimes carried out and that the introduction of the development master planning process has helped, however, this isn't always the case and sometimes the wider local implications are not considered. With this in mind the task group recommends a review into the wider traffic and pollution implications of

new developments. This should include a review of traffic modelling techniques and how planning obligation monies can be applied across a wider area to deal with the impact of traffic and pollution.

- **Recommendation 10** - In a world of shrinking financial resources it is important for the Council to take advantage of any additional expert support currently available. During the inquiry the Members were told that the Health Protection division of Public Health Wales and Natural Resources Wales were available to offer free expert advice on technical and complex air quality issues. The task group recommends that the Planning Service takes advantage of these expert resources as and when required.

Transport Recommendations

➤ General

- **Recommendation 11** – There was broad agreement that the Council's travel plans for Cardiff were sound and if delivered would have a positive impact in terms of driving modal shift and improving air quality in the city. In addition to this it was acknowledged by several witnesses that we don't currently have the necessary infrastructure to ensure that we meet the EU air quality targets, and that the Metro proposals wouldn't be delivered within 'the soonest time possible'. One notable witness stressed that now was the time to deliver against the plans as we have moved from the position of 'predict & provide' to 'provide & promote'. On this basis the task group recommends that the Council notes the urgency of required change to meet air quality targets and does all that it can to deliver and then promote its existing transport proposals.
- **Recommendation 12** - Delivering the long-term infrastructure that is required to grow sustainable travel and drive modal shift is very important. The Council needs to be involved in helping to bring the large pieces of infrastructure to Cardiff and the wider South East Wales Region, for example, by playing its part in the development of schemes like the Metro. However, it is quite often the case that the Council is just a partner in such schemes and that ultimately it is reliant on the purse strings of other organisations (such as the Welsh Government) to ensure that large infrastructure schemes are delivered. At the same time it is important to remember that the Council has a number of short-term initiatives for influencing travel behaviour that are within its control. For example, the introduction of 20 mph zones; increasing residential parking schemes to 75%; working with and educating the public, local businesses and schools, etc.. The small changes that the Council is able to make can have a huge difference to influencing public behaviour and driving modal shift. On this basis the task group recommends that the Council should increase its

focus on the affordable short-term measures within its control.

- **Recommendation 13** – There are a number of existing and potential traffic / parking control measures that the Council is able to employ to help control the use of the public highway. For example, the Council currently delivers civil parking enforcement and moving traffic offences across the city and in theory could introduce a range of other charging schemes including congestion charging, low emission zones and a work place parking levy. All of these schemes are capable of generating significant levels of income that could be used to underpin the delivery of transport infrastructure improvements. With this in mind the task group recommends that monies raised from existing or proposed traffic / parking control measures is reinvested directly back into transport infrastructure. This would create a virtuous circle where driver penalties are reinvested to provide clean and sustainable long-term travel alternatives.
- **Recommendation 14** – During the task & finish exercise Members were informed that the Council is due to publish ‘Cardiff’s Transport & Clean Air Green Paper’ in the spring of 2018. The Environmental Scrutiny Committee would welcome the opportunity to scrutinise this document once it becomes available.

➤ **Public Transport Infrastructure**

- **Recommendation 15** - Several witnesses stressed the importance of completing the Cardiff Central Transport Interchange and the positive impact that it will have on increasing the use of public transport. It is felt that the facility will act as the heart of the regional transport network and, therefore, help drive modal shift. The task group agrees with this and urges the Council to work with developers to complete this facility ‘in the soonest time possible’. As an interim measure the Council should republish and distribute the map that was made available when the old bus station was first closed; this will provide a vital navigation tool for new / infrequent users of public transport and visitors to the city.

➤ Active Travel (Cycling & Walking)

- **Recommendation 16** – The task group agrees with the Public Health position around accelerating the improvement of infrastructure to support active travel (cycling & walking). Based on the evidence received during the inquiry the task group recommends that:
 - The Council continues with improvements and ongoing development of dedicated walking and cycling infrastructure, for example, by accelerating the development of segregated cycle lanes in Cardiff;
 - The Council continues to improve access to local green spaces by active travel, for example, improving walking and cycling access in Cardiff's parks;
 - The Council actively promotes and encourages the use of its recently introduced 'NEXTBIKE' cycle hire scheme. Members felt that such schemes provide a positive message in terms of sustainable travel and encourage behaviour change;
 - The Council continues with its roll out of 20 mph schemes in the city. Members felt that 20 mph schemes support the growth of active travel (cycling and walking) by reducing average vehicle speed. This in turn creates a safer travel environment and so encourages people to undertake more cycling and walking journeys. Quite a few of the witnesses to the inquiry were very supportive of the continued roll out of 20 mph zones.
- **Recommendation 17** - The Council, public sector partners, major employers and For Cardiff (the Cardiff BID) should do all it can to encourage their staff to use active travel to get to work and carry out day to day trips whenever possible. The Council should work with these groups to create a strategy to drive this change and identify practical incentives that can be directed at staff to encourage modal shift. Suggestions could include the expansion of flexible working; increasing

the option of home working; travel discounts for using park & ride facilities; involving major employers in the planning of car free days; issuing support and direction to employers to provide and fund bike stands; providing information on cycle lanes and safe cycle routes; selling the health and well-being benefits of active travel.

➤ **Parking**

Recommendation 18

Car parking is an important factor in managing travel behaviour. Cheap plentiful parking encourages car journeys into an area, while placing physical restrictions and financial barriers on parking supply encourages a positive modal shift. As stated in many parts of this report, reducing car journeys into and out of Cardiff is key to meeting air quality targets. It is also, in part, something that the Council has control over and so is able to change. With this in mind the task group recommends that the Council should:

- Consider gradual increases in public car parking charges in city centre areas as public transport options are improved. The funding raised by the public parking charges should then be used to pay for and accelerate improvements in active travel facilities and public transport;
- Run a consultation on private parking facilities in the city to identify how much it is used and to understand the impact that it has on businesses, congestion and air quality;
- Consider what the Council can do to manage the large amount of private parking in Cardiff, for example, a review of the planning process around car park development to encourage modal shift;
- Review the option of introducing a workplace parking levy to Cardiff. Nottingham has successfully introduced a workplace parking levy which has increased modal shift and raised significant funds (£44 million) for transport initiatives in the city;

- Consider variable parking charges to correspond with traffic parking demand when next reviewing the parking charges within the Parking Revenue Account;
- Develop further methods to encourage ‘For Cardiff (Cardiff BID)’ members and their staff to use the park & ride facilities offered by the Council - if successful this would help reduce traffic movements into the city.

➤ Taxis

- **Recommendation 19** – As a part of the task & finish exercise Members met with representatives from the taxi industry to discuss the air quality challenges facing taxi drivers and companies in the city. It was clear during discussion that there is an understanding of the future challenges facing the industry, for example, some companies have already taken steps to address the problem by procuring low emission vehicles. However, the ongoing Welsh Government Taxi Consultation and a lack of financial assistance for the taxi industry in Wales has created uncertainty and stalled vehicle investment decisions. Other issues discussed during the meeting included existing taxi licensing policy; emissions levels and the use of bus lanes. Based on the evidence gathered, discussion at the meeting and the key findings the task group recommends that:
 - The Council makes a clear statement that sets out the Council’s ambitions for taxi emission standards in the city and explains out how this might be achieved, for example, Nottingham has stated that it wants to significantly reduce taxi emissions in the city by converting all of its taxi fleet to electric by 2025;
 - The Council needs to work with Cardiff’s taxi companies and drivers to establish and implement a reasonable timescale to set a minimum emissions standard for taxis operating in the city, with the new minimum emissions standard being built into the existing licensing policy. To support this change the Council should work with the taxi companies and drivers to identify potential financial assistance to

deliver the change, for example, an approach could be made to Welsh Government asking for support – such transitional support has been provided in cities like Dundee, Derby and Birmingham;

- Taking the Welsh Government Taxi Consultation into consideration the Council should review the use of the ‘Exceptional Conditions Policy’ and wider ‘Taxi Licensing Policy’ to make sure that it is fit for purpose and complies with the aim of improving air quality in the city;
- The Council needs to work closely with the taxi companies and drivers to ensure that parking or blocking of bus lanes stops. It should be made clear that enforcement action will be taken by the Council against any drivers who block the bus lanes. The task group recommends that any driver found blocking a bus lane should be fined and ultimately have the privilege removed if they persist in doing it. In return for this support the Council should acknowledge that the number of Hackney Carriage licences greatly exceeds the number of taxi rank spaces and carries out a review of taxi rank facilities in the city centre. It would be appreciated that any response to this recommendation is supported by a series of proposed actions and agreed timescales as this matter has been raised at previous scrutiny meetings during the last twelve months.

➤ Buses

- **Recommendation 20** – As a part of the task & finish exercise Members met with a number of bus company and passenger group representatives. It was clear from discussion that they understood that overall bus emission levels needed to fall to help improve air quality, however, to achieve this substantial and ongoing financial assistance would be required from the public purse. Several references were made to the lack of Welsh Government funding to support bus services in Wales; this was in contrast to the support offered other parts of the United Kingdom and indeed to the rail network. Other issues discussed during the meeting included emission

levels in the city centre; bus company business planning and investment in future vehicles; the introduction of low emission buses; park & ride and bus lane infrastructure and a single ticketing approach. Based on the evidence gathered, discussion at the meeting and the key findings the task group recommends that:

- The City Centre Air Quality Management Area (predominantly based around Westgate Street) has the highest levels of nitrogen dioxide concentrations in Cardiff - this is significantly impacted by approximately 140 bus movements per hour. It is estimated that buses account for 56% of the nitrogen dioxide emissions and that 63% of the bus movements in the Westgate Street area are from vehicles that are Euro 4 or less. To provide some context the Euro 5 standard was established on the 1st September 2009; this means that over half of the bus movements in Cardiff's worst polluted street are from vehicles that are approaching ten years of age or more. This local air pollution problem is compounded by the canyon nature of the street. Members of the task group believe that air quality improvements are urgently required in this very busy area and recommend that the Council should work with local bus companies to explore the feasibility of restricting older buses from the area. Options that should be considered might include the creation of a 'greener bus route' or developing a low emission zone in the area that might exclude buses that fail to meet a specified emissions standard, for example, Euro 6. The Members of the task group acknowledge the challenges that this might present to local bus companies, however, such restrictions have been applied in other parts of the country and have dramatically reduced nitrogen dioxide emissions.
- Bus companies should be asked to work with the Council and provide a business plan to illustrate how they plan to reduce bus emissions for bus journeys in the Cardiff in the next three years. This would correspond with the timescale for achieving compliance with the EU air quality limits and help provide focus on the role that they have in

helping to achieve this target.

- In terms of financial support to reduce bus emissions it is clear that Welsh bus companies are a poor relation when compared to their Scottish and English counterparts. Government funding has been put in place in other parts of the United Kingdom to help support the transition to cleaner buses, while the Welsh Government in comparison has provided very little. The Council should support the local bus companies by lobbying the Welsh Government for financial assistance for bus services in Cardiff and Wales.
- There are no low emission buses operating in Cardiff or indeed Wales. The Council should do what it can to bring a low emission bus to the Capital City, for example, supporting a major bus provider to procure and introduce one or more hydrogen buses would be a very positive step forward.
- The Council should continue with its development and promotion of Park & Ride and bus lane infrastructure across the city. These are essential in driving modal shift and will be a key ingredient in supporting the wider Metro effort. Effective bus lanes help reduce journey time and improve punctuality – this in turn breeds confidence and convenience into the system, important for delivering modal shift. To compound this park & ride journeys should be punctual, quick and direct. Members were aware of park & ride journeys that made multiple stops between the park & ride facility and city centre – this adds time and makes the park & ride journey less attractive compared to using the private car, on this basis the Committee recommends that all park & ride journeys should be direct, i.e. not feature additional stops.
- Bus and train services in Cardiff should work towards a single ticketing approach in the South East Wales Region. Introducing this in line with the new Metro developments would appear to be a good opportunity and the functionality of the ticket should be similar to that of the London

Oyster Card.

- The Council should work with local bus companies and consider the potential option of introducing bus mounted transponders onto buses using bus lanes to enter and exit the city. In doing this feedback should be sought from the Swansea bus lane transponder scheme where they are used to send a signal to traffic lights before the bus actually arrives at the light. The signal changes the traffic light in favour of the bus to allow it to proceed smoothly without having to wait as standing traffic. This makes the bus journey quicker and ultimately more reliable – two important characteristics in helping to increase bus patronage.

➤ **Other**

- **Recommendation 21** - In recent years Cardiff has promoted itself as a cruise liner destination and has managed to attract some interest from visiting cruise liners. The task group was told that when a cruise liner visits a port it emits the equivalent amount of particulate matter as approximately of 100,000 vehicles entering the city – this is greater than the average number of commuter vehicles entering the city on a typical day. While the task group acknowledges the economic benefit created by cruise liners it is also concerned at the level of particulate emissions that they produce and the impact that these emissions might have on public health. With this in mind the committee feels that when the Council is assessing the economic benefits of allowing cruise liners to dock it should also factor the environmental impact that they might create into the overall assessment.

Sustainable Fuel Recommendations

➤ The Wider Picture

- **Recommendation 22** - Recent market trends clearly illustrate that low emission vehicles are the future of motoring – this is a very positive thing as the technology is much cleaner than traditional crude oil based fuels. The growth of sustainable fuels such as electric and hydrogen will result in air quality improvements, but will not necessarily reduce congestion. This future direction of travel means that Cardiff and Wales cannot afford to be left behind; therefore, the Council and its other public sector partners must do everything they can to embrace and support the change. With this in mind the task group recommends that:
 - The Council continues with the development of its Sustainable Fuel Strategy and supporting list of short, medium and long-term action plans. Clearly documenting the actions that the Council is planning to take is a positive step forward;
 - The Council works with and lobbies Welsh Government to create a sustainable fuel strategy for all of Wales. This is something that countries like Scotland have done and it would send a clear message of intent to all Welsh local authorities, public sector bodies, businesses and the wider public;
 - The Council engages with other local authorities in the South East Wales region to encourage them to create and publish sustainable fuel strategies. When developing the strategies they should be encouraged to publish short, medium and long-term actions that align with those established for Cardiff. It is important to reiterate that air pollution doesn't just start at Cardiff's boundaries and so a regional approach is required;
 - The Council engages with its public sector partners across the South East Wales Region to encourage them to create and publish

sustainable fuel strategies. When developing the strategies they should be encouraged to publish short, medium and long-term actions that align with those established for Cardiff. The Cardiff Public Services Board would seem to be a good place to table the debate on improving air quality and developing suitable sustainable fuel strategies across the public sector;

- The Council should encourage neighbouring local authorities and other public sector partners to issue positive proposals on how and when they intend switching existing fleet to sustainable fuel options. In addition to this, they should also be encouraged to build the use of sustainable fuels (such as electric and hydrogen) into their procurement processes for vehicles and the wider supply chain;
- Cardiff has very little in the way of sustainable fuel infrastructure. Without the necessary charging and refuelling infrastructure it is very difficult to increase the use of electric and hydrogen fuelled vehicles in Cardiff and across the wider area. The Council needs to work with neighbouring local authorities, public sector partners and local businesses to identify what they can do to grow sustainable fuel infrastructure across the South East Wales Region. Welsh Government, neighbouring local authorities, public sector partners and major businesses should be asked to provide information on the sustainable infrastructure that they currently have and intend to provide or support. This information should then be collated to create a 'South East Wales Region Sustainable Fuel Infrastructure Map' that would then be published and circulated to various stakeholder groups to raise awareness of the options available.
- **Recommendation 23** –The task group recommends that the Council should work with local car dealerships to encourage the growth of electric, hybrid or hydrogen vehicle sales. In particular the following information should be clearly communicated:
 - That there is an urgent and legal need to improve air quality in the city

- this in part can be addressed through the increased use of electric, hybrid or hydrogen vehicles;
 - Details of existing and proposed sustainable fuelling infrastructure in the South East Wales Region;
 - The benefits to their customers for owning new electric, hybrid or hydrogen vehicles;
 - Details of any financial assistance available for the purchase of new electric, hybrid or hydrogen vehicles.
- **Recommendation 24** – The Council should work with the motor industry to bring a trade show for electric, hybrid or hydrogen vehicles to Cardiff. To achieve this it should approach an established industry body or motor trade show provider (for example, the Society of Motor Manufacturers & Traders or Green Fleet Urban) and invite them to deliver an event aimed at the motor vehicle industry in Wales. Such an event would help to stimulate further interest in electric, hybrid and hydrogen vehicles and hopefully increase local take up of the vehicles.
- **Electric (EV)**
- **Recommendation 25** - Cardiff has no on street electric vehicle-charging infrastructure. Some private companies such as IKEA and ASDA have charging points at their sites but the offer is very limited. This means that electric vehicle charging opportunities are very limited in the city, making it difficult for people to refuel electric or hybrid vehicles. Cities like Manchester, Leeds and Bristol are pushing ahead in creating public on street charging infrastructure and it would be a shame for Cardiff to be left behind. The Council has recently commissioned a report that aims to identify the best way forward for electric charging infrastructure in the city. It aims to explore different charging methods; the challenges of installing on street charging; the various implementation options and the potential economic opportunities being presented to the Council and private sector.

It is important that we understand all of these factors before taking the next step. With this in mind the task group recommends that the Council considers and evaluates the content of the report before deciding on how to roll out electric charging infrastructure to the city. That said the need to make progress is immediate and so the Council should ensure that there are no unnecessary delays in the decision making process for taking this forward. Once a clear picture has been identified then it is essential that the Council does what it can to accelerate the delivery of this much needed infrastructure.

- **Recommendation 26** – The Council currently has only one electric vehicle. From the evidence provided it is clear that electric vehicles are a part of the solution in terms of improving air quality, therefore, we need to procure more of these vehicles. With this in mind the task group recommends that the Council builds the use of sustainable fuels (such as electric & hydrogen) into the vehicle and wider supply chain procurement process to support the growth of low emission fuels. If suppliers and contractors are keen to win our business then they should support our objective of improving air quality by using cleaner vehicles;

➤ Hydrogen

- **Recommendation 27** - Cardiff has no hydrogen-fuelling infrastructure; the closest refuelling site being found a few miles north of the city in Treforest. In total there are only three hydrogen-refuelling stations in all of Wales. The lack of convenient and accessible hydrogen refuelling infrastructure has been identified as the single biggest barrier to owning and running a hydrogen vehicle in Cardiff; without more infrastructure the market for hydrogen vehicles will simply not grow. The slow take up of hydrogen-fuelled vehicles seems to be a shame for a number of reasons, these include:
 - Producing hydrogen fuel is a relatively simple chemical process that

can be achieved anywhere;

- Water is the only emission produced by hydrogen fuelled cars;
- Refuelling a hydrogen car is a relatively quick process which can take anywhere between one and five minutes – this is comparable to refuelling to a petrol or diesel car and significantly quicker than charging an electric vehicle;
- The drive range on a tank of hydrogen is comparable to most petrol or diesel cars;
- South Wales has significant expertise in the production of hydrogen fuel;
- The hydrogen fuel cell was invented by a Welshman called Sir William Grove in 1839. It seems a shame to have invented the technology in Wales and then to have fallen behind the rest of the world in rolling out its use in motor vehicles;
- South Wales could play a significant role in supporting the supply chain for the production of hydrogen vehicles in the United Kingdom.

With all of this in mind the task group recommends that the Council needs to review and then do what it can to bring at least one hydrogen refuelling facility to Cardiff. Potential options include supporting a major fuel supplier to install a facility or developing a Council / public sector facility to fuel Council or other public sector vehicles. In particular, the Members of the task group would like to see a hydrogen bus and waste truck being introduced to the streets of Cardiff – the introduction of public sector hydrogen vehicles could act as a catalyst to underwrite the development of new refuelling infrastructure. Members understand that hydrogen vehicles are approximately twice the cost of similar petrol or diesel vehicles and so financial support would be required to make the purchase a reality. Contacting the Welsh Government for financial assistance for such a purchase would be a good starting point.

Council & Public Sector Partner Responsibilities - Recommendations

- **Recommendation 28** – Improving air quality in Cardiff is an issue that affects everyone in the city. This means that a united public sector response is required and so it is vital that the Council and other major public sector partners assume a leadership role in driving this agenda forward. On this basis the task group recommends that the Council works with its public sector partners to:
 - Agree and work towards setting clear and meaningful targets for air quality improvement;
 - Implement air quality strategies and that detail time focused action plans to help achieve air quality compliance;
 - Communicate and educate the public on air quality issues;
 - Monitoring the progress achieved.
- **Recommendation 29** – The Council and all major public sector organisations should run a programme to encourage their staff to switch to active travel and encourage workplace practices to reduce the number of unnecessary journeys. For example, increasing work from home opportunities where practical; creating partnerships and discounted travel offers with public transport providers; increasing use of conference calls; emphasising the benefits of sustainable travel and implementing flexible start times.

Consultation & Engagement Recommendations

- **Recommendation 30** – Once the Clean Air Strategy is complete and a clear direction of travel is established the task group recommends that the Council should do all it can to raise the profile of what is being done to improve air quality in Cardiff and explain why it is being done. This should involve a huge communications, consultation and engagement exercise that targets neighbouring local authorities, public sector organisations, major employers and the public. The aims and ambitions of the strategy should be highlighted; specific actions should be detailed and an explanation on the potential benefits provided. As with most change there will be negative feedback, however, evidence suggests that in the medium to long term the popularity of any significant proposals will increase.
- **Recommendation 31** – The Council should support an interactive consultation event during the feasibility study period with its public sector partners and Members of the business community to explain the air quality challenges facing Cardiff. This event should include a brainstorming session with the group to explore practical steps that Cardiff's employers could take to help improve air quality in the city. It would seem sensible to work with For Cardiff (Cardiff BID) to deliver this event as they are in direct contact with most of the employers in the city centre. A business community representative who took part in the inquiry felt that drawing on the collective experience and knowledge of the business community might identify ideas that public sector partners might not have considered. For example, drawing on his wider experience he explained that some cities in the United Kingdom had worked with businesses to introduce a voluntary ban on private workplace deliveries which it is estimated account for approximately 40% of private deliveries in a typical city centre.

KEY FINDINGS

'Improving Cardiff's Air Quality' - Meeting 1 - Wednesday 1st November 2017 - Setting the Background

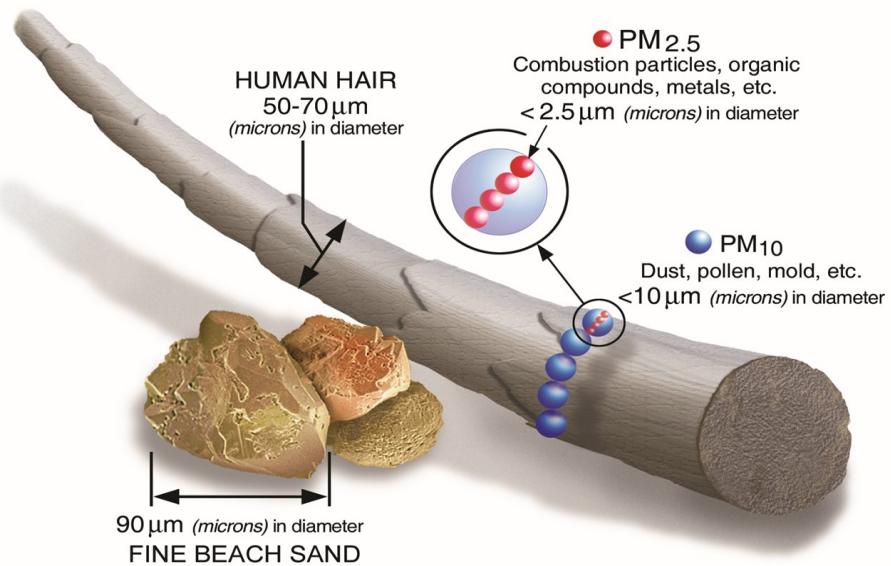
Part 1 - A Review of Cardiff's Current Air Quality – Councillor Michael Michael, Cabinet Member for Clean Streets, Recycling & Environment, Councillor Caro Wild, Cabinet Member for Strategic Planning & Transport and Councillor Susan Elsmore, Cabinet Member for Social Care, Health & Well-being were invited to brief the task group on air quality in Cardiff. In doing this they identified the challenges and opportunities facing Cardiff's air quality as well highlighting the main problem areas in the city. They were supported by officers from Shared Regulatory Services and the City Operations Directorate.

Key Findings

- Local air quality management is a statutory duty for all local authorities in the United Kingdom. This statutory responsibility is set out under Part IV of the Environment Act 1995 and air quality objectives for specific pollutants are prescribed in air the quality regulations.
- Exposure to air pollution reduces life expectancy by increasing mortality and morbidity risks from heart disease and strokes, respiratory diseases, lung cancer and other illness.
- In the UK, the health burden is substantial. It is estimated that the equivalent of 40,000 deaths occur each year as a result of exposure to outdoor pollution.
- Public Health Wales estimates that there are 225 attributable deaths to PM 2.5 and 220 attributable to nitrogen dioxide per annum in the Cardiff and Vale Health Board area each year.

- Particulate Matter (PM) – These are fine particles composed of a wide range of materials and sources. Current regulatory monitoring is focussed on PM10, however, PM2.5 and ‘ultrafine’ particles are also vitally important in public health terms.
- Particulate matter can be carried deep into lungs. This can cause inflammation and worsen heart / lung diseases. It is also possible for particulate matter to carry surface-absorbed carcinogenic compounds into the lungs.
- The primary man made sources of PM are fuel combustion, transport, quarrying and construction.
- **Diagram 1** illustrates the relative sizes of particulate matter when compared against grains of sand and human hair.

Diagram 1 – Relative Size of Particulate Matter (PM)



- Nitrogen dioxide is the most common air pollutant in Cardiff. It is a secondary pollutant that is mainly produced by vehicle emissions. Nitrogen dioxide is created when Nitric oxide is emitted from vehicles as a

result of the combustion process – on its own it is not harmful to human health. However, nitric oxide then oxidises with atmosphere to form nitrogen dioxide which is harmful to health. Nitrogen dioxide can irritate lungs and lower resistance to respiratory infections.

- Continued or frequent exposure to concentrations higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness in children.
- 2016 Local Air Quality Monitoring in Cardiff – there are 77 diffusion tubes located across Cardiff that are used to monitor nitrogen dioxide on a long term basis to provide annual average concentrations.
- Real time monitoring of ozone, particulate (PM10 & PM 2.5), sulphur dioxide, nitrogen dioxide is undertaken by the AURN on Frederick Street. This provides an overall background reading for the city – the latest results can always be accessed online by visiting:

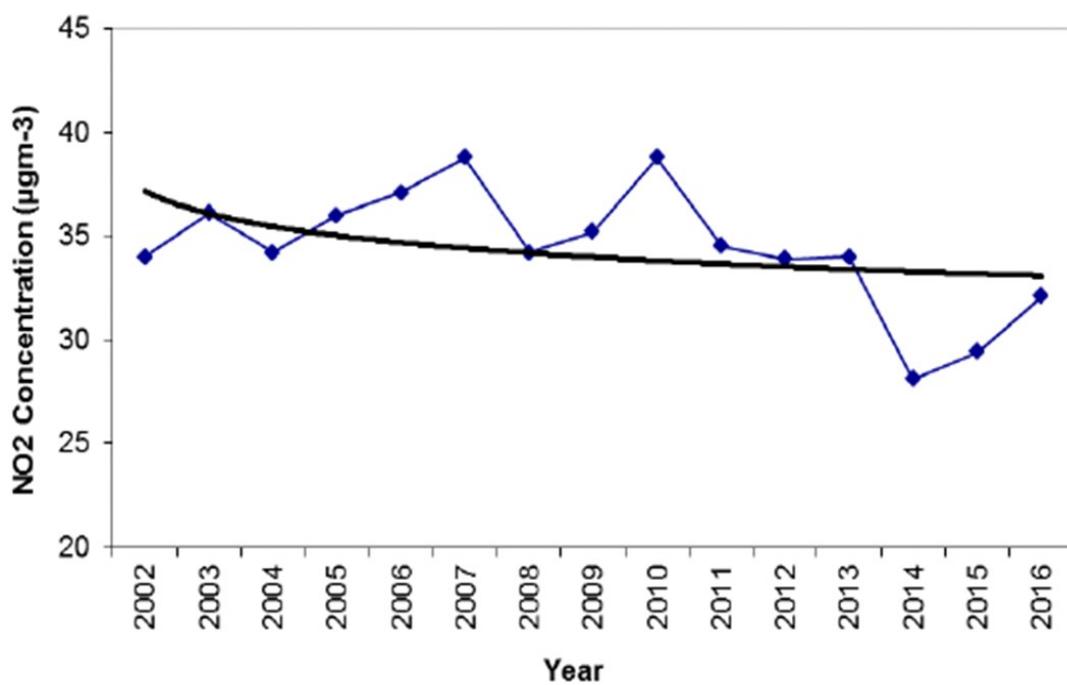
http://www.welshairquality.co.uk/current_levels.php?lg=

- Cardiff has four ‘Air Quality Management Areas’ which have been declared due to elevated nitrogen dioxide concentrations as a result of vehicle emissions. These are:
 - Stephenson Court Air Quality Management Area
 - Ely Bridge Air Quality Management Area
 - Llandaff Air Quality Management Area
 - City Centre Air Quality Management Area
- Maps of Cardiff’s four Air Quality Management areas are attached to this report as **Appendix 1**.
- During 2016 Cardiff had a number of sites with exposure exceeding the 40 $\mu\text{g}/\text{m}^3$ annual mean objective. In addition to this, it had a number of monitoring sites (11) that exceeded the 40 $\mu\text{g}/\text{m}^3$ annual mean objective for nitrogen dioxide. The exceedences were predominantly contained within

the declared Air Quality Management Areas; however, there were four monitoring locations that were not located within Air Quality Management Areas.

- During 2016 the City Centre Air Quality Management Area experienced an increase of 2 $\mu\text{g}/\text{m}^3$ in nitrogen dioxide concentrations.
- **Diagram 2** illustrates the results of nitrogen dioxide concentration monitoring for the years 2002 to 2016. Overall there has been a reducing trend during this period, however, since 2014 the nitrogen dioxide concentration levels have increased quite steadily.

Diagram 2 – City Centre Air Quality Management Area Nitrogen Dioxide concentration monitoring - 2002 to 2016

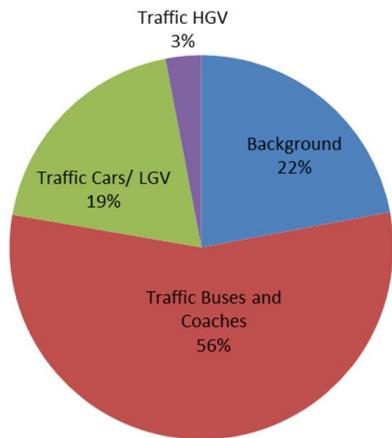


- Road traffic is the primary source of elevated concentrations of nitrogen dioxide for Cardiff. This is mainly caused by cars (predominately diesel), buses and coaches. A breakdown of the nitrogen dioxide source apportionment analysis for each of Cardiff's four Air Quality Management Areas is attached to this report as **Appendix 2**.

- The City Centre Air Quality Management Area (predominantly based around Westgate Street) has the highest levels of nitrogen dioxide concentration in Cardiff. This is significantly impacted by approximately 140 bus movements per hour. A breakdown of the nitrogen dioxide contributions by percentage can be seen in **Diagram 3** below:

Diagram 3 – City Centre Air Quality Management Area Nitrogen Dioxide Contributions

City Centre AQMA (Westgate Street)



- It is important to note that 56% of the Nitrogen Dioxide emissions for this area are caused by buses and coaches. From the 140 buses using this area:
 - 72 (51% of the overall total) have engines that comply with Euro 3 standards;
 - 17 (12% of the overall total) have engines that comply with Euro 4 standards;
 - 15 (11% of the overall total) have engines that comply with Euro 5 standards;
 - 36 (26% of the overall total) have engines that comply with Euro 6 standards.

- The Euro engine emission standards were first established in July 1992 with the launch of the Euro 1 standard. Since then an additional five overall standards have been added with the aim of reducing emissions and improving air quality. The most recent standard to be introduced is the Euro 6. **Appendix 3** that is attached to this report details the six Euro categories that have been created to date.
- Travel Patterns – during the presentation it was explained that 38% of Cardiff's workforce travel to Cardiff from outside the county area. This figure increased by 10% between 2004 - 2014. Figures from the census conducted in 2011 suggest that between 76% - 84% of the commuting workforce travel by car.
- Progress on Action Plans - Cardiff Council has a statutory requirement to produce Air Quality Action Plan(s) for Air Quality Management Areas. Previous experience in implementing singular action plans has not been as successful as has been required. Air Quality Action Plans focus on introducing local measures to individual road links/ areas - this only targets improving air quality within the identified Air Quality Management Area itself. Sometimes localised measures can lead to adverse impacts on air quality in surrounding areas as they don't address the actual root cause of air quality issues.
- The development of a Clean Air Strategy will target the whole of Cardiff to try and improve the overall air quality within the city. In doing this it is hoped that the Clean Air Strategy will help protect and improve public health.

Part 2 - Development of Cardiff's Clean Air Strategy - Councillor Michael Michael, Cabinet Member for Clean Streets, Recycling & Environment, Councillor Caro Wild, Cabinet Member for Strategic Planning & Transport and Councillor Susan Elsmore, Cabinet Member for Social Care, Health & Well-being were invited to brief the task group on the development of Cardiff's Clean Air Strategy.

Key Findings

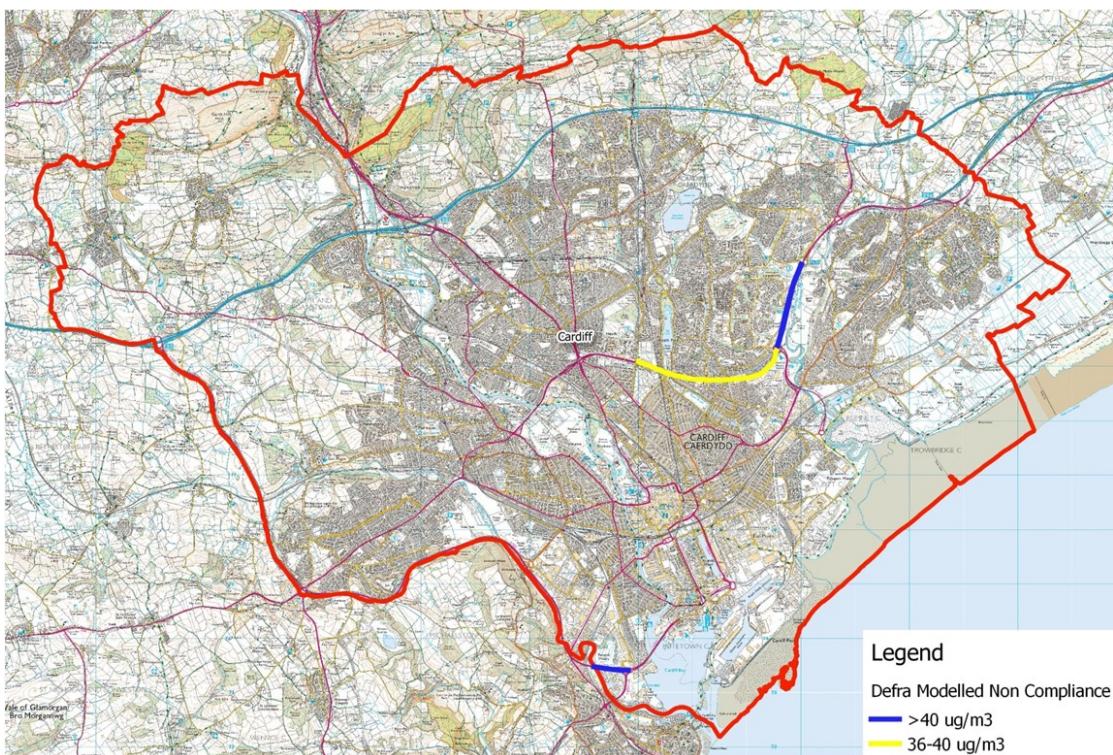
- It was explained that a collaborative approach is being taken in the development of Cardiff's Clean Air Strategy, i.e. the work was being spread across a number of portfolios and that it would involve the harmonising of existing strategies and policies. To help achieve the aims of this important strategy they are working with a number of external bodies, for example, Public Health Wales, Welsh Government and Industry/ Businesses.
- In developing the strategy the collaborative working group were reviewing best practice, NICE Guidance and a number of relevant strategies produced by other local authorities. A key aim of the strategy is to develop a number of strategic measures that would then be implemented through an action plan.
- The overarching aim of the Clean Air Strategy is to Improve Air Quality in order to protect and improve public health. Officers anticipated that this would be achieved by:
 - Enhancing Local Planning Policy - for example, by adhering to air quality related Local Development Plan policies and by creating relevant supplementary planning guidance to help improve air quality.
 - Enhancing Cardiff's Transport Infrastructure - for example, by delivering a Transport Strategy with the aim of reducing congestion,

increasing car clubs, delivering on 20mph zones and influencing behavioural change.

- Increasing the Uptake of Sustainable & Active Travel – for example, by delivering active travel improvements to increase cycling and walking; by supporting public transport improvements through buses, the Metro, trains, school travel plans and influencing behavioural change.
 - Implementing a Renewable Fuel Strategy & Improving OLEV Capacity – for example, by increasing electric charging infrastructure, by supporting alternative fuels (e.g. hydrogen); by delivering green fleet changes (with the Council to take a lead); by supporting industry change and by helping to influence behavioural change in the area of sustainable fuels.
 - Increasing Public Information & Behaviour Change Initiatives – for example, by delivering an effective communications strategy; by focusing on the promotion and marketing of the wider health and environmental benefits of tackling air quality.
 - Implementing Additional Regulatory Interventions – for example, by creating non-idling zones; through parking permit reform and as a part of a taxi policy review.
- The Clean Air Strategy will be vital to develop and implement strategic long term measures to improve air quality below and beyond Air Quality Standards across Cardiff, however, the strategy may not be sufficient to enable Welsh Government to meet legal ruling that compliance with the Ambient Air Quality Directive needs to be achieved in ‘the shortest time possible’ – this was established in a recent court case between Client Earth and the United Kingdom Government.
 - In order that legal compliance is achieved the United Kingdom and devolved governments have legal obligations to achieve nitrogen dioxide annual average limit value (40ug/m³ AA) as set out in the EU Ambient Air Quality Directive (2008/50/EC) ‘in the shortest possible time, and is likely’.

- The United Kingdom government published its final action plan on the 26th July 2017. The policy paper titled 'Air quality plan for nitrogen dioxide (NO₂) in UK (2017)' set out to detail the measures required to bring about compliance in shortest time possible.
- Modelling undertaken by Defra indicates that Cardiff will be non-compliant beyond 2023, and as such will be in breach of the Directive that could result in legal action/ fines being implemented. **Diagram 4** (below) illustrates the results of this modelling and indicates that the two routes highlighted in dark blue on the map would exceed the 40ug/m³ limit and so create non-compliance. The two areas are both along key arterial routes into and out of the city, i.e. the A48 from the centre of the city going east and the A4232 in Grangetown to the west of the city. This theoretical modelling has concluded that the main reason for 40ug/m³ limit breaches in these areas is the volume of diesel fuelled private vehicles using the routes, for example, the use of private diesel fuelled cars in the section of the A48 in breach accounts for 46% of the nitrogen dioxide emissions for the section.

Diagram 4 – Defra Modelled 40ug/m³ Estimated Limit Breaches in 2023



- The following statements were included in the United Kingdom Published Action Plan in July 2017:
 - *'The latest modelling undertaken by Defra identified areas across the UK that may need to implement a Clean Air Zone to achieve compliance in the shortest time. One area identified in Wales, for which, based on current projections, a zonal approach would accelerate compliance, is in Cardiff'.*
 - *'Welsh Government anticipates a Clean Air Zone, with vehicle access restrictions, could be implemented in Cardiff during 2021 or earlier if possible, thereby achieving compliance by 2022 or sooner'*.
- If a local authority can identify measures other than charging zones that are at least as effective at reducing nitrogen dioxide, those measures should be preferred as long as the local authority can demonstrate that this will deliver compliance as quickly as a charging Clean Air Zone. If Cardiff cannot demonstrate compliance and doesn't introduce a charging Clean Air Zone then Welsh Government can mandate the Council to implement a Clean Air Zone under Section 87 (2(j)) of the Environment Act 1995.
- Client Earth have stated that local authorities should ensure their plans meet the legal test set out in the High Court by:
 - Explaining exactly how the limit values can be met;
 - Taking the route that reduces people's exposure as quickly as possible;
 - Ensuring that compliance is not just 'possible', but 'likely'.
- Five cities in England were directed to implement Clean Air Zones in 2016. These were Leeds, Derby, Nottingham, Birmingham and Southampton. The 2017 Plan details additional local authorities in England that have been required to undertake action to achieve statutory nitrogen dioxide limit values within shortest time. These local authorities

have to produce draft action plans by March 2018, with final plans approved December 2018. The United Kingdom Government will assess these plans – if they are not able to demonstrate compliance in shortest time possible then they will be forced to implement a clean air zone.

- A £255m implementation fund has been created to support local authorities in preparing their plans and to deliver targeted action to improve air quality - £40m of this fund is immediately available. At the time of receiving this evidence, the Welsh Government had not indicated if Cardiff could apply for this funding or requested that such plans were put in place. Ongoing discussion was taking place on the issue.
- A Clean Air Zone is an area where targeted action is taken to improve air quality and resources are prioritised and coordinated in a way that delivers improved health benefits and supports economic growth. There are two types of Clean Air Zones, non charging and charging.
 - Non Charging Zones are defined geographic areas used as a focus for action to improve air quality.
 - Charging Zones are areas vehicle owners are required to pay a charge to enter, or move within, a zone if they are driving a vehicle that does not meet the particular emission standard for their vehicle type in that zone.
- Before any decisions are taken on the best option(s) for a Cardiff clean air zone a feasibility study will need to take place. At the time of the meeting it was hoped that a feasibility study would start in Quarter 1 2018 and that this could be delivered within a year. The Council had not identified a funding source to pay for a feasibility study and were negotiating with Welsh Government to attempt to secure monies to deliver the work. They acknowledged that the timescale for delivering a feasibility study was short – other local authorities (for example Bristol) had taken at least two years. The hope was that the Council would learn from the mistakes of the other local authorities and deliver the piece of work in a year. It was anticipated

that much of the work for the feasibility study would involve traffic modelling across the city.

- It was hoped that the results of the feasibility study would go out for consultation in early 2019 with a final plan being delivered by the end of 2019.
- At the time of the meeting the Welsh Government had yet to define the strategic measures to be applied in the development of the feasibility study. English local authorities have received guidance on the strategic measures to be used in feasibility studies from DEFRA.
- Members felt that clear guidance and funding was needed from the Welsh Government to help drive the whole process forward.

Part 3 – Welsh Government Statement - The task group received an air quality update statement from the Welsh Government. The statement set out the current Welsh Government position on managing air quality in Wales and the Cardiff local authority area.

Key Findings

Representatives from the Welsh Government were unable to attend the meeting and so provided a statement to set out the Welsh Government position titled ‘Air Quality in Wales – the National Context’. The statement is attached to this report as **Appendix 4**. Extract containing the main points from **Appendix 4** are set out below:

- *Taking further action to improve air quality in Wales is a key priority in the Welsh Government’s National Strategy, Prosperity for All. In 2018, the Welsh Government will develop and consult on a new Clean Air Plan for Wales, including a Clean Air Zone framework.*
- *The United Kingdom currently meets the legal limits for almost all pollutants but faces significant challenges in reducing levels of nitrogen dioxide.*
- *Non-compliance with EU legal limits for nitrogen dioxide across the United Kingdom and Europe is associated principally with high vehicle emissions in urban areas. This is due both to the significant growth in vehicle numbers and to European vehicle emission standards not delivering the expected reductions in emissions of nitrogen oxides from diesel vehicles.*
- *In the event of exceedances of EU legal limits, air quality plans produced by Member State governments are required to set out appropriate measures to attain compliance in the soonest time.*
- *New evidence received from Defra in early 2017 showed compliance with EU legal limits for nitrogen dioxide in Wales will take longer than the 2015*

UK Air Quality Plan had previously predicted. Defra's modelling now predicts non-compliance in Cardiff until 2023.

- *The Welsh Government therefore set out further remedial measures to accelerate the pace of compliance in Wales. These were published in July 2017, within a new UK Air Quality Plan:*

<https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>.

- *We need all levels of measure, local and national, to deliver compliance in the soonest time possible, requiring close joint working with Local Authorities and others.*
- *The need for urgent action is not just about compliance with law; the essential reason for action is the health of our citizens.*
- *The Welsh Government is working with Cardiff Council to help the Council bring its area within the legal limits in the soonest possible time and to protect the health of people over a wider geographical area.*
- *The Welsh Government is also working with Local Authorities to strengthen air quality provisions in Planning Policy Wales to prevent new problems from arising.*

Clean Air Zones

- *The latest modelling undertaken by Defra identified areas across the United Kingdom that may need to implement a Clean Air Zone to achieve compliance in the shortest time. One area identified in Wales, for which, based on current projections, a zonal approach would accelerate compliance, is in Cardiff. The Welsh Government anticipates a Clean Air Zone, with vehicle access restrictions, could be implemented in Cardiff during 2021 or earlier if possible, thereby achieving compliance by 2022 or sooner.*

- *Implementation of a Clean Air Zone will need to be subject to further assessment and ongoing work with Cardiff Council to understand whether alternative local measures could achieve compliance more quickly. Where alternative local measures are suggested, to be effective they must be capable of achieving compliance within the same amount of time, or sooner, than a Clean Air Zone with access restrictions. This further assessment will need to be based on local as well as national data modelling relating to both air quality and transport. The modelling will be followed by a thorough options assessment, local consultation, planning and implementation. The actions up to the point of implementation should complete during 2019.*
- *The Welsh Government intends to consult on a Clean Air Zone framework for Wales as soon as possible and in any event no later than the end of April 2018.*

Legislation

- *Under domestic legislation, specifically the Environment Act 1995 and associated regulations, the local air quality management (LAQM) regime requires Local Authorities to review and assess air quality in their areas against objectives and standards for a range of averaging periods for a number of air pollutants. Assessment of air quality is focused on locations where members of the public are regularly present and where there is exposure to the pollutant in question over the timescale for which the air quality objective is defined. Under LAQM, Cardiff Council has declared four air quality management areas for non-compliance with the annual average air quality objective for nitrogen dioxide. The Council has produced an action plan for only one of these areas to date, but has advised the Welsh Government that the Council's new Clean Air Strategy and Action Plan, expected in draft by the end of March 2018, will incorporate actions covering all four air quality management areas as well as the city as a whole.*

- *The Well-being of Future Generations (Wales) Act 2015 (“the WFG Act”) requires public bodies in Wales, including the Welsh Government and Local Authorities, to carry out sustainable development. This is the process of improving the economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principle, aimed at achieving the seven national well-being goals. Specifically, public bodies in Wales must act in a manner which seeks to ensure the needs of the present are met without compromising the ability of future generations to meet their own needs.*
- *One of the national well-being indicators under the WFG Act is average population exposure to nitrogen dioxide.*

(<https://statswales.gov.wales/catalogue/environment-and-countryside/air-quality>). This has been calculated at a Local Authority as well as a national level, and indicates that Cardiff Council has the highest average concentration of nitrogen dioxide where people live of any Welsh Local Authority, Statutory guidance issued by the Welsh Government in June 2017

(<http://gov.wales/topics/environmentcountryside/epq/airqualitypollution/airquality/guidance/policy-guidance/?lang=en>) joined up these two domestic regimes by requiring Local Authorities in Wales to follow the ways of working set out in the WFG Act when carrying out LAQM. The Welsh Government also made regulations in 2017 requiring Public Services Boards to consider Local Authorities’ LAQM progress reports when carrying out assessments of local well-being.
- *National improvements in air quality have also been driven by European Directives, including those that set limits on:*
 - *Concentrations of pollutants in ambient air (for example, the Ambient Air Quality Directive which sets EU limit values for air quality in Member States, similar to the national air quality objectives under LAQM);*
 - *Annual pollutant emission totals for each Member State, helping to tackle trans-boundary pollution (for example, the National Emission*

Ceilings Directive, which implements the UNECE Gothenburg Protocol); and,

- *Concentrations of pollutants from specific sources (for example, the Industrial Emissions Directive which, together with domestic environmental permitting legislation, controls emissions to air from industrial sites regulated by Natural Resources Wales and Local Authorities, and EU legislation covering car and lorry exhaust pipe emissions).*
- *Under European legislation, the Ambient Air Quality Directive (2008/50/EC) requires the Welsh Ministers to secure compliance as soon as possible with EU air quality limit values at locations where the public has access. The work of Local Authorities in relation to LAQM makes an important contribution to actions being implemented by the Welsh Government to achieve compliance with EU legal limits.*
- *The Cabinet Secretary for Environment and Rural Affairs wrote to the Leaders of all Welsh Local Authorities in July 2017, emphasising the importance of their public protection, planning and transport departments taking joint ownership of the LAQM work programme, and, in Cardiff's case, of having regard to the non-compliance with EU air quality limit values highlighted in the UK air quality assessment.*

Improving Cardiff's Air Quality - Meeting 2 – Public Health - Wednesday 8th November 2017

Impact of Air Quality on Health – Public Health View – Dr Huw Brunt and Dr Tom Porter were invited to provide the Public Health Wales view on the impact of air quality on health in Cardiff. Councillor Susan Elsmore, Cabinet Member for Social Care, Health & Well-being was also invited to attend to provide context on the work that the Council is delivering in this area.

Key Findings

- It was identified that the linkages between air pollution and health were:
 - Air pollution has been identified as the single most significant environmental determinant of health;
 - Exposure to air pollution is associated with increased mortality and morbidity risks;
 - It has created a substantial health burden in the United Kingdom, for example, PM2.5 - equivalent of 29,000 annual deaths (or 307,000 lost life-years); Nitrogen Dioxide - equivalent of 23,500 annual deaths (or 277,000 lost life-years). Overall it is estimated that it contributes to 40,000 premature deaths in the United Kingdom every year – some doctors actually believe that this is just the tip of the iceberg.
 - On average it is estimated that it contributes to a reduction in life expectancy of seven or eight months.
- It was explained that the national-level burden estimates masked local variations in air quality. Some people are more at risk than others, this can be driven by ‘differential exposure vulnerability’, for example, exposure to high air pollution concentrations and ‘differential susceptibilities’ for example, intrinsic factors such as age, sex, genetics, ethnicity and acquired factors such as chronic illness, lifestyles and behaviours and

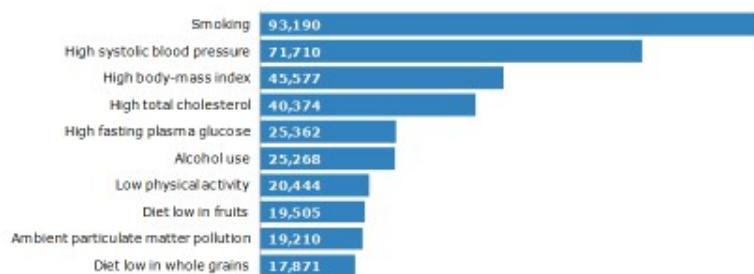
multiple deprivation. This is further complicated by interaction with a wider range of other health determinants.

- ‘Triple jeopardy’ in Wales – research has been carried out to explore the relationships between linked air pollution, deprivation and health data. The research identified that the air pollution concentrations are highest in the ‘most deprived’ areas where population most is susceptible.
- Public Health was described as a key stakeholder in dealing with air quality management. As a part of its role it aims to:
 - Support others to assess air pollution in the context of public health risks;
 - Support others to mitigate risks;
 - Advise and support planners and regulators;
 - Provide information to the public to reduce risks and drive behaviour change;
 - Manage public health risks associated with acute and chronic incidents;
 - Influence and support action to improve corporate environmental sustainability;
 - Lead evidence-based change through effective advocacy and informed policy development.
- It was explained that the main legislative drivers for change were Environment Act 1995 (LAQM); Environment (Wales) Act 2016; Active Travel (Wales) Act 2013; Climate Change Act 2008; Planning (Wales) Act 2016 and the Public Health (Wales) Act 2017. These in turn feed into the Wellbeing of Future Generations (Wales) Act 2015 which is underpinned by seven well-being priorities, i.e. a globally responsible Wales, a prosperous Wales, a resilient Wales, a healthier Wales, a more equal Wales, a Wales of cohesive communities and a Wales of vibrant culture and thriving Welsh language.

- The health impacts of air pollution are associated with cardiovascular and respiratory disease, stroke, cancer, diabetes, low birth weight and dementia. In addition it was explained that:
 - One fifth of cases of low birth weight are due to traffic related air pollution;
 - An estimated 5% of deaths in Cardiff and Vale are due to particulate matter air pollution;
 - Levels of nitrogen dioxide in Cardiff and Vale residential areas are the highest in Wales.
- In terms of the broader public health context it was illustrated that the way in which we travel has significantly changed over time, for example:
 - 1952 - 42% of journeys were by bus, this reduced to 5% by 2016;
 - 1952 - 11% of journeys were by bike, this reduced to 1% by 2016;
 - 1952 - 27% of journeys were by car, this increased to 83% by 2016;
 - 2015 - total motor vehicle traffic in Great Britain reached a new record level;
 - 1928 - 42 million journeys were taken by tram in Cardiff in 1928 (that is the equivalent of 150 return journeys in the city per person per annum);
 - 1950 - The Cardiff tram system closed in 1950. Most housing and commercial developments over the last 50 years have been shaped by cars, not people.
- **Diagram 5** sets out the top 10 risk factors for years of life lost in Wales in 2015. Four of the top ten are impacted by car use (high systolic blood pressure, high body mass index, low physical activity, ambient particulate matter pollution).

Diagram 5 – Top 10 Risk Factors for Years of Life Lost in Wales 2015

Figure 3. Top 10 risk factors for years of life lost (YLL) in Wales (2015). Four of the top ten are impacted by car use.¹⁶



- The car has seven general effects on health and well-being in Wales, these were air pollution; road traffic injuries and deaths; reduction in green space; climate change; physical inactivity and sedentary lifestyles; increase in loneliness and social isolation and exacerbating health inequalities. The effects on health and well-being are expanded upon below:
 - **Physical Inactivity & Sedentary Lifestyles** – over half (54%) of adults in Cardiff and Vale are overweight or obese; sedentary lifestyles are associated with 91% increase in the risk of type 2 diabetes; people are much less likely to undertake active travel if they have a car.
 - **Road Traffic Injuries & Deaths** – there are 20 road accidents causing death or serious injury each week in Wales; the most common cause of death for children aged 5 to 14 years is being hit by a vehicle; half of car drivers in 30mph zones routinely exceed the speed limit.
 - **Increase in Loneliness & Social Isolation** – Nearly 1 in 4 vulnerable people in Cardiff and Vale report being lonely some or all of the time. Reducing car use and increasing access to public transport support healthy ageing in urban environments and is attributed to increasing social interaction.

- **Reduction in Green Space** – Green spaces are associated with improved social interactions, increased physical activity and cardiovascular health and reduced mortality.
- **Exacerbating Health Inequalities** – Cars are owned and used more by the least deprived, but adverse impacts are felt most by the most deprived. Children in more deprived wards are four times more likely to be hit by a car compared with the least deprived wards.
- **Climate Change** – Global temperatures are expected to increase by 4 degrees celsius by 2100 if current trends continue, with some areas experiencing 10 degrees Celsius increases. Flood related displacement of communities has been found in the United Kingdom to cause significant and enduring mental health issues; one quarter of domestic greenhouse gas emissions are due to car transport.
- **Air Pollution Health Impacts** – cars are associated with cardiovascular and respiratory disease, stroke, cancer, diabetes, low birth rate and dementia.
- Public Health Wales believes that addressing the causes of transport-derived air pollution will have broad public health benefit. In doing this we need to:
 - **Support active travel and public transport** – Daytime journeys of less than 2km should be walkable for individuals aged 5 to 74; for many people the trigger to take up active travel is a significant life event; to achieve change we need to provide high quality, flexible public transport. The National Institute for Health & Care Excellence found that off-road cycle routes were good value for money, with every £1 investment in off road routes returning around £14 in benefits.
 - **Reduce Air Pollution & Carbon Emissions** – NICE (National Institute for Health & Care Excellence) recommends the introduction of Clean Air Zones which support low emission travel. The NHS should set the benchmark for clean air and safe workplaces.

- **Follow the recommendations from NICE guidelines on improving air quality** - Support active travel - there should be a choice of cycle routes, including routes avoiding highly polluted areas; support car sharing schemes and car clubs; provide electric vehicle charging points in workplaces, commercial developments and residential areas; consider introducing a clean air zone that introduces restrictions or charges on certain classes of vehicle, and supports zero and low emission travel (including active travel); where traffic congestion is contributing to poor air quality, consider incorporating a congestion charging zone within the clean air zone; introduce bylaws to support 'no idling' areas where vulnerable groups congregate such as outside schools, hospitals and care homes; specify emission standards for private hire and other licensed vehicles; address emissions from public sector transport and introduce 20 mph zones without physical measures, to avoid unnecessary accelerations and decelerations which contribute to air pollution.
- **Design well-connected and attractive communities, plus protect and enhance our green space** - Reducing traffic speed with 20mph limits make streets more inviting for walking, socialising and cycling; people who walk and cycle in a neighbourhood are more likely to spend money in local shops.
- **Provide Leadership** - the London congestion charge resulted in an 80% increase in cycling.
- Public Health Wales believes that public services (for example, Local Authorities and the National Health Service) need to work together to properly address the air quality issues that impact on Cardiff. It feels that it is important to accelerate improvements to infrastructure to support active travel and low emission transport in the following ways:
 - Continue improvements and ongoing development of dedicated walking and cycling infrastructure, prioritising deprived areas first;
 - Provide access to local green spaces by active travel;

- Maximise opportunities presented by the Metro programme;
 - Introduce bike hire schemes (including e-bikes);
 - Consider the widespread introduction of 20mph zones;
 - Increase electric vehicle charging infrastructure, particularly for areas without off-street parking;
 - Reject planning proposals which have an adverse impact on walking or cycling;
 - Support local renewable energy generation.
- Public Health felt that it was important to support staff to choose active travel options and suggested that the Council should work with employers to help them:
 - Encourage all staff to travel actively, to reduce sickness absence and productivity;
 - Provide visible senior leadership and role modelling;
 - Assess opportunities at times of workplace moves;
 - Support employees preparing for retirement.
 - Public Health Wales felt that it was important to engage with the local community and businesses on the benefits of active travel and to discourage unhealthy and polluting travel, suggestions on how to do this included:
 - Agree consistent communication across local public sector;
 - Emphasise increased customer spend in walkable areas;
 - Organise and promote co-ordinated car free days across the region;
 - Introducing ‘no idling’ zones outside all schools;

- Consider gradual increases in public car parking charges to fund and accelerate improvements in active travel facilities and public transport;
 - Scope the introduction of a low emission zone in Cardiff, with any charges levied used to fund active travel and public travel transport improvements;
 - Introduce low emission pool cars for major sites where they are not already in place.
- The Health Protection Division of Public Health Wales has supported Newport Council in the development of supplementary planning guidance for air quality. They are also able to deal with challenging issues around public health that relate to planning applications. The team has the skills to undertake complex health risk assessments that perhaps local authorities are not able to support. They are happy to offer their support in dealing with the more complicated health risk assessments.
- Ocean liners emit an enormous amount of particulate matter when visiting a port. It is estimated that when one ocean liner visits a port it is the equivalent of 100,000 vehicles entering the city – this is greater than the average number of commuter vehicles entering the city on a typical day and the associated level of pollution that they produce. In 2017, Venice announced that from 2021 ships of over 55,000 tonnes in weight would no longer be allowed to enter the city harbour and would have to instead dock at a mainland port.
- The main culprit for air quality emissions in Cardiff is road traffic with diesel fuelled vehicles being the biggest emitter (it contributes to 65% of emissions). Industry is the second largest emitter in Cardiff. As Cardiff has a working port it is also subject to emissions from shipping (again mostly nitrogen dioxide).
- It was suggested by Public Health Wales that the Council and other public sector partners have a collective corporate responsibility for air quality and

so they should do what they can to reduce emissions, for example, through fleet management and responsible procurement practices.

- Public Health Wales explained that there appeared to be a challenge in terms of working on air quality issues across more than one local authority area. They also stressed that in order to deal with air quality issues it was often essential to take a cross boundary approach and so work with neighbouring authorities. For example, large volumes of traffic come from neighbouring authorities such as Rhondda Cynon Taff and the Vale of Glamorgan. This traffic contributes significantly towards air pollution in Cardiff.
- Public Health Wales feels that as a society we have the responsibility to drive forward long term, sustainable transport solutions. To emphasise this they highlighted a number of messages including:
 - In 1928, 42 million journeys were taken by tram in Cardiff – that equates to 150 tram journeys per person per annum. The tram service closed in 1950;
 - Car ownership is now the default transport position;
 - National Institute for Health & Care Excellence found that off road cycle routes were good value for money. Every £1 spent on off road routes generated benefits equal to £14;
 - Cardiff Metro is a long term vision that needs to become a reality;
 - The London congestion charge resulted in an 80% increase in cycling;
 - Run a car free event in conjunction with another event;
 - Car clubs and car share schemes are encouraged by Public Health Wales;
 - Public Health Wales stated that feasibility studies are long costly exercises that generally require financial support for local authorities to deliver.

Improving Cardiff's Air Quality - Meeting 3 – Transportation (1)

- Wednesday 15th November 2017

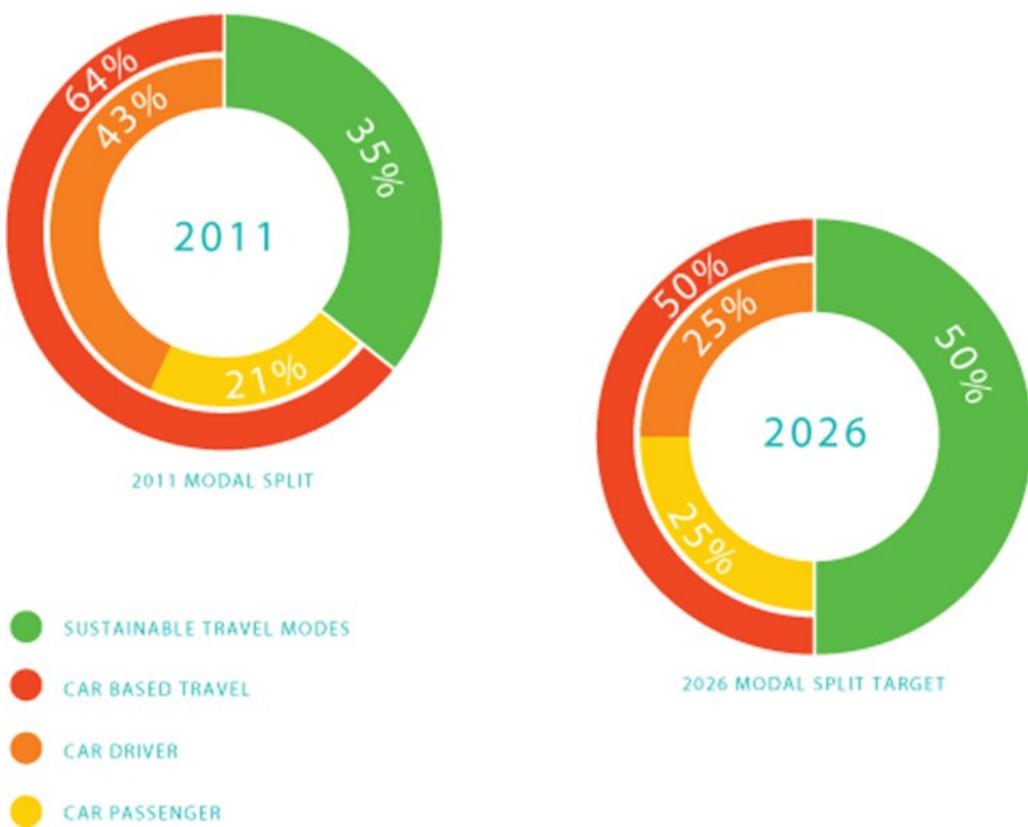
Part 1 - A Review of Cardiff's Current Air Quality – Councillor Caro Wild, Cabinet Member for Strategic Planning & Transport briefed the task group on the transport management work being delivered by the Council and how this will contribute to improving Cardiff's air quality. In doing this he identified the challenges and opportunities around using transport initiatives to improve air quality. He was supported by officers from the City Operations Directorate.

Key Findings

- It is anticipated that much of the transport information covered in the presentation would feature in the 'Transport Green Paper' which is due to go out for consultation in April 2018. It was felt that the 'Transport Green Paper' would be a key document in terms of improving air quality in Cardiff.
- It was explained during the presentation that Cardiff's Transport Strategy priorities were:
 - Widening travel choices making it practical for most daily trips to be made by alternatives to the car, for example, public transport, walking and cycling;
 - Demand management to reduce the demand for travel overall, and particularly by car;
 - Network management using technology to make best use of the existing highway network, rather than building new roads that would generate more traffic.
- The Local Development Plan 2006 – 2026 aims to achieve a 50:50 modal split by 2026. To put this into context it aims to take the 65:35 figure achieved in 2011 and make a 1% improvement for every year over a 15 year period.

- Achieving modal shift is viewed as being vital to deal with the rapid growth of the city – it is anticipated that 41,000 new homes and up to 40,000 new jobs will be added to Cardiff by 2026. This means that transport alternatives will be required beyond using the existing network and that peak traffic periods might be extended. It is estimated that if nothing happens then this could lead to a 32% (net) increase in traffic by 2026 - finding extra capacity on the highway network cannot be achieved. **Diagram 6** illustrates the planned change in modal split between 2011 and 2026.

Diagram 6 – Cardiff’s Planned Modal Split between 2011 & 2026



- There are 80,000 plus traffic movements in and out of the city every day, and that managing this isn't completely within the control of the Council. Some Councillors felt that the Council needed to spend more time dealing with transport issues within its control and focus less effort on delivering the larger schemes. While the larger schemes were important there was

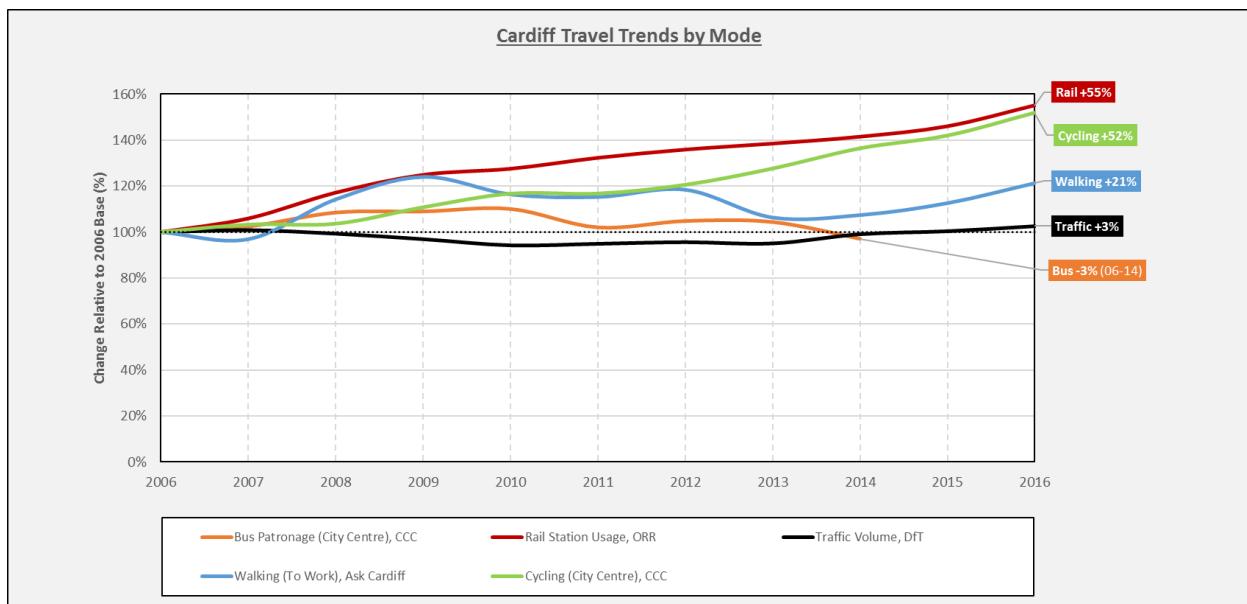
the tendency for the Council to focus on these instead of changing public behaviour through initiatives like 20 mph zones and 75% residential parking schemes. He felt that delivering short term measures was a tried and tested approach which worked well in places like London; they force people out of cars and into alternative means of transport. This suggestion was generally accepted, however, it was noted that Cardiff did not offer the same level of transport alternatives, for example, bus and train services were nowhere near as extensive as the options provided in London.

- A Council officer made a comment that the range of bus services and supporting infrastructure needed to be improved. This was supported by Professor Cole who felt that Cardiff's rail provision was reasonable, however, additional capacity needed to be added.
- Council officers identified the current transport issues, challenges and barriers facing Cardiff as congestion; through traffic; poor bus priority; a lack of cycling lanes; pedestrian safety issues; poor air quality; links with Cardiff Bay and a dated transport system.
- There have been some good strides in terms of developing Park & Ride in Cardiff in recent years, for example, Cardiff East Park & Ride, Cardiff City Park & Ride and the Junction 33 Park & Ride scheme now has planning permission. It is estimated that the Junction 33 site will have between 1200 and 1500 spaces. In addition to this there is some discussion around creating a new Park & Ride scheme in the Vale of Glamorgan which could access the city via the Cardiff Bay Barrage. Work is ongoing on identifying a suitable Park & Ride site for the A470 – sites at Nant Garw and Taff's Well have been suggested. An A470 scheme would need to be supported by bus priority measures (bus lanes) along the A470 into Cardiff.
- A comment was made that services from the Cardiff East Park & Ride into Cardiff City Centre were not direct enough, i.e. they stop at every junction on Newport Road and the journey takes approximately 30 minutes. It was felt that for the service to succeed (and act as a good alternative to the car) it needed to be convenient, quick and direct. The Park & Ride

contract for this site is due for renewal soon and with the large scale housing developments being built in that section of the city it could be possible to get new subsidies to support the upgrade of the bus routes, for example, through planning obligations associated to the development.

- It was explained that there was still a lot of work to do but that the Council has taken some important steps forward in recent years. The results of these include a 28% increase in cycling; the implementation of new measures on key transport strategic corridors and a 26% reduction in daily through traffic in the city centre between 2004 and 2014.
- An officer felt that enforcement was a ‘big stick’ to get things moving, but that ultimately better infrastructure provides the required reliability. Public transport services need to be quick, reliable and convenient.
- **Diagram 7** sets out the percentage change relative to Cardiff travel trends by mode set against a baseline figure of 2006. During the 10 year period of this chart rail travel and cycling increased by 55% and 52% respectively. Walking increased by 21% while overall traffic levels only increased by 3%. The only negative result was that bus patronage fell by 3% across the 10-year period. A comment was made that the closure of the bus station had contributed to the reduction of bus patronage – Cardiff badly needs a good functioning bus station / transport hub to help reverse the current bus patronage trend, i.e. getting a new bus station / transport hub has to be a priority.

Diagram 7 – Percentage Change for Cardiff Travel Trends 2006 to 2016

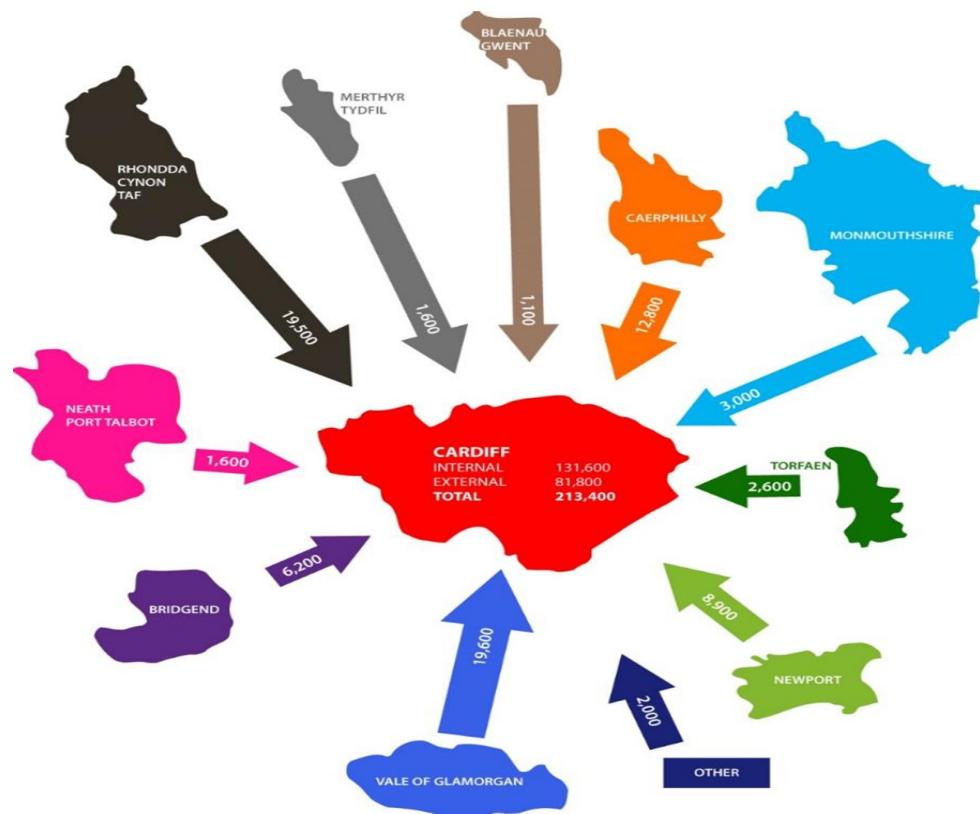


- During the presentation officers provided the following 'Headline Statistics' to set out the current picture of travelling into and around Cardiff on a typical day in 2016:
 - 107,800 vehicles entered and exited the city centre during a typical twelve hour period during 2016;
 - There were 55,300 city centre bus passengers (on a two-way journey) across a twelve hour period in 2014;
 - Each year the city centre attracts a footfall of approximately 40 million people in the pedestrianised retail area;
 - It is estimated that Cardiff's population will grow by 23% between 2016 and 2039;
 - In 2016 39% of Cardiff's workforce travel into the city from outside the local authority area;
 - Approximately 5,300 cyclists passed through the city centre during a typical twelve hour working day in 2016.
- A Member asked what the Council is doing to better manage residential parking. He felt that by using good planning and other parking mechanisms it was possible to drive behavioural change which in turn

would reduce congestion and air quality issues. Examples of where this might work well would include increasing residential parking to 75% limits and the continued roll out of 20 mph zones. An officer felt that this approach was working and that public parking capacity was slowly being squeezed out from the city centre through a mixture of policy and enforcement. A Council officer emphasised that more could be done to drive behaviour change by increased working with neighbouring local authorities.

- **Diagram 8** illustrates the commuter journeys into and out of the Cardiff local authority area during a typical twelve-hour working day in 2016. The data identifies that a total of 78,900 journeys were made into Cardiff each day (Vale of Glamorgan 19,600; Newport 8,900; Torfaen 2,600; Monmouthshire 3,000; Caerphilly 12,800; Blaenau Gwent 1,100; Merthyr Tydfil 1,600; Rhondda Cynon Taf 19,500; Neath / Port Talbot 1,600; Bridgend 6,200 and other 2,000). This is in addition to the 131,600 internal journeys.
- It was felt that Cardiff is now a 24/7 society and Cardiff Bus needs to think more proactively about the night time economy and how it services demand in this area. A Council officer explained that there is a plan to create a park & ride facility with a bus gate at Junction onto the A4232 and a rapid bus route into the city.
- Swansea City Council has created a Park & Ride facility next to the Amazon Fulfilment Centre on Fabian Way. It directs bus journeys into the city centre and uses a bus light activator to clear sections of the route so that buses can run to time, this has proved to be an efficient approach and has made services more reliable.

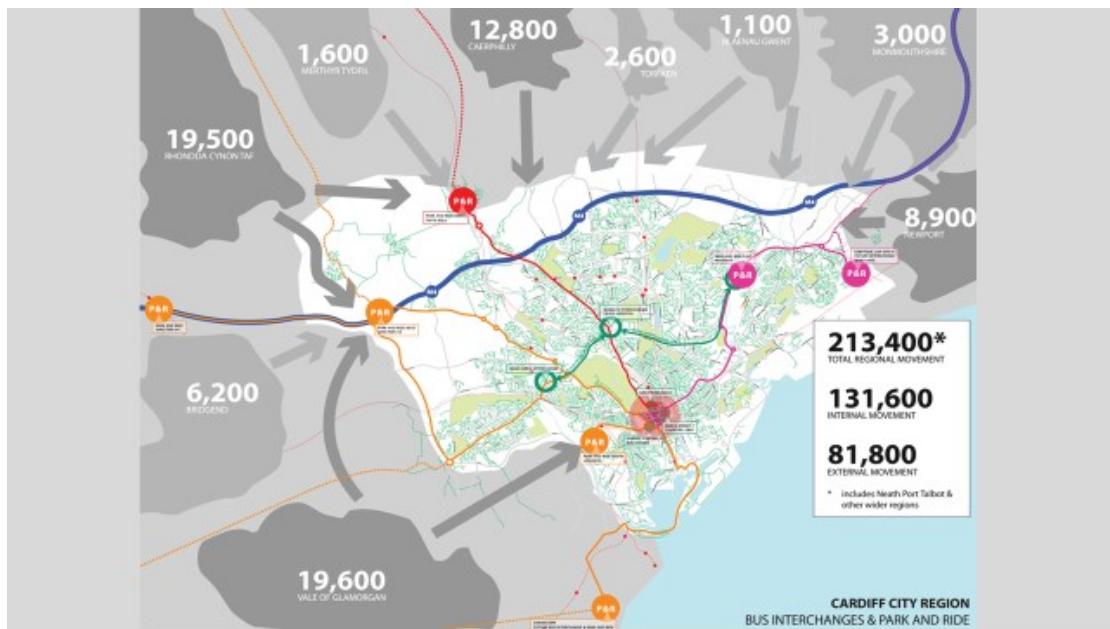
Diagram 8 – Cardiff Local Authority Commuter Journeys 2016



- The importance of using a common ticket on the new Metro system was stressed, i.e. a ticket that can be used across different companies and modes of transport (for example, bus and train).
- Places like the Netherlands franchise out bus and train routes, when in the United Kingdom journeys are commercially driven operations. In effect Wales runs a market driven approach where bus operators are able to develop their own core operation.
- A Member was of the view that Park & Ride will only ultimately work when it becomes very difficult to park in Cardiff City Centre.
- A Council officer stated the importance of developing every radial route around the city.

- A comment was made that competition on bus routes could be a good thing with companies successfully creating a series of new routes. Some operators are currently looking at developing cross city movements. Such thinking and healthy competition is good for the development of transport options in the city.
- It was explained that if we could get bus patronage to where it was 10 years ago we would quickly move to the 50:50 modal split position. The biggest issue that we have in Cardiff is the transport funding deficit.
- **Diagram 9** illustrates the current and proposed Park & Ride facilities relevant to the daily internal commuter journeys into Cardiff. It also identifies the potential future bus interchanges planned for the city.

Diagram 9 - Current / Proposed Park & Ride Facilities Relevant to the Daily Internal Commuter Journeys

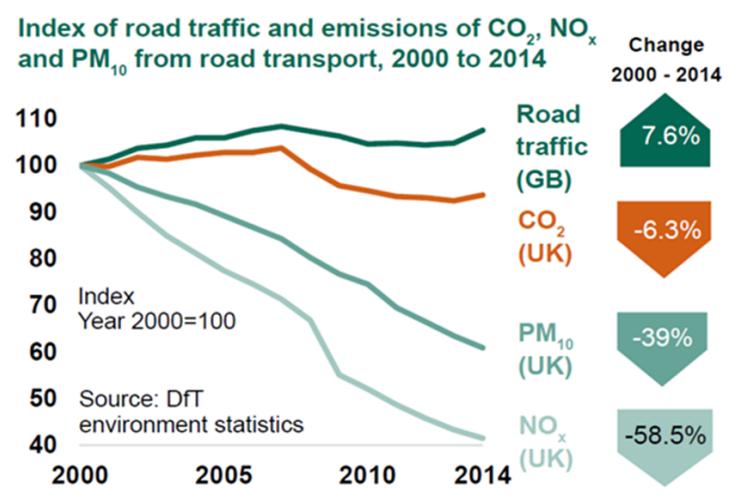


- The Council transport presentation reiterated that:
 - Road traffic emissions, in particular particulate matter and nitrogen dioxide, are the primary contributing factor to poor air quality in Cardiff;
 - Emerging scientific evidence shows air pollution exposure reduces life expectancy by increasing mortality and morbidity risk from heart

disease, and strokes, respiratory diseases, lung cancer and other conditions;

- Public Health Wales state: "...local-level health risks and impacts will vary considerably, not only influenced by differential air pollution exposures but also by individual and population-level susceptibilities. These factors may be 'intrinsic' (e.g. age, sex, genetics) and/or 'acquired' (e.g. income, education, housing, employment, service access, lifestyle/behaviour-related chronic illnesses). The triple jeopardy of air pollution, impaired health and social deprivation is said to compound problems by creating disproportionate and amplified disease burdens between and within regions."
- The presentation provided evidence from the Department for Transport that illustrated that emissions had fallen in recent years, however, for particulate air pollution and nitrogen dioxide there is no safe level of exposure. Any initiatives to reduce air pollution will have positive health benefits. **Diagram 10** illustrates the index of road traffic and emissions of carbon dioxide, nitrogen dioxide and particulate matter from road transport for the period 2004 to 2014. This illustrates that nitrogen dioxide and particulate matter have reduced significantly (58.5% and 39% respectively), while carbon dioxide emissions have only fallen by 6.3%. During the same period road traffic increased by 7.6%.

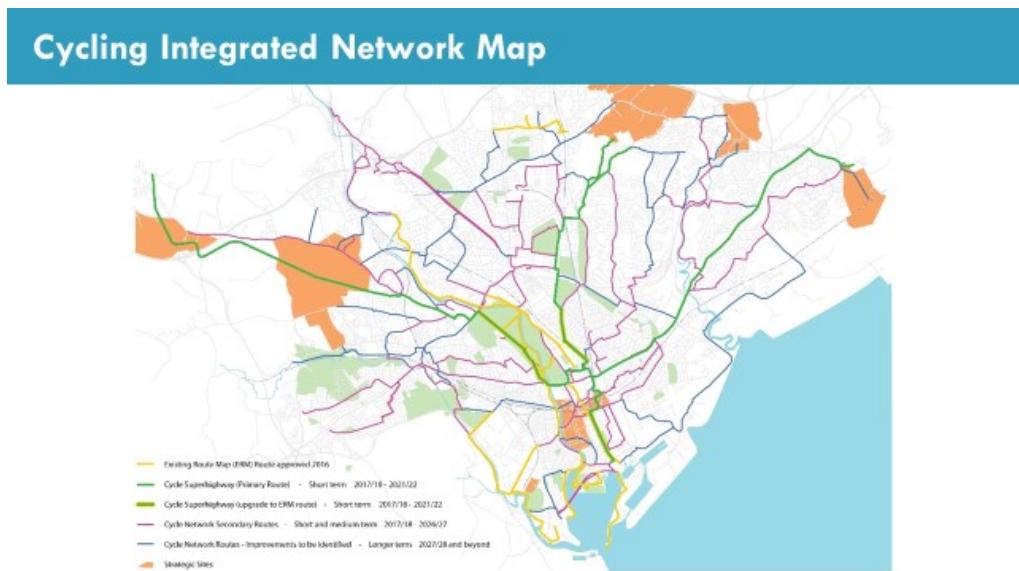
Diagram 10 - Index of Road Traffic and Emissions from Road Transport for the Period 2004 to 2014



- Officers explained that Cardiff's Local Transport Plan was approved by the Welsh Government in May 2015. Cardiff's Local Transport Plan sets out its main transport infrastructure proposals which will support this significant modal shift and recognises the need to improve air quality. Its programme prioritises:
 - The development of active travel networks to increase walking and cycling for local journeys;
 - The provision of cycling infrastructure;
 - The bus network;
 - Reduced speed limits;
 - Reducing congestion;
 - Improving transport efficiency and reliability;
 - Bus based park and ride.
- The presentation detailed a list of measures submitted to DEFRA for the United Kingdom Air Quality Plan for tackling roadside nitrogen dioxide concentrations in the Cardiff urban area (July 2017). These are taken from key plans and strategies, including the Local Development Plan, Local Transport Plan and the Cycling Strategy. These were summarised in the presentation.
- **Cycling Strategy & Integrated Network Map** – This is an ambitious vision to double the number of cycling trips by 2026, from a 9.2% modal share in 2015 to 18.4% in 2026. It includes:
 - The development of a comprehensive network of cycling infrastructure which is suitable for use by people of all ages and abilities;
 - Working with key partners from employers, retail and schools to ensure that appropriate cycling facilities are provided at destinations and to promote cycling;
 - The development of the Integrated Network Map which is a requirement of the Active Travel (Wales) Act 2013. This document plans and prioritises infrastructure improvements for walking and cycling;

- Proposals for two new cycle superhighways which will provide high quality cycle routes, segregated from pedestrians and motor vehicles on busy roads, connecting residential and employment sites.
- **Diagram 11** (below) sets out the plan for the Cycling Integrated Network Map for Cardiff

Diagram 11 – Cycling Integrated Network Map



- The presentation explained that Cardiff City Centre attracts hundreds of thousands of commuters and visitors each day from across the Cardiff City Region and further afield. Traffic flows on main routes to and through the city centre generate peak time congestion which causes delays to bus services and can make the area less attractive for pedestrians and cyclists. Increasing sustainable travel to and through the city centre are crucial to achieving improvements in air quality.
- Bus travel has an important role to play in reducing the number of journeys made by car. Developing bus priority measures on strategic bus corridors is essential in reducing bus journey times, improving journey time reliability and making bus travel a more attractive alternative to the car for a greater range of journeys. 400m of bus lane can give each bus a time advantage of five minutes or more over general traffic on the approach to junctions

and improve the ability of bus drivers to meet timetables (Cardiff 2014 Regional Bus Lane surveys). Lanes have been installed on a number of main roads into the city including the A470, A4119 and A48.

- While all contributions to the inquiry agreed that growing the existing cycle infrastructure was important it was stressed that creating good quality modern cycle lanes was very expensive, i.e. they cost £1 million per kilometre to build.
- A report was published in 2016 which stated Wales would need to spend £60 million per annum each year for the next 10 years to match the standard and relative scale of cycle lanes in the Netherlands. As previously stated developing a comprehensive cycle network is not a cheap option, achieving cycle lane parity with countries like the Netherlands would require huge central government subsidies and many years to deliver.
- A Councillor noted that we were a long way behind countries like the Netherlands and asked why this was the case? He was told that it was because they started working on the infrastructure in the 1970's and in relative terms we are at the start of our journey. The Dutch started to invest in cycling infrastructure in the 1970's because they had a very high cycling death rate for young children.

City Centre Transport Improvement Projects

- Cardiff City Centre attracts hundreds of thousands of commuters and visitors each day from across the Cardiff City Region and further afield. Traffic flows on the main routes to and through the city centre generate peak time congestion which causes delays to bus services and can make the area less attractive for pedestrians and cyclists. Increasing sustainable travel to and through the city centre will be crucial to achieving improvements in air quality. Key measures will focus on sustainable transport improvements that will encourage mode shift and contribute to improving air quality levels.

- Trains in the Netherlands are half the price of the United Kingdom thanks to the rail subsidy – this is funded by central government.
- The Council presentation delivered to the task & finish exercise set out a number of priorities for bus travel in Cardiff, these included:
 - Developing a new bus interchange as part of the major redevelopment of Central Square;
 - Working with bus operators to identify and develop an expanded city bus network, including new cross-city and local routes;
 - Work with operators to increase the number of buses where bicycles can be taken on board, to encourage mixed active travel to be used as part of longer journeys;
 - Developing new bus park and ride facilities at M4 Junction 33 and other appropriate locations in Cardiff and neighbouring areas to reduce the number of cars driving into the city;
 - Making bus services faster and more reliable by providing bus priority measures on strategic bus corridors to help reduce bus journey times, improve journey time reliability and make bus travel a more attractive alternative to the car for a greater range of journeys;
 - Investigating opportunities for the development of a green technologies bus fleet.
- **Greener Bus Fleets** - Cardiff Council and Cardiff Bus have submitted an application to UK Government for £1.5million funding to retrofit buses within the Cardiff Bus fleet to reduce their emissions to Euro 6 compliance. The Council will continue to work with Cardiff Bus and other regional bus operators to continue making improvements in the composition of the bus fleets operating on the Cardiff road network. They will explore the use of greener bus types, such as hybrids, full electric and hydrogen. There has been discussion with Welsh Government officers around making new monies available for the development of greener bus fleets.

- It was suggested that the flow of bus lanes wasn't great and needed to be smoother to avoid causing a traffic backlog. Key routes need to have continuous bus lanes like the ones coming in from the Cardiff East Park & Ride.
- A Member stated that bus patronage across the United Kingdom was down and asked how we could reverse this trend? A suggestion to address this issue was the introduction an integrated ticket approach, something similar to the Oyster Card in London. To achieve this in Wales a regional approach would be needed and a network of transport partners would need to take a part in the initiative.
- A Cardiff Capital Region Metro has been proposed by the Welsh Government. It is expected to be a combination of rail-based and bus-based rapid transit routes linked through interchanges and using the same network brand and integrated ticketing system.
- 6% of journeys to work by Cardiff residents are made by rail. Passenger numbers across the city and the wider region have grown significantly in recent years. The Council works closely with key partners, including Welsh Government, rail operators and Network Rail, towards improving and developing the rail network. The new Wales and Borders rail franchise should deliver new rolling stock, increased capacity and frequencies to the meet rising demand and allow for further modal shift to rail based journeys.
- It is hoped that cutting congestion by reducing the number of journeys made by car will bring air quality improvements as well as reducing costs and journey times for individuals and businesses. It also makes journeys made by sustainable and active modes of travel easier, for example, by making bus journey times more reliable and providing a more attractive environment for walking and cycling. By managing Cardiff's highway network more effectively, the Council hopes to make the best use of the existing highway in a way which promotes access by sustainable modes of travel.

- A 20 miles per hour limit was piloted in Cathays /Plasnewydd in March 2014. This was deemed successful and a wider future rollout of 20mph limits is underway in residential streets in areas around the city centre. The consensus is that lower speed limits in residential areas can:
 - Improve air quality in terms of particulate matter exposure;
 - Improve the liveability of the city by reducing car use for local trips;
 - Make it easier to cross roads and access local facilities – especially for children and the elderly;
 - Help to improve the environment for walking and cycling resulting in greater levels of physical activity;
 - The installation of 20 mph limits will complement the ongoing programme of school safety zones through Safe Routes to School and Safe Routes in Communities. These improvements at the local level support active and sustainable travel;
 - Air quality around schools, as well as the impact of driver behaviour and inconsiderate parking on schools and their local communities, are matters of concern. The Council (and other key stakeholders) all have a role to play in tackling these issues.
- Electric Vehicle Infrastructure & Car Clubs – The presentation identified that electric vehicle infrastructure and car clubs had a role to play in improving Cardiff's air quality. In particular it made the following points about this evolving technology:
 - It moves toward a shift from traditional fossil fuels for motorised transport to more sustainable forms of clean, renewable energy;
 - The United Kingdom government has a commitment to ending sales of new petrol and diesel cars from 2040;
 - The transition is largely private sector led through vehicle manufacturing markets, however, there is also a clear role for the Council in facilitating, championing and preparing for this transition;

- The Council is running a feasibility study which will review best practice, the market and funding streams which will inform a decision on the best option for the city;
 - Use of more environmentally friendly modes of transport including Low Emission Vehicles will be supported through provision of electric vehicle charging and the rollout of additional car club vehicles;
 - A pilot electric vehicle charging system is expected to be launched in Cardiff during 2017/2018;
 - Car clubs offer a flexible alternative to car ownership and can play an important role in an integrated transport network;
 - Car club provision in Cardiff is set to grow in the short term, helping to reduce the number of journeys made by car and giving access to new, low emission vehicles.
-
- During the session it was explained that the Council fleet needed to be continually upgraded to ensure that we have clean / low emitting vehicles. This responsibility should also be embraced by the other public sector partners (for example, Health Service, Police, Universities, etc...) and other major employers in the city.

Part 2 - A Review of Cardiff's Current Air Quality - Stuart Cole, Professor of Transport at the University of South Wales provided a view on the transport initiatives being proposed and delivered by the Council. In particular, he commented on how the proposals could contribute towards key policy objectives such as modal shift and sustainable travel.

Key Findings

- Professor Cole agreed with all of the objectives set out in the Cardiff Council Transport Presentation, but emphasised that the important area to focus on now was delivery, for example, it was important that the Council focused on the delivery of the new integrated transport hub.
- It was again explained that the major cause of urban pollution was the motor car – this was consistent with what all other witnesses had said. There is a specific problem at peak periods of the day or during major events.
- We need more bus lanes on strategic bus routes into and out of the city. These are needed to support a prompt reliable service which is ultimately what the public want. The key bus priority characteristics that will influence modal shift are reduced journey times and reliability of journey time.
- Bikes on buses are a good intention but are almost impossible to achieve. Lots of time was spent some time on Trans Cymru trying to achieve this, and it has been attempted on three occasions in England. Only the Nottingham service has partially worked as the approach causes delays on loading and unloading; the drivers and trade unions are not keen on the idea and there is a lack of space on the bus.
- The task group was warned that the amount of investment that was being proposed for the Metro was probably only sufficient for train line upgrade at the moment, however, the rail upgrade would result in the electrification

of heavy rail and this would quickly increase capacity. The introduction of trams was considered to be a practical option for densely populated areas of the city that have no rail service, for example, Ely, Heath; Caerphilly road; Newport road and parts of Cardiff Bay.

- To be successful we have to follow examples of places like the Netherlands and we have to create separate spaces for travel modes, for example, walking, cycling, bus / tram and motor vehicles.
- Professor Cole suggested that public transport access to Cardiff Airport needed to be improved if Cardiff is serious about its ambitions to be a major event city.
- Different parts of Wales have differing transport challenges, for example, urban areas are prone to congested roads, while accessibility is an issue in rural areas.
- The Welsh Assembly has brought many business to Cardiff making it an attractive city to live and work in – this success brings increased transport considerations with it which we have to address.
- There is plenty of private parking in the city centre and in recent years several very large car parks have been built. How do you deal with a large car park company?
- Previously the phrase ‘predict and provide’ has been used to describe what needs to be done to address transport issues. We are now at the stage where this needs to change to ‘provide and promote’, i.e. we don’t need to predict as we understand the issues.
- Little details are important, for example, Cardiff Bus doesn’t give change. All other providers do. Cardiff Bus insists on the correct fare, no one else does this.
- Having a single travel card which can be purchased by one transaction is important to improve public transport in Cardiff and the South East Wales

Region. A card that could be used across several different transport providers to cover the whole journey – it would make things easier and push large volumes of people onto our public transport systems.

Something similar to the Oyster Card.

- Park & ride works well if done properly. The trick here is to ensure that there are always buses on hand and that services are punctual. For example, the Park & Ride scheme in Oxford has been a success as they have made sure that there is always a bus waiting at the facility at peak periods. When drivers arrive at the Park & Ride site they are greeted with a bus waiting to take them to their destination – this makes them content and more likely to use the facility in future. They also run to time and are supported by good bus lanes. Cardiff has started introducing bus lanes on strategic routes – more of this needs to happen.
- The key Swansea bus routes use a transponder to trigger lights on key routes – this speeds up journeys. An example of this can be seen on Fabien Way between the new University campus and the city centre.
- Transport for London takes parking in bus lanes very seriously. Cameras are placed on the front of buses and the details of any vehicles blocking these lanes are recorded and a fine is immediately issued. This has had a dramatic effect on driver behaviour change. Average journey times have come down, services are reliable and the cost is the same or less than the corresponding car journey.
- Trans Cymru offer free travel access across Wales. Average patronage on these services is about 70% and these are mostly leisure journeys.
- The number of over 60's that have moved to public transport in Wales has increased by between 40% and 50%. This is mainly due to the fact that they have free bus travel.
- Train journeys in Wales are 52% cheaper in Wales than in other parts of the United Kingdom.

- The importance of creating interchanges that are able to attract people from more outlying areas was stressed.
- Cardiff's Integrated Transport Interchange – Cardiff very badly needs this to be completed. Why is it so late? This has cost the city in terms of growing the use of public transport.
- Initially when the old bus station was closed the Council issued maps to help people find their way around. These were invaluable, particularly for people visiting the city. Why aren't these issued any more? Could the Council reprint and start giving these away again. It is important to get better transport information to public transport (and potential) users. A Member stated that the Council tends to distribute information well at the start of a scheme, however, this then drops away after a while and our communication becomes poor.
- The task group were told that £12 million was a fairly accurate cost for an average size station – they need a large land development to support them which tends to increase costs.
- Cycle parking – to ensure that cycling take up improves we need to put in place lots of cycle parking facilities. In Copenhagen every hotel hires bikes and has bike parking facilities.
- It was felt that it is important to establish safe routes to stations – this could be paid for out of parts of the City Deal bid. Important to ensure that routes are safe to encourage people to use them.
- Once again there was more support for a single ticket option for the Cardiff and wider South East Wales transport network. The information collected from the use of a single ticket approach can be used to collect huge amounts of data for travel planning.
- Professor Cole explained that Utrecht and Cardiff are similar in size. Utrecht has 16 train platforms while Cardiff has eight. He stated that we need more platforms than we currently have.

Improving Cardiff's Air Quality - Meeting 4 – Transportation (2)

- Tuesday 21st November 2017 – 4:00pm to 7:00pm

Air Pollution & Cardiff's Bus Services – A round table discussion with Cardiff based bus services and associated stakeholders to consider the impact that bus services have upon Cardiff's air quality. This discussion included, but was not limited to the current level of emissions produced by bus services in Cardiff; the state of Cardiff's current bus fleet; current and proposed work to improve / upgrade Cardiff's bus fleet; the impact that a clean air zone could potentially have on Cardiff's bus services.

Key Findings

- It is important that bus companies put forward a business plan about the positive contribution that they make towards reducing congestion and taking cars off the road. The bus providers emphasised that it is difficult for them to upgrade vehicles voluntarily and at a speed required as the financial assistance isn't available. Introducing new vehicles needs to be supported by a benefit to the business. This could involve fitted telematics, safer fuel initiatives as well as replacing vehicles.
- The bus providers explained that to just replace all older vehicles simply isn't viable. The Green Bus Fund which operates in England is currently in its 7th tranche, however, despite lobbying there is no equivalent fund in Wales.
- Cardiff Bus has applied for OLAF funding, but to date this has not been successful – the fund has been oversubscribed by over five times.
- A witness suggested that society is hung up on stopping people from coming in by bus and that the car is king. He added that we do need to look at far more financial assistance but we need to tackle day to day sustainable transport issues first. We need to make buses look more

attractive, we need to make it unpopular for people to use the car. A full bus can take 75 cars off the road.

- A witness explained that using a bus to get into Cardiff City Centre was a huge challenge if you were a wheelchair user. She also added that there are over 3,000 parking spaces in Cardiff City Centre, this number needs to be reduced – the parking spaces on Westgate Street are a particular problem. Other witnesses agreed with this and reiterated the importance of taking some of the car parks out of Cardiff City Centre.
- A witness explained that she lived in London and did not own a car; however, through a car club she had access to a car. She explained that the shift needed to be sustainable and reflect the needs for modern living.
- A witness explained that London has the infrastructure to support such an urban shift while many other parts of the United Kingdom did not. Improving route reliability is key – if journeys are quick and reliable then customers will make the shift.
- A bus provider representative explained that lots of funding has been taken out of bus services. The funding model has changed, buses now run as a business and are driven by the volume of where people actually want to go.
- A witness explained that making the bus services more popular would probably mean having to increase the prices of car parking and the potential introduction of a congestion charging zone.
- A witness stated that the quality of buses is increasing rapidly in Wales with £140 million being invested into new buses since 2010.
- It was explained that the cost to convert a Euro 5 bus into a Euro 6 was typically between £10,000 to £15,000 per conversion.
- It was suggested by a bus service representative that the creation of a clean air zone in Cardiff would result in the delivery of fewer bus services.

- A witness explained that the subsidy on rail in Wales is £6 per journey, while bus services only receive £1 per journey.
- A bus service representative suggested that Wales needed a policy to support a good fleet replacement cycle, i.e. ensuring that bus companies always buy the latest and best. This would go a long way towards reducing emissions. Such a policy would also need to be supported by a package of financial assistance.
- It was explained that other things being equal Cardiff Bus is potentially able to replace ten old vehicles with new ones every year. A subsidy is needed to increase the percentage of fleet running on new technology.
- A witness asked if Cardiff Council could help with funding as the Welsh Government had decided against a green bus fund in Wales. He suggested that DEFRA had made funding available in England - £30 million has already been allocated to local authorities and a further £100 million is available for new investment. Denbighshire was awarded some funding for electric buses in 2017 from the government's 'Low emission bus scheme'. Electric buses typically cost 2.5 times the cost of regular petrol or diesel buses.
- In the last financial year London received £1.1 billion for investment in bus services, while the rest of England received a further £2 billion. Wales received £92 million (split into amounts of £67 million and £25 million). In bus investment terms Wales is the poor relation.

Air Pollution & Cardiff's Taxi Services – A round table discussion with Cardiff based taxi services and associated stakeholders to consider the impact that taxi services have upon Cardiff's air quality. This discussion included, but was not limited to the current level of emissions produced by taxi services in Cardiff; the state of Cardiff's current taxi fleet; current and proposed work to improve / upgrade Cardiff's taxi fleet; the impact that a clean air zone could potentially have on Cardiff's taxi services.

Key Findings

- An Uber representative explained that there are pressing and important challenges facing areas in the United Kingdom in terms of air quality. Cardiff is one city that has been identified on the list where action needs to happen. Council's are having to implement clean air zones – this is a trend that we are seeing across the country. Uber has made the following clean air pledge:
 - *By the end of 2019 every car available on uberX in London will be 100% hybrid or fully electric with no diesel vehicles on the app;*
 - *They are starting in London but aim to meet the same standard (100% hybrid or fully electric cars on uberX with no diesels on the app) across the UK by the end of 2022;*
 - *More than half the miles on uberX journeys in London are already in hybrid or fully electric cars, but we want to go much further with a goal for every vehicle using the app in London to be electric in 2025;*
 - *They are also launching a diesel scrappage scheme aimed at removing 1,000 of the most polluting cars from London's roads. The first 1,000 people in London to scrap a pre-Euro 4 diesel vehicle and provide an official scrappage certificate will receive up to £1,500 of credit to spend on Uber or uberPOOL rides as they encourage Londoners to get into a shared car to connect with public transport. Londoners can register*

their interest here and will be able to apply through the scheme from October 2017.

Setting up a Clean Air Fund

- *In order to achieve these ambitious goals Uber will create a dedicated Clean Air Fund to allow licensed drivers who use their app across the UK to access up to £5,000 towards the cost of upgrading their car to a hybrid or fully electric vehicle.*
- *Over the life of the fund, it is expected that drivers will claim more than £150m to help transition to a greener car. Uber is currently in discussions with potential third-party administrators of the fund.*
- *Uber kickstarted the fund in October 2017 with a £2m investment. 35p will be added to every ride taken through the app in London – every penny of which will be donated to the dedicated and ring-fenced fund. An amount will also be added to rides in other UK cities over the next year.*
- *uberPOOL trips will be excluded from the 35p addition as passengers are already opting to share their journey with someone else heading the same way. In London more than 400,000 people regularly use uberPOOL to travel from A to B.*
- *Uber-branded rapid chargers have also been installed in central London which will initially be dedicated for use by drivers of electric vehicles who use the Uber app.*
- 65% of miles driven on the Uber app are on petrol or LV. The biggest challenge facing most United Kingdom cities to address the air quality issue is putting new infrastructure in place, for example, public charging points. Uber ran a trial in one United Kingdom city with 50 Nissan Leaf cars and 90% of the drivers identified the biggest challenge as not having enough off-street parking where they could charge the vehicles.

- Uber is chasing OLAF funding for its fleet in major cities across the UK, for example, Glasgow and Edinburgh are keen to drive this agenda forward – such schemes make vehicles cheap to buy or rent, i.e. the new technology is viable with grants.
- Infrastructure – taxi firms are really looking for support and certainty to drive forward with the purchase of low emission vehicles. The ideas and technology are available, they just need help in rolling these out.
- It was stressed that in order to increase the uptake of new low emission vehicles a carrot and stick approach would need to be taken. You need a grant to make the vehicles financially viable as they are very expensive at the moment.
- Making loans available to purchase new sustainable vehicles has to be affordable. The changes need to be phased in for the new drivers – buying hybrid vehicles isn't currently an option in the second hand market so all purchases would need to be new.
- A taxi firm representative explained that there is an issue in Cardiff around the use of the 'Prestige List' (also known as the 'Exceptional Conditions Policy'). It is not fit for purpose as many drivers are claiming that older vehicles are 'prestige vehicles'. The very wide definition of a 'prestige vehicle' means that it is difficult to reject an older vehicle from the list. This means that older vehicles can still taxi on the back of this list – these tend to be higher polluting vehicles which potentially have an impact on Cardiff's air quality.
- To improve the quality of the taxi fleet in Cardiff local standards need to be introduced that force drivers to make a change. Once they understand the direction of travel then they will have to invest in greener and less polluting vehicles. This can only be achieved once the results of the Welsh Government consultation into taxi services is published.

- A witness explained that there are 2,200 licenced taxis in Cardiff, 406 of these are over 10 years old. The policy around the prestige list (Exceptional Conditions Policy) needs to be revisited and updated. Setting new emissions standards would be a good way of lifting the quality of the fleet. The powers for changing taxi legislation in Wales has recently been devolved to the Welsh Government. They are currently undertaking a consultation into the current taxi regulations in Wales and are due to provide feedback at some point in 2018. All Welsh local authorities have contributed to this consultation exercise by completing and submitting a consultation response – these will all be considered before announcing any changes.
- A taxi service representative explained that the Welsh Government consultation into taxi standards in Wales has been a breath of fresh air. It is much needed as the industry needs a clean-up. Moving forward as an industry everything has to focus on efficiency. Financial considerations is the main driver for most taxi drivers and the majority of taxis in Cardiff are owned by owner drivers.
- A Member asked if the taxi companies would help in raising awareness with drivers on a range of key issues such as air pollution. He was told by a taxi company representative that taxi companies could be great drivers for this information and that they would be happy to do this, particularly if the Council got a grip of the current regulations.
- One taxi company representative explained that they were aware of the changes and that when they replace existing vehicles they are ensuring that they are replaced with low emission fleet. Another taxi company representative explained that running low emission disabled access vehicles wasn't currently viable.
- A Council officer explained that the Council's response to the Welsh Government taxi consultation made that point about disabled access vehicles and raised a number of other issues. He felt that a now would be

a good time to review the wider taxi licensing conditions and that this could include disabled access vehicles.

- A taxi company representative explained that government funding needed to be put in place to encourage taxi drivers to switch to low emission vehicles. Support has been provided for taxi upgrades in other parts of the United Kingdom, for example, Birmingham and Scotland. Easy access to refuelling infrastructure also needs to be put in place.
- A witness explained that the taxi industry has successfully evolved many times over the years – these proposed changes will be no different and the industry will adapt to any new proposals.
- A taxi firm representative explained that taxi companies are now able to provide hydrogen kits to its drivers that are Arriva approved for the cost of £500 including installation. These are proven to significantly reduce emissions.
- A comment was made about one taxi company who when renewing their fleet generally replaced older vehicles with the new Toyota Avensis. It was explained that staying technology neutral is important when taking vehicle investment decisions. There needs to be at least a consistent Euro 4/6 standard for taxis applied across Wales. This will really help and will be supported by natural vehicle changeover.
- A Member stated that it is important to open up the debate between bus and taxi companies about the issue of taxis blocking bus lanes. The bus companies are complaining that taxis are regularly blocking lanes and slowing down services. He wanted to know if the message around blocking bus lanes was being clearly communicated to taxi drivers.
- Some of the representatives from the taxi companies were aware of there being an issue around Greyfriars Road in Cardiff, i.e. a bus lane was regularly being used as a drop off point. In response a comment was made that there is a need for a rank or drop off point in this part of the city.

It was explained that there are approximately 1,100 Hackney licences in Cardiff and only 70 rank parking spaces. The issue for many taxi drivers is where are they able to park?

- A Council officer explained that the Council's Moving Traffic Offences Service were asked if any Fixed Penalty Notices had been issued against taxi drivers for parking in bus lanes, however, none had. They stated that the Council is able to revisit this issue, however, it needs evidence to support taking any action. It was suggested that no Fixed Penalty Notices had been issued because Moving Traffic Offences are not specifically looking for the problem. A taxi company representative suggested that if this was an issue then it was something that Council needs to review using its Civil Parking Enforcement and Moving Traffic Offences teams.
- A taxi firm representative stated that the benefits for all taxi drivers being able to use bus lanes – he felt that the decision to allow them to use the bus lanes was a positive thing and felt that a harder approach needed to be taken against individuals who regularly broke the rules around 'banking'.

Part 3 Society of Motor Manufacturers – Sukky Choongh - Campbell from the Society of Motor Manufacturers attended the meeting to brief the task group on the view of the Society of Motor Manufacturers on managing air pollution.

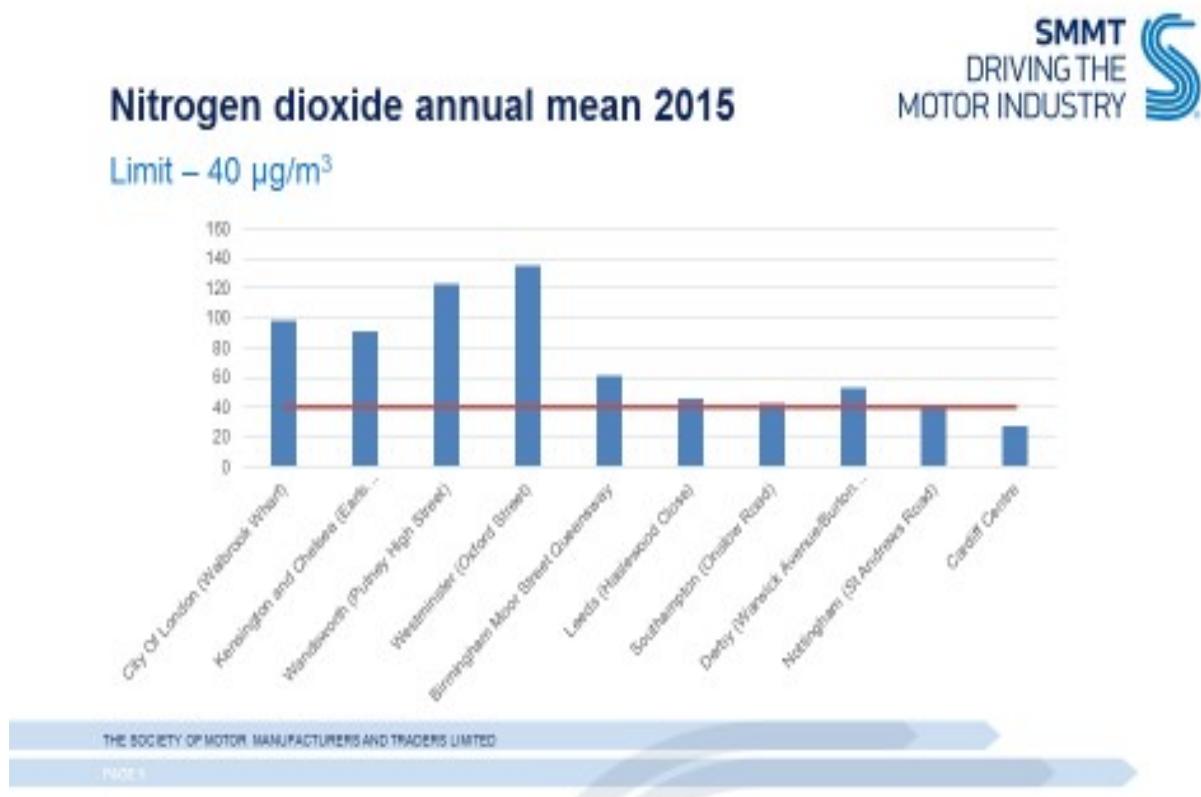
Key Findings

- The Society of Motor Manufacturers & Traders presentation started by setting out the scale of the United Kingdom automotive sector for the start and end of the period 2006 to 2016, the data was as follows:
 - Turnover - £50.4 billion in 2006; £77.5 billion in 2016.
 - Value Added - £9.5 billion 2006; £22 billion 2016.
 - Vehicles Exported – 1,242,312 in 2006; 1,354,216 in 2016.
 - Vehicles Manufactured Annually – 1,649,789 in 2006; 1,816,622 in 2016.
 - Jobs in Automotive – 851,000 in 2006; 814,000 in 2016.
 - Jobs in Manufacturing – 205,000 in 2006; 169,000 in 2016.
 - Engines Manufactured – 1,442,085 in 2006; 2,545,608 in 2016.
 - New Cars Registered – 2.34 million in 2006; 2.69 million in 2016.
- National Air Quality Plan – the presentation outlined the government's ambitions as:
 - End the sale of conventional diesel and petrol vehicles by 2040;
 - Clean Air Zones – original five cities to develop plans, plus an additional 29 local authorities to produce new plans (March and December 2018);
 - Funding - £255 million Implementation Fund and new Clean Air Fund which would cover mitigating actions;
 - Consultation to be launched in Autumn 2017 on mitigation measures (retrofit, discounts, car clubs, subsidised public transport and scrappage);

- New labelling and consumer information requirements to be developed.
- The presentation touched on the proposals for a diesel related United Kingdom scrappage scheme - the consultation for the diesel scrappage scheme was due to be launched in the autumn of 2017. It was anticipated that the aim of the scrappage scheme would be to target support at those that are most likely to be impacted by measures to improve air quality. The government has stated that they are open to ideas from stakeholders through the consultation on how some of the challenges to implementing a scheme could be overcome.
- The presentation touched on 'Clean Air Zones' and explained that the Government will take forward as previously announced plans to introduce Clean Air Zones. Clean Air Zones will be mandated in five United Kingdom cities (Birmingham, Leeds, Nottingham, Derby and Southampton) with a 2019 implementation timeline envisaged. A further 29 local authorities have been identified as requiring to take action due to persistent exceedances of the annual mean objective limit for nitrogen dioxide. Secondary legislation requiring these authorities to implement a Clean Air Zone is still to be passed. Emission standards for Clean Air Zones remain as previously planned with cars/vans at Euro 6 (diesel) and Euro 4 (petrol) and HGVs/buses at Euro VI. Vehicles which meet these minimum emission standards will be able to enter or move within the zone free of charge. Fully electric or hydrogen fuel cell ULEVs will also be able to enter or move within zones free of charge. Government has stated that charging zones should only be used where local authorities fail to identify equally effective alternatives, i.e. as a last resort.
- Clean Air Zone plans will only be approved by government if local authorities can demonstrate that:
 - It is likely to cause nitrogen dioxide levels in the area to reach legal compliance within the shortest time possible;

- The effects and impacts on local residents and businesses have been assessed, including on disadvantaged groups, and there are no unintended consequences; and
 - Proposals that request Central Government funding support demonstrate value for money.
- **Client Earth** – The Presentation explained that the recent Client Earth legal action against the United Kingdom Government had succeeded, however, it had not mandated the following:
 - The five local authorities referenced in the case have not been mandated to introduce clean air zones;
 - 45 local authorities exceeding the nitrogen dioxide limit are not required to do anything;
 - No action is required in Wales.
- It is anticipated these might be addressed in the third Client Earth legal action due to take place against the United Kingdom Government in 2018.
- The presentation included **Diagram 12** that set out the nitrogen dioxide annual mean for 2015 for a number of areas in London and compared these against the annual mean in Cardiff City Centre. It is clear from the data that Cardiff City Centre is by far the lowest of the sites identified and the only one under the nitrogen dioxide limit. Westminster (Oxford Street) was the highest at 135 – almost four times higher than the Cardiff value. It should be noted at this point that the Cardiff City Centre value was taken from the 24 hour City Centre ambient background tracking site in Frederick Street which is in a pedestrianised area. The London values are based on roadside recordings that are adjacent to the public highway.

Diagram 12 – Nitrogen Dioxide Annual Mean 2015

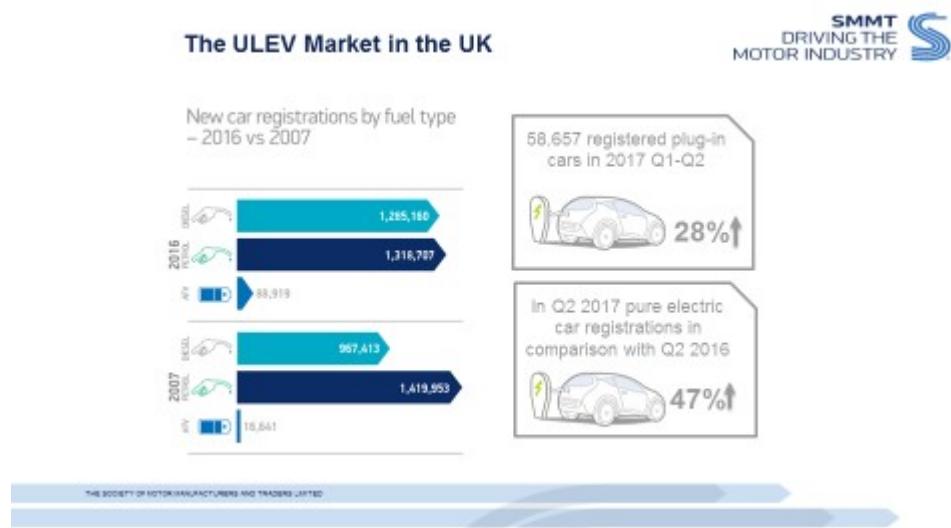


- The presentation identified the four types of electric and ultra low emission vehicles currently available in the United Kingdom, these were:
 - **Battery Electric Vehicles (BEVs)** - A battery electric vehicle is a type of electric vehicle (EV) that uses chemical energy stored in rechargeable battery packs. BEVs use electric motors and motor controllers instead of internal combustion engines for propulsion. They derive all power from battery packs and thus have no internal combustion engine, fuel cell, or fuel tank. BEVs include motorcycles, bicycles, scooters, skateboards, rail cars, watercraft, forklifts, buses, trucks and cars.
 - **Extended – Range Electric Vehicles (E-REVs)** – AN E-REV, or Extended-Range Electric Vehicle, offers all of the benefits of a plug-in hybrid, but with the promise of even greater efficiency. Think of an E-REV as an electric car, but with a generator on board to stop the batteries from getting flat. The idea is that you can recharge an E-

REV's batteries from a socket at home or work, and hopefully the car's range will be sufficient for most journeys. But if it isn't, the petrol engine just kicks in and works as a generator, keeping the battery at a minimum charge level until the next mains charge can top it up.

- **Fuel Cell Electric Vehicles (FCEVs)** – A fuel cell electric vehicle (FCEV) is a type of electric vehicle which uses a fuel cell, instead of a battery, or in combination with a battery or supercapacitor, to power its on-board electric motor. Fuel cells in vehicles generate electricity to power the motor, generally using oxygen from the air and compressed hydrogen.
- **Plug-in Hybrid Electric Vehicles (PHEVs)** - A plug-in hybrid electric vehicle (PHEV) is a hybrid electric vehicle that uses rechargeable batteries, or another energy storage device, that can be recharged by plugging it in to an external source of electric power as well as an on-board internal combustion engine and generator.
- **Diagram 13** was included in the presentation and sets out the new car registration for diesel, petrol and AFV in the years 2007 and 2016. It is clear to see that there has been a significant increase in AFV's since 2017. 58,657 plug in cars were registered in quarter 1 – 2 of 2017 which represents a 28% increase. In quarter 2 2017 pure electric car registrations were up by 47% when compared against Quarter 2 2016.

Diagram 13 – Changes in the United Kingdom ULEV Market



- It is estimated that 15% of vehicles in the United Kingdom will be electric by 2021.
- The presentation then considered the experiences of other cities in developing a clean air strategy and reducing air pollution, the areas covered were:
 - **Manchester** – The planning for the approach to be taken has been delivered in Manchester by Transport for Greater Manchester as six of the local authorities required to deal with the clean air issue are within the Greater Manchester area (Manchester, Rochdale, Stockport, Trafford, Bury, Oldham, Salford, Tameside and Wigan). It is being driven by the Mayor for Manchester Andy Burnham who has publically stated that publically that he will not charge drivers to use the road. Planned initiatives include an electric bus trial with Volvo; a 'Go Ultra Low' event with Europcar; they are very keen to increase the number of ULEVs in the city and they are looking to showcase an event next summer around the National Clean Air Day. Manchester has an established tram system - which helps.
 - **Leeds** – Leeds launched an informal public consultation on Clean Air Zones in November 2017. The critical issue in Leeds is that the non-

compliant areas currently have 75% through traffic, i.e. the bulk of the problem isn't caused by local resident traffic. To help deal with this improvement works for traffic flow are being planned which should be completed in 2022. The main local bus operator has committed to only use Euro VI diesel by 2020. They are also in the process of accessing funding to help convert local taxis and are looking to secure a site for an alternative re-fuelling station. They are looking to work with local dealerships to help increase educational awareness on Clean Air Zone requirements and to help promote the uptake on ULEVs. Leeds was one of the first five cities in the England to be given £1 million for taxi improvements.

- During this part of the meeting it was suggested that one national bus company was passing older buses across to Cardiff / Wales because certain English cities have now increased emission standards.
- **Derby** – In Derby the main areas of exceedance are caused by the M1 corridor. As with most other exceedance areas, cars are the greatest source of emissions. Derby has undertaken research into census data to identify the residents most likely to upgrade their vehicles. They have also used the planning and development process to install electric vehicle charging points. Derby has a non-retrofit policy and are looking to arrange an event to promote Ultra Low Electric Vehicles in the city. The Leader of the council is an ex-taxi driver and has been reluctant to do anything that will charge drivers or adversely affect the economy in anyway. They are very keen to work with dealerships to promote the benefits of electric vehicles and the potential impact of a clean air zone. They are keen to access the JAQU funding which is potentially able to provide each clean air zone authority £1m for electric Hackney carriage taxis.
- **Nottingham** – They are in the early stages of writing their plan. The main area on non-compliance is the inner ring road with the private vehicles contributing to 83% of the emissions. DEFRA has advised they should implement a Class D Clean Air Zones by 1st January

2020. Additional measures include the implementation of trams, biogas vehicles and electric buses. They are looking to convert to a 100% electric taxis fleet by 2025. They have a workplace parking levy in place. This has raised £44 million since its introduction and currently generates a £9 million income each year for investment into Nottingham's transport infrastructure.

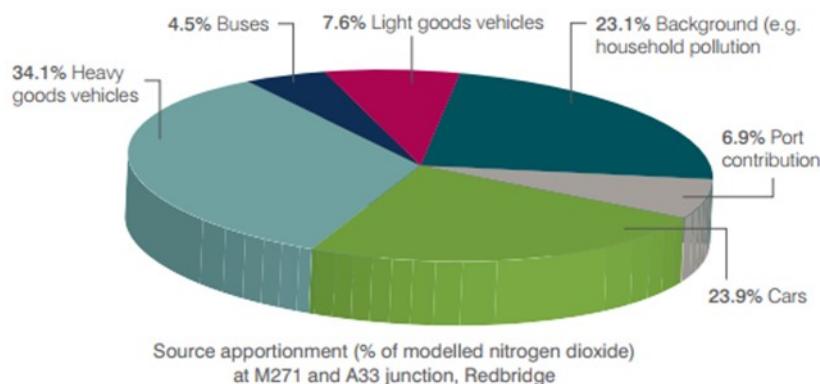
- **Bristol** – They are looking to implement the most stringent Clean Air Zone to deter cars from entering the city centre. The first Clean Air Zone feasibility study was deferred due to Client Earth contact, there is a need for a new AQAP and they need to deliver a completed Clean Air Zone feasibility study. It estimated that 60% of vehicles drive into the city from outside Bristol. They are looking to achieve the 'Go Ultra Low' (GUL) city status, and plan to install a large number of EVCPs. They have the ambition of upgrading the entire taxi fleet to electric vehicles. In doing this they are applying for help with upgrading their taxi and bus fleets.
- **Bath** – The city is trying to introduce a number of freight interventions, and to this end DHL are supporting this initiative by trying to acquire an alternative to the Smith electric truck. Source apportionment shows diesel to be the greatest contributor to air pollution, and the most polluted place is a strategic road with high volume of freight. They have recently added a combined natural gas re-fuelling station to the list of potential options for implementation. They are looking to introduce electric taxis into the fleet. Bath is keen to become a test area for connected & autonomous vehicles (CAV's). Bath also considers it important to spread the message of sustainable vehicles by working with dealerships, i.e. they ultimately sell cars and so it is probably a good idea to develop their sales pitch to support sustainable fuel vehicles.
- **Southampton** – Southampton has a large port which makes a large contribution to air pollution. The PCM model doesn't recognise other AQMAs. They have an Enterprise car club which is reluctant to move to

ULEVs. Southampton would like their taxi fleet to become EVs.

Diagram 14 sets out the main pollution sources in Southampton, this shows that the port contributes to 6.9% of the pollution, with heavy goods vehicles accounting for the single largest pollution contribution at 34.1%.

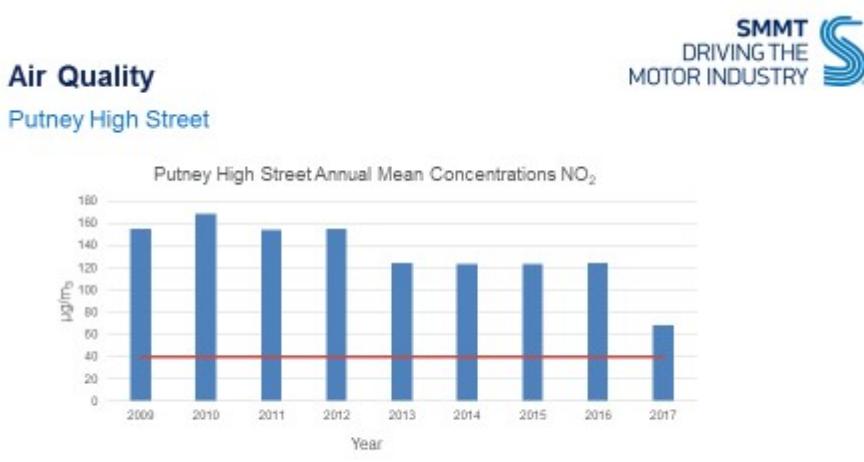
Diagram 14 – Causes of Pollution in Southampton

Causes of pollution in Southampton



- Due to exceptionally high air pollutions caused by NO₂ emissions a 'Clean Bus Corridor' has been introduced on Putney High Street. This now means that only vehicles achieving Euro 6 standards or higher can access the route. As can be seen on the **Diagram 15** this has significantly reduced nitrogen dioxide concentrations.

Diagram 15 – Air Quality – Putney High Street



- The Society of Motor Vehicle Manufacturers representative made a number of suggestions on the next steps for Cardiff's Clean Air Strategy, these included:
 - Encouraging the uptake of Ultra Low Electric Vehicles;
 - Develop a recharging infrastructure for electric vehicles in Cardiff;
 - Bus fleet upgrade;
 - Taxi fleet upgrade;
 - ULEV incentives, for example, parking, bus lane use;
 - Procurement – build the use of using vehicles that use sustainable fuels into the procurement process to ensure that the Council and public bodies convert as well the key parts of the supply chain;
 - Planning and Development – use active planning and development to encourage sustainable travel;
 - Encourage and expand car clubs;
 - Promote car sharing across the local authority and with its partners;
 - Introduce the 'Mobility as a Service' (MaaS) concept into Cardiff – i.e. this combines options from different transport providers into a single mobile service, removing the hassle of planning and one-off payments;
 - Freight – develop schemes to divert heavy goods vehicle transport out of key areas of the city;
 - Communications – clearly communicate the message of what is happening and more importantly why it is happening;
 - Lead by example – take control of the situation, deliver the required changes and other bodies and individuals will follow your example.
- It was suggested that the Council should work with a commercial partner to introduce electric charging points into public spaces. They are experienced in delivering this type of infrastructure whilst most local authorities aren't.

**Improving Cardiff's Air Quality - Meeting 5 – Planning,
Development & Other Pollution Sources - Thursday 23rd
November 2017 – 11:30am to 2:45pm**

Part 1 - Planning & Development - Councillor Caro Wild, Cabinet Member for Strategic Planning & Transport and officers from the City Operations Directorate were invited to attend the meeting to discuss the role that planning & development has on Cardiff's air quality.

Key Findings

- An officer stated that the Planning Service has numerous interfaces with air quality issues, and that they work closely with the Air & Noise Team within Shared Regulatory Services.
- Cardiff's Local Development Plan has been adopted and sets out Cardiff's growth plan until 2026. The site planning includes future transport infrastructure which will have a large impact on air quality in the city. One of the fundamental aspects of the plan is to maintain or improve air quality in the city.
- The Planning Service is going through the long task of developing new supplementary planning guidance and is able to create additional guidance to support the planning process where a specific need is identified. New supplementary planning guidance has recently been published on green infrastructure, managing transport infrastructure. These were presented to Council in November 2017.
- A Planning Officer explained that air quality could be reviewed as a potential topic for a supplementary planning document and but that it needed a policy hook from the Local Development Plan.
- Cardiff deals with the largest number of planning applications in Wales – it also deals with the most complicated by type. The Air Quality Team within

Shared Regulatory Services are regularly contracted to act as a technical consultee for these planning applications.

- A Member felt that dealing with air quality issues was sometimes a tick box exercise. A Planning Officer disagreed saying that today it was a far more regulated and highly technical process than had previously been the case.
- A Member stressed the importance to consider the wider (further afield) knock on effects of air quality issues caused by new developments, for example, building a new housing estate could cause air pollution issues at a road junction several miles away. In response it was explained that larger developments now have to be supported by an Environmental Impact Assessment. Such documents now look at the impacts caused over a much wider area.
- A Member explained that objections were put in for a specific Cardiff site over wider traffic problems. There was no new road to support the work required and the planning department was not minded to ask the developer for a new one. He felt that for such large sites we should be telling the developer that one is required, not asking or having the debate.
- It was explained that thorough assessments are undertaken and considered for all sites. The process involves deciding if a development should proceed based on a balance of factors, not just one or two. A development can proceed within parameters of acceptable harm. The task of the Planning Service is to challenge and then debate on the background of professional advice.
- A Member commented that large new sites created large levels of traffic during the construction phase and that this should be factored into the planning decision. A Planning Officer replied by saying that the bigger the site the more traffic, etc.... This is addressed through the master planning process, for example, sites are designed with more internal trips to keep traffic / travel within the site; there is significant investment in public

transport. Lots of thought is applied in getting under the skin and detail of the development.

- It was stated that the Planning Service had offered good collaboration and support to the development of the Clean Air Strategy.
- A Member agreed that the process of internalising developments was important and that it needed to work to cope with the scale of growth in the city and wider city region. A Planning Service Officer explained that good planning is not just about onsite provision, it should also focus on offsite contributions, for example, transport infrastructure.
- Planning obligation contributions have been large in Cardiff in recent years, for example, one site has attracted a planning obligation payment of £250 million.
- Trigger points should be applied to certain traffic levels, for example, if traffic increases in certain points then developers would become liable. Ensuring that good transport planning is put in place is crucial.
- A Member explained that a bus gate was put in place at a Cardiff site without there being any discussion with the bus companies. No one actually understood if there would be sufficient demand to make the route viable. Without financial support no bus company would take on the route.
- The strongest tool that the Council can use to ensure that developments deliver the required infrastructure is planning obligation. It is important to be as strict as possible when applying this. Front loading of planning obligations is also important when developing transport infrastructure – this provides an option to get bus subsidies in from the start.
- A Member asked if we have supplementary planning guidance that relates to electric cars and supporting provision. She was told that technology is changing really quickly, for example, things seem to change on an annual basis. This means that the relevant supplementary planning guidance will need to be reviewed each year.

- A Member asked if the Council should take the risk of keeping up with technology. It was explained that policy integration is a huge issue and striking a sensible balance in this area is very challenging. The Wellbeing of Future Generations means that the Council is now obliged to evidence that the planning process satisfies such need.
- National Planning Policy Wales is updated every year to ensure that it follows the needs of the Wellbeing of Future Generations Act. The Council follows and updates its policies to ensure compliance with the Act.

Part 2 - Dr Clare Beattie - Associate Director at Air Quality Consultants

Ltd – Dr Clare Beattie was invited to attend the meeting to comment on the important characteristics of a clean air strategy and discuss the opportunities and challenges that exist for the Council as it develops ‘Cardiff’s Clean Air Strategy’.

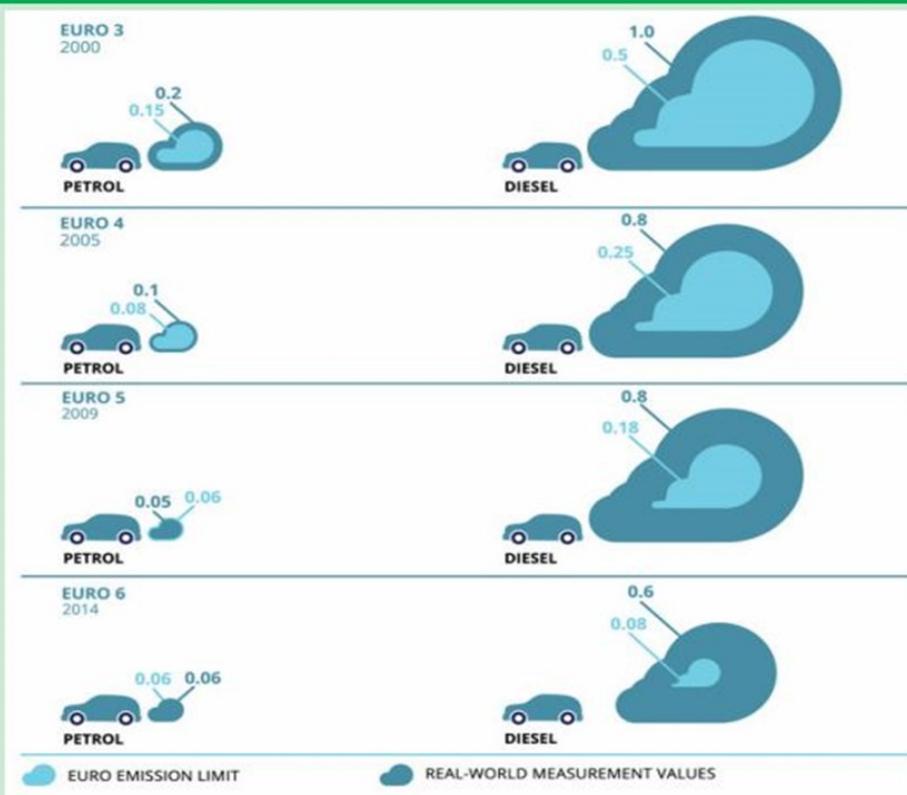
Key Findings

- Local Air Quality Management should be delivered through a systematic review of air quality against health based air quality ‘Objectives’ and that where necessary ‘Air Quality Management Areas’ would be required. Action Plans required where objectives are not met.
- EU Requirements - Welsh Ministers are responsible for meeting ‘Limit Values’ in Wales and failure in this area could result in potential fines for non compliance. Such assessments are undertaken on a different basis to LAQM (national modelling – PCM (Pollution Climate Mapping Model)).
- As explained by previous witnesses it was stated that nitrogen dioxide is the dominant pollution issue in Wales and that limit levels are set at a constant level of 40 mg.
- The presentation explained that the Welsh Government has recently produced the Well-being of Future Generations (Wales) Act 2015 - air quality clearly has an impact of well-being. Poor air quality impacts on health in Wales and so it needs to be addressed to comply with such legislation. The Welsh Government has recently introduced an average population exposure to nitrogen dioxide national indicator which Cardiff has to report on and comply with. By July 2018 consultation on Clean Air Zone Framework for Wales will need to be assessed in relation to whether other measures could achieve compliance more quickly. Welsh Government will need to work with Cardiff Council (and any other LAs) on this consultation and all other Welsh local authorities.

- Other Relevant Issues – Dr Beattie commented on a number of other relevant issues around air quality, these included:
 - That objectives and limit values are measured as an annual mean;
 - Several parts of Cardiff with Air Quality Management Areas are impacted on the ‘Street Canyon’ affect. Tall buildings create a canyon effect and hold the pollution in a confined area preventing dispersion;
 - Complex chemistry of nitrogen dioxide;
 - Drop off in concentrations away from road for nitrogen dioxide and other forms of pollution are quite rapid;
 - Congestion increases emissions - stop/start driving significantly increases the level of vehicle emissions;
 - HGVs/ Buses – these produce greater emissions per vehicle;
 - Gradients will increase emissions – although Cardiff is fairly flat which is a positive for air pollution levels in the city;
 - Real world emissions – especially diesel.
- **Real World Emissions** – **Diagram 16** provides a comparison of emissions of nitrogen dioxide for different car Euro standards, by emission limit and real – world performance. It is clear from the diagram that nitrogen dioxide emissions are significantly higher for diesel than petrol for each of the four Euro categories, and that actual emissions from vehicles when driven in a real world environment (and not under laboratory conditions as used for the Euro limit standards) are significantly higher than the prescribed Euro standard values. The diagram illustrates that in terms of nitrogen dioxide emissions, diesel engines present a far more significant threat to health than their petrol equivalent.

Diagram 16 - Comparison of emissions of Nitrogen Dioxide for different car Euro standards (diesel & petrol), by emission limit and real world performance

Figure 6: Comparison of emissions of NOx for different car Euro standards, by emission limit and real-world performance (grams/kilometre)

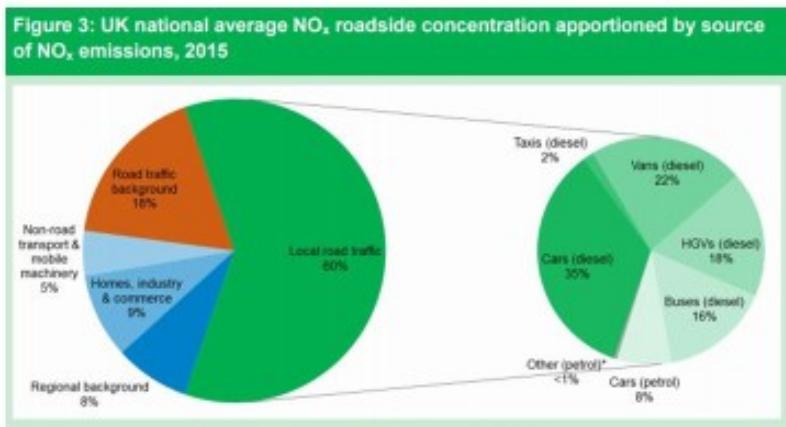


Source: Adapted from a report by the European Environment Agency²⁵.

- **Diagram 17** sets out the United kingdom national average nitrogen dioxide roadside concentration apportioned by source of nitrogen dioxide emissions 2015. The diagram illustrates that 60% of nitrogen dioxide is generated by local road traffic – from this 60%, 93% is generated from diesel vehicles (cars (diesel) 35%; Taxis (diesel) 2%; Vans (diesel) 22%; HGV's (diesel) 18%; Buses (diesel) 16%). This means that as a United Kingdom average in 2015 55.8% of all nitrogen dioxide emissions was generated by diesel vehicles.

Diagram 17 - United kingdom national average NO_x roadside concentration apportioned by source of NO_x emissions 2015

Sources



Source: PCM modelling provided by Ricardo Energy & Environment (2017)

Note: "Local road traffic" in the large pie chart is the estimate of the proportion of local NO_x roadside concentrations contributed by traffic on that road and is shown in greater detail in the smaller pie chart. "Road traffic background" is the estimate of NO_x concentrations contributed by traffic on other roads.

* Other (petrol) is made up of petrol vans and motorcycles.

HGVs = Heavy Goods Vehicles.



- The presentation touched on the Client Earth High Court cases to date and the impact that this has had on dealing with air pollution in the United Kingdom. In particular the presentation made reference to:
 - The Client Earth High Court cases relate to the Defra National Air Quality Plan, which ClientEarth considered had only taken 'minimum steps' to achieve the EU Limit Value.
 - In November 2016 the High Court concluded that modelling of when the Limit Value will be met was based on overly optimistic vehicle emission factors in future years. It also identified that the Defra National Air Quality Plan was not sufficiently ambitious to meet the Limit Values by the 'soonest date possible'.
 - In November 2017 a further legal action against the Government was announced. This also included taking the Welsh Government to court for failing to meet their obligations in Wales.

- **Clean Air Zone Feasibility Work** – it was explained that most of the local authorities who have a requirement to consider implementing a clean air zone are at an early stage of the process, i.e. are involved in the planning or are actually undertaking a feasibility study. DEFRA has set out prescriptive reporting requirements for English local authorities with 2020 Limit Value exceedances. JAQU (Joint Air Quality Unit – Defra and DfT) is providing considerable financial support to English local authorities in planning for and implementing clean air zones. It was felt that Wales needed to utilise this existing experience and that the resource allocation for Wales for carrying out this work was still unclear.
- The presentation made some suggestion on how to go about creating a Clean Air Strategy in Cardiff, in doing so she explained that:
 - It would need a ‘Steering Group’ of relevant Council officers and other key stakeholders – this should include the Welsh Government;
 - Extensive traffic and air quality modelling would be required to identify the scale of the problem in the city;
 - A list of options would need to be identified for dealing with the issue, this should include a range of Clean Air Zone scenarios (size of area? the type of vehicles to include?);
 - It would be important to engage political involvement at the earliest possible opportunity.
- It was suggested that a Clean Air Strategy for Cardiff should include:
 - A detailed evaluation of options impacting on air pollution in Cardiff and not just air quality;
 - A detailed business case setting out the option(s) chosen for the Clean Air Strategy and why these had been selected;
 - Prioritisation of measures – i.e. those that need to delivered first to achieve the Limit Values as quickly as possible;
 - Consideration of consultation/ engagement with the public and other key stakeholders;
 - An ‘Implementation Plan’ for the Clean Air Strategy’;

- A defined monitoring approach to ensure that the chosen initiatives are being properly implemented;
 - Key elements / wider measures worth building into the Clean Air Strategy should include ‘Smarter Travel’, ‘Low Emission Vehicles and Infrastructure’, ‘Traffic Management’, ‘Planning Frameworks’ and ‘Communication’.
- The challenges facing the Council in developing the Clean Air Strategy were highlighted as:
 - A Clean Air Strategy will need to cover the identified Air Quality Objectives and deal with addressing the EU Limit Value requirements;
 - Working through the lengthy processes of feasibility work, gaining approval and public / political acceptability;
 - The funding position in Wales is still unclear for developing a Clean Air Strategy and dealing with the implications of potentially introducing a Clean Air Zone;
 - Many aspects of the work that needs to be delivered is outside of local authority control;
 - Brexit and all of the uncertainty that this presents.
- The opportunities presented to the Council in developing the Clean Air Strategy were identified as improved health; a more agreeable city centre environment; the development of a collaborative approach for dealing with the issue.

Part 3 - Natural Resources Wales – Air Quality Monitoring – An air quality officer from Natural Resources Wales was invited to attend the meeting to explain the role that the organisation has in monitoring and compliance around air quality in Cardiff and across Wales.

Key Findings

- The Natural Resources Wales role can be broadly categorised as adviser, regulator and evidence gatherer/provider. Within this remit they have a number of duties including:
 - They ensure that the industrial facilities comply with EU requirements on Wales and the United Kingdom (for example, Air Quality Directives, Habitats Directive, the National Emissions Ceiling Directive and the Industrial Emissions Directive, Domestic and UK requirements such as the Environmental Permitting Regulations, the Air Quality Standards (Wales) Regulations, the UK Air Quality Strategy and the Countryside and Rights of Way Act and the Well-being of Future Generations (Wales) Act).
 - They support local authorities in improving local air quality, including the provision of ambient air quality modelling, advice and guidance.
 - They coordinate ambient air quality monitoring for incidents that can have an impact on air quality.
 - They provide air quality modelling, analysis, guidance and advice services to support permitting, conservation and compliance activities.
 - They are not generally responsible for monitoring or assessing ambient air quality.
 - They are the advisor to the Welsh Government - air quality is a devolved matter, and the Welsh Government is responsible for their

own air quality policy and legislation. The UK government leads on international and European legislation.

- Natural Resources Wales is the principal environmental advisor to the Welsh Government. They support the Welsh Government in its duty to achieve air quality limit and target values set in European Directives and domestic regulations. They also support its duty to minimise the harmful effect of air pollution on human health and the environment. They provide the Welsh Government with advice, guidance and evidence.
- Natural Resources Wales is committed to working with local authorities and playing its part in Local Air Quality Management. They continue to agree improvements with local authorities for the installations they regulate that contribute significantly to breaches of an Air Quality Strategy objective.
- Natural Resources Wales provides local authorities with information that identifies the current releases from industrial installation(s); any assessments on the effect of the releases from the installation on local air quality; any plans already in place that will deliver future improvements for local air quality; any equipment or operational changes that could deliver improvements for local air quality.
- The monitoring and compliance arrangements in place to measure air quality includes:
 - **Stack monitoring** - Large combustion plant (LCP) and waste incineration plant (covered by WID/IED) are required to take stack monitoring. For example, permit at Viridor requires continuous monitoring (CEMS) for Oxides of Nitrogen (NO and NO₂ expressed as NO₂), Particulate Matter TOC, HCl, SO₂, CO. Such data has to be provided every hour or half hour.

- **Ambient monitoring** - When it is necessary, installations will be asked to carry out stack or ambient air quality monitoring as a permit condition or compliance check.
- **Diagrams 18 & 19** set out the sites that Natural Resources Wales routinely monitors for air quality standards in Cardiff and the wider South Wales Region. An officer from Natural Resources Wales explained that Cardiff in particular did not contain a high concentration of industrial facilities that needed constant monitoring and that there were no recent examples of emissions breaches in the city.

Diagram 18 – Cardiff Permit Sites Monitored by Natural Resources Wales

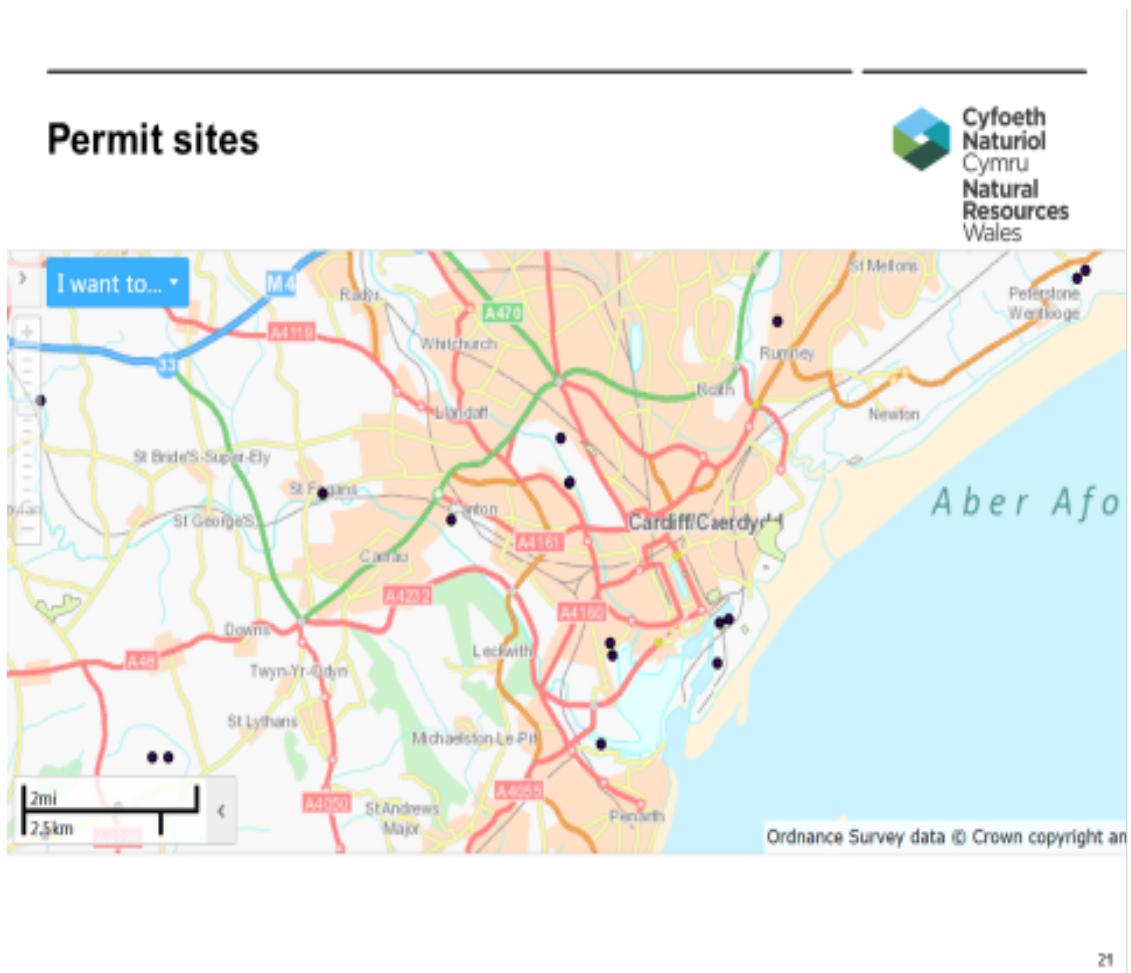
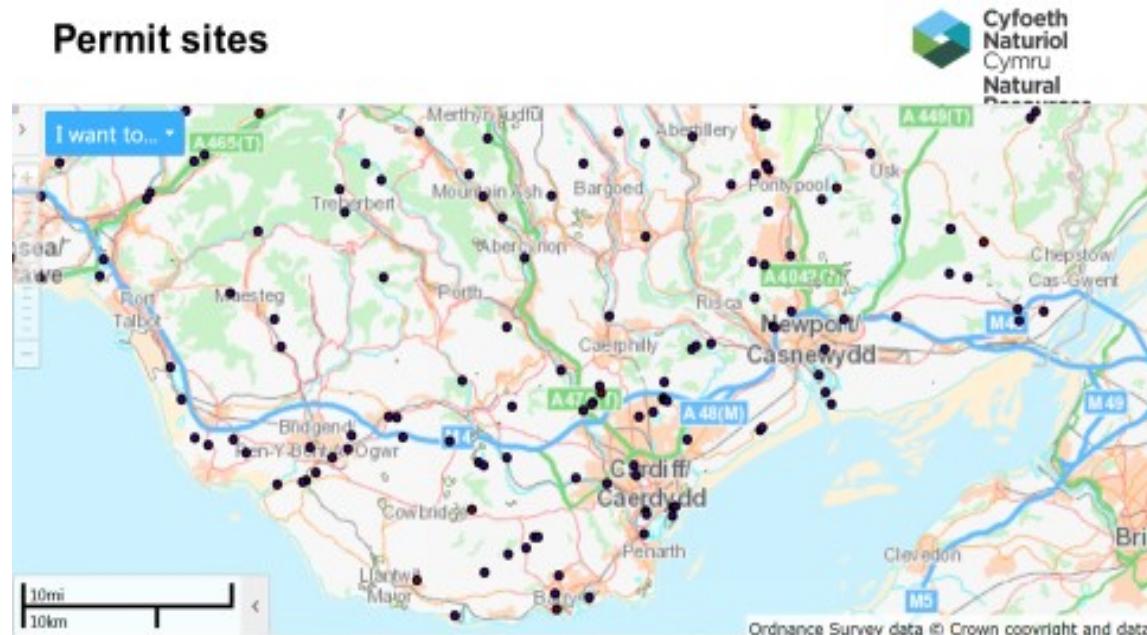


Diagram 19 – South Wales Permit Sites Monitored by Natural Resources Wales



20

- Natural Resources Wales has the following enforcement powers at its disposal, the main one that they use is the Environmental Permitting (England and Wales) Regulations 2016.

'Improving Cardiff's Air Quality' - Meeting 6 – Sustainable Fuel for Vehicles - Wednesday 6th December 2017

Part 1 - Council Approach to Sustainable Fuel for Vehicles - Councillor Michael Michael, Cabinet Member for Clean Streets, Recycling & Environment and officers from the City Operations Directorate / Economic Development Directorate were invited to attend the meeting to discuss the work that the Council is doing to support the delivery of sustainable vehicle fuel within the Council and across Cardiff as a whole.

Key Findings

- The presentation set out why the Council needs to act in terms of developing low emission transport in Cardiff. It addressed six key points including:
 - **Poor Air Quality** – this contributes to 40,000 premature deaths per year in the United Kingdom. Cardiff is in breach of EU limit values, with diesel fuel related emissions being the largest contributor to Cardiff's problem.
 - **Carbon Reduction** – There are national and city wide targets for carbon reduction across the United Kingdom. Transport accounts for 24% of emissions nationally. The Welsh Government is pushing for a carbon neutral public sector by 2030.
 - **Cost** - Fossil fuels are an ever increasing cost to the Council and citizens. Fuelling the Council fleet cost £1.5m in 2016/17.
 - **Demand/Supply Standoff** - Market confidence needs to grow in low emission transport. High consumer cost and an uncertainty/slow emerging supplier market slows down potential growth. Strategic leadership and “intelligent customer” actions needed are needed to

help push things forward. This underlines the Council role as an “early adopter” and strategic player.

- **Cardiff’s Competitive Position** – It was explained that Cardiff should have a strong competitive position in pushing forward low emission transport, for example, it presents a ‘World Class City Offer’; it is a city at the forefront of technology and it is a city that facilitates a cleaner smarter quality of life.
- The Cabinet Member stressed the importance of taking a lead in this area, i.e. upgrade the standards within our fleet and to act as an enabler for things like public electric charging infrastructure. He also commented on the potential benefits of dealing waste on a South Wales Regional basis, for example, he felt at the time that it would be great to have a waste collection vehicle that ran on sustainable fuel (electric or hydrogen), however, there didn’t appear to be an appropriate vehicle in the market to meet this ambition. As a consequence he felt that a waste collection vehicle using sustainable fuel would not feature in the next procurement exercise, but hoped it would happen in the one after that.
- Background studies have been commissioned to help understand the Council’s role, opportunity and key points of impact in terms of developing and supporting sustainable fuel infrastructure.
- A Member explained that £4 million had just been made available for electric charging infrastructure in Wales. An officer explained that he was off to a meeting the following day to discuss the potential implication for Cardiff from this fund.
- Members commented and agreed that it was essential to build sustainable fuel vehicle options into future procurement strategy. The Cabinet agreed with this and felt that it should now be easier to do this as all fleet procurement is delivered through Central Transport Services.

- £50,000 in the 2017/18 budget was allocated to fund a study into how Cardiff supports and delivers electric charging infrastructure in the city.
- The Cabinet Member explained that as a general rule of thumb hydrogen currently works better for larger vehicles and electric is more efficient for smaller vehicles. An officer then explained that there is strong hydrogen expertise in South Wales, for example, at the Baglan hydrogen centre and University of South Wales.
- An officer explained that it is important to acknowledge that in the short, medium or long term there is no single silver bullet to solve this problem. Cardiff needs to embrace the complete range of technologies available.
- Five examples of best practice in terms of using sustainable fuels in the United Kingdom were mentioned in the presentation, these were:
 - **Dundee City Council** – they have introduced electric vehicle charging infrastructure across the city (15 rapid chargers & 50 fast chargers); converted 81 Council vehicles to electric; created electric vehicle charging “hubs” and a pool car scheme; they have converted the main taxi fleet to electric (81 vehicles). To help achieve this they have received £3m in financial support from the EU, the United Kingdom Government and the Scottish Government. They were ‘Highly Commended’ in the United Kingdom cities ‘Go Ultra Low’ scheme.
 - **Fife Council** – they were cited as a best practice example as they are trialling hydrogen waste vehicles and using renewable energy assets to generate hydrogen as a fuel for the vehicles.
 - **Greater Manchester Combined Authority** – They have made bids to the ‘Green/Clean Bus Fund’; they are implementing 200 electric vehicle charging points as a part of a 'Plugged in Places" initiative; they are aiming to set stricter emission standards for taxis operating in the area.
 - **Nottingham City Council** – They have rolled out electric vehicle charging infrastructure across the city; they have converted the Council fleet to electric; they have introduced a ‘Low Emission Zone’ and they are now operating compressed Natural Gas Buses. This has been

achieved thanks to £6 million of United Kingdom Government financial support. Nottingham City Council were winners of the United Kingdom cities 'Go Ultra Low' scheme.

- **Mayor of London Assembly** – They have created 'Low Emission Zone exemptions'; introduced an 'Ultra Low Emissions Zone plan'; all new buses introduced in London are either hydrogen or electric; they have introduced an extensive range of car clubs and electric vehicle charging points.
- The presentation went on to explain the main opportunities available to Cardiff in terms of growing the use of low emission or sustainable fuels, the actions that it needs to take and why we need to deliver the actions. These included:
 - Cardiff is the capital of Wales and as such it should take a 'Leadership role' in growing the use of low emission or sustainable fuels;
 - Cardiff is a population and business centre. It has the critical mass to stimulate uptake of low emission or sustainable fuels;
 - The Council is in a strong position to control and influence the introduction of sustainable fuel infrastructure. Also given its size it can act as an early adopter in terms of converting its large fleet and build the use of sustainable and low emission fuel into its procurement process and the procurement supply chain;
 - The Council has close working links with Cardiff Bus, Cardiff's taxi companies and other partner public sector organisations (for example, Health Service, Police Force, Universities, etc..);
 - They have the responsibility of managing the public highway and major development sites across the city;
 - The Council is able to support and deliver local energy supply opportunities that can be used to produce sustainable energy and create circular economies. Local sustainable / renewable energy

examples include the Lamby Way Solar Farm, Viridor Energy from Waste Facility and the Tidal Lagoon;

- South Wales has significant levels of hydrogen fuel expertise, for example, at the University of South Wales and several manufacturing sites across the region. In addition to this, the South Wales Steel Industry has huge potential for capturing hydrogen as a waste product and then reusing it as a sustainable vehicle fuel;
- Do-nothing is not an option. Improving air quality to achieve compliance with EU limits without some type of clean air zone was unlikely and that without the growth of sustainable / low emission fuels it would be even more difficult.
- The presentation set out a ‘Strategic Vision’ that the Council needed to deliver to act as a catalyst for change, this included:
 - Facilitating and speeding up a pathway to zero emission transport;
 - Proactively addressing Air Quality Challenges;
 - Using procurement power to provide market confidence;
 - Accessing grants to proactively kick-start infrastructure provision;
 - Engaging with and supporting local innovation;
 - Exploring beneficial business models on supply and generation;
 - Securing the best Circular Economies for the City and for Wales.
- The presentation then provided three slides that set out short, medium and long term actions that the Council needed to take to drive the clean / low emission fuel agenda forward. These are set out in **Diagrams 20, 21 & 22**.

Diagram 20 – Short Term Strategic Actions

Short Term		
Action	Evidence	Progress
Fleet Procurement Gradual conversion to ULEV vehicles	<ul style="list-style-type: none"> Pool cars and small vans – already cheaper on a whole of rental life analysis but requiring associated charging infrastructure HGVs - less mature market still needs piloting approach 	<ul style="list-style-type: none"> Testing 2 EV vans Corporate target around fleet emissions Draft Procurement strategies pointing towards inclusion of ULEV vehicles
EV Charging Infrastructure Install more publically available Charging Points	<ul style="list-style-type: none"> Growing consumer demand Market needs support in dense urban areas OLEV Funding available 	<ul style="list-style-type: none"> Detailed feasibility study commissioned Preparing for bid to OLEV
Understand the Council's Energy Supply Role	<ul style="list-style-type: none"> Renewable projects - business models significantly enhanced with Council Fleet as a potential customer Unclear governance and delivery models around on-street sale of electricity 	<ul style="list-style-type: none"> Already using innovative solar to supply EV's Modelling impact on Solar Farm proposal EV study looking at issues to do with sale/supply

Total Cost of Ownership (Incl maintenance, fuel)						
	Vehicle Type	Initial Purchase	Running Costs	Maintenance	Annual Fuel	Total Cost
Car	5	£ 27,342	£21,868	-	£ 2,514	£ 51,724
Small Vans	7	£ 28,377	£18,758	-	£ 3,069	£ 49,194
Large Vans	7	£ 38,322	£18,758	-	£ 31,248	£ 58,328
Topper Vans	7	£ 27,989	£18,758	-	£ 41,762	£ 58,509
Minibuses	10	£ 110,415	£18,758	-	£134,827	£ 243,970



Diagram 21 – Medium Term Strategic Actions

Medium Term		
Action	Evidence	Progress
Cardiff Bus Understand current investment approach and identify more ambitious opportunities for Hydrogen, electric and CNG vehicles	<ul style="list-style-type: none"> Best Practice in London, Manchester, Nottingham and elsewhere English Schemes have benefitted from funding not available in Wales 	<ul style="list-style-type: none"> Significant carbon and emissions reductions already achieved Needs further and longer term strategy to address Carbon Neutrality and Air Quality agendas
City Growth Explore opportunities for ULEV infrastructure as part of new development proposals (LDP sites, Park and Ride, Metro, etc)	<ul style="list-style-type: none"> Clear and increasing demand. Relates to general SD design principles Cost effective business models (viability) CIL item? 	<ul style="list-style-type: none"> Developing SPG
Taxis Explore incentives and licencing levers to favour ULEV incl Council Taxi Use strategies	<ul style="list-style-type: none"> Working in Dundee and elsewhere Needs level playing field in licencing (UBER risk) 	<ul style="list-style-type: none"> Residential areas with high incidence of licenced taxi drivers targeted for on-street EV charging points Explore ULEV criteria for CCC taxi use contracts



Hydrogen Bus - London



Dundee EV Taxi rank

Diagram 22 - Long Term Strategic Actions

Longer Term		
Action	Evidence	Progress
Clean air Zones	<ul style="list-style-type: none"> WG stats UK Govt response 	<ul style="list-style-type: none"> Air Quality Strategy considering this
Develop Fully Integrated Hydrogen Strategy	<ul style="list-style-type: none"> Fife pilot scheme London Bus Pilot Scheme WG – circular Economy aspiration UK and EU innovation funding programmes 	<ul style="list-style-type: none"> Dialogue with Shell IUK hydrogen project (now closed)
Electric Vehicles to Grid and Energy Storage Provision	<ul style="list-style-type: none"> Potential enhanced business case and citizen benefit UK and EU innovation funding programmes 	<ul style="list-style-type: none"> Local Electricity Distributor (WDP) developing strategy
Electric Vehicle hubs providing a social purpose	<ul style="list-style-type: none"> Dundee experience WG directive on EV inclusion in 21st Century Schools Programme 	

- The task & finish group were pleased to see that the slides provided an outline plan and structure for driving forward the development and growth of sustainable / low emission fuels in Cardiff. Seeing a series of actions, supporting evidence and progress to date across the short, medium and long term was encouraging and seemed like the basis for a sound Low Emission Transport Fuels Strategy.
- The presentation concluded by explaining that the Council is currently in the process of delivering an Electric Vehicle Feasibility Study. The scope of the study is to:
 - Review the electric vehicle market including – electric vehicle charging infrastructure providers; demand for electric vehicle charging & charging types and developing technology.

- Review ‘Best Practice’ including - Technology in the UK and abroad; potential links to other projects (e.g. car clubs, renewable fuels, fleet, parking sensors, smart living principles etc.); enforcement.
- Consider a range of infrastructure technology, including types of charge point; connection types; charge speed and site suitability; system architecture.
- Consider Energy requirements including - power availability by location and power requirements by charging technology type.
- Consider installation issues, including potential locations and feasibility assessment placement considerations; maintenance and warranty.
- Review costs, including capital (excluding delivery and installation) and revenue (indicative).
- Consider funding options and availability including - OLEV and commercial partnership options;
- Consider commercial/operational models including - an understanding of business models around direct sale of energy through on street charging points;
- Consider the procurement - options appraisal and recommendations emerging;
- The development of a Draft Action Plan.

Improving Cardiff's Air Quality - Meeting 7 – Clean Air Zones & Scrutiny Research - Tuesday 12th December 2017

Part 1 - Scrutiny Research – Gladys Hingco from Scrutiny Research attended to brief Members through the findings of her research into the implementation of ‘Clean Air Zones’ and the emission standards of Cardiff’s public sector fleet.

Key Findings

- The Environment Scrutiny Committee commissioned a research report to identify current initiatives and arrangements that selected cities have adopted to achieve improvements in air quality. The report focused on initiatives and measures introduced by selected local and transport authorities to reduce levels of nitrogen dioxide emissions and Particulate Matter (PM10). In the UK, this research examined the work in improving air quality in London and its Boroughs as well as initiatives that were implemented in the cities of Nottingham and Manchester. More specifically the report focused on best practice initiatives in implementing Low Emission Zones; the procurement of clean cars and transport; the use of economic incentives and disincentives such as congestion charging, parking management approaches and improvements in modal shift. The document is titled ‘Improving Air Quality Initiatives – Best Practice Examples’ and is attached to this report as **Appendix 5**. This section of the report highlights the key findings identified in this piece of research.

European City Ranking

- The European City Ranking report examined various initiatives to improve air quality in European city capitals. In 2015, their evaluation work reviewed initiatives in 23 key cities in Europe. The city which has achieved the highest ranking for improving air quality for that year was Zurich, closely followed by Copenhagen, Vienna and Stockholm. Although the City

of London ranked 7th in 2015, this latest ranking is a significant improvement from the previous review in 2011. **Diagram 23** shows the ratings and achievements of the twelve highest ranked cities in 2015.

Diagram 23 - Top twelve ranked European cities in terms of delivering initiatives for managing air quality in 2015

City	Overall Mark	Emission Reduction Success	Low Emission Zones and bans of High Emitters	Public Procurement	Non-Road Mobile Machinery	Economic Incentives	Mobility Management and Modal Split	Promotion of Public Transport	Promotion of Walking and Cycling	Participation and Transparency
Zurich	7B+ (89%)	++	0	++	++	+	++	+	+	++
Copenhagen	7B (87%)	+	0	++	+	+	++	++	++	+
Vienna	7B (84%)	++	0	+	+	+	++	++	+	+
Stockholm	B- (80%)	0	0	0	+	++	+	++	++	+
Berlin	C (76%)	0	++	++	+	0	+	0	0	+
Helsinki	7C-(71%)	++	0	0	--	0	++	++	+	0
London	7C-(71%)	-	0	+	+	+	0	++	+	0
Paris	7C-(71%)	--	+)	-	+	++	+	++	+
Stuttgart	C-(71%)	0	++	+	--	+	+	+	0	+
Amsterdam	D+(69%)	+	-	0	-	+	0	+	++	+
Graz	D+ (69%)	0	0	0	0	0	0	++	+	+
Dusseldorf	7D (7%)	0	++	0	0	-	0	0	+	+

- **Diagram 23** sets out the top twelve ranked European cities in terms of delivering initiatives for managing air quality in 2015. Zurich is the best performing city and scores 89% - the overall mark is based on it performing well in areas such as emission reduction success; low emission zones and bans on high emitters; public procurement; non-road mobile machinery; economic incentives; mobility management and modal split; promotion of public transport; promotion of walking and cycling; participation and transparency. The only United Kingdom city to feature in the top twelve is London which scored 71%. It is clear from the table and following evidence that the best performing cities have been working to improve air quality for some time and that they have invested considerable resources into managing the air quality problem. In comparative terms these are wealthy cities - the list (excluding Frankfurt) contains five of the largest financial centres in Europe. German, Austrian and Danish cities are dominant in the list accounting for six of the twelve places – these are

countries that have received strong support from central government to improve air quality standards. In short, achieving quick improvements is expensive and generally requires financial support from central government.

- In reducing PM10 and nitrogen dioxide emissions, the Scrutiny Research report cited that the cities of Helsinki Zurich and Vienna had made significant improvements in this area. In Helsinki, the reduction in these pollutant indicators was partly attributed to the implementation of the low emission zone, while in Zurich this partly attributed to regulations around emission standards for old and new vehicles.

Low Emission Zones

- Low Emission Zones are often introduced to reduce particulate matter (PM10 and PM2.5) and nitrogen dioxide emissions. Minimum emission standards are set within these areas for vehicles that wish to enter the zone. Such schemes operate by regulating the entry (ban, restrict, charge) of highly polluting vehicles into the area.
- So far it is reported that there are as many as 225 active or planned low emission zones in Europe. In the United Kingdom, there are only two low emission zones, the biggest covering most of the Greater London area. In Europe, the cities of Stuttgart and Berlin are reported as leading practice in implementing Low Emission Zones. 55 of the 225 low emission zones are in Germany – principally because central government has prioritised the matter, issued clear guidance and provided financial support.
- The LEZ s in Berlin and Stuttgart as with others in Germany are also referred as Green Environmental Zones. These environmental zones only allow traffic for vehicles bearing a green environmental badge i.e. vehicles that meet the minimum EURO 4 or better emission standards. This stricter regulation has been inforce since January 2017. The restriction to traffic apply all the time irrespective of whether the levels of air pollution are higher or lower at any one time. Vehicles that drive as well as stop and

park in an environmental zone without a valid environmental badge, will be fined 80€ plus an additional 25 € to cover administrative fees.

- It is also planned that traffic restrictions for diesel vehicles will be introduced in selected German cities including Berlin, Hamburg, Munich, Leipzig and Stuttgart by 2018. These “diesel restriction zones” or “blue environmental zones” and is intended to regulate traffic of diesel vehicles depending on their emission rate of nitrogen dioxide.

Low Emission Zone – Berlin

- The environmental zone in Berlin covers 88 km² and was introduced in 2008. Significant reductions were seen in the level of PM10 and nitrogen dioxide following the introduction of the measure. Reports have cited that the introduction of the scheme had no measurable impact on traffic flows in Berlin. However, this scheme is credited for speeding up the turnover of vehicle fleet towards more cleaner vehicles and is regarded as a significant factor to the change in composition of vehicles in the area.
- The Berlin Low Emission Zone restricts entry by only allowing vehicles with EURO 4 or better emission standards into the area. All vehicles entering the city need to display a green environmental badge – failure to adhere to this will generate a non-compliant fine of 80€ plus an administrative charge 25 €. In addition to this Berlin is planning to introduce “diesel restriction zones” or “blue environmental zones”. The results to date measured against the baseline figures have achieved reductions in PM by 58% and nitrogen dioxide by 20%. There has been no measurable impact on traffic flows in Berlin following the introduction of the Berlin Low Emission Zone, but there has been an increased vehicle turnover in favour of cleaner or low emission vehicles. In 2012 around 96% of diesel cars and approximately 85% of all trucks had a green sticker.

Low Emission Zone & Congestion Charging - Milan

- Milan has adopted a combined Low Emission Zone and congestion charging. The measure was trialed in 2008 and was fully implemented in

2012. The scheme in Milan differs to the environmental zones in Germany in charging petrol and diesel cars entering the zone. Entry to the zone is forbidden for pre-EURO gasoline vehicles and for pre-EURO, EURO1 and EURO2 diesel vehicles. The entry fee for vehicles that meet emission standards is €5. The restriction applies every working day (Monday-Friday) from 7:30am-7:30pm with shortened hours on Thursdays from 7:30 am to 6:30 pm to encourage weekday shopping activities. The area is free to access (no charge) on weekends and public holidays. The payment allows users to travel for the whole day in the charged area. Electric vehicles, hybrid vehicles, bio-fuel natural gas vehicles and scooters, public utility vehicles are exempted from the charge.

- The implementation of the measure in Milan led to significant reduction in PM10 (~19%) and nitrogen dioxide (~14%) levels. The scheme also led to a significant reduction in traffic volume with the average number of vehicles that entered Area C declining by 34%. The number of polluting vehicles entering the area also declined by 49%. The number of cleaner vehicles entering the area has increased from 9.6% to 16.6% of total vehicles entering the area.

Low Emission Zone - London

- In London, the Low Emission Zone was introduced 2008. Unlike the low emission zone in Milan and Berlin, this measure only applies to all heavy goods vehicles greater than or equal to 3.5 tonnes (for example, diesel lorries, buses, coaches, motor caravans, motorised horseboxes, larger vans, minibuses and other specialist vehicles) so that cars and motorcycles are not affected by this regulation. From 2012, heavier goods vehicles including buses have to meet Euro 4 emission standards and Euro 3 for heavier vans and mini buses. All heavy goods vehicles in these categories that do not meet the required emissions standards have to pay a daily charge. The charges range from £100 - £200 depending on vehicle category and weight. The low emission zone covers most of the Greater London area. It operates 24 hours a day, every day of the year, including weekends and public holidays. Charging days run from midnight to

midnight. Similar to the impact of low emission zone in other cities in Europe, the scheme in London has also led to reduction in PM10, nitrogen dioxide and black carbon. It is estimated that this Low Emission Zone has reduced emissions of PM10 by 1.9% (28 tonnes) and nitrogen dioxide by 2.4% (26 tonnes).

Ultra Low Emission Zone - London

- The Ultra Low Emission Zone was planned to be introduced in 2020 but will instead come into force in Central London in April 2019. The Ultra Low Emission Zone will replace the “toxicity charge” T-charge, that was recently introduced. The Ultra Low Emission Zone will cover the same area as the Congestion Charging Zone in London. It is also planned that in 2020, Ultra Low Emission Zone could be further expanded to cover nearly all of Greater London for heavy polluting buses, coaches and lorries. Starting April 2019, all vehicles will need to meet exhaust emission standards (Ultra Low Emission Zone standards) or pay a daily charge when travelling in central London. With the implementation of this measure, the minimum Euro standard for Motorcycles is Euro 3 and for petrol cars and light utility vehicles not exceeding 500 kg, the minimum standard will be Euro 4. For diesel cars and vans, Euro 6 and for lorries and busses the requirement is Euro VI. The daily charge for non-compliant smaller vehicles is £12.50 and £100 for buses and lorries. These charges are in addition to the congestion charges in London and the Low Emission Zone requirements.

London Toxicity Charge & Zero Emissions

- The London Toxicity Charge or T-charge came into force on 23 October 2017. The charge was introduced to further improve air quality within the capital and to prepare Londoners for the Ultra Low Emission Zone that will be introduced in 2019. The T- charge costs £10 per day and is payable on top of the London Congestion Charge and applies to all vehicles that do not meet the current emission requirements within the zone. For petrol and diesel vehicles the minimum standard required is Euro4 and Euro 3 for motorised tricycles and quadcycles. There are no charges for motorcycles.

- It is also intended by Transport for London that the entire road transport system in London will be zero emission by 2050 at the latest. Zero emission zones will be introduced in Central London and town centre zero emission zones from 2025, with a view of achieving this zero emission zone for inner London by 2040 and a London-wide zone by 2050.

Low Emission Neighbourhoods - London

- Another scheme that has been introduced via the Mayor of London's Air Quality Fund is the Low Emission Neighbourhood. This is defined as an area-based scheme that includes a package of measures delivered within a specific area and is focused on reducing emissions and promoting sustainable living locally. This scheme is currently being implemented in five areas across different Boroughs in London. This scheme is focused on areas of high exposure to high pollution which can be reduced through local measures, and locations with high trip generation. The measures associated with Low Emission Neighbourhoods are less suited to areas where the high pollution levels are restricted to a single road, especially if through-traffic is a large source of emissions. Key to the success of Low Emission Neighbourhoods is the partnership and involvement of the local community, businesses and the local authority to jointly identify and deliver a common set of goals. The Mayor of London has provided £1m in funding to each of the five Low Emission Neighbourhoods to support the measure and a range of initiatives.

Marylebone Low Emission Neighbourhood

- The partnership between Westminster City Council and local stakeholders, including businesses, landowners and residents gave rise to the Marylebone Low Emission Neighbourhood. The Low Emission Neighbourhood implements a range of innovative projects to improve air quality throughout the area including encouraging behavioural changes that directly reduce emissions. This includes projects that involve working with major landowners to improve emissions from buildings, better management and reduction of freight movement and service vehicles

entering the area, for example, by consolidation of deliveries and use of shared supplier scheme. The scheme also implemented on street parking charges that mean vehicles are charged according to their emissions level when parking in on-street pay and display and residents' bays. This measure intends to encourage use of electric vehicles and discourage more polluting vehicles. The Council has also commenced the trial for a 50% parking surcharge for all diesel vehicles in certain locations in area (for example, in the Hyde Park, Marylebone and Fitzrovia areas typical parking charges increased from £4.90 to £7.35). The Low Emission Zone is also working with the taxi industry to improve the management of taxi ranks through the use of parking sensors that provide taxi drivers with real time information of the location of available taxi rank spaces. The Low Emission Neighbourhood scheme is also working with taxi drivers and local hospitals to reduce unnecessary vehicle idling in the Westminster and Marylebone area. Air Quality champions were recruited to encourage drivers to stop vehicle idling and inform them of its harmful effects. They will be empowered to enforce unnecessary vehicle idling via a penalty charge notice. The scheme will also include a pilot to provide on-street electric vehicle charging points, a schools emissions engagement scheme and focus on children's play activity through temporary street closures.

Manchester Air Quality Strategy

- The Transport for Greater Manchester has developed the Greater Manchester Low-Emission Strategy and Greater Manchester Air Quality Action Plan – their approach was identified as best practice at the UK Clean Air Day 2017. These identify key priority areas and commitments in improving local air quality. A key priority is to increase the take up of electric vehicles and alternative fuel vehicles. The authority hopes to achieve this by providing incentives and by setting emission standards and restricting vehicle access to specific areas. It is also committed to increasing the number of publically available charging points (with an initial implementation of 200 and an aim to eventually reach 700) and increasing the number of low emission vehicles within the public sector via joint procurement schemes. Transport for Greater Manchester will work with

licensing authorities to standardise the minimum emission requirements of the vehicles that are allowed to operate and the standards that will operate in future years. The strategy is also committed to reducing freight emissions by shifting freight to Urban Distribution Centers'. This will allow loads to be broken down for final delivery via low emission vehicles. It is also planned that local consolidation centers will be set-up so that courier services and small deliveries are coordinated to avoid multiple delivery providers from visiting same premises. The strategy also supports the take-up of zero emission transport refrigeration and will promote anti-idling policies with freight transport companies. Transport for Greater Manchester will work with bus companies to ensure that they sign-up to targets for improving emission standards and in implementing practical measures such as the deployment of buses with the lowest emission in areas with the highest pollutant concentrations. The Transport for Greater Manchester will also continue to work with bus operators to roll out the bus electrification scheme, to encourage the use of new technology (such as geofencing control systems and exhaust abatement technology) and to support a driver training initiative for drivers of hybrid buses.

- Transport for Greater Manchester will also explore the feasibility of establishing a Low Emission Zone in the Greater Manchester area, as well as the implementation of the 20mph zones in areas where this will have significant impact on emissions. Finally, Transport for Greater Manchester will work with the planning authorities to develop common guidance and toolkit for assessing proposals to support the identification of appropriate mitigating measures, for example, electric vehicle charging points, access to public transport or sustainable transport.
- Other initiatives included in the action plan are to set ULEV specifications for all car club vehicles; to work with licensing authorities (across the Greater Manchester area) to standardise the minimum emission requirements of taxi vehicles and the retrofitting of yellow school buses.

Procurement and Retrofitting of Vehicle Fleet

- One of the key measures that many cities are working on is to improve emission standards of their fleet is through the retrofitting of older vehicles with diesel particulate filters and investment in vehicle fleets that use electric and sustainable fuels. Leading in practice is the city of Berlin which has adopted a policy for using green air technology. More than 50% of diesel vehicles are equipped with particulate filters or meet the Euro V/EVV standard. Similarly, the city of Copenhagen aim to make its public transit carbon neutral. So far, the city has acquired 255 electric vehicles and has attained its goal that 85% of the municipality's own vehicles are electric, hydrogen or hybrid powered. The city of Zurich has introduced regulations that require the strictest Euro standards for new vehicles and have also planned for the extensive retrofitting of its older vehicles. The city is working to increase usage of electric vehicles in its sustainability plans. The cities of Zurich and Copenhagen provide a host of financial incentives and infrastructure to support the use of electric vehicles through reduced taxation or exemptions from vehicle tax and increasing availability of charge points.

Congestion Charging Zones

- Some cities have implemented congestion charging schemes to restrict the number of vehicles entering a specified area to reduce traffic volume and improve environmental conditions including air quality. Such a scheme was introduced in Stockholm in 2006 in the form of congestion tax. The tax applies to cars, lorries and buses while there are exemptions for emergency vehicles, buses, diplomatic vehicles, disabled persons vehicles, military vehicles, hybrid or electric cars, motorcycles and mopeds. The amount charged varies depending on the time of day that the driver enters or exits the congestion tax area. Generally, the cost is higher during periods when traffic is heaviest. Unlike other congestion charging schemes, the scheme in Stockholm charges vehicles on both entry and exit of the affected area. A limit is set (£9.35 or 10.54 Euros) for the amount that a vehicle can be charged per day. The charges do not apply

on Saturdays, Sundays, public holidays or the day before public holidays, in the month of July, nor during the night-time period (18:30 - 06:29). The vehicle owner is expected to pay the charges at the end of the next month. The scheme served as an effective stimulus for the adoption of alternative fuel cars. Following the introduction of the measure, the number of alternative-fuel cars increased from 3% in 2006 to 15% in 2009. The exemption was abolished in 2009 as the authority believes that the scheme had filled its role as a facilitator for market introduction. On the whole the scheme led to a reduction in traffic level (22%) and the reduction in congestion has led to increased in reliability of travel time and travel times have declined substantially inside and close to the inner city. The reduction in traffic also led to reduced emissions of between 10-15% across different types of emissions. There was also no adverse impact on retail as was initially feared. The number of passengers in the transit system has also increased because of the scheme.

- A key obstacle to congestion charging is often the support and acceptability of the scheme. The experience in Stockholm is an example in a change in the attitude and support of the public on issue or a measure that needed acceptance and support. In this case the attitude changed from fairly hostile to overwhelmingly positive. The experience in Stockholm supports the hypothesis that “familiarity breeds acceptability”, i.e. that once a system is in place, support will generally increase or build up as the benefits and advantages of the scheme become more evident.

London Congestion Charging

- The world's first congestion charging scheme was introduced in Central London in 2003. It aims to reduce congestion and encourage motorists to use other modes of transport. The daily congestion tariff is £11.50. This daily charge allows motorists to drive around, leave and re-enter the charging zone as many times as required in one day. The charge is in operation Monday to Friday from 07:00-18:00 and does not apply at weekends, Bank Holidays, public holidays or the period between Christmas Day and New Year's Day, when traffic levels are lighter. The

charges generate a significant source of revenue for Transport for London that is then invested to improvements to the bus network in London.

Although the revenue from the scheme make a significant contribution towards the London Bus network, questions have been raised whether this is a cost effective way of generating the money for investment in transport improvement and infrastructure. Similar to the experience in Stockholm, the ring fencing of income proceeds for improvements in transport facilities and infrastructure has increased its acceptability. Following the introduction of the scheme, there was decline in the level of automobile traffic, however the long-term impact of congestion charging to traffic levels have yet to be established. Studies have reported that the measure changed people's travel patterns in London and have increased the use of buses (14%) and the underground system. The introduction of the scheme also resulted in significant increase in traffic speeds within the zone and peak period congestion has also declined. Although the measure has brought many benefits, the system is not considered optimal because the fee charged is not based on how many miles a vehicle is driven within the charging area and is not time-variable as the fee is not higher during the most congested periods and lower during less congested periods.

- There are certain exemptions for the London Congestion Charging scheme, these include:
 - Cars or vans (not exceeding 3.5 tonnes) which emit 75g/km or less of carbon dioxide and that meet the Euro 5 standard qualify for a 100% discount;
 - Any car registered as new on or after 1 January 2011- Euro 5 standard;
 - Vehicles that are powered by 'electric', hydrogen or are defined as a 'plug-in hybrid'.
- The scheme has brought in a significant source of revenue for the Transport for London Authority, for example, £190m in 2004/5 and £268m in 2007/8. Questions have been asked about the cost effectiveness for

generating the money for investment in transport improvement and infrastructure. The scale of initial investment required was quite high and the operating costs have been reported as being approximately 40% of total revenue.

Singapore's Electronic Charging

- Singapore adopted a congestion charging scheme in 1975, referred to as an Area Licensing Scheme which required vehicles to have a special license to operate within specific areas. In 1998, the scheme was replaced by Electronic Road Pricing. This new system introduced electronic toll collection, electronic detection, and video surveillance technology. The in-vehicle unit communicates with detectors when passing under gantries and the respective charge is deducted from the driver's cash card. The amount varies by time of day (rush hour is two to three times more expensive), type and size of vehicle (taxis and passenger cars according to engine capacity, goods vehicles and buses and others) and the type of road (arterial and expressways).

Parking Management Schemes

- Parking management is used as a travel reduction strategy in many cities in Europe and the US. The reductions in car travel will reduce traffic congestion and will reduce transport emissions. Various parking schemes have been adopted to dis-incentivise motorists from taking private vehicles in their commute into the city. In Rotterdam, the parking scheme adopted by the Erasmus Medical Centre in Rotterdam required employees to pay for parking according to arrival time and gives credit for every kilometre not travelled by car if employee decides to take public transport.
- Improving user information as part of parking management will allow motorists to identify parking locations and prices so they can choose the best option for each trip. Some cities make use of advance parking management systems that provide motorists with real-time information to help them quickly find a parking space. Since 2011, the San Francisco Municipal Transportation Agency has implemented a comprehensive

smart parking system to help manage congestion. The system is demand responsive whereby rates may vary by location, by time of day and day of the week. With this scheme, parking rates would vary incrementally, depending on time of day and availability of spaces. In areas and at times of the day where it is difficult to find a parking space, rates will increase incrementally. However, in areas where open parking spaces are plentiful, rates will decrease until some of the empty spaces get filled.

- Some local authorities in the UK use charging for parking to help with their CO₂ reduction objectives. Richmond upon Thames Borough Council charges residents for parking permits according to the CO₂ emissions of the vehicle. The Council is considering extending this principle to charges at parking meters and in car parks. Edinburgh City Council has proposed to introduce a similar CO₂-related charge for residents parking permits.
- Nottingham City Council introduced the Work-place Parking Levy in 2012. It was intended that the Work-place Parking Levy scheme would serve as an incentive for employers to manage their workplace parking provision and encourage commuters to use public transport on their journey to work. The scheme generates significant revenue for the Council that is ringfenced to finance improvements in transport infrastructure and air quality in the city. The scheme works as a levy for employers who provide parking spaces for its employees. The local authority collects a charge for each parking place used by employees, certain types of business visitors, and pupils and students. The employer decides whether or not they would pass the charge on to their employees. Each employer that provides more than 10 parking spaces for its employees is required to obtain an annual licence for the maximum number of liable places they provide. The current charge for each workplace parking for this financial year 1 April 2017 to 31 March 2018 is set at £387. The Work-place Parking Levy generates around £9 million pounds a year for the City and since its implementation has generated over “over £44 million of revenue” with “100% compliance of liable employers”. The scheme is low cost to run as the operating costs only take up around 5% of the total revenue. It is considered more cost

effective scheme than the London Congestion Charge. The London Congestion Charge raises more money in absolute terms than the Work-place Parking Levy; however, it is regarded as less efficient due to more than 40% of total revenue taken up by operating costs. So far, the revenue from the Work-place Parking Levy has successfully leveraged £400m funding from central government to finance major transport infrastructure developments and improvements.

Reduction of Speed Limits

- Cities can also impact on air quality by reducing speed limits. Vehicle emissions are at its lowest at 30-50 km/hr. A number of cities have adopted 30 km/hr speed limits in residential areas (Zurich and Copenhagen) while Paris envisages reducing the 50km per hour limit to 30km/h across the central district in the future.
- The aim of the Clean Air Zone research was to identify current initiatives and arrangements that selected Cities have adopted to achieve improvements in air quality and review a range of documents available online.

Stockholm Congestion Charging

- All vehicles are required to pay the congestion tax in Stockholm. Exemptions are applied for electric cars, hybrid vehicles, mopeds and motorcycles. The amount charged varies depending on the time of day that the driver enters or exits the congestion tax area. The cost is higher when traffic is heaviest. Charges are applied to vehicles both on both entry and exit of the affected area – the scheme has set a maximum charge of 10.54 Euros. Charges do not apply Saturdays, Sundays, public holidays or the day before public holidays, in the month of July, nor during the night time period (18:30 - 06:29).
- The impact of the scheme has been positive with a 22% reduction in traffic levels; an increase in reliability of travel time; declining travel times;

reduced traffic emissions; no adverse impact to retail & business and an increase in patronage of public transport.

- The task & finish group also commissioned a second Scrutiny Research report titled 'Public Sector Vehicle Fleet in Cardiff – Comparative Figures'. A copy of this document is attached to this report as **Appendix 6**. The research was commissioned to look into the fuel and emission characteristics of vehicle fleets that are being operated in the Cardiff area by various locally based public sector bodies.
- The public sector bodies included for this research were Cardiff Council, Cardiff & Vale University Health Board, South Wales Fire & Rescue, South Wales Police Authority and Natural Resources for Wales. The findings of the research provided comparative information on the number, fuel type and age public sector vehicles that are currently in use.
- Key findings identified in **Appendix 6** include:
 - The organisations surveyed reported that they had 1,210 vehicles that were operating across Cardiff. This was broken down as – Cardiff Council 732; South Wales Police – 273; University Health Board – 120; Natural Resources Wales – 58; South Wales Fire & Rescue Service 27.
 - 1,137 from the total of 1,210 public sector vehicles reported as being used in Cardiff were diesel operated vehicles – this equates to approximately 94%.
 - Approximately 65% of the vehicles owned by the surveyed public sector organisations were registered between 2013 and 2017, i.e. they are less than five years old.
 - Only two of the public sector organisations surveyed were able to provide data on the Euro emissions ratings of their vehicles. Approximately 82% of Cardiff Council's vehicles were rated as Euro 5 or Euro 6.

Part 2 – Developing a Clean Air Zone in Cardiff – Councillor Caro Wild, Cabinet Member for Strategic Planning & Transport was invited to attend the meeting to discuss the feasibility of creating a clean air zone in Cardiff. He was supported by officers from the City Operations Directorate and Shared Regulatory Service.

Key Findings

- It was explained that the Council had held a meeting with representatives from the Welsh Government and DEFRA around addressing air quality issues in Cardiff. The meeting focused on what needed to happen next in terms of assessing the situation, modelling various air quality improvement options, the technical approach that needed to be followed and undertaking a feasibility study. In addition to this they discussed the need for additional resources to deliver the work as what was being proposed was far from business as usual. The task group was told that discussions had been positive and that they were awaiting a letter from the Welsh Government confirming the actions that need to take place and how these will be funded.
- It was stressed that timescales were very challenging and so exercises like an options analysis and a feasibility study would probably need to take place at the same time.
- The feasibility study would focus on options around delivering a clean air zone or low emission zone in Cardiff, while the options analysis would consider how much progress could be achieved ‘within the shortest time possible’ by developing options like active travel, parking measures, sustainable travel, electrical charging and planning.
- The task group were informed that they would be provided with a copy of the letter once it arrived. The task group was also told that there wasn’t much that the Council could do until they received the letter, other than

carry out some ‘soft market testing’ to establish the type of support available to deliver the work and the companies in the market with the relevant expertise.

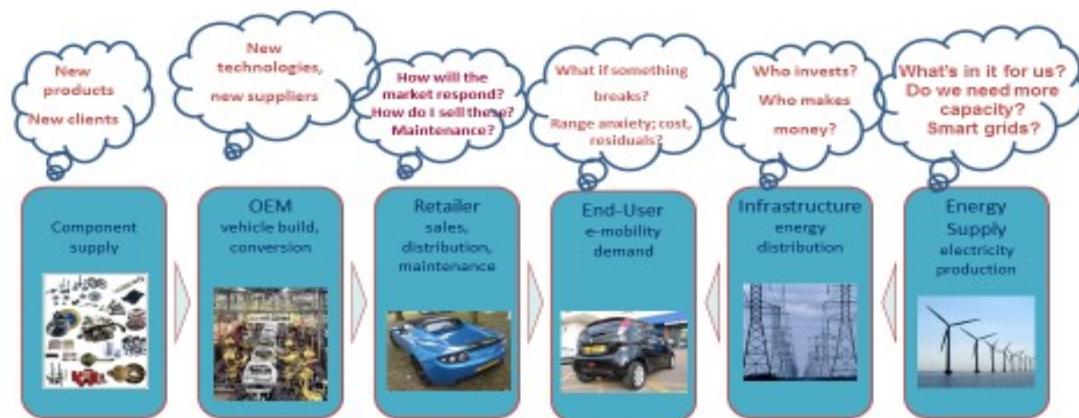
'Improving Cardiff's Air Quality' - Meeting 8 – Sustainable Fuel for Vehicles & Cardiff BID - Wednesday 20th December 2017

Part 1 - Dr Paul Nieuwenhuis from Cardiff University – He was invited to brief the task group on the continually evolving market for sustainable vehicle fuel and the potential impact that this could have on cities like Cardiff. This included a discussion on key areas such as growing infrastructure, scaling the use of new fuels and the introduction of associated technologies.

Key Findings

- The presentation started by explaining that electric vehicles are older than either petrol or diesel cars and the first ones date back to the 1840's. It then questioned why they had not taken off and provided a number of suggestions explaining why this was the case. Some of the explanations provided are set out in **Diagram 24**.

Diagram 24 – Risks at all stages along the value chain



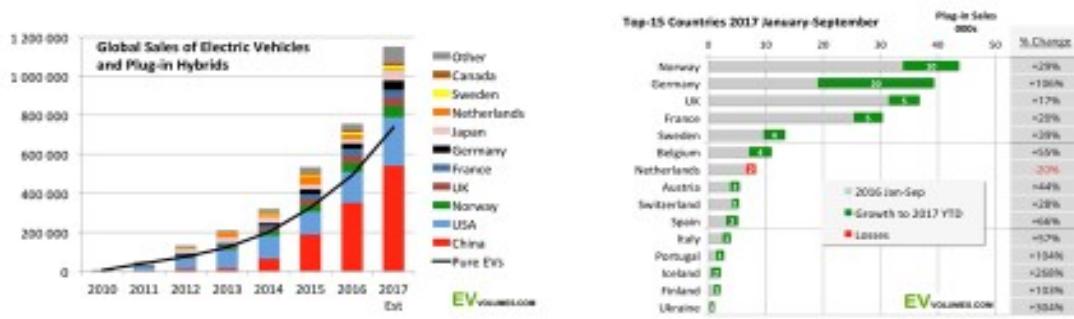
Risks at all stages along the value chain that impede transition from IC to EV

- It was explained that the car industry doesn't really talk to oil / fuel industry. The new model is very different from the previous combustion approach in that renewable energy can be produced everywhere and you don't need to be an oil or fuel company to produce fuel for low emission vehicles – this will become a complete game changer across the value chain. For example, fuel production will be possible from a much wider range of suppliers (including potentially the car manufacturers).
- The battery in a vehicle is worth half the value of the car, for example, if the car costs £30,000 then the battery would cost £15,000 to produce. Until the battery (or fuel cell) costs fall then this evolving technology will need to be subsidised.
- The first car to reach 100 miles per hour was a steam vehicle; the first car to reach 100 kilometres per hour was an electric car.
- Electric charging will never be as quick as petrol, diesel or hydrogen. A rapid charge will typically take 20 to 30 minutes, but the trip range will be no more than 100 miles. Hydrogen fuelled vehicles can be fuelled in less than a minute and have a 300 mile plus range.
- Recent growth in the global sales of electric vehicles and plug in hybrids has been very quick. In 2017 approximately two thirds of the sales of such vehicles were in China and United States. The United States has two separate emissions standards, the United States National Standard and the California Standard. The California Standard is much stricter, however, in recent years other states have started moving across to this new standard and the desire to reduce vehicle emissions increases.
- **Diagram 25** illustrates the sharp increase in electric vehicle and plug in hybrid sales between 2010 and 2017 (estimated). Sales increased from virtually none in 2010 to 1.2 million in 2017 (estimated). **Diagram 25** also includes a secondary chart that illustrates the top 15 European countries in terms of electric vehicle plug in sales for the period January to September

2017. It is clear from the diagram that sales increased rapidly in all but one country (the Netherlands). Norway was responsible for the greatest number of sales, while Germany saw the biggest percentage increase (20%). The German increase is attributed to the roll out of low emission zones across the country, clear Central Government policy / financial support and the Volkswagen diesel scandal.

Digram 25 – Increasing trends in electric vehicle sales

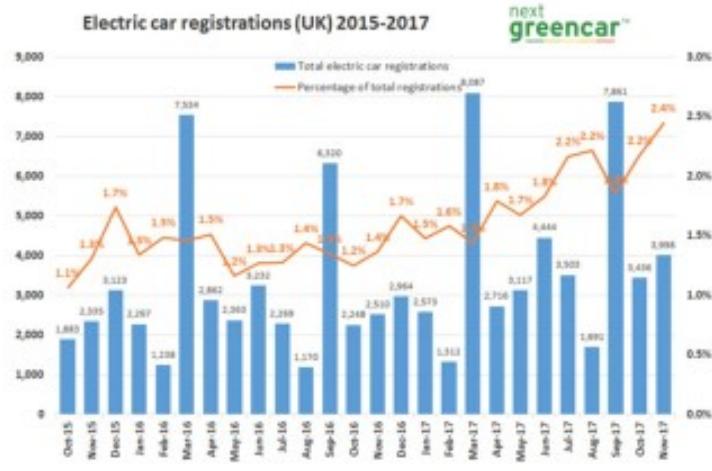
Recent years have seen a massive increase in EV sales:



- The country with the highest overall market share for low emission vehicles is Norway, this is probably due to the fact that they have been subsidising such vehicles for many years. The United Kingdom also offers incentives for low emission vehicles, for example, £5,000 is available towards the purchase of a new low emission vehicle and they are exempt of road tax.

Diagram 26 – United Kingdom Electric Vehicle Sales 2015 to 2017

UK EV sales 2015-17



Source: Society of Motor Manufacturers and Traders, November 2017.



Paul Nieuwenhuis EVCE 2017

1

- **Diagram 26** illustrates the growth of electric vehicle sales in the United Kingdom relative to overall registration for the period October 2015 to November 2017. Over the period electric vehicle registrations as a percentage of total registrations increased from 1.1% in October 2015 to 2.4% in November 2017. It was explained that a 5% market share (estimated to be reached in 2020) is the magic number in terms of starting to achieve economies of scale.
- In terms of taking a reality check it is important to remember that take up of electric vehicles in the public sector is crucial to help drive demand, and that electric vehicles still need to be a part of an incentive-driven market. Norway is the market leader in terms of overall percentage of people using electric vehicles - they have approximately 20 years experience of private electric vehicle use. Like all electric vehicle markets, the Norwegian market is incentive-driven, for example, electric vehicles are able to enter Oslo for free; they are allowed bus lanes; they can access free parking; free charging points are supplied and there is no sales or road tax. Tax on

a car purchase in Norway is typically 45% - there is no tax on an electric vehicles.

- Electric charging cables can be a health and safety issue, for example, there is a trip potential attached to the cables and the power coming down a charging line can be considerable (particularly for a Tesla vehicle).
- Dr Nieuwenhuis went on to suggest a number of possible air quality improvement options for Cardiff, these included:
 - **Public Charging Points** - Currently Cardiff only has private charging points in car parks (for example, NCP and IKEA) and dealerships (for example, BMW, Nissan, Renault). There are no public charging points - just a few would raise profile of electric vehicles and show support.
 - **Convert Council Fleet to Electric Vehicles** - Expensive initially; the running costs lower; most of Cardiff would be well within range; there would be an air quality benefit. An increasing number of private fleets (for example, DHL & UPS) are moving to electric vehicles.
 - **Convert Cardiff Bus to Electric or Fuel Cell buses** – They currently don't have any, so only having one show case bus would be a good start. They would contribute to a significant air quality improvement, for example, BYD e-buses are in operation in London; fuel cell buses have been in operation for years in Vancouver, Perth, Chicago, Amsterdam, London & Reykjavik.
 - **Promote Electric Taxis** - Public charging points could attract electric taxis, for example, as seen in Dundee. This would help air quality improvement.
 - **Attract Electric Vehicle Car Club** – For example, Autolib and Car2Go. The advantage here is that they will cover most of the cost, provided infrastructure needs are met. A note of caution here, they are generally more justifiable in cities larger than Cardiff.

- **Ban Internal Combustion Vehicles from the City Centre** – This would be a longer term option, so no immediate impact. It could be used as an opportunity to gradually expand the pedestrianised zone in the city centre.
- **Seriously Promote Cycling & E-bikes** - Cheapest option, but takes away road space from cars, trucks, buses. E-bikes are the world's most common form of electric vehicle.
- Some early local authority installers of electric vehicle charging points have come unstuck at the rapid development of the technology, for example, the charging plugs used have become outdated and are no longer suitable for use on the modern electric vehicles.
- BYD-ADL are the biggest manufacturer of e-buses in the world and operate an e-bus in London. They are close to the point of mass-producing this type of vehicle. A BYD-ADL e-bus is twice the cost of a regular petrol or diesel bus.
- The batteries for electric vehicles have become efficient, however, making and disposing of the battery has a very high cost implication.
- The Munich programme that was launched in 1999 used a BMW powered liquid hydrogen vehicle which was designed as a demonstrator model to illustrate how the technology could be used. Vancouver has a trolley bus that is powered on electric – Cardiff used to have a similar tram system.
- There are no low emission buses in Wales. On several occasions during the meeting it was felt that Cardiff Bus would be an ideal candidate for a low emission bus – either electric or hydrogen fuelled. Introducing a hydrogen bus could act as a catalyst to support the introduction of the first hydrogen refuelling centre in Cardiff.
- Two interesting quotes relating to electric vehicles were provided during the presentation, these were:

- “*The petroleum spirit cab will never be a practical proposition in large towns*” - (Hospitalier, 1898, quoted in Nieuwenhuis, Cope and Armstrong (1992)The Green Car Guide, p88).
 - *Before 1900 most taxis in big cities were horse-drawn or EV. By 1900 1 in 3 cars sold in the US was an EV; many of these were taxis!*
- Several examples of cities using electric taxis were quoted during the meeting, for example, the BYD taxi in Brussels and the Tesla taxi that is used in Stockholm. Closer to home the city of Dundee in Scotland now run their entire taxi fleet on electric.
- Other suggestions made that could increase the introduction of low emission cars into the city included:
 - To raise public profile of any of your measures currently being delivered;
 - Or to inform colleagues about the same measures;
 - Inviting Green Fleet to do a launch event or an information event in Cardiff. Similar events have taken place in Dundee, Manchester, Bristol... Such events can help raise awareness on low emission vehicles and act as a catalyst to launch other private and public investments in this type of technology.
- The presentation explained that a major shift is taking place in terms of the type of vehicles that we use, examples included:
 - The shift towards using renewables to generate energy and fuel...;
 - This shift means that EVs make even more sense;
 - It is anticipated that access to electricity will be greater than to petrol and diesel;
 - And Wales is well placed as a potential renewable energy powerhouse.
 - Hydrogen is already used to store energy from renewables at times of peak supply but low demand in Germany.

- With Welsh renewables this is also an option and could potentially make Wales a clean hydrogen fuel hub – this is perfect for Welsh firm Riversimple.
- It was explained that Wales is potentially a Low carbon powerhouse because:
 - It is perfect for on shore and off shore wind; not bad for solar; good for micro-hydro and excellent for tidal. Many years after coal, Wales could once again become an energy exporter.
 - But a strategy is needed to build the necessary infrastructure (wind, tidal) and to promote the dispersed rural energy solutions (solar, micro-hydro). Key steps include attracting investment in EV/H2; ensuring that EV charging infrastructure is put in place and promoting / supporting new business models.
- 80 million cars a year are produced worldwide. In the long term this is not environmentally sustainable and so future vehicles will need a longer lifespan. Disposal will also be an issue as the battery is the big polluter.
- New battery technology allows for rapid battery charging. As we have not implemented any electric charging infrastructure in Wales there is no legacy to update or replace, this could be an advantage.
- Five years ago there were three separate charging systems and no crossover to allow all electric vehicles to share common charging points, this problem has reduced and common charging solutions have become available. The main divide now appears to be Japanese and non-Japanese charging solutions.

Part 2 - Professor Alan Guwy from the University of South Wales – he
briefed the task group on use of hydrogen as a sustainable fuel for vehicles.
This included discussion on recent developments in the field; the Baglan
Hydrogen Centre and key challenges and opportunities facing this evolving
technology.

Key Findings

- The University of South Wales Hydrogen and Fuel Cell Research & Development scheme addresses a range of energy and transport challenges, these include:
 - Production of hydrogen – electrolysis, biological, thermochemical;
 - Hydrogen storage – novel storage materials;
 - Fuel Cells – PEM, SOFC and Microbial;
 - Hydrogen vehicles and fuelling infrastructure;
 - Recovery of hydrogen from industrial streams;
 - Hydrogen and an integrated gas and electricity system;
 - Hydrogen and Fuel Cell economics and environmental Impact.
- In 1839 William Grove invented the gas voltaic battery, the first fuel cell. Reversing the electrolytic separation of water, he recombined oxygen and hydrogen to produce electricity and water. William Grove is a Welshman from Swansea. His invention was the forerunner of the modern fuel cell. William Grove's experiments were conducted within 5km of the University of South Wales Hydrogen Research Centre.
- Hydrogen for Energy Storage Research & Development - The University has a major applied research & development programme investigating hydrogen by electrolysis. It is also developing industrial scale alkaline and PEM electrolysis test beds (1550kW) with a focus on interaction with renewable electricity production.

- The University of South Wales collaborates with industrial partners in prototype testing and product development. In addition to this the University of South Wales has solid oxide electrolysis and biochemical electrolysis laboratories at the Pontypridd campus. These facilities are used to explore the options of converting electricity to hydrogen and providing short and long term energy storage.
- Electricity Network Constraints – The United Kingdom target is for 15% of all energy to come from renewable sources by 2020. In addition to this there is an EU target of 27% of all energy from renewables by 2030, but not clear how United Kingdom exit from the European Union will affect the United Kingdom target. Connecting new generation changes power flows on network, and so variable renewable electricity generation can challenge the stability of the electricity network, for example, voltage rise due to current flowing across resistance in wires, or thermal constraints from resistive heating due to current flowing across the resistance. This has presented a major challenge to new renewable generation as networks need to be upgraded to accept the increased current flows.
- Electrolysis of Excess Renewable Electricity - Hydrogen as storage solution to overcome electricity network constraints. Known as 'power-to-power' it relies on rapid response electrolysis and fuel cells for regeneration of electricity.
- Hydrogen Recovery and Enhancement – The ~University of South Wales has extensive industrial and academic experience in steam reforming and adsorption / membrane separation systems. It acted as a test reformer at the Port Talbot Hydrogen Centre following a collaboration with Shell. In doing this it researched the complex syngas streams and biogas/bioliquids produced as by products from the steelworks, particularly investigating how this process can be used to maximise hydrogen production.
- Hydrogen and Fuel Cell Vehicle Research & Development - The University of South Wales has supported industrial hydrogen vehicle development and deployment for 10 years. Hydrogen refuelling stations at Port Talbot

and Pontypridd have been developed as a result of such work. This expertise has been used to provide advice for the development of Honda Swindon and Bristol hydrogen refuelling stations.

- The Riversimple car (which is linked to the University of South Wales project) can be refuelled in less than a minute – it has the capacity to hold 1 kg of hydrogen fuel. The vehicle is capable of covering over 300 miles on one kilogram of hydrogen. The Baglan Hydrogen Centre produces 80 kg of hydrogen a day using renewable energy (from a relatively small number of solar panels). This means that each day the plant produces enough hydrogen to power the Riversimple vehicle for over 24,000 miles – or 8.76 million miles a year (the equivalent to more than eleven trips to the moon and back).
- **UK Government Vision & Support for Fuel Cell Vehicle Deployment -** Recognising the role of transport in reducing emissions, the United Kingdom Government's vision is that by 2050 almost every car and van in the United Kingdom will be an ultra-low emission vehicle. This puts the United Kingdom at the forefront of their design, development and manufacture, making it one of the most attractive locations for ULEV-related inward investment in the world. The United Kingdom Government believes that Hydrogen fuel cell vehicles (FCEVs) will feature alongside plug-in hybrid and battery electric vehicles in delivering zero carbon dioxide emissions at the tail pipe.
- Creating a United Kingdom Hydrogen Refuelling Infrastructure – H2 Mobility is a collaboration between the United Kingdom Government and industry to evaluate and plan the development of hydrogen refuelling stations in the United Kingdom. The 2013 evaluation led to a phased plan for the introduction of hydrogen stations and hydrogen volume requirements to support FCEV deployment. The wider aim is for full coverage of the country in 2030's.

- The presentation provided the following information about hydrogen refuelling stations in the United Kingdom:
 - 14 existing hydrogen refueling stations in UK close to most (not all) major centres of population
 - 6 Stations at University sites, supporting R&D and demonstration – capacity generally <24kg/day
 - 8 industrial stations with higher capacity 50-100kg/day
 - Half of the existing hydrogen stations have on-site production (mostly electrolysis)
 - Port Talbot, Sheffield and Swindon stations are mostly fed by renewable electricity (Projected FCEV sales and Hydrogen Station deployment in UK wind and solar).
- **Projected FCEV sales and Hydrogen Station deployment in United Kingdom** - Projections assume convergence of vehicle costs, i.e. FCEV prices are same as petrol or diesel vehicles by 2030. It is predicted that early stations will be small, but stations will increase in size as demand grows.
- The presentation questioned the future of hydrogen production and asked if it would be achieved through a centralised or distributed production approach? In doing this the presentation identified that:
 - Existing United Kingdom industrial hydrogen market is approximately 690,000 tonnes per year;
 - Production is generally from hydrocarbon reforming and as an industrial by product;
 - Markets include chemical and petrochemical, metals, electronics and food industries;
 - Distribution is mostly on-site or ‘over-the-fence’ by pipeline (c.94% of demand);
 - c.6% is distributed via (road) tube trailers;
 - < 0.1% of total market is currently used for vehicle application;

- Potential shift towards smaller scale, on-site production of hydrogen to suit the growth of hydrogen refuelling stations;
 - Unlikely to replace all centralised production but economics will dictate the spread of distributed hydrogen stations;
 - Anticipated dominant technology of electrolysis for refuelling station production, but may also include de-centralised reforming;
 - Projected hydrogen demand for vehicles is 254,000 tonnes per year by 2030. This is a significant growth from the existing quantity of distributed hydrogen production of < 1,000 tonnes per year.
- Creating a Market for 'Green' Hydrogen – United Kingdom Government recognise that meeting 2050 decarbonisation targets will require innovative approaches, including hydrogen for energy and transport sectors.
- The presentation commented on the following United Kingdom Hydrogen Refuelling Stations:
 - **Sheffield & London Teddington ITM Power** - Originally built in 2009, the Sheffield site was upgraded in 2015 to house an 80kg/day refuelling station with 350 bar and 700 bar capability. The London station is also a 80kg/day and facility and opened in May 2016. Production is on-site by an ITM PEM electrolyser, which is fed by a 225kW wind turbine (Sheffield) and grid electricity (London). The Sheffield station is situated near to the M1 motorway and is supported by the European H2EME project, which aims to deploy 200 FCEV in Europe by 2019 - including partner projects in 10 European countries. The London Station is part of the European funded HyFive project.
 - **H2 Aberdeen** - Opened in 2015, the Aberdeen refuelling station is the first hydrogen bus refuelling station in the UK to have onsite production. Three onsite alkaline electrolyzers can produce up to 400kg/day. As well as ten fuel cell buses, the site also fills fuel cell and hydrogen combustion engine vans. The development cost £19million

and was funded by EU, UK and Scottish governments. Further enhancements are planned in the area in 2017.

- **Swindon - Honda** – It was originally built in 2011 by BOC Linde on Honda's Swindon manufacturing site. It was funded by the regional business agency and initially the station relied on imported hydrogen, but was capable of refuelling at 350 and 700bar. The hydrogen refuelling station was upgraded in 2014 to include full on-site production via electrolysis which is fed by solar PV cells at the factory. Access to the station is currently being improved to allow third parties and the public to use the facility. Honda operate FC fork lift trucks on the site and Swindon Council and Commercial Group regularly refuel their hydrogen vans at the site.
- **Introduction of Fuel Cell Electric Vehicles to the UK** - Major Auto companies have started to introduce Fuel Cell Electric Vehicles in limited numbers into the United Kingdom. The Hyundai ix35 Fuel Cell Electric Vehicle was the first commercial fuel cell vehicle introduced to the United Kingdom in 2014 and the Toyota Mirai was first sold commercially in the United Kingdom in 2015. Sales increased in 2016; however, overall numbers were small. It is hoped that sales will increase in 2017 due to United Kingdom Government support schemes. The Honda Fuel Cell Vehicle Clarity was introduced into the United Kingdom market in 2017. Daimler have joined forces with Ford, Nissan and Renault in a joint development programme and anticipate new Fuel Cell vehicle launch in 2017, with costs competitive with comparable to battery electric vehicles.
- **Independent or Smaller Vehicle Manufacturers Fuel Cell Electric Vehicles & Hydrogen Vehicles with Internal Combustion Engines** - Non original equipment manufacturers are developing and selling hydrogen vehicles to the United Kingdom market. These are both fuel cell vehicles and hydrogen combustion vehicles, often buses or commercial vehicles rather than passenger cars. Examples include:

- Van Hool have provided ten fuel cell buses to Aberdeen and two to London to go with previous fuel cell buses in the capital;
 - Revolve is a small independent United Kingdom company with expertise in hydrogen engine vehicle development. They have delivered hydrogen/ diesel dual fuel refuse trucks to Fife council in Scotland as well as a significant number of hydrogen vans throughout the United Kingdom;
 - Independent United Kingdom vehicle developers Riversimple have a strong vehicle design pedigree together with a mission for environmentally friendly mobility. Riversimple's Rasa is a two-seater, lightweight fuel cell car in prototype phase;
 - Microcab is also an independent fuel cell car developer, working in partnership with Coventry University. The Microcab H2EV with a 3kW horizon fuel cell is the latest development and has been deployed in limited numbers;
 - United Kingdom Fuel Cell developer Intelligent Energy has worked with Lotus and the London Taxi Company for a limited run of fuel cell taxis.
- **Creating a Hydrogen Gas Network** - Over 80% of the UK population use natural gas from a national pipeline network to heat, cook and provide hot water. The H21 Leeds City Gate project is an ambitious plan to progressively convert part of the low and medium pressure gas network in large United Kingdom cities to pure hydrogen. The objective is to decarbonize the network at minimal additional cost to consumers, whilst allowing for additional energy storage. Since 2002 there has been a major iron mains replacement programme, upgrading the network to polyethylene, which is compatible with hydrogen at medium pressure and below. The H21 Leeds City Gate project initially focuses on conversion within the city and suburbs of Leeds. The planned scale means that the hydrogen is to be produced by reforming natural gas combined with carbon capture and storage.
- After the presentation discussion continued and the following key comments and observations were made:

- Wales does not have a clean air strategy and to drive improvements forward it probably needs one;
- Significant financial support will be required to grow the number of hydrogen vehicles and infrastructure in Wales and across the United Kingdom as a whole;
- The grid is not currently large enough to accommodate all of the renewable energy generated in the United Kingdom; this means that without effective storage a large amount of potential renewable energy is lost. Converting the renewable energy to hydrogen when grid capacity is reached seems to be a very effective way of capturing and storing this excess energy;
- The major car manufacturers have a foot in both camps in terms of hydrogen and electric vehicles. In fact some are even developing vehicles that run on electric but have a small hydrogen back up fuel tank;
- Due to Scottish Government investment Scotland is much further forward than Wales in terms of clean air and renewable energy initiatives;
- Converting renewable electricity into hydrogen currently has a conversion rate efficiency of between 60% and 70%;
- Germany hopes to be using 700 hydrogen-powered buses by 2025;
- A hydrogen bus would be a good idea for Cardiff; however, it would be expensive and need supporting infrastructure in the form of a hydrogen-refuelling centre (which would also be expensive);
- Mid Wales would be an ideal location for a hydrogen train;
- Hydrogen is a safer fuel than petrol or diesel. The tanks are the expensive part in the vehicles and are made from a range of metals – they are also bullet proof to stop the hydrogen from leaking – having a bullet proof tank is a practical and not a safety issue. The quantity of precious metals used in the built of a hydrogen fuel tank is no more than the quantity used in a catalytic converter in an average petrol or diesel vehicle.

- At the end of the session Professor Guwy summarised the United Kingdom position in terms of hydrogen fuel development and implementation as:
 - The United Kingdom is moving to include Hydrogen and Fuel Cell solutions to address affordable, reliable and clean energy issues;
 - Hydrogen's potential to overcome electricity system constraints is a key focus, for example, using it as a backup storage facility alongside the national grid;
 - The United Kingdom is moving from a planning phase to deploy hydrogen and fuel cell vehicles and is financially supporting this introduction;
 - The network of hydrogen refuelling stations in the United Kingdom is strengthening with larger, accessible stations providing hydrogen at 700 and 350bar, often produced on-site;
 - Major vehicle manufacturers are starting to see the United Kingdom as a viable market for fuel cell cars;
 - The United Kingdom's aim is to encourage investment in manufacturing in the sector for international organisations as well as smaller United Kingdom;
 - There is a growing opportunity for Japanese vehicle and component manufacturers to do business in the hydrogen and fuel cell field in the United Kingdom;
 - The electron to hydrogen conversion rate is typically between 60% and 70%;
 - With an electric battery you have to take the whole of life costs into consideration, i.e. essential to include the production and disposal costs into the equation. Hydrogen fuel cells are simply complex metal boxes that store hydrogen and can be reused;
 - Wales is a long way behind Scotland in terms of supporting green energy and fleet initiatives. Wales should watch the market and back both electric and hydrogen options in the short term.

Part 3 - Adrian Field, Executive Director from the Cardiff BID (For Cardiff)

- He met with the task group to discuss the views of the Cardiff business sector on air quality in the city and the potential impact of creating a clean air zone.

Key Findings

- There has been no consultation to date with the BID or its members on the Clean Air Strategy and the potential introduction of a clean air zone in Cardiff. The BID would welcome the opportunity to be a part of any consultation exercise and would appreciate being updated on the development of the clean air strategy.
- Adrian Field has been with the Cardiff BID since January 2017. In that time they have not received any queries or complaints about air quality in the city centre.
- The BID is pleased that the new Next Bike Scheme is being rolled out in Cardiff and support the initiative. It was felt that offering the major employers in the city a discounted membership might work well and stimulate use of the scheme – the BID members employ a significant number of people entering and leaving the city centre every day.
- BID has eight ambassadors who are able to work with the 750 BID members to pass on and communicate on any air quality related issues.
- It was felt that more could be done to encourage BID members and their staff to use the park & ride facilities offered by the Council. To reduce traffic into the city and ensure commuting is more comfortable for staff and business owners the BID has worked with Cardiff Bus to offer levy payers reduced costs on the Cardiff East Park and Ride service. A BID park & ride pass is available for £450 per annum, that's less than £2 a day for parking and bus travel and helps free up invaluable parking and driving space in the city.
- The BID is pleased and supportive with the new Next Bike Scheme that is being rolled out by the Council. They are also running the 'Abandoned Bike Removal Project' which includes amongst other things includes work

on identifying and delivering new bike storage facilities in the city. Sustrans has provided support and endorsed this project. They would be keen to work with the Council to help identify suitable hosting sites in the city centre for the new Next Bike scheme as they feel they are gaining a good understanding for potentially available sites in the city. They view improved cycle parking as an important issue and one that will help increase cycling participation in the city.

- Over July and August 2017 the BID asked businesses to complete a bicycle survey so that they could understand the issues that BID employees were having with bike storage and parking to gauge demand for further stands. It became clear that abandoned bikes are a significant issue in the city. Cardiff BID, in partnership with Cardiff Council and the South Wales Police, undertook a removal operation of these abandoned bikes. That took place on Tuesday 29th August.
- Adrian Field had dealt with BID's in London where congestion and air pollution was an issue. One idea that he felt had worked well for these BID's was a pledge for all staff working for BID companies to avoid having personal deliveries in at work. This it was thought had been a success as it had reduced the volume of small delivery vehicles entering an already overcrowded area – it has been estimated that 40% of deliveries in a typical city centre area are to staff.
- The task group was told that adding click and collect schemes to key transport locations worked well in London. Similar facilities could be introduced at Park & Ride facilities and in the new integrated transport hub.
- BID would welcome and support a car free day in the city and could task its eight ambassadors to help promote the event across the city centre.
- During the discussion it was felt that Cardiff BID members could be encouraged to develop more flexible working habits to help reduce congestion, for example, greater promotion of the car sharing scheme, home working where practical and possible, flexible ticket pricing (rail & bus) to spread the volume of traffic normally experienced at peak travel times.

- The BID would be happy to lobby for additional train carriages across the South East Wales region. Train journeys into Cardiff from the wider South East Wales region are normally full, providing more capacity it is felt would encourage more people to use this form of transport and take cars off the road.
- It was felt that using ‘stock transfer sites’ at the edge of the city would help keep heavy goods and other types of delivery vehicles out of the city centre. The stock could then be transferred onto a low emitting vehicle (for example, electric) before transferring it into the city centre. This would reduce emissions. The BID would be an excellent tool for supporting a debate on such an initiative, with the collective buying power of all the members providing necessary economies in scale in terms of logistics. Such a scheme could be delivered through a BID wide procurement.
- Next Bike – offer a deal to the BID members for discounted use of the scheme or a corporate membership. This would provide many of the larger companies (for example, Admiral) with the opportunity to engage with the scheme and experience the benefits. If it was a positive experience then the larger companies might eventually see the benefits of sponsoring the scheme.
- It was agreed that collectively the BID membership represented a significant pool of knowledge, talent and experience – something that the Council should support and work very closely with. Members felt that a significant amount of congestion and pollution coming into and out of the city was caused by BID member employees and the customers that they support. With this in mind the task group felt that there would be value in running a BID wide focus group or ‘brainstorming’ session with a large range of BID representatives. This would involve setting out the current issues facing the city in terms of air quality and then challenging the group to identify potential solutions. This it was felt would add a different dynamic and angle to solving the air quality problem and hopefully identify new and innovative solutions.
- Run an event and car free day where certain roads were closed. It would be interesting to tie this in with a major event to help understand how we

might better manage travel congestion in the city. Car free days on lesser polluted roads, this it was felt would be an ideal opportunity to promote cycling and walking in the city. It was also felt that employers should be encouraged to introduce a car free day, similar to the one applied by the Council.

- Run a consultation on private parking facilities to identify how much is used in Cardiff and to understand the impact that a parking levy might have on businesses and congestion / air quality in the city.

WITNESSES TO THE INQUIRY

During the inquiry the task group was grateful to the following witnesses who provided verbal evidence or written contributions:

- Councillor Michael Michael, Cabinet Member for Clean Streets, Recycling & Performance
- Councillor Caro Wild, Cabinet Member for Strategic Planning & Transport
- Councillor Susan Elsmore, Cabinet Member for Social Care, Health & Well-being
- Gary Brown, Operational Manager – Assets, Engineering & Operations
- David Lowe, Operational Manager - Operations
- Jane Cherrington, Operational Manager – Strategy & Enforcement
- Simon Gilbert, Operational Manager – Development Management, Strategic & Place Making
- Paul Carter, Head of Transport
- Gareth Harcombe, Commercial Manager – Energy & Sustainability
- Gladys Hingco, Researcher – Scrutiny Services
- Richard Jones, Fleet Manager, Commercial Services
- Tim Walter, Senior Planning Officer
- Craig Lewis, Specialist Services Officer– Environment (Enterprise and Specialist Services), Shared Regulatory Services
- Jason Bale, Team Manager – Environment (Enterprise and Specialist Services), Shared Regulatory Services
- Helen Picton, Operational Manager, Enterprise & Specialist Services, Shared Regulatory Services
- Dr Huw Brunt – Public Health Wales
- Dr Tom Porter - Consultant in Public Health Medicine, Cardiff & Vale Local Public Health Team
- Stuart Cole, Professor of Transport, University of South Wales

- Huw Williams, Emeritus Professor of Transport and Spatial Analysis, Cardiff University
- Sukky Choongh- Campbell, Society of Motor Manufacturers
- Peter Renwick – Premier Taxis
- Ryan Owen – Dragon Taxis
- Kieran Harte – Uber
- Desmond Broster – Dragon Taxis
- Dr Claire Beattie – University of the West of England
- Gareth Mole - Cardiff Bus
- Margaret Everson - Bus Users Cymru
- John Pocket – Confederation of Passenger Transport
- Roger Herbert – Welsh Government
- Martin McVay – Welsh Government
- Steve Lloyd Brennan – New Adventure Travel
- David Conway – Stagecoach Bus
- Dr. Ji Ping Shi, Senior Technical Specialist, Air Quality Modelling and Risk Assessment Team Leader, Natural Resources Wales
- Professor Alun Guwy, Head of the Sustainable Environment Research Centre, University of South Wales
- Dr Paul Nieuwenhuis, Centre for Automotive Industry Research & Electric Vehicle Centre of Excellence, Cardiff University
- Adrian Field, Executive Director, Cardiff BID (For Cardiff)
- Will Lane – Shared Regulatory Service

LEGAL IMPLICATIONS

The Scrutiny Committee is empowered to enquire, consider, review and recommend but not to make policy decisions. As the recommendations in this report are to consider and review matters there are no direct legal implications. However, legal implications may arise if and when the matters under review are implemented with or without modification. Any report with recommendations for decision that goes to Cabinet / Council will set out any legal implications arising from those recommendations. All decisions taken by or on behalf of the Council must (a) be within the legal power of the Council; (b) comply with any procedural requirement imposed by law; (c) be within the powers of the body or person exercising powers on behalf of the Council; (d) be undertaken in accordance with the procedural requirements imposed by the Council e.g. standing orders and financial regulations; (e) be fully and properly informed; (f) be properly motivated; (g) be taken having regard to the Council's fiduciary duty to its taxpayers; and (h) be reasonable and proper in all the circumstances.

FINANCIAL IMPLICATIONS

The Scrutiny Committee is empowered to enquire, consider, review and recommend but not to make policy decisions. As the recommendations in this report are to consider and review matters there are no direct financial implications at this stage in relation to any of the work programme. However, financial implications may arise if and when the matters under review are implemented with or without any modifications. Any report with recommendations for decision that goes to Cabinet/Council will set out any financial implications arising from those recommendations.

Scrutiny Services, Cardiff Council,
Room 263, County Hall, Atlantic Wharf, Cardiff CF10 4UW
Tel: 029 2087 3606
Email: scrutinyviewpoints@cardiff.gov.uk
www.cardiff.gov.uk/scrutiny
© 2018 City of Cardiff Council

This page is intentionally left blank

APPENDIX 2

CABINET RESPONSE TO THE ‘IMPROVING CARDIFF’S AIR QUALITY ‘REPORT PUBLISHED BY THE ENVIRONMENTAL SCRUTINY COMMITTEE SEPTEMBER 2018.

Recommendation 1

Task group recommends that improving public health should be documented as the primary reason for introducing a Clean Air Strategy in Cardiff.

RESPONSE: The recommendation is accepted

From the outset of the work to develop the Clean Air Strategy (CAS), it was agreed with the working group that the overarching aim of the CAS was to Improve and protect Public Health. This is clearly established and set out in the CAS which has formed the foundations of the Council’s Full Business Case published in line with Welsh Government’s Legal Direction.

Recommendation 2a

The Council continues to work with and lobby the Welsh Government for a clear direction and guidance on the next steps to take in terms of achieving air quality compliance ‘in the shortest time possible’.

RESPONSE: The recommendation is accepted

Direction was issued to the Council, dated 14th February 2018 (actually received 8th March 2018). Officers set up regular meetings with Welsh Government officials in order to ensure that the Council undertook the feasibility study in accordance with appropriate guidance issued from Welsh Government or from the Joint Air Quality Unit at Defra. Final Plan was submitted in accordance with the Direction.

Recommendation 2b

Ask the Welsh Government to provide financial assistance to undertake the feasibility study and to deliver the option identified to improve air quality in the feasibility study

RESPONSE: The recommendation is accepted

Funding to undertake the feasibility study was provided by Welsh Government and confirmed in writing.

In terms of implementation the preferred option to deliver compliance, the Council submitted its Final Plan to Welsh Government on the 28th June 2019, in line with the requirements of the Direction. The plan has been reviewed by the Welsh Government’s expert panel and the Minister approved Final Plan subject to additional clarifications being provided no later than the 31st October 2019.

Recommendation 2c

Employ suitably qualified experts to deliver the feasibility study and help implement the option identified in the feasibility study to improve air quality.

RESPONSE: The recommendation is accepted

From the outset of the feasibility study, the Council secured the services of Ricardo Energy and Environment (Ricardo) to ensure the feasibility study was completed to the highest technical and quality standards. Ricardo are seen as the leading AQ consultants in the UK and have been working with a number of Core Cities who have been following similar legal directions to complete feasibility studies.

In addition to Ricardo the Council also procured the services of Mott Macdonald (through Transport for Wales (TfW)) in order to provide detailed transportation modelling required to assess future roadside emissions and to assess the impact of the measure being considered to deliver compliance.

Recommendation 2d

Waste no further time in carrying out the feasibility study – the EU air quality limits need to be addressed by either 2022 or in the soonest time possible. The evidence presented suggests that feasibility studies take about two years to deliver and at the point of writing this report the Council had not started its feasibility study for Cardiff.

RESPONSE: The recommendation is accepted but also refuted

Following the legal Direction received March 2018, work began immediately on Feasibility Study, with the initial proposal issued to Welsh Government by March 31st 2018 detailing how the Council intended to undertake the feasibility study. Further, the previous work on developing CAS was the catalyst to identifying a long list of measures to consider as part of the feasibility study.

Recommendation 3

Task group recommends that the new clean air strategy cites the reduction of nitrogen dioxide from diesel vehicles as one of its key aims and that whenever possible actions resulting from the clean air strategy specifically reflect this aim.

RESPONSE: The recommendation is accepted

CAS identified NO₂ as the primary source of air pollution in Cardiff, and strategic measures identified in the strategy looked to reduce NO₂ as a primary target objective in order to protect public health.

In addition, the Direction from Welsh Government required the Council to achieve compliance with EU limit Value for NO₂ in the shortest possible time and thus the Direction further ensured that reduction in NO₂ is essential.

However, it should be noted that other pollutants particularly particulate matter (PM_{2.5} and PM₁₀) have also known significant health impacts and thus ultimately the CAS looks to improve all air pollutant concentrations and not just NO₂.

Recommendation 4

The task group recommends that we consult and work with neighbouring local authorities to develop the Clean Air Strategy and supporting action plan to improve air quality.

RESPONSE: The recommendation is accepted

A full public consultation took place on the preferred option for the feasibility study which also included the Clean Air Strategy document. Work will progress with neighbouring authorities in implementing the White Paper.

Recommendation 5

Should the feasibility study recommend some type of clean air zone, congestion charging zone, or low emission zone as the way forward the Council should not be afraid to implement the decision as it will ultimately help achieve its biggest existing transportation target.

RESPONSE: The recommendation is partially accepted

As part of the requirements to meet the legal direction and inform the decision to progress with a preferred option to address the documented non-compliant air quality levels, those suggested options (Package of non-charging measures/ Charging Clean Air Zone) have been cross referenced and assessed against the three Garnham tests;

1. Aim to achieve compliance as soon as possible;
2. Choose a route to compliance which reduces human exposure as quickly as possible; and
3. Ensure that compliance with the limit values is not just possible but likely.

Following the comparative analysis Cardiff Council supported the decision to proceed with a revised package of non-charging measures as its preferred option.

The findings of the assessment outlined that a CAZ does not meet the requirements of 2 Garnham tests;

- It will not achieve compliance in shortest time possible as its feasibility for implementation is uncertain. Likelihood is that an operational CAZ would not be in place until end 2020/ Q1 2021. Comparatively the package of non-charging measures will be implemented in a shorter amount of time and associated improvements in air quality levels will be evidenced almost immediately (Q1 2020); and
- It will not reduce exposure as soon as possible. As outlined the envisaged timeframes for an operational CAZ would not see exposure reduced between

now and implementation date. The delivery of the package of non-charging measures will reduce exposure once implemented in late 2019 through to 2020.

It needs to be reiterated, in line with the legal direction; compliance must be achieved in the shortest possible time for the highlighted non-compliant road link only, this being Castle Street.

As detailed in the FBC, owing to the particular road link of non-compliance, it was deemed that a wider CAZ would not be interpreted as proportionate to the area of non-compliance. Subject to viable evidence it could be assumed that a wider CAZ could generate geographically wider air quality improvements, however the project must remain honest to the Direction's objective and deliver a mitigation option which coincides with the projections derived from 2021 baseline understanding, thus being only 1 road link of non-compliance.

Results of final plan indicated that a package of non-charging measures have greater benefit in terms of AQ improvement and public health protection. This is because while NOx rates would fall in the CAZ itself as modelled, rerouted traffic outside the CAZ would have an adverse impact significantly outweighing any benefits seen in the CAZ itself.

However, it is not to say that the Council should not further consider the implementation of a CAZ or congestion zone/ road user charging scheme, should the necessity arise to use said schemes to support further reductions in air pollution or to provide mechanism to enhance/ implement wider transportation projects.

Recommendation 6

The task group recommends that the Council look into the feasibility of creating a low emission neighbourhood in an area of Cardiff with the worst air pollution levels. It could act as a pilot for trialling air quality improvement initiatives and would be a first of its kind for Wales.

RESPONSE: The recommendation is rejected

The results of the feasibility study has identified Castle Street as the area within the City anticipated to show future non compliance with the EU Limit value for annual average NO₂. The results of the modelling undertaken correlates well to non-automated measurements for NO₂ results collected on Castle Street, and the locality of the City Centre Air Quality Management Area (AQMA). As such, the measures proposed to improve air quality levels whilst initially targeting Castle Street have also been modelled in terms of a city wide impact.

Recommendation 7

The task group recommends that the Council continues to lobby the Welsh Government for clear direction and financial support, and that it invests as much money and effort as possible to drive air quality improvements across the city.

RESPONSE: The recommendation is accepted

The Council submitted its Final Plan (FBC) on the 28th June 2019, which included a detailed financial case setting out a request of £21.2m funding to implement a package of measures. Full details of the funding case put forward are included in the Final Plan and we are continuing to work with Welsh Government to secure this funding.

Recommendation 8

The task group recommends that the Planning Service reviews its existing supplementary planning guidance in relation to managing air quality and implementing sustainable fuel infrastructure alongside the development of the Clean Air Strategy.

RESPONSE: The recommendation is accepted

Shared Regulatory Services (SRS) have developed a draft version of a Supplementary Planning Guidance (SPG) for Cardiff Council. This document is subject to review and approval

In addition, the Planning Team have already produced a new SPG on the requirements for EV Infrastructure on new developments.

Recommendation 9

The task group recommends a review into the wider traffic and pollution implications of new developments. This should include a review of traffic modelling techniques and how planning obligation monies can be applied across a wider area to deal with the impact of traffic and pollution.

RESPONSE: The recommendation is accepted

The implementation of this recommendation is dependent on the scale of the development, and any requirements for an Air Quality Assessment (AQA). SRS already request that cumulative impacts of large developments are considered when agreeing the scope of the AQA with developers/ consultants.

SRS ensures that AQA comply the requirements of Institute of Air Quality Management (IAQM) /Environmental Protection UK (EPUK) Planning Guidance for AQ assessments. This will be further enhanced through a revised SPG on Air Quality.

The use of planning obligation monies across wider areas can be consider but would be subject to agreement of local members agreeing wider expenditure.

Recommendation 10

The task group recommends that the Planning Service takes advantage of these expert resources (NRW/ PHW) as and when required.

RESPONSE: The recommendation is accepted

SRS officers already liaise with PHW/ NRW colleagues on major applications and elsewhere as necessary. SRS have recently been successful in securing funding from NRW to implement further NO₂ monitoring at a number of schools in Cardiff.

Recommendation 11

The task group recommends that the Council notes the urgency of required change to meet air quality targets and does all that it can to deliver and then promote its existing transport proposals.

RESPONSE: The recommendation is accepted

The Council has noted the urgency of the change required to meet air quality targets, most notably the EU limit value for NO₂ to comply with the legal direction from Welsh Government. This is reflected in the ambitious plans set out in our Final Plan and the challenging programme for implementation.

In addition, the CAS will deliver further on-going and long term continuous improvements not only for NO₂ but other key pollutants. The Council's White Paper set out the Council's long term visions for transportation improvements not only in Cardiff but across the City Region as a whole.

Recommendation 12

The task group recommends that the Council should increase its focus on the affordable short-term measures within its control.

RESPONSE: The recommendation is accepted

Current focus is on the Feasibility study and developing and implementing the preferred option detailed in the Final Plan and agreed with WG. Additional measures including anti idling zones, green infrastructure/ Living walls can be taken forward as part of wider Clean Air Strategy but will of course be subject to appropriate funding being available.

Recommendation 13

The task group recommends that monies raised from existing or proposed traffic / parking control measures is reinvested directly back into transport infrastructure.

RESPONSE: The recommendation is accepted

This already occurs and will continue to do so.
Page 184

Recommendation 14

During the task & finish exercise Members were informed that the Council is due to publish 'Cardiff's Transport & Clean Air Green Paper' in the spring of 2018. The Environmental Scrutiny Committee would welcome the opportunity to scrutinise this document once it becomes available.

RESPONSE: The recommendation is accepted

Recommendation 15

Completion of the Cardiff Central Transport Interchange. The task group urges the Council to work with developers to complete this facility 'in the soonest time possible'. As an interim measure, the Council should republish and distribute the map that was made available when the old bus station was first closed.

RESPONSE: The recommendation is accepted

The planning permission for the ITH was approved in November 2018, and construction is due to commence imminently with a scheduled opening date in early 2023. In terms of the maps detailing location of services/ stops in the interim period, we will work in conjunction with Cardiff Bus and other operators to ensure accurate and up to date information is available to passengers.

Recommendation 16

The Council continues with improvements and on-going development of dedicated walking and cycling infrastructure, for example, by accelerating the development of segregated cycle lanes in Cardiff;

RESPONSE: The recommendation is accepted

Cardiff Council are developing proposals for five Cycleways to support and promote cycling for all ages and abilities. The proposed routes will connect communities to major destinations across the city, including the City Centre and Cardiff Bay.

Cycleways will provide continuous routes that are intuitive and comfortable to use and separated from motor vehicles and pedestrians where needed.

The Cycleways will be developed from proposals in the Integrated Network Map which sets out a 15 year plan to improve routes for walking and cycling in the city.

The proposed Cycleway routes are:

Cycleway 1: City Centre to Cathays, University Hospital Wales, Heath High Level and Heath Low Level Rail Stations, and North East Cardiff Strategic Development Site

Cycleway 2: City Centre to Adamsdown, Newport Road retail parks, Rumney, Llanrumney and St Mellons Business Park

Cycleway 3: City Centre to Cardiff Bay

Cycleway 4: City Centre to Llandaff, Danescourt and North West Strategic Development Site

Cycleway 5: City Centre to Riverside, Ely and Caerau.

Following a public consultation in 2018 works have been commissioned and commenced on Cycleway 1 on Senghenydd Road.

Recommendation 17

The Council, public sector partners, major employers and For Cardiff (the Cardiff BID) should do all it can to encourage their staff to use active travel to get to work and carry out day to day trips whenever possible.

RESPONSE: The recommendation is accepted

Working initially through Cardiff Public Services Board, a Healthy Travel Charter for Cardiff has been developed with major public sector employers and was launched in April 2019. Signatories to the Charter make 14 commitments on improving access to active and sustainable travel for staff and visitors to their main sites, and jointly commit to three targets namely:

- Reduce the proportion of commuting journeys made by car;
- Increase the proportion of staff cycling weekly; and
- Increase the proportion of vehicles used for business purposes which are plug-in hybrid or electric.

The Charter was signed by 11 public sector organisations at launch in April 2019, employing over 33,000 staff, with additional public and private sector organisations subsequently invited to sign up to the Charter.

Currently it is not possible to fully assess the impacts of the above the measures but it is envisaged that such measures will contribute to wider behavioural changes and incentives to encourage further modal shift or uptake of low emission vehicles which will see improvements in air quality.

Recommendation 18

Car parking is an important factor in managing travel behaviour, the task group recommends that the Council should:

- Consider gradual increases in public car parking charges in city centre areas as public transport options are improved.

- The funding raised by the public parking charges should then be used to pay for and accelerate improvements in active travel facilities and public transport;
- Run a consultation on private parking facilities in the city to identify how much it is used and to understand the impact that it has on businesses, congestion and air quality;
 - Consider what the Council can do to manage the large amount of private parking in Cardiff, for example, a review of the planning process around car park development to encourage modal shift;
 - Review the option of introducing a workplace parking levy to Cardiff. Nottingham has successfully introduced a workplace parking levy which has increased modal shift and raised significant funds (£44 million) for transport initiatives in the city;
 - Consider variable parking charges to correspond with traffic parking demand when next reviewing the parking charges within the Parking Revenue Account;
 - Develop further methods to encourage 'For Cardiff (Cardiff BID)' members and their staff to use the park & ride facilities offered by the Council - if successful this would help reduce traffic movements into the city.

RESPONSE: The recommendation is partially accepted

The Council has powers to review the amount it charges residents for on road parking permits. An assessment should be made of the potential impact of introducing a sliding scale of permit charges based on the emission standards of vehicles, which would see a significant reduction in permit costs for EV/OLEVs, in order to encourage and expedite the uptake of such vehicles. Such measures have already been implemented in a number of Local Authorities in England.

Similar measures will also be considered at Council Car Parks and on Street Parking locations, whereby the most polluting vehicles would be charged a premium parking rate.

Managing Transportation Impacts (Incorporating Parking Standards) SPG

This SPG sets out Cardiff Council's approach to assessing and managing the transport impacts of developments and supplements the transport and other related policies in Cardiff's Local Development Plan 2006-2026. It applies to all categories of development for which planning permission is required, including new developments, extensions, redevelopments and material changes of use.

The SPG provides detailed guidance with regard to:

- 1) How the Council will consider the impacts of development on the routes that make up the local highway network.
- 2) The detailed information that applicants for planning permission should include with their submissions to enable the Council to make a fully informed assessment of transport impacts.
- 3) The Council's approach to quantifying and assessing the transport impacts of development proposals as part of its determination of planning applications.

- 4) The types of transport infrastructure and other mitigation measures which may be sought to address transport impacts.
- 5) How the Council will seek to secure the transport infrastructure and other transport measures required to mitigate transport impacts, enable development to proceed and support the implementation of Transport policies in the Local Development Plan.
- 6) The scope and content of Travel Plans required as part of the overall package of measures to mitigate impacts and support the implementation of LDP transport policies.
- 7) The parking standards which apply to different types of development in specific areas of the city.
- 8) How the impacts of developments upon Public Rights of Way will be considered and the likely requirements for mitigation.

Recommendation 19

- The Council makes a clear statement that sets out the Council's ambitions for taxi emission standards in the city and explains out how this might be achieved, for example, Nottingham has stated that it wants to significantly reduce taxi emissions in the city by converting all of its taxi fleet to electric by 2025;
- The Council needs to work with Cardiff's taxi companies and drivers to establish and implement a reasonable timescale to set a minimum emissions standard for taxis operating in the city, with the new minimum emissions standard being built into the existing licensing policy. To support this change the Council should work with the taxi companies and drivers to identify potential financial assistance to 21 deliver the change, for example, an approach could be made to Welsh Government asking for support – such transitional support has been provided in cities like Dundee, Derby and Birmingham;
- Taking the Welsh Government Taxi Consultation into consideration the Council should review the use of the 'Exceptional Conditions Policy' and wider 'Taxi Licensing Policy' to make sure that it is fit for purpose and complies with the aim of improving air quality in the city;
- The Council needs to work closely with the taxi companies and drivers to ensure that parking or blocking of bus lanes stops. It should be made clear that enforcement action will be taken by the Council against any drivers who block the bus lanes. The task group recommends that any driver found blocking a bus lane should be fined and ultimately have the privilege removed if they persist in doing it. In return for this support, the Council should acknowledge that the number of Hackney Carriage licences greatly exceeds the number of taxi rank spaces and carries out a review of

taxi rank facilities in the city centre. It would be appreciated that any response to this recommendation is supported by a series of proposed actions and agreed timescales as this matter has been raised at previous scrutiny meetings during the last twelve months.

RESPONSE: The recommendation is partially accepted

The improvement of the age/ emission standards of the private hire/ hackney carriage fleet operating in Cardiff is a long standing improvement which will take time and effort to fully implement. The Council is proposing to improve the emission standards of the City's licensed vehicles. Subject to consultation response and Public Protection Committee (PPC) approval (Scheduled for December 2019), Cardiff Council wishes to implement a taxi licensing policy change to improve emission standards for licensed taxi vehicles in Cardiff.

The policy change will require all new grants and renewals for licensed vehicles to have a maximum age limit of 5 years. In essence this will require all **new** grants/ renewals to meet Euro 6 emission standards.

As part of the feasibility study initial grant scheme to target initial 620 taxis to apply with ULEV - equivalent to £3k per driver over 3 years.

With regards to the enforcement of taxis stopping/ blocking bus lanes a pilot enforcement project has commenced in Mill Lane. This is scheduled to run for 3 months, with a view of expanding enforcement to key City Centre locations, including St Mary Street, Castle Street, and within the vicinity of CIA to be considered.

With regards to allocating EV charging points for taxi ranks, the Council have procured a contractor to undertake work focussed on promoting the uptake of electric taxis by taxi firms and self-employed drivers, in order to reduce air and noise pollutants being released into communities. They have been in contact with the trade asking for taxi vehicles (being both private hire and hackney licenced vehicles) to have a tracker fitted for up to a 4 week period in order to provide a drop off and pick up 'heat map' which will enable the Council to prioritise EV charging infrastructure in order to support taxi operators in Cardiff wishing to adopt EVs.

Recommendation 20

As a part of the task & finish exercise Members met with a number of bus company and passenger group representatives. It was clear from discussion that they understood that overall bus emission levels needed to fall to help improve air quality, however, to achieve this substantial and ongoing financial assistance would be required from the public purse. Several references were made to the lack of Welsh Government funding to support bus services in Wales; this was in contrast to the support offered other parts of the United Kingdom and indeed to the rail network. Other issues discussed during the meeting included emission levels in the city centre; bus company business planning and investment in future vehicles; the introduction of low emission buses, park & ride and bus

lane infrastructure and a single ticketing approach. Based on the evidence gathered, discussion at the meeting and the key findings the task group recommends that:

- The City Centre Air Quality Management Area (predominantly based around Westgate Street) has the highest levels of nitrogen dioxide concentrations in Cardiff - this is significantly impacted by approximately 140 bus movements per hour. It is estimated that buses account for 56% of the nitrogen dioxide emissions and that 63% of the bus movements in the Westgate Street area are from vehicles that are Euro 4 or less. To provide some context the Euro 5 standard was established on the 1st September 2009; this means that over half of the bus movements in Cardiff's worst polluted street are from vehicles that are approaching ten years of age or more. This local air pollution problem is compounded by the canyon nature of the street. Members of the task group believe that air quality improvements are urgently required in this very busy area and recommend that the Council should work with local bus companies to explore the feasibility of restricting older buses from the area. Options that should be considered might include the creation of a 'greener bus route' or developing a low emission zone in the area that might exclude buses that fail to meet a specified emissions standard, for example, Euro 6. The Members of the task group acknowledge the challenges that this might present to local bus companies, however, such restrictions have been applied in other parts of the country and have dramatically reduced nitrogen dioxide emissions.
- Bus companies should be asked to work with the Council and provide a business plan to illustrate how they plan to reduce bus emissions for bus journeys in the Cardiff in the next three years. This would correspond with the timescale for achieving compliance with the EU air quality limits and help provide focus on the role that they have in 23 helping to achieve this target.
- In terms of financial support to reduce bus emissions it is clear that Welsh bus companies are a poor relation when compared to their Scottish and English counterparts. Government funding has been put in place in other parts of the United Kingdom to help support the transition to cleaner buses, while the Welsh Government in comparison has provided very little. The Council should support the local bus companies by lobbying the Welsh Government for financial assistance for bus services in Cardiff and Wales.
- There are no low emission buses operating in Cardiff or indeed Wales. The Council should do what it can to bring a low emission bus to the Capital City, for example, supporting a major bus provider to procure and introduce

one or more hydrogen buses would be a very positive step forward.

- The Council should continue with its development and promotion of Park & Ride and bus lane infrastructure across the city. These are essential in driving modal shift and will be a key ingredient in supporting the wider Metro effort. Effective bus lanes help reduce journey time and improve punctuality – this in turn breeds confidence and convenience into the system, important for delivering modal shift. To compound this park & ride journeys should be punctual, quick and direct. Members were aware of park & ride journeys that made multiple stops between the park & ride facility and city centre – this adds time and makes the park & ride journey less attractive compared to using the private car, on this basis the Committee recommends that all park & ride journeys should be direct, i.e. not feature additional stops.
- Bus and train services in Cardiff should work towards a single ticketing approach in the South East Wales Region. Introducing this in line with the new Metro developments would appear to be a good opportunity and the functionality of the ticket should be similar to that of the London 24 Oyster Card.
- The Council should work with local bus companies and consider the potential option of introducing bus mounted transponders onto buses using bus lanes to enter and exit the city. In doing this feedback should be sought from the Swansea bus lane transponder scheme where they are used to send a signal to traffic lights before the bus actually arrives at the light. The signal changes the traffic light in favour of the bus to allow it to proceed smoothly without having to wait as standing traffic. This makes the bus journey quicker and ultimately more reliable – two important characteristics in helping to increase bus patronage.

RESPONSE: The Recommendation is partially accepted

In 2018 SRS along with Cardiff Council's Transport team collaborated with Cardiff Bus company to put forward a successful bid application for the Ultra-Low Emission Bus (ULEB) fund made available by the Department for Transport (DfT).

The proposal draws links between the air quality management areas (AQMAs) identified under the LAQM regime, as well as the issued direction from Welsh Ministers which targets Cardiff on the regional scale highlighting non-conformities in association with European Directives. Therefore linking the two together; due to the heightened profile of air quality and its potential adverse impact on public health, and given Cardiff's Local Air Quality Management scenario, as well as its regional air quality concerns it is imperative that short term measures, such as increasing the uptake of low emission buses are implemented as soon as possible to start the process of achieving compliance with the air quality objectives.

The bid application looks at acquiring a total of 36 electric buses that would be introduced to the Cardiff Bus fleet over a three year cycle. The uptake of 36 ULEV buses will result in 15% of the Cardiff Bus operator fleet being certified as Ultra Low Emission. The introduction of the electric buses would form part of a cascade programme whereby Euro 3 standard buses would be offset from the fleet completely, therefore improving the overall fleet composition.

It is envisaged that the roll out of the electric vehicles will begin in the 1st quarter of 2020.

Owing to the previously offered Department for Transport's (DfT) Clean Bus Technology Fund (CBTF), subject to legal advice surrounding State Aid, Cardiff Council's Clean Air Project Team proposes to function as a regulatory entity to manage, regulate and fund such a retro fit scheme with Cardiff based bus operators.

The retro fit programme would see applicable bus vehicles fitted with the necessary upgrades to produce an emissions output equivalent to a Euro VI vehicle. Replicating the conditional criteria outlined in the DfT's CBTF, to successfully qualify for the provided funding it is a main requirement that those vehicles identified for the accredited technology upgrades are expected to be operational for a further 150,000 miles or operational for minimum of 5 years after the relevant upgrades.

Following the discussions with senior representatives from the various operators, Cardiff Council received a good level of positive interest and commitment. To date **150 bus vehicles** applicable to proposal have been identified. These vehicles operate solely in Cardiff or Cardiff based routes, therefore they will positively attribute to improving roadside emissions in Cardiff.

If the uptake of the retrofit scheme is not sufficient to provide the modelled air quality benefits then the Council will need to assess the possibility of introducing a Low Emission Zone (LEZ) for Buses. This would require buses operating in the LEZ to have minimum emission standard of Euro 6/ equivalent retrofit or ULEV, which would look to increase the uptake of the scheme.

Such a zone would be achieved by applying to the Traffic Commissioner to issue a Traffic Regulation Condition (TRC) which applies to the license of bus operators providing services in Cardiff. A TRC would be issued under the Regulation 7 of the Transport Act 1985¹, whereby Regulation 7(4) states that if the traffic commissioner is satisfied, 'after considering the traffic in the area in question that such conditions are required or are likely to be required in order to(c) reduce or limit ...air pollution.

The introduction of such zones has been undertaken in a number of Cities in the UK outside of London, including Oxford, Brighton and Glasgow.

Alternatively the Council will work with local operators on the possibility of establishing a Quality Partnership Scheme (QPS) under Section 114 of the Transport Act 2000. Such schemes can be voluntary or statutory and provides looks to improve facilities and services in an agreed area of operation. As part of the QPS, it is possible to stipulate minimum emissions standards that buses operating in the area of QPS would be required to meet, i.e., Euro 6 retrofit or ULEV.

As part of the supporting works to facilitate the feasibility study, a detailed understanding has been documented for the potential impacts generated by improvements to the bus fleets operating in Cardiff.

Recommendation 21

The committee feels that when the Council is assessing the economic benefits of allowing cruise liners to dock it should also factor the environmental impact that they might create into the overall assessment.

RESPONSE: The Recommendation is rejected.

The Council confirms that there are no ports or shipping that meet the specified criteria cited within the necessary local air quality management guidance to deem further assessment of relevant air quality pollutants.

Recommendation 22

Sustainable Fuels Strategies

This recommendation is in fact a series of sub-recommendations, focusing on increasing sustainable fuel infrastructure:

- a) The Council continues with the development of its Sustainable Fuel Strategy
- b) The Council works with and lobbies Welsh Government to create a sustainable fuel strategy for all of Wales.
- c) The Council engages with other local authorities in the South East Wales region to encourage them to create and publish sustainable fuel strategies.
- d) The Council engages with its public sector partners across the South East Wales Region to encourage them to create and publish sustainable fuel strategies.

RESPONSE: The recommendation is accepted.

- a) The Council has developed its sustainable fuels strategy.
- b) Welsh Government Published [Prosperity for All: A Low Carbon Wales](#) in March 2019 which sets out the Welsh Government's approach to cut emissions and increase efficiency in a way that maximises wider benefits for Wales, ensuring a fairer and healthier society and thus there is no need to further lobby Welsh Government on this.
- c) The City Region has been working on a Sustainable/ Alternative Fuel Strategy and work is ongoing with Cenex to produce this work and the Council has been working with the region on this.
- d) Working initially through Cardiff Public Services Board, a Healthy Travel Charter for Cardiff has been developed with major public sector employers and was launched in April 2019. Signatories to the Charter make 14 commitments

on improving access to active and sustainable travel for staff and visitors to their main sites, and jointly commit to three targets namely:

- Reduce the proportion of commuting journeys made by car;
- Increase the proportion of staff cycling weekly; and
- Increase the proportion of vehicles used for business purposes which are plug-in hybrid or electric.

The Charter was signed by 11 public sector organisations at launch in April 2019, employing over 33,000 staff, with additional public and private sector organisations subsequently invited to sign up to the Charter.

Recommendation 23

The task group recommends that the Council should work with local car dealerships to encourage the growth of electric, hybrid or hydrogen vehicle sales.

RESPONSE: This recommendation is rejected.

Whilst the intention of this recommendation is fully appreciated, the Council is not able to influence how private businesses such as car dealerships market alternative fuelled vehicles. However in developing its Clean Air Feasibility Study and Clean Air Strategy the Council has worked directly with the SMMT to develop an increase awareness of alternative fuelled vehicles, and will continue to do so. The Council's ambition is to encourage a significant modal shift from the dependency private cars.

Recommendation 24

The Council should work with the motor industry to bring a trade show for electric, hybrid or hydrogen vehicles to Cardiff.

RESPONSE: This recommendation is rejected.

As per the previous recommendation, the Council's focus is on improving sustainable transport to encourage a significant modal shift from private vehicles.

Recommendation 25

The Council has recently commissioned a report that aims to identify the best way forward for electric charging infrastructure in the city. The task group recommends that the Council considers and evaluates the content of the report before deciding on how to roll out electric charging infrastructure to the city.

RESPONSE: The recommendation is accepted

In 2018 Arcadis Consulting (UK) Ltd supported by Zero Carbon Futures (UK) Ltd were commissioned by Cardiff Council to prepare a feasibility study to explore how electrically powered Ultra Low Emission Vehicle (ULEV) charging points could be

integrated across the city of Cardiff. As the market share of ULEV is growing and is forecasted to increase significantly over the coming decades, it is critical that the necessary charging infrastructure is provided to facilitate this growth, in order to support a cleaner transport system across Cardiff.

Eighteen new fast EV charging points have been installed in Cardiff as part of a successful bid to the OLEV Residential Charge Point Scheme.

The chargers installed and managed by SWARCO E.Connect form part of a pilot scheme to evaluate the benefit of having EV charging points on street in residential areas.

In line with the requirements of the successful bid, the new 7Kw electric chargers, which fully charge a vehicle in four to six hours have been installed in residential areas, where there is little or no off-street parking.

The Council has set out that over 90 vehicles in the Council's fleet will be converted to either electric or hybrid engines by 2020, with plans to convert the remaining smaller fleet by 2022.

The EV chargers have now been installed and are operational in the following locations:

Canton: One charge point has been installed at Butleigh Avenue, two charging points at Victoria Park Road West and two charging points at Anglesey Street.

Riverside: Two charging points in Turning Head Car Park (Llandaff Fields), two at Severn Road Car Park and one point at Rennie Street.

Cathays: Two charging points on Maindy Road

Plasnewydd: Two charging points at Penylan Library

Penylan: Two charging points at Waterloo Road and two charging points at Stallcourt Avenue.

The Council has made progress in terms of increasing electric charging infrastructure at four main employment hubs. It has been agreed that in 2019/20 for 8 electric vehicle chargers each at County Hall, Lamby Way, Wilcox House and Coleridge Road (i.e., total of 32 chargers).

Recommendation 26

The task group recommends that the Council builds the use of sustainable fuels (such as electric & hydrogen) into the vehicle and wider supply chain procurement process to support the growth of low emission fuels.

RESPONSE: The recommendation is accepted.

Members are referred to the Sustainable Fuels Strategy

Recommendation 27

The task group recommends that the Council needs to review and then do what it can to bring at least one hydrogen refuelling facility to Cardiff.

RESPONSE: The recommendation is partially accepted.

Members are referred to the Sustainable Fuels Strategy.

Recommendation 28

The task group recommends that the Council works with its public sector partners to:

- Agree and work towards setting clear and meaningful targets for air quality improvement;
- Implement air quality strategies and that detail time focused action plans to help achieve air quality compliance;
- Communicate and educate the public on air quality issues;
- Monitoring the progress achieved.

RESPONSE: The recommendation is accepted.

The Council has worked with PSB partners in developing its Clean Air Strategy, and the sub points of this recommendation have all been included in the Council's Clean Air Strategy.

Recommendation 29

The Council and all major public sector organisations should run a programme to encourage their staff to switch to active travel and encourage workplace practices to reduce the number of unnecessary journeys.

RESPONSE: The recommendation is accepted

A Healthy Travel Charter for Cardiff has been developed with major public sector employers and was launched in April 2019.

Recommendation 30

Once the Clean Air Strategy is complete and a clear direction of travel is established the task group recommends that the Council should do all it can to raise the profile of what is being done to improve air quality in Cardiff and explain why it is being done.

RESPONSE: The recommendation is accepted.

In developing the NO₂ plan, the Council undertook a detailed engagement exercise, which involved all identified key stakeholders. A number of public engagement

events were undertaken to promote the Council's plan and advise members of the public on the plan. This involved developing the Clean Air Cardiff the events were heavily promoted via the Council's social media channels.

Further promotion of the Council's plan will be undertaken during the implementation phase once all aspects are agreed with Welsh Government.

Recommendation 31

The Council should support an interactive consultation event during the feasibility study period with its public sector partners and Members of the business community to explain the air quality challenges facing Cardiff.

RESPONSE: - The recommendation is accepted

The above recommendation was implemented as part of the Feasibility study.

This page is intentionally left blank

**CYNGOR CAERDYDD
CARDIFF COUNCIL**

ENVIRONMENTAL SCRUTINY COMMITTEE

21 JANUARY 2020

CARDIFF'S TRANSPORT WHITE PAPER

Reason for the Report

1. To provide the Committee with an opportunity to consider the content of the draft 'Transport White Paper: Transport Vision 2030', and to discuss the options for funding the delivery of the proposed transport infrastructure.

Background

2. A draft paper titled 'Transport White Paper: Transport Vision 2030' is due to be presented for approval at the Cabinet meeting scheduled for Thursday 23rd January 2020. A copy of the document is attached to this paper as **Appendix 1**.
3. **Appendix 1** explores the reasons for changing Cardiff's approach to transport; discusses city growth; sets out four key areas where change is required; links the paper into the Cardiff Council Corporate Plan priority of 'A Capital City that works for Wales'; and provides a delivery / funding timeline. These are set out in the following order:
 - Why do we need to change the way we travel around Cardiff? (**pages 4 to 5**);
 - City growth (**pages 6 to 9**);
 - The Cardiff Metro (**pages 10 to 13**);
 - Rapid Bus Transport (**pages 14 to 19**);
 - Active Travel & Streets for people (**pages 20 to 23**);
 - The Future of the Car (**pages 24 to 25**);
 - A Capital City that works for Wales: supporting the wider region (**pages 26 to 27**);
 - Delivery Timeline & Funding (**pages 28 to 30**).

4. **Transport & Clean Air Green Paper** - The Transport & Clean Air Green Paper recognised the importance of transport in creating a capital city which is healthier and more accessible, sustainable and prosperous for future generations. The extensive consultation and engagement on the Transport & Clean Air Green Paper, which ran from 26th March to the 1st July 2018, generated over 3,500 individual responses as well as a number of collective responses from organisations. The high number of responses and what they said explained how much the transport system impacts on the daily lives of people across Cardiff and the wider region, and highlights the importance of tackling the long standing challenges presented by the city's existing transport infrastructure.
5. The Transport & Clean Air Green Paper acknowledged the need for a transformative approach to transport in Cardiff and put forward 18 'big ideas' to achieve this, including the potential for introducing different forms of user charging as a mechanism to raise funds for investment in the transport system.
6. Cardiff has already taken steps forward in terms of achieving sustainable patterns of modal shift. Travel to work data for Cardiff (Ask Cardiff survey) demonstrates a trend of modal shift to active and sustainable modes. For example, there has been a significant increase in cycling, with journeys to work made by cycling growing from 7% in 2010, to 13% today. Car use has experienced a decline, reducing from 57% in 2010, to 49% today. This is a positive trend, but more action is needed to ensure that Cardiff continues to develop as a successful city.
7. A new transport programme is currently being delivered, this includes segregated cycle ways, 20 mph limits and a package of clean air measures including major changes to Castle Street and Westgate Street to prove access for buses and active travel modes. Discussions are also underway regarding the development of the Metro. The existing programme represents a significant level of investment and will deliver much needed infrastructure in some areas of the city, however, it is recognised that it will not provide the scale of change that is required for meeting some of the challenges set out in this report.
8. The draft 'Transport White Paper: Transport Vision 2030' builds on the work of the Transport & Clean Air Green Paper and sets out a series of priorities for Cardiff over

the next 10 years which it is hoped will transform the way people move around the city. The document suggests that the proposals will ensure that Cardiff is a well-connected city where people can easily, reliably and safely get to where they need to go in the greenest, healthiest and most affordable way. This will reduce the dependency on private cars, whilst adopting challenging modal split targets for active travel and public transport through investment in transport projects.

9. Delivering the vision set out in the draft ‘Transport White Paper’ will require a significant increase in funding, with an estimated investment of between £1 - 2bn necessary to deliver the scale of improvements required. This means that the question of funding arrangements now needs to be discussed. How the Council funds this shift in transport provision will probably require difficult decisions, but it is likely that they will be needed to ensure that Cardiff meets the range of complex challenges that it faces, for example, climate change, poor air quality and tackling congestion.
10. The draft ‘Transport White Paper’ outlines a package of projects that aim to make a contribution in tackling climate change, improving air quality, reducing congestion, addressing inequality and promoting inclusive economic growth. Four of the major priorities included in the document for Cardiff are:
 - **Cardiff Crossrail** - A Cardiff Crossrail tram line which would connect the city’s newest communities, as well as providing links to the city centre and key business developments for some of the city’s most deprived communities. The line could also extend beyond Cardiff’s boundaries, connecting the city with the wider region, for example, new housing developments in Rhondda Cynon Taff.
 - **Cardiff Circle Line** - The Cardiff Circle Line would connect the Coryton Line to the Taff Vale Line north of Radyr to deliver cross city connectivity. This would provide new park and ride opportunities from J32 of the M4 and allow for more frequent services on the Coryton and City lines.
 - **Rapid Bus Transport** - Rapid Bus Transport will provide cleaner, greener vehicles, travelling on dedicated bus corridors with smart network management giving buses priority. New park and ride facilities will connect the city with the

wider region including, for example, Junction 33. The new Central Bus Station will be completed in 2022.

- **Active Travel** - Active Travel to enable more people to walk and cycle for more journeys, making Cardiff safer, cleaner and quieter. Investment in five fully segregated cycle ways and a network of supporting routes, as well as interventions to provide high quality facilities for walking will contribute towards the targets set for active travel.
11. In addition to the four key priorities set out above, the draft 'Transport White Paper' outlines a number of other actions that will help to deliver the scale of change required. Examples include:
- Working closely with Welsh Government and Transport for Wales on the delivery of the Metro – including new and refurbished stations and fully integrated ticketing;
 - Delivering lower speeds where people live through the continuing commitment to 20mph limits;
 - Developing a 'Healthy Streets' programme to support active travel and play in our local communities;
 - Tackling dangerous and inconsiderate driving and parking behaviour around our schools;
 - Supporting the move towards cleaner vehicles and managing traffic on our road network through facilitating charging infrastructure for electric vehicles;
 - Developing the car club offer in the city; and,
 - Using the latest technology to provide a new, up to date, 'Real Time Passenger Information System'.
12. It is felt that delivering the vision contained within the draft 'Transport White Paper' would help raise the position and profile of Cardiff as a European city, with sustainable transport underpinning the wider ambitions of the city. The report states that realising the transport vision would help decarbonise the city, deliver air quality improvements, create public health improvements and support environmental benefits.

13. In addition to this, it is suggested that the range of transport initiatives will underpin a positive business environment, for example, it will improve access to jobs and opportunities for disadvantaged communities currently poorly served by public transport, and help reduce the inequality.

Issues

14. How people move around Cardiff is fundamental to how the city works and has a significant impact on the success of the economy, the quality of our environment, community safety and social equity. There are a number of critical issues relating to transport that are outlined below and need to be addressed.
15. **City Growth** - Cardiff is a rapidly growing and changing city, with a transport infrastructure that has suffered underinvestment and which was built to serve a population of approximately 200,000 people. Managing the city's growth in a sustainable way is critical for the success of Cardiff and the wider city region. Cardiff's Local Development Plan (2006-2026) (LDP) identifies the need for substantial improvements to Cardiff's transport infrastructure in order to accommodate Cardiff's expansion sustainably. Its policies seek to integrate new development with the provision of on-site and off-site transport infrastructure improvements in order to mitigate transport impacts and, by 2026, to achieve a 50:50 'modal split' between journeys by car and trips made by walking, cycling and public transport. For example, the new park and ride site and bus services at Junction 33 is being delivered by the developer and Section 106 Contributions have been secured towards supporting bus services. Additional revenue funding for the operation of the services will also be sought.
16. **Tackling Congestion & Supporting Business** - Congestion has significant economic, environmental and social impacts. It is consistently identified as a key area of concern for Cardiff residents, for example, 64.1% of respondents to the 2017 Ask Cardiff survey rated reduced congestion as the transport improvement they would most like to see. Around 100,000 people commute in and out of Cardiff each day, 80,000 by car, many of which are single occupancy vehicles. Together with trips by car made by Cardiff residents and the expected growth of the city, this is an unsustainable pressure on the road network. Reducing the proportion of these trips

made by car would greatly assist Cardiff's efforts to reduce the pressures on its road network, tackle poor air quality and improve the efficiency of public transport.

17. **Climate Change & Clean Air** - Climate change and air quality are two of the most pressing issues we currently face, requiring urgent action and radical solutions. On the 28th March 2019, Cardiff Council approved a motion to declare a climate emergency. The Welsh Government also declared a climate emergency on 29th April 2019, the day after the Scottish Government, followed by the UK Government on 1st May. Over 70 Councils in the UK have now declared a climate emergency with the majority including carbon emission reduction targets to be achieved by 2030. As part of this, the Council has agreed to support the implementation of the Welsh Government's Low Carbon Delivery Plan, which aims to secure a carbon neutral public sector in Wales by 2030. This includes the commitment for the Council to progress a wide range of projects in support of the existing Carbon Reduction Strategy, and to further reduce carbon emissions from the Council's operations.
18. Poor air quality impacts significantly on health, child development and environmental quality. Whilst air pollution affects everyone, it can disproportionately affect vulnerable population groups such as "*children, older people, those with underlying disease, and those exposed to higher concentrations because of living or commuting in urban or deprived locations*" (Public Health Wales 2018). The Council's Clean Air Plan which has to achieve compliance with EU Limit Values for NO₂ pollution in the shortest possible time was approved by the Welsh Minister in December 2019. Whilst this plan is ambitious in terms of reducing NO₂ concentrations, the Council recognises that there is no safe limit for air pollutants and that further measures will be necessary to ensure that pollution levels are continually reduced to as low as is reasonably practicable.
19. **Creating Safe & Healthy Communities** - Transport can help to make our communities safer and healthier. Ensuring we have streets and neighbourhoods where it is safe for people to walk and cycle and children to play will help to deliver Cardiff's wellbeing objectives, for example, 'Cardiff is a great place to grow up' and 'safe, confident and empowered communities'. Reducing traffic and congestion helps create cleaner, quieter communities which are better places to live, while improving active travel facilities provides more opportunities for physical activity, tackling

sedentary behaviour and obesity that can contribute to ill health. Air and noise pollution as well as road traffic collisions often have the greatest impact on our most deprived communities. For example, research shows that child pedestrians from the lowest socio-economic groups are over four times more likely to be killed or seriously injured on the roads (Road Safety Framework Wales 2013). Department for Transport research also indicates that child pedestrians are the group most likely to be killed and / or seriously injured (69%). Of this group, 82 per cent of all child KSI casualties were pedestrians travelling before or after school on a school day.

20. **Supporting Economic Growth & Managing a Growing City** - Cardiff has been transformed by a programme of major urban regeneration projects that have supported its economic growth. Investment in the city's business infrastructure and new jobs, together with new housing communities, further new employment and leisure opportunities highlight the need for excellent transport links that support every part of the city.
21. It is hoped that the new transport vision will significantly improve access to jobs and opportunities for disadvantaged communities that are currently poorly served by public transport, both within Cardiff and the wider region. In turn it is anticipated that this will help to reduce inequality.
22. The proposals within the draft 'Transport White Paper' will seek to address the inadequacies of a transport infrastructure that can no longer accommodate the needs of a rapidly growing city, one which serves as a regional employment centre and national destination for culture, sports and tourism. More fundamentally, it will signal a decisive move away from the incrementalism that has characterised the development of mass public transport infrastructure in the region for many years.
23. **Context within National Policy** - Welsh Government is currently consulting on a Clean Air Plan for Wales, which includes reference to Workplace Parking Levies, as a means to '*encourage commuters to find alternative means of travel by applying a direct charge on employees for using employer-provided parking*'. Similarly, the consultation document highlights that '*Reduced car journeys and road congestion can deliver reductions in polluting emissions and revenue generated by such a scheme may be used to support improvements in local transport provision*'. The

commitments and actions' outlined in the plan include '*Continue to review the role of vehicle access restriction under the Clean Air Framework, including whether road-user charging and banning of the most polluting vehicles has a role to play in reducing roadside levels of air pollution*'.

24. **Delivering the Transport White Paper Vision** – Delivering the major initiatives included within the Transport Vision has been estimated at between £1 and £2 billion. It is therefore clear that delivering such a transformative package of projects – which will make a decisive contribution to tackling the Climate Emergency, addressing inequality and promoting inclusive economic growth – requires a radical departure from the incremental funding model that has constrained development. Consequently, the Council must explore a more radical approach to meet the investment level required if it is to deliver the Transport Vision and achieve the associated benefits.
25. As an immediate step, the Council will work with Welsh Government to develop a comprehensive investment plan to support the delivery of this agenda. This will include detailed consideration of the range of funding mechanisms to achieve the modernisation of local infrastructure. Development of the strategy will need to consider the extent to which existing assets and sources of capital might be mobilised to address current investment needs. New sources of funding may also be available, including the new 'Shared Prosperity Fund' that will replace existing regional development funding. However, given the scale of the ambition set out in the draft 'Transport White Paper', more radical funding options must be considered. The Council will therefore review a range of mechanisms that have supported infrastructure development in other cities, and may include:
 - **A Cardiff Bond:** A debt-based investment model where money is loaned to a public entity in return for an agreed rate of interest.
 - **Tax Increment Financing (TIF):** The UK TIF model is based on re-investing a proportion of future business rates from an area back into infrastructure related to the development of that area. It applies where the sources of funding available for a scheme to deliver economic growth and renewal cannot cover the cost of infrastructure required by the scheme.

- **Work Place Parking Levy:** A type of congestion management scheme that is placed on employers who provide workplace parking. Employers and businesses pay an annual levy to their local council for every parking space provided to their employees, and employers would determine whether to subsidise their payments by asking employees to pay a charge for using their spaces. In the UK such a scheme has been introduced in Nottingham. Since 2012 Nottingham City Council has been able to raise around £9m per annum, enabling the extension of the tram network, re-development of the railway station and the creation of the UK's first all-electric park and ride. A number of authorities across the UK including Birmingham, Leicester, Oxford, Reading, Edinburgh and a number of London Boroughs are considering such schemes and developing appropriate business cases.
 - **Road User Charging:** Urban road user charging – also called congestion charging or road pricing –charges drivers for the use of the roads they drive on, and can potentially vary the charges according to location, time and type of vehicle. One example could be a city-wide scheme to introduce a universal minimal level of charging (for example, £2 per day) for all vehicles crossing into the charging area. Appropriate exemptions for local residents, emergency vehicles, motorcycles and registered blue badge holders for people with disabilities could form part of any scheme
 - **Low Emission Zones (LEZ) or Clean Air Zones (CAZ):** These schemes are defined areas where access by some polluting vehicles is restricted (charged) or banned with the aim of improving air quality.
26. This list of scheme types is by no means exhaustive, and any review of potential funding options would include detailed considerations of the widest range of potential delivery options. Until this work is completed, no decision on the implementation of any scheme will be taken. The cabine report, therefore, seeks authority to undertake appropriate assessments / investigations to identify a viable scheme that could deliver the improvements to the city's transport infrastructure highlighted in the draft Transport White Paper.

27. **Key Principles: Delivering a Scheme that Works for Cardiff** - Whilst a range of options have been outlined above, a number of other potential options will need further consideration. The overarching aims of any charging mechanism would need to be commensurate with the ambitions of the draft ‘Transport White Paper’ in that they:
- Address the Climate Emergency by reducing vehicle emissions;
 - To facilitate wider improvements in air quality to protect and improve public health and the environment;
 - Reduce congestion and improve travel times and reliability; and,
 - Deliver improvements in public transport and active travel to support modal shift.
28. The cost of negative externalities associated with high volumes of commuting traffic from outside Cardiff – which include additional congestion, air pollution, and road maintenance requirements – are currently borne by the city’s residents. The Council’s preferred option would therefore include an exemption for Cardiff residents if a charging option was deemed desirable. However, as part of a robust decision making process, a full list of options will need to be initially assessed in order for the Council to identify an option that could best deliver our desired objectives. No scheme will be taken forward unless we are satisfied that such a scheme will work for Cardiff residents.
29. In developing the business case for any such scheme, the Council would undertake detailed assessments and adopt in full any relevant Welsh Government guidance, for example WelTAG. Whilst the Council appreciates the need to assess a full range of options as part of any process to unlock infrastructure funding, it is clear about the fundamental principles which would underpin the approach and the Cabinet’s preferred approach. This would include:
- **No Displacement of Existing Funds (Additionality)** - Any additional funding generated by a potential charging scheme should not be a basis for displacing Welsh Government revenue or capital funding, which is currently or may be in the future, allocated to Cardiff.

- **Ring-fenced investment for core objectives (Hypothecation)** - Any additional funding will be used to reduce congestion into Cardiff, improve public transport, increase the range and choice of sustainable travel choices, and make public transport more affordable.
30. Whilst these principles would not pre-determine the outcome of any business case, they would ensure that work to identify and introduce a sustainable transport funding mechanism would be underpinned by fairness and transparency of purpose.
- Detailed Technical Analysis**
31. In order to progress suitable assessments of potential funding schemes, the Council will require external professional advice, particularly relating to transportation modelling, assessments and cost benefit analysis in order to develop a robust business case. It has been estimated that the costs to develop a Full Business Case may be up to a minimum of £2m, although these costs will be subject to the results of appropriate tender exercises and the outcomes of the work as it progresses.
32. **On-going Delivery Capacity & Risks** - The Cardiff Council Transport Strategy Team is currently progressing a number of transport projects in Cardiff through funding secured from Local Transport Fund, Active Travel Fund and City Deal Funding Allocations. This includes transformative projects in the city centre.
33. The delivery of these projects has already placed significant pressures on the Team, and it is obvious that to continue to deliver these existing projects and the wider projects in the draft 'Transport White Paper', including the development of any charging scheme, will require a significant uplift in resources for the team.
34. The Planning, Transport & Environment Directorate will need to review the staffing resources required to support the projects set out in the draft 'Transport White Paper' and to ensure that work can be delivered.
35. **Local Member Consultation** - Consultation with local members was undertaken as part of the Transport & Clean Air Green Paper. A package of appropriate Member engagement will be implemented, together with consultation and engagement around the delivery of each scheme outlined in the draft Transport White Paper, for example,

cycle ways, strategic bus infrastructure schemes, the development of SMART corridors and the next phase of modal filters.

Cabinet Report - Financial Implications

36. The Cabinet report that supports the draft 'Transport White Paper' includes a section of financial implications. These have been provided by Finance staff in the Resources Directorate, and include the following comments:

- *'The report indicates a number of major transport projects as well as indicative costs of implementation as part the white paper vision. It is important to note that these costs are high level concept costs with a significant level of optimism bias, as required to be assumed in initial modelling of projects at this stage of their development. Detailed costs and financial implications would need to be developed as part of WelTag or other relevant business case approaches prior to decision making'.*
- *'Any projects implemented will have capital and associated revenue budget implications for the Council. In developing such projects, the Council's Capital strategy highlights the importance of working with partners particularly with Welsh Government to align key priorities and to make a case for a much longer term and sustained approach to capital grant investment that supports the City's vital infrastructure, to make a stepped change in helping drive the city, region and nation forward. This is particularly important given the financial challenges facing the Council particularly in respect of affordability of additional borrowing without additional income streams. Whilst it is important that a significant and sustained level of prioritised capital grant for transport infrastructure is received by the Council, this report requests the development of potential additional options that could generate resources to support affordability of additional investment as well as meeting wider aims set out in the transport vision'.*
- *'Funding for the development of outline and strategic business cases for congestion management schemes will need to be considered as part of other priorities in the Council's 2020/21 and medium term financial budget as well as options for using the Parking Enforcement Earmarked reserve subject to determining key priorities for use of this reserve. The costs of developing*

proposals would be subject to a procurement process. Where such proposals utilise the Council's borrowing powers, the sustainability of income in the long term will be an important consideration, to ensure there is affordability, in the short, medium and long term'.

- *'In order to ensure effective delivery of the options, both external and internal resource is likely to be required, with the latter including, transport as well as financial and legal due diligence support. Where this cannot be managed within existing revenue budget resources, this should be considered as part of the 2020/21 budget and medium term financial to ensure the timescales for delivery of the outputs set out in this report can be met'.*

Cabinet Report - Legal Implications

37. The Cabinet report that supports draft 'Transport White Paper' includes a section of legal implications. These have been provided by Legal staff in the Governance & Legal Services Directorate, and include the following comments:
- *'The report recommends approval of the Transport White Paper ("the White Paper"), which sets the Council's Transport Vision to 2030. The report also contains details on funding options for the proposed infrastructure changes required'.*
 - *In implementing the projects and/or policies noted within the White Paper the Council will exercise various powers under the Transport Act 2000, the Road Traffic Regulation Act 1984, the Traffic Management Act 2004 and the Highways Act 1980 amongst various other legal provisions. As and when individual proposals within the White Paper are developed, legal advice should be obtained, legal implications may arise if and when the matters referred to in the whitepaper are implemented, with or without any modifications.*
 - *The report also notes that the Green Paper was subject to consultation. Consultation gives rise to the legitimate expectation that the outcome of the consultation will be duly considered when subsequent decision are made. Accordingly, in considering this matter due regard should be had to the consultation feedback received.*

- In considering the recommendations contained within the report and in developing the various projects/ policies, regard should be had, amongst other matters, to:

➤ **Well Being of Future Generations (Wales) Act 2015:** The Well-Being of Future Generations (Wales) Act 2015 ('the Act') places a 'well-being duty' on public bodies aimed at achieving 7 national well-being goals for Wales - a Wales that is prosperous, resilient, healthier, more equal, has cohesive communities, a vibrant culture and thriving Welsh language, and is globally responsible.

In discharging its duties under the Act, the Council has set and published well being objectives designed to maximise its contribution to achieving the national well being goals. The well being objectives are set out in Cardiff's Corporate Plan 2019-22. When exercising its functions, the Council is required to take all reasonable steps to meet its well being objectives. This means that the decision makers should consider how the proposed decision will contribute towards meeting the well being objectives and must be satisfied that all reasonable steps have been taken to meet those objectives.

The well being duty also requires the Council to act in accordance with a 'sustainable development principle'. This principle requires the Council to act in a way which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs. Put simply, this means that Council decision makers must take account of the impact of their decisions on people living their lives in Wales in the future. In doing so, the Council must:

- *Look to the long term;*
- *Focus on prevention by understanding the root causes of problems;*
- *Deliver an integrated approach to achieving the 7 national well-being goals;*
- *Work in collaboration with others to find shared sustainable solutions;*
- *Involve people from all sections of the community in the decisions which affect them.*

The decision maker must be satisfied that the proposed decision accords with the principles above; and due regard must be given to the Statutory Guidance issued by the Welsh Ministers, which is accessible using the link below:

<http://gov.wales/topics/people-and-communities/people/future-generations-act/statutory-guidance/?lang=en>

- **Equalities Impact Assessment/public duties:** The Council has to satisfy its public sector duties under the Equalities Act 2010 (including specific Welsh public sector duties) – the Public Sector Equality Duties (PSED). These duties require the Council to have due regard to the need to (1) eliminate unlawful discrimination, (2) advance equality of opportunity and (3) foster good relations on the basis of ‘protected characteristics’. The ‘Protected characteristics’ are: • Age • Gender reassignment • Sex • Race – including ethnic or national origin, colour or nationality • Disability • Pregnancy and maternity • Marriage and civil partnership • Sexual orientation • Religion or belief – including lack of belief.

Consideration should be given to the Equality Impact Assessments ('EIA') attached to this report so that the decision maker may understand the potential impacts of the proposals in terms of equality. This will assist the decision maker to ensure that it is making proportionate and rational decisions having due regard to the public sector equality duty.

Where a decision is likely to result in a detrimental impact on any group sharing a Protected Characteristic, consideration must be given to possible ways to mitigate the harm. If the harm cannot be avoided, the decision maker must balance the detrimental impact against the strength of the legitimate public need to pursue the recommended approach. The decision maker must be satisfied that having regard to all the relevant circumstances and the PSED, the proposals can be justified, and that all reasonable efforts have been made to mitigate the harm.

38. A copy of the Equality Impact Assessment for the draft Transport White Paper is attached to this report as **Appendix 2**.

Way Forward

39. The Cabinet Member for Strategic Transport & Planning has been invited to attend the meeting. He will be supported by officers from the Planning, Transport & Environment Directorate. The item will also be supported by witness contributions from:

- Mark Barry - Professor of Practice in Connectivity, Cardiff University;
- Stuart Cole CBE – Professor of Transport at the University of South Wales.

Legal Implications

40. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not making policy decisions. As the recommendations in this report are to consider and review matters there are no direct legal implications. However, legal implications may arise if and when the matters under review are implemented with or without any modifications. Any report with recommendations for decision that goes to the Cabinet/Council will set out any legal implications arising from those recommendations. All decisions taken by or on behalf of the Council must (a) be within the legal powers of the Council; (b) comply with any procedural requirement imposed by law; (c) be within the powers of the body or person exercising powers on behalf of the Council; (d) be undertaken in accordance with the procedural requirements imposed by the Council e.g. Scrutiny Procedure Rules; (e) be fully and properly informed; (f) be properly motivated; (g) be taken having regard to the Council's fiduciary duty to its taxpayers; and (h) be reasonable and proper in all the circumstances.

Financial Implications

41. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not making policy decisions. As the recommendations in this report are to consider and review matters there are no direct financial implications at this stage in relation to any of the work programme. However, financial implications may arise if and when the matters under review are implemented with or without any

modifications. Any report with recommendations for decision that goes to Cabinet/Council will set out any financial implications arising from those recommendations.

RECOMMENDATIONS

42. The Committee is recommended to:

- (i) Consider the information in this report and the information presented at the meeting;
- (ii) Determine whether they would like to make any comments, observations or recommendations to the Cabinet on this matter; and,
- (iii) Decide the way forward for any future scrutiny of the issues discussed.

Davina Fiore
Director of Governance & Legal Services
15 January 2020

This page is intentionally left blank

Cardiff's Transport White Paper: Transport Vision to 2030

Changing how we move around a growing city



This document is available in Welsh /
Mae'r ddogfen hon ar gael yn Gymraeg

Introduction

Since I've taken on this job I've found there are few things in Cardiff that stir up more debate among residents than transport.

If you look at it from the point of view of the average Cardiff resident driving into the city to work every day, struggling for their bit of road space with the 80,000 other car commuters from outside the city's boundaries then absolutely, traffic congestion, traffic pollution and a public transport system which struggles to adequately serve the people who live and work here are all issues of major concern - and so they should be.

Right now we are living in a world where the Climate Emergency is changing how we feel about our future. It is beginning to shape our behaviour and point towards the actions we will all have to take to save the planet for our children and grandchildren. That's why getting our transport system right is so important for our city's future and for our children's future too.

Did you know Cardiff's current transport network was designed half a century ago for a city of 200,000 people? Today, once commuters, shoppers and visitors are taken into account our city has a daily population of almost half a million. No wonder our transport network is creaking – it's no longer fit for purpose.

A public transport system – underfunded for years – and an ever increasing number of cars on our roads is bringing our city to a standstill. We now know the harm this number of cars does:

- It is our biggest contributing factor to climate change
- Air pollution is reaching legal limits, affecting the health of every one of us, especially the most vulnerable
- It holds back businesses and our daily lives with drivers spending an average of 143 hours a year stuck in peak-time traffic jams

And these problems are before you consider the fact Cardiff's population is **set to grow by a further 50,000 people over the next decade**, with more and more jobs coming to the city centre attracting more and more commuters.

Urgent action and bold solutions are required. Our Green Paper started a serious debate about the problems the city is facing and some potential solutions. Over 5,000 respondents, including 2,500 young people, shared their thoughts with us, alongside numerous organisations, experts and institutions. Today that debate carries on in Cardiff pubs, at school gates, and all over social media. It's clear, we can't go on as we are. There are too many cars on our roads, our public transport isn't good enough. Bus and train services are too infrequent. A growing number of people want to cycle but don't feel safe. We all want cleaner air and to do our bit to combat climate change.

That's why we're delighted to bring forward this Transport White Paper. In it you will hear an exciting vision for the city, and how we plan to deliver it.

It includes:

- Expanding on the Metro plans for new tram-train routes and stations
- Introducing new Bus Rapid Transit services and Park & Ride sites, and making bus travel far cheaper
- Re-prioritisation of our streets to give more space to people walking and cycling

All of this is a serious undertaking, some of which will take 10-20 years to deliver. It also won't be cheap.

“Cardiff has a daily population of almost half a million people, no wonder our transport network is creaking - it's no longer fit for purpose”



This is why we, as Cardiff Council's Cabinet, have become more and more convinced that to undertake the kind of radical change required we will need to investigate a form of charging mechanism that could help deliver on the following:

1. tackle climate change
2. reduce congestion
3. improve air quality
4. Provide ring fenced funding to invest in much-needed public transport initiatives

As part of a robust decision making process we will consider a number of options. However, our preferred option would include an exemption for Cardiff residents from any charge.

One option that we believe could work would be a road user charging scheme with a minimal (e.g. £2) charge for vehicles coming into Cardiff. This could reduce the number of vehicles coming into the city, whilst achieving reductions in carbon emissions, improving air quality, reducing congestion and helping to raise the money required to help pay for improvements to our transport network. Money which could help make Cardiff one of Europe's greenest, healthiest and most sustainable cities.

And that's what we want to deliver a greener, healthier, less congested city, with an affordable public transport system that works for everyone. This will require partnership working with the region and Welsh Government on a scale unheard of before.

Finally we are calling on you to help. We will only see change realised if we collectively make changes. So today: please make a pledge to alter one of your own daily transport habits. You will find pledge ideas contained in this document and any change you make could in turn inspire others as we all try to change this city for the better.

Cities that get transport right - work. They make life easier and better for residents, commuters and visitors. Cities that get transport wrong have the opposite effect, and right now, right here, with a Climate Emergency declared, the argument for change couldn't be any more immediate. It's simply time to act in the interests of all.



Councillor Caro Wild

Why do we need to change the way we travel around Cardiff?

Responding to the Climate Emergency

It's vital we all play our part in addressing climate change. Research shows the public's concern about climate change is at an all-time high. In Cardiff, 81.2% of people who took part in the Ask Cardiff Survey said they were either "very" or "fairly concerned" about climate change¹. Climate strikes and demonstrations are taking place across the world, including here where our schoolchildren and young people have marched on the National Assembly. The science is clear - urgent action is needed to cut carbon emissions. The high use of single-person car journeys into and around Cardiff only adds to the city's carbon figures. Changing how people travel is seen as one of the biggest contributions cities can make to reducing their impact on the climate.

We need to build a public transport network that encourages people out of cars and into more environmentally-friendly ways of travel. The climate emergency adds urgency to the decisions we need to take for our children's futures. We are not only working towards the UK's net zero emissions by 2050 target, we want to get there faster.

“

With 100,000 or so people commuting into Cardiff each day – around 80,000 of them by car – it is easy to see why transport is consistently the most important issue for Cardiff residents

”

Clean Air

Road traffic is also the main cause of air pollution. The health effects of air pollution have been extensively researched and are well documented. Along with physical inactivity it is one of the biggest health issues of our time. In Cardiff we have some of the highest levels of Nitrogen Dioxide (NO₂) pollution in Wales. In fact levels exceed the EU and national limits for NO₂ in some areas. We have a Clean Air Plan which aims to address NO₂ levels in the short term, but we want to get the air we breathe in the city as clean as it can be. Improvements to sustainable travel options and increasing the number of journeys made by active travel (walking and cycling) is a key part of this plan.

Poor air quality affects all of us, however we travel, but some people are more vulnerable. The people who suffer most from poor air quality are often the very young, the very old and those already suffering with ill health. For some, it can be fatal. For Cardiff and Vale University Health Board area, the number of equivalent deaths due to long-term air pollution are estimated to be in the range of 178-227 per year. Polluted air reduces average life expectancy across the UK by 7-8 months². Improving air quality and increasing levels of physical activity doesn't just protect our health, it can help to reduce the level of spending required on health services.





Creating Safe and Healthy Communities

Transport has a major role to play in making where we live safer, happier and more attractive. It is easy to forget that the most common cause of death for children between the ages of five and 14 years is being hit by a vehicle. Fear of traffic and the cars clogging up our streets have put a stop to children playing outside and limited their independence across much of our city³.

Recent research shows that two thirds of drivers feel that it is often not safe for children to walk or cycle because of traffic in UK cities⁴. Streets which are safe for children are streets which are good for all of us. By having a transport network that focuses on people, as well as vehicles, we can make sure our streets, neighbourhoods and public spaces are safer, cleaner, and quieter. Creating places where we choose to spend time with family and friends.

Having safe communities and attractive public spaces is also crucial if we are to promote active travel (walking and cycling). Not only is it the greenest way to get around - generating less pollution and helping to tackle climate change - it also helps keep us fit while saving us money.

A city for everyone

Travelling around our city is not always as easy as it should be, especially for people who are often the least mobile in our society. People with disabilities or reduced mobility, those with specific access needs, older people and children and young people should be able to enjoy all our city has to offer and get to the places they need to go easily and affordably. Jobs, training, schools, health-care services, leisure opportunities and childcare facilities should all be connected by our transport network. We need to make sure that everywhere in our city is open and accessible to everyone.

100,000

PEOPLE COMMUTING INTO THE AUTHORITY FROM OUTSIDE **EACH DAY**



80,000

TRAVELLING BY CAR



190,000

COMMUTER TRIPS MADE BY **CARDIFF RESIDENTS**



100,000

PEOPLE TRAVELLING BY CAR (ESTIMATED)



“

Transport has a major role to play in making where we live **safer, happier and more attractive**

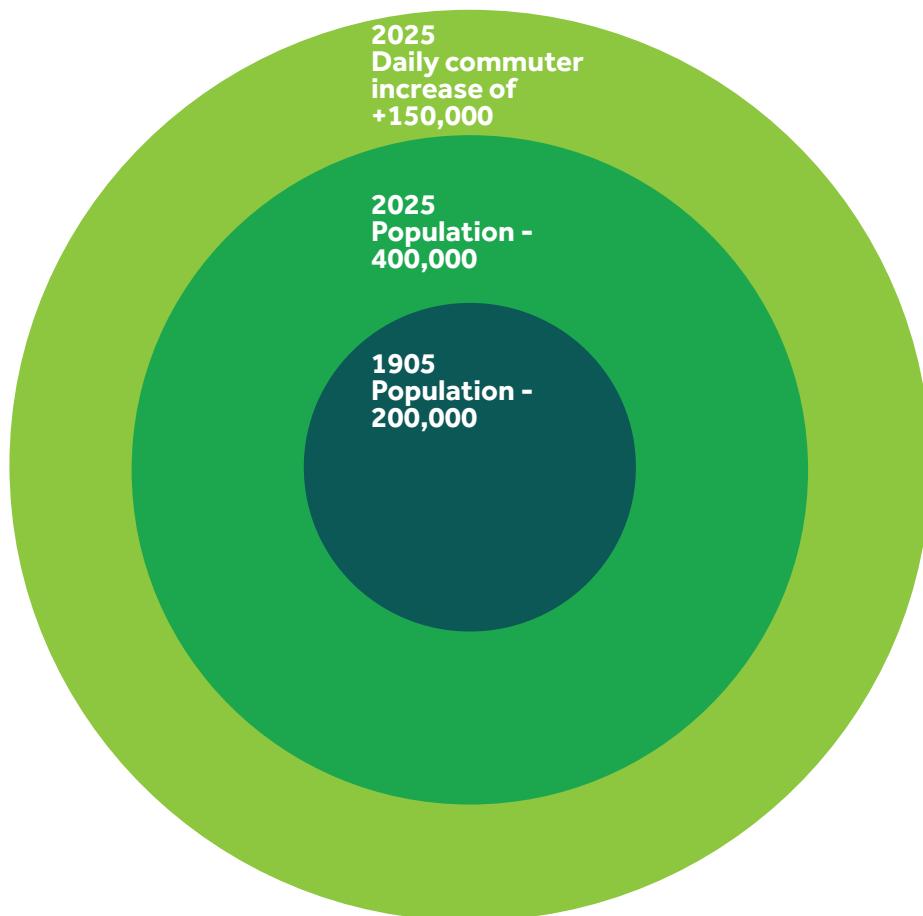
”

³Moving forwards: Healthy travel for all in Cardiff and the Vale of Glamorgan, Annual Report of the Director of Public Health for Cardiff and Vale of Glamorgan 2017

⁴Cities for People, Brake 2019

City growth

Cardiff growth



Managing a growing city

Over the next 20 years, Cardiff is expected to be the fastest-growing major UK city.

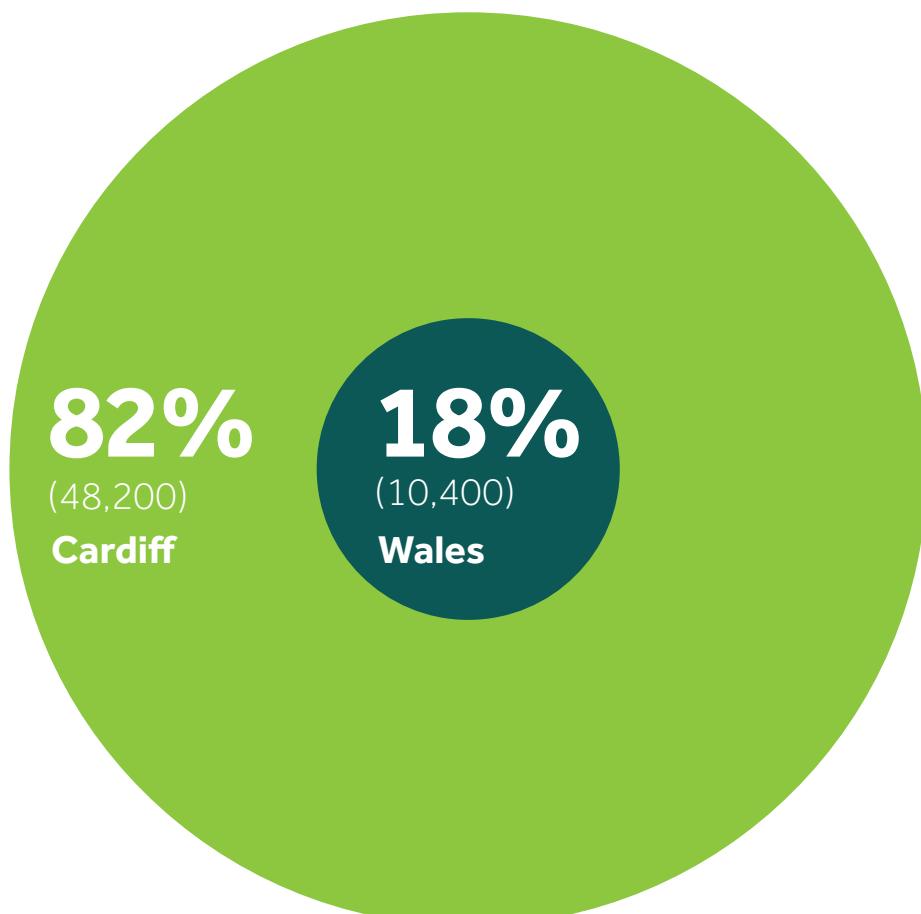
In fact, our population is projected to grow by more than every other local authority in Wales combined across that time. However, a city of soon to be 400,000 people will be operating on a transport system built to serve a much smaller population. As of 2018, there are around 100,000 people commuting into the authority from outside each day⁵, with around 80,000 of them travelling by car⁶. In addition to this there are nearly 190,000 commuter trips made by Cardiff residents, with nearly 160,000 of these within Cardiff, and around 30,000 travelling to work outside.

So it is easy to see why transport is consistently the most important issue for Cardiff residents, but the number of people commuting here means that getting our transport network right, is just as important for the

region as it is for those living in the city. The completion of the first phase of Central Square means that Cardiff has a central business district at the heart of the city centre, right next to a regional transport hub, but we need to make sure that excellent transport links support every part of the city and every community. With new homes being built in the north and west of Cardiff, new employment opportunities planned for the east of the city and a series of projects - like the indoor arena planned for the Bay - getting transport right is more important than ever.

“ Over the next 20 years, Cardiff is expected to be the fastest-growing major UK city ”

Jobs growth: Cardiff vs the rest of Wales⁷



Tackling Congestion & Supporting Business

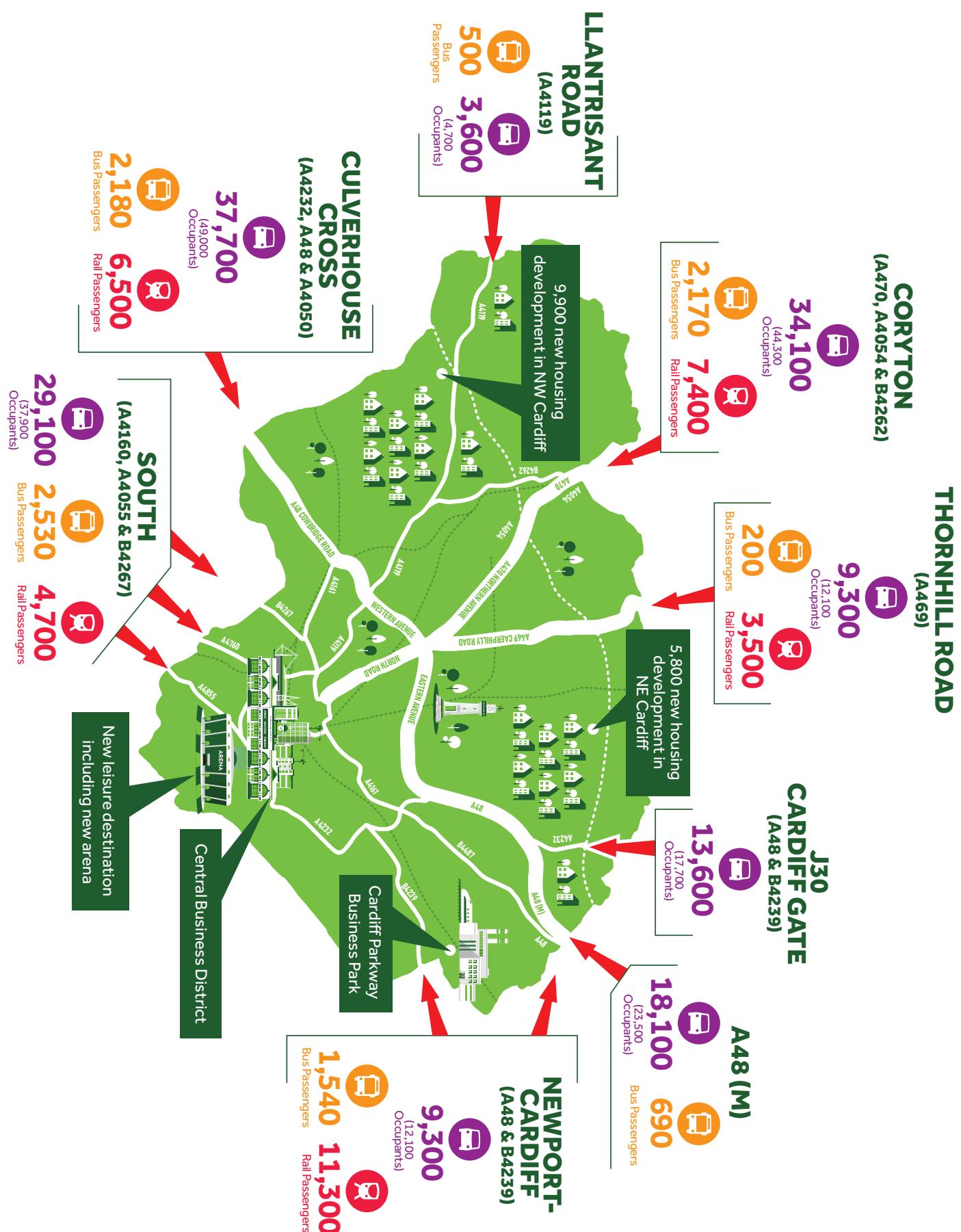
Congestion doesn't just annoy residents and commuters. It also costs money.

Since 2018 drivers in the city are losing 143 hours a year stuck in traffic during peak times. That's around 19 full working days at a cost of around £1,056 per driver. 19 full days you could spend with friends, family and doing the things you enjoy.

In the city centre during peak times, the average speed is just 9mph⁸. More than half of time travelling during peak periods (56-57%) is spent in delay, adding 17 minutes to what should normally be a 30-minute journey. As of 2018, the average journey time for the day as a whole is 28% more than when traveling during off-peak times⁹.



Growing Pains:
how people travel
into Cardiff daily



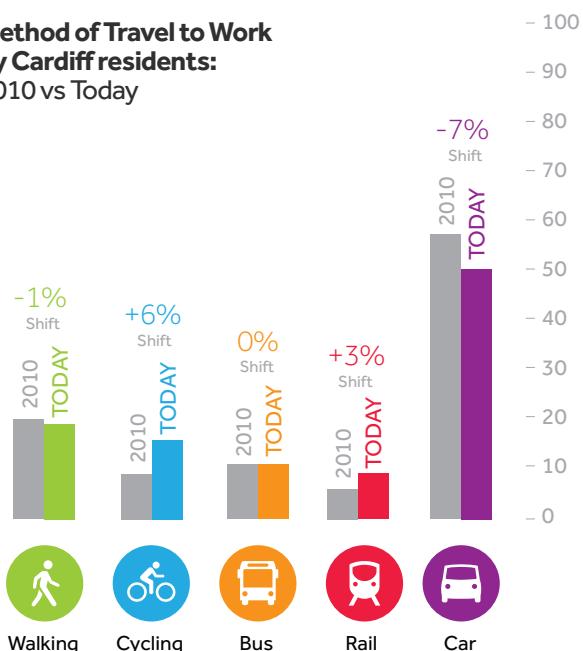
Moving Forward

In 2018 we published a Transport and Clean Air Green Paper, 'Changing how we move around a growing city' and asked you for your views on the future of transport in Cardiff. The responses made clear that Cardiff needs to be a well-connected city where everyone can easily, reliably and safely get to where they need to go in the greenest, healthiest and most affordable way. This White Paper builds on feedback we've received on the Green paper and our Clean Air Plan, to set out a series of detailed measures we plan to now take to make Cardiff's transport system fit for the 21st century. Achieving this will require major improvements to public transport, significantly enhanced opportunities for active travel and major innovations in the way road traffic is managed. Taken together, this can lead to a major shift in the way we move about Cardiff. We have already come a long way.

The numbers of people cycling and commuting by rail has increased, whilst car use has fallen - but it is not enough. This Transport White Paper sets out a bold blueprint for Cardiff, which puts people at the heart of our transport plans and will fundamentally change the way people move around our city. For all the reasons outlined above we do need to see lower car use and we have ambitious targets for active travel in the city. The percentage of journeys made by active modes will increase significantly, with cycling continuing to grow in popularity. Walking will always be hugely important part of our transport system and is vital for our local communities. The number of walking journeys may fall slightly, but the rising number of trips made by easily-accessible public transport will begin and end with a walking element.

Walking regularly can reduce the risk of type 2 diabetes, stroke and high blood pressure, contribute to good mental health, and lower levels of anxiety and stress¹⁰. Encouraging walking and cycling, and reducing air pollution, should result in significant improvements in cardiovascular health. Rates of diabetes obesity and cancer should fall, our mental health should improve and overall life expectancy should increase.

**Method of Travel to Work
by Cardiff residents:
2010 vs Today**

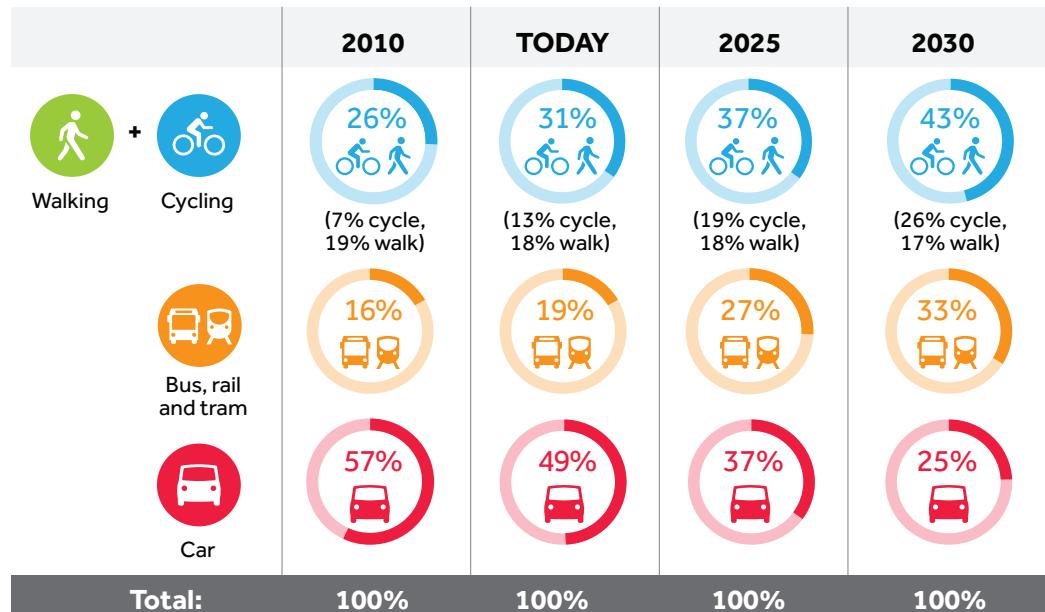


“

Encouraging walking and cycling, and reducing air pollution, should result in **significant improvements in cardiovascular health. Rates of diabetes obesity and cancer should fall, our mental health should improve and overall life expectancy should increase**

”

Targets for travel to work journeys by Cardiff residents



1. The Cardiff Metro

If you live in or around Cardiff then you may have heard about the South Wales Metro. It is an integrated public transport network, including rapid bus services, trains, tram-trains and active travel, and is being developed by Welsh Government and Transport for Wales.

The Metro is being designed to improve journey experience and to increase the amount of public transport travel across the city and south-east Wales. It will also help reduce carbon emissions using newer and cleaner fleet enabling more journeys to be taken by public transport. One of the main benefits of the Metro will be getting people in and out of Cardiff from the wider Capital Region quickly and efficiently.

This is much needed but if we are to cater for the needs of a growing capital city, then new rail lines and services must be considered now too.

That is why our proposals for a new Cardiff Crossrail tram-train line and a new Cardiff Circle tram-train line are so important. They will give thousands of people the options they need to change the way they travel in the city. Signalling and track improvements on the core metro, running between Radyr and Cardiff Bay, will unlock the pathways and capacity to enable the delivery of the Crossrail and Circle line routes.

Running from Creigiau, Crossrail's tram-train service could extend to the new housing developments that are planned beyond our boundaries, most notably the new houses planned between junctions 33 and 34 in Rhondda Cynon Taff. Connecting east to Newport is also possible.

The new line would travel through the major new housing site at Plasdwr – where around 7,000 new homes will be built – through Fairwater and Ely and the new housing development at Ely Mill, all the way to Cardiff Central Station. It will then run on through Cardiff Bay and the docks, on to Splott and Tremorfa. Crossrail would connect the city's newest developments, and its most deprived and disconnected communities, with the city centre and key business and employment hubs.

The Cardiff Circle Line would see new track connecting the Coryton Line to the Taff Vale Line north of Radyr to create a light-rail orbital route around the city. This would deliver a step change in connecting our city's suburbs. The Circle Line will also link up to a new Park & Ride facility at Junction 32 of the M4 corridor, helping to move commuting traffic from the north, off the roads and onto rail. A completed Circle Line would also improve frequency of service allowing the existing Coryton and City Line service to be upgraded from two services an hour to four services an hour, in both directions.

While bold, these proposals are also necessary, especially if we are to manage the city's growth in a sustainable way. Given its importance in keeping the capital city – and the city-region moving and working - then these proposals are of national importance.



To deliver the Cardiff Metro and enhance the South Wales Metro we will:

1 Deliver the **Cardiff Crossrail tram-train line**, integrating the Bay and City lines and increasing services to four per hour. The new communities in the west of the city and existing communities in the east which are currently poorly served by public transport will be connected by 2030 (phase 1 by 2024);

2 Deliver the **Cardiff Circle tram-train line** to complete an orbital route around the city;

3 Develop new **Metro**, in areas of the city such as Ely and Caerau, including bus rapid transit routes which can be delivered in the short term;

4 Deliver an integrated transport interchange at **Cardiff Central**, including a new central bus station in 2022 and supporting key transport interchanges across the city;

5 We will also support Welsh Government, Transport for Wales (TfW) and other partners in the development of the Metro which will:

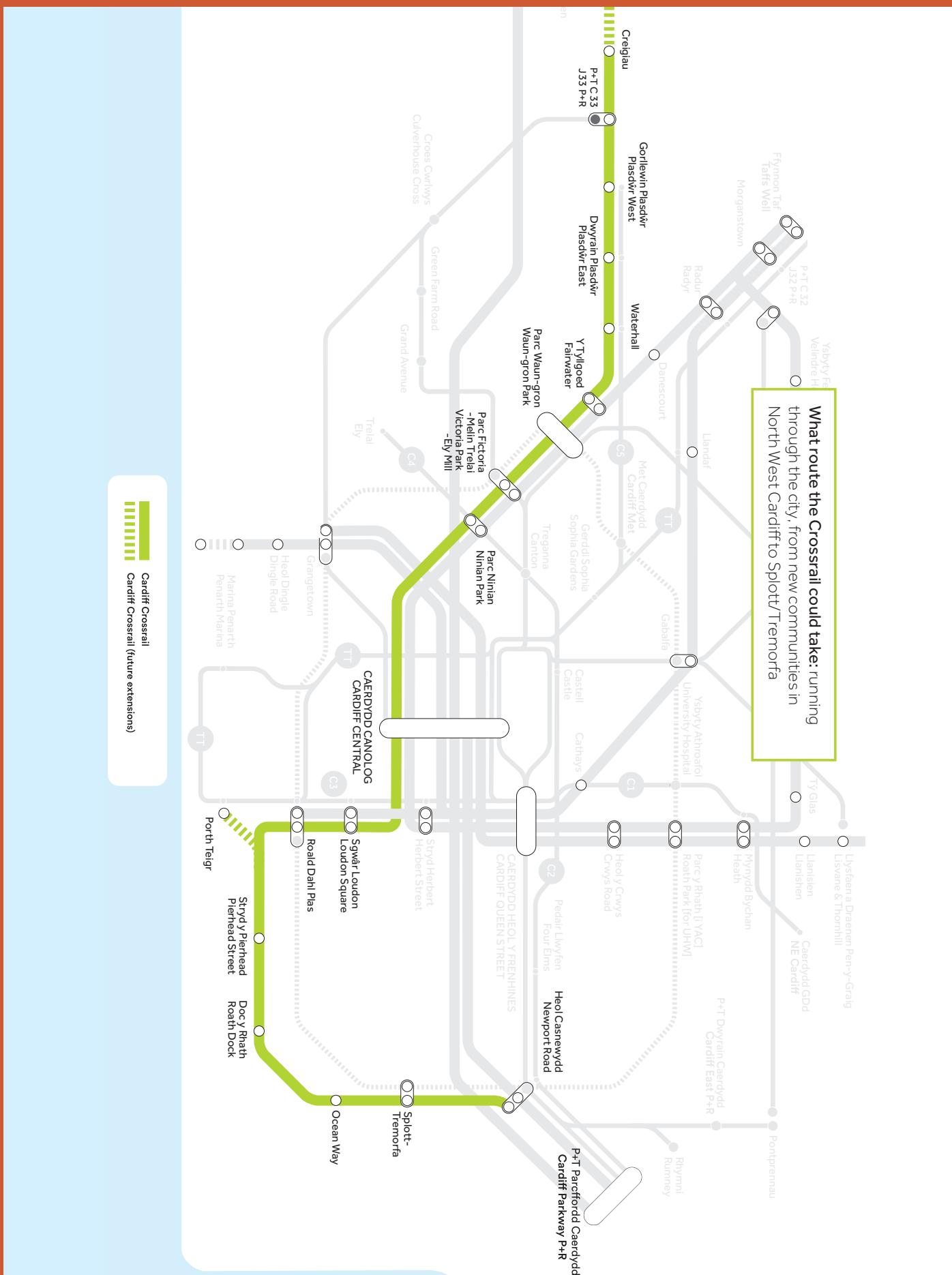
- Deliver phase 1 of Crossrail - a new tram-train service from Radyr to Cardiff Bay, via the City Line and a new link south of Central and across Callaghan Square, by 2024;
- Deliver new stations at Loudon Square (Butetown), in the heart of Cardiff Bay, Crwys Road and Roath Park by 2024;
- Deliver new stations at Gabalfa by 2028 as well as Victoria Park, Velindre, Roath Dock and Splott thereafter;
- Establish a new Mainline Train Station at Cardiff Parkway in St Mellons;
- Deliver station improvements at all existing train stations including extensive regeneration of Queen Street Station;
- Launch a fully integrated ticketing system for all public transport in Cardiff - including the Metro, bus and Nextbike - allowing one ticket to be used across the whole transport system.



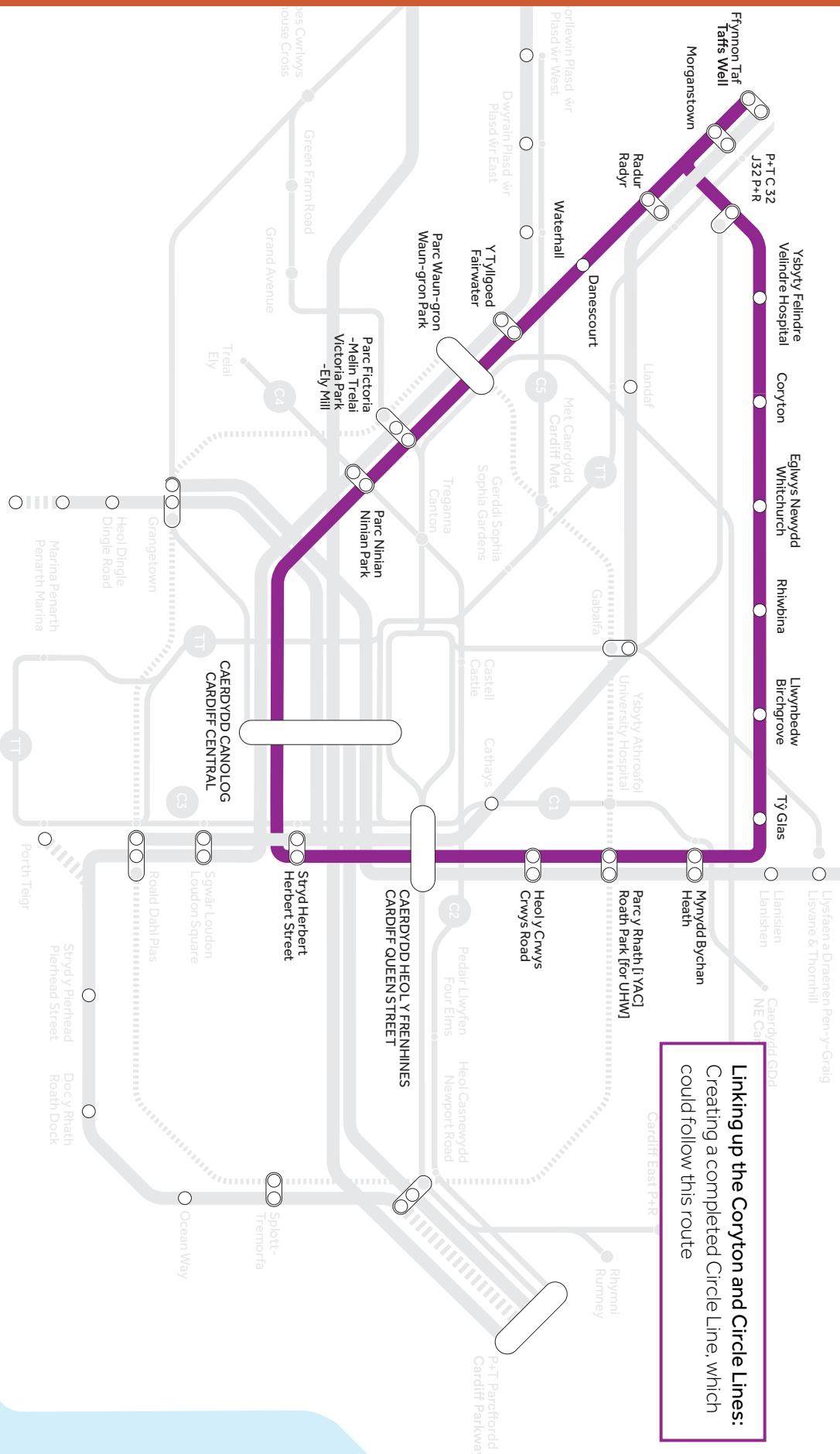
75%
of **Green Paper responses** supported being able to use the same ticket across the South Wales metro, the bus network and Nextbike (integrated ticketing)



Cardiff Cross Rail



| Cardiff Circle Line



2. Bus Growth

More people travel by bus in Cardiff than any other form of public transport. Buses connect communities, take us to work or to school providing easy access to shopping, leisure, childcare, health and other essential services. We know people value these services – a trip on any bus in Cardiff is sure to end with a 'Cheers drive!'.

Bus services also link Cardiff with the region and are an integral part of the regional network. Buses are especially vital for some of the region's most vulnerable residents, including those people who cannot afford to own a car or are unable to drive. Groups including children and young people, older people and people with disabilities are often particularly reliant on bus travel.

We know, however, that a real issue with Cardiff's current bus services is that they too often require people to journey into the city centre before they can connect with the service that takes them to their final destination. Where journeys involve a change of bus this can also mean extra cost, a major issue for young people and low-income households travelling to education and jobs. We also know that delays and journey times mean buses can be an unattractive alternative to cars. For some people it can take over an hour on the bus to get to any major destination outside the city centre.

“

For some of the region's most vulnerable residents, buses are especially vital

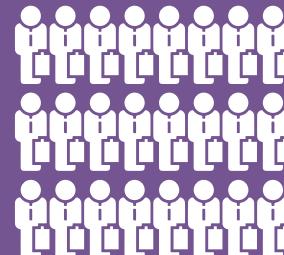
”



We need to make all of this a thing of the past. Moving forward, Cardiff will be served by next generation buses, travelling on bus corridors and supported by technology which gives buses priority at signals and junctions. Regular, rapid bus services will link to the region and join up seamlessly with train services.

When running on bus-priority lanes, buses are great queue-busters, free from the delays, traffic and congestion experienced by other motorists. We will make sure buses in Cardiff are greener, more reliable and more affordable, with prices as low possible, taking us to the destinations we want when we want, supported by easy-to access travel information which is accurate and simple to understand.

Buses help reduce congestion by taking cars off our roads



To improve travel by bus into and around Cardiff we will:

1 Reduce bus fares across the city with the aim of introducing £1 journeys

2 Improve bus services by:

- Establishing a new cross-city bus network, linked to the new Metro network, which includes a bus loop around the city centre and new bus stations in the east and west of the city;
- Improving access to key destinations within the city including the University Hospital of Wales and Cardiff Metropolitan University;
- Using SMART corridors to prioritise buses at traffic lights;
- Improving access to regional destinations - including Newport, Pontypridd and Penarth - by delivering new bus links and SMART corridors to the East, North and West of the city;

3 Make sure all buses in Cardiff are clean, green and efficient by shifting to electric buses and cleaner engines;

4 Take major traffic off Cardiff roads by establishing new Park & Ride facilities at strategic areas - including Junction 33 and Junction 32/A470 - making journey times quicker, cheaper and stress free.

87%

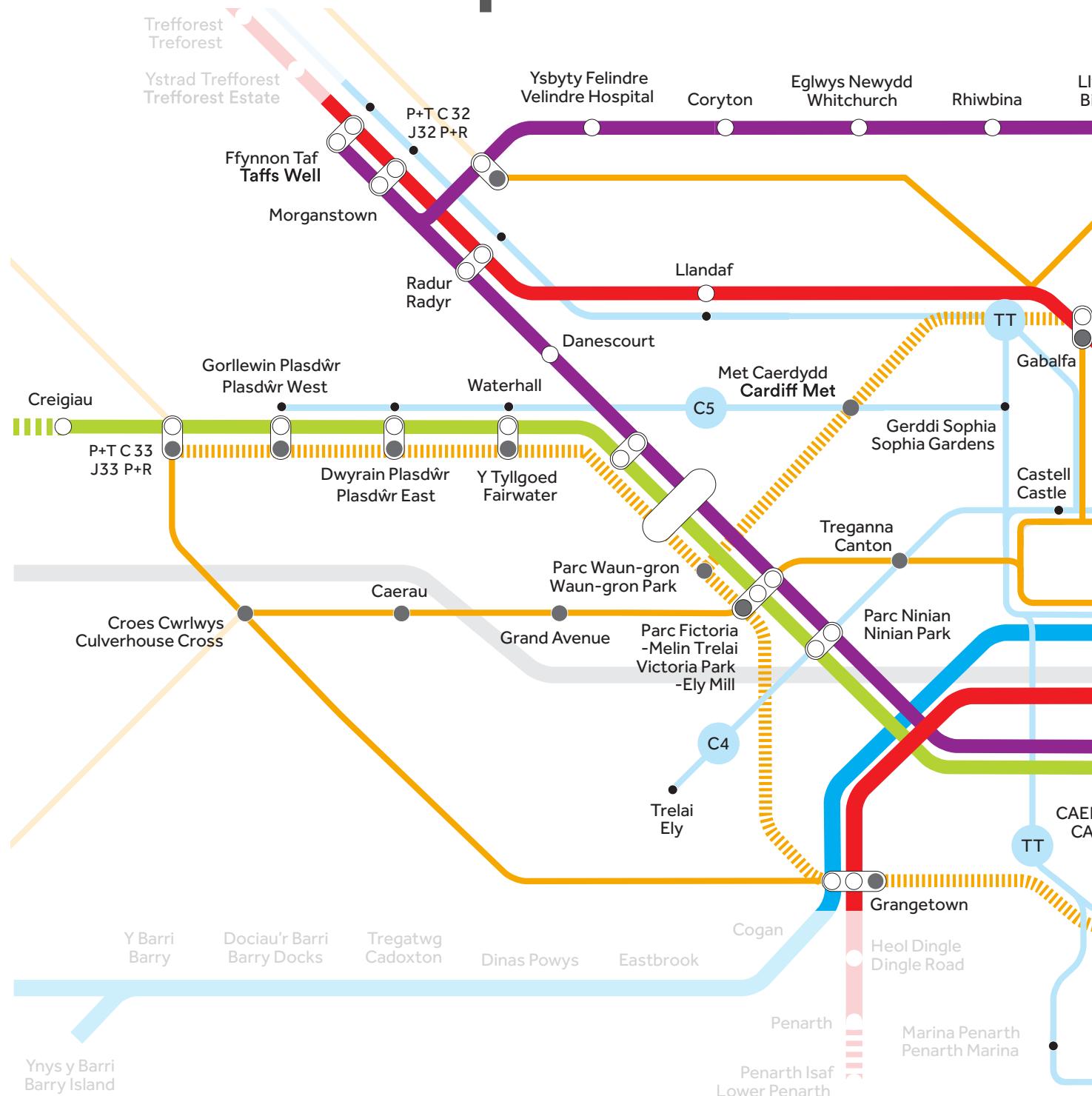
of Green Paper responses supported the reshaping of the bus network

60%

of Green Paper responses supported improved regional park and ride connections

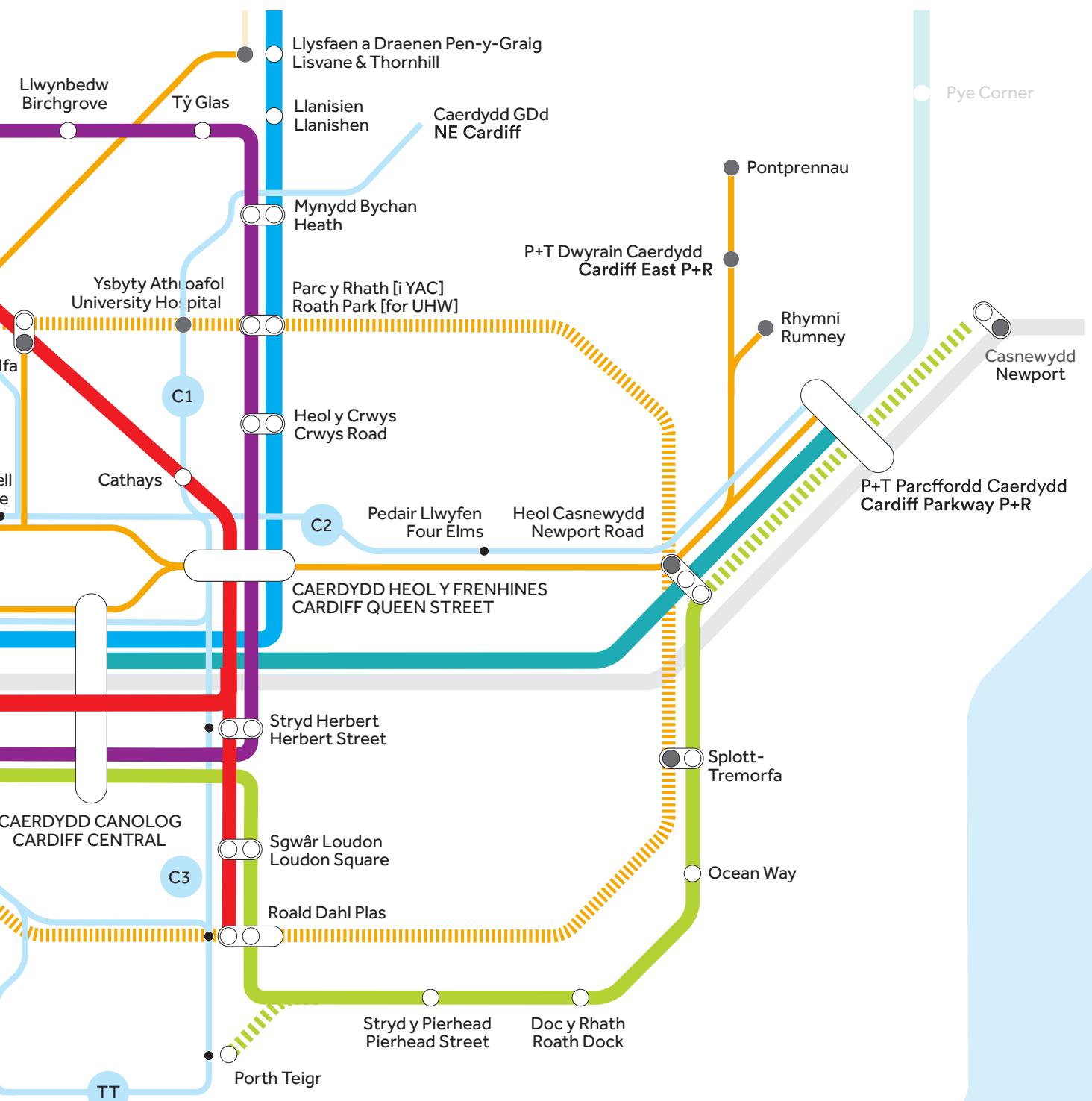


Cardiff's Transport Vision



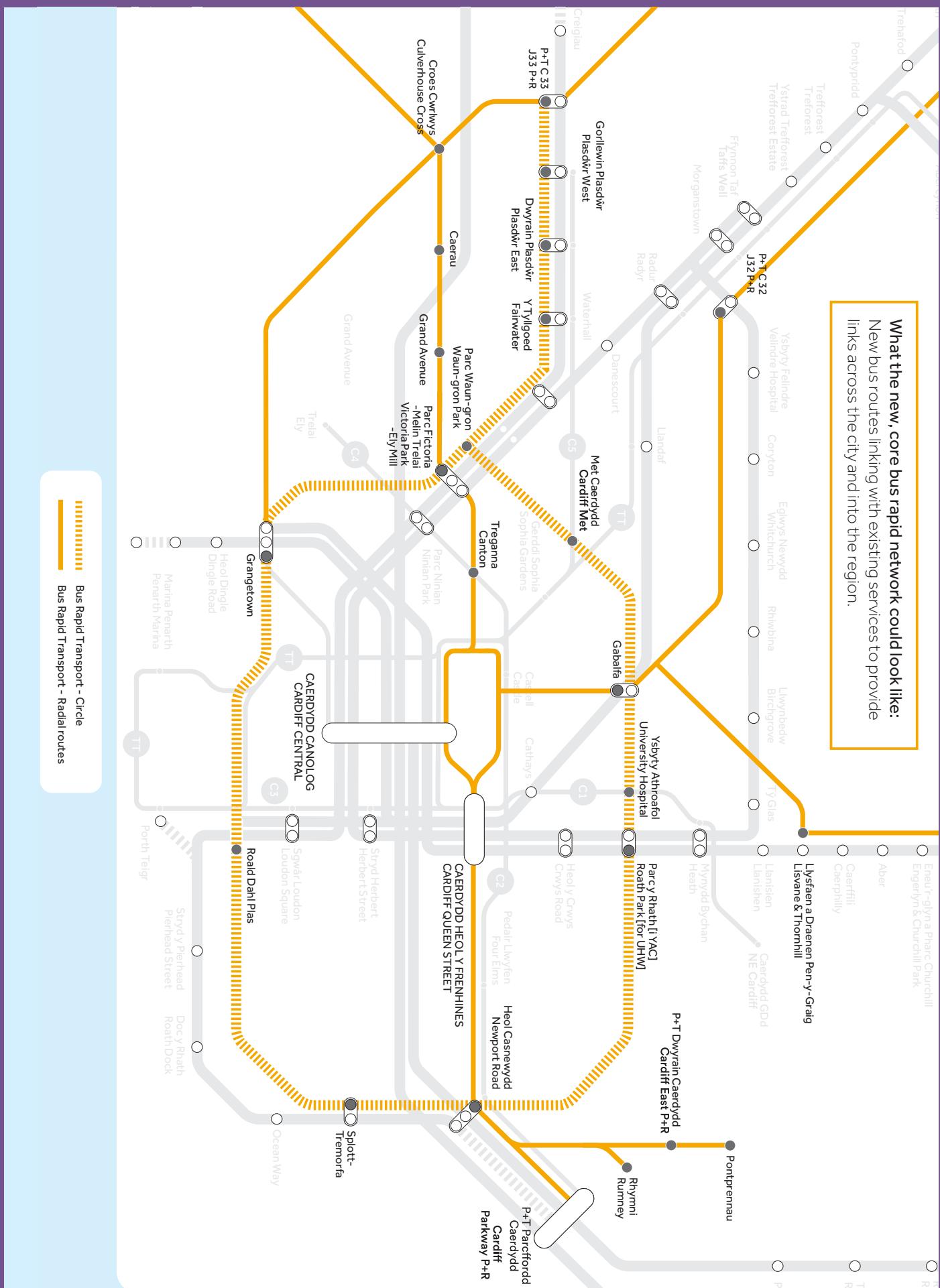
- Cardiff Circle
- Cardiff Crossrail
- Cardiff Crossrail (future extensions)
- Core Valleys Line
- Core Valleys Line (future extensions)
- Rhymney & Vale
- Ebbw Vale
- Mainline & cross country services
- Bus Rapid Transit - Circle
- Bus Rapid Transit - Radial routes

- Cycleway
- Rail station
- Rail and/or Bus Rapid Transit interchange
- Bus Rapid Transit stop
- Multi-modal interchange
- Cycleway route number
- Cycleway location



Our proposals for developing the South Wales Metro network in Cardiff: more detailed work is needed but this map shows how different routes and modes could link together across the city and into the region

| Bus Rapid Transport



| Proposals for the new Cardiff Central Interchange



| Proposals for Wood Street



3. Active Travel and streets for people



Walking and cycling are by far the cleanest, healthiest and cheapest ways of moving about the city. Indeed for many shorter journeys they can be the quickest as well.

Combined with frequent and reliable public transport longer journeys can be made easy too. We realise that not every journey can be made by active travel, but we want to make it the best option for a greater number of people. The health benefits are also too important to ignore. Not only does active travel make our streets, neighbourhoods and public spaces safer, cleaner and quieter, but it also takes congestion off our roads.

We know, though, that our city's cycling infrastructure is too often fragmented and that people don't always feel safe riding a bike in Cardiff. Only 34% of people think cycling safety in Cardiff is good, and only 23% think the safety of children's cycling is good (Bike Life 2017). This is why we are investing £10m of the Council's own capital budget to match grants from Welsh Government up to 2022 into a network of segregated Cycleways across the city. We are on course to deliver six major, strategic Cycleways by 2022. These will provide safe access to the city centre for cyclists along major commuting corridors.

We have also launched our on-street Bike scheme – NextBikes - which is the most successful bike-sharing scheme outside London.

To help people take up active travel, through the Public Services Board we are also supporting the Healthy Travel Charter. Organisations signed up to the Charter commit to support and encourage their staff and visitors to use healthy modes of travel, for example, by giving staff access to cycle parking and other facilities, offering discounts on public transport and supporting agile working. A number of key public sector organisations have signed up to the Charter, with work underway to offer the Charter to businesses and other organisations.

This is just the start. We have spoken about our ambition to become one of the best cycling cities in the UK. We now need to plan how we achieve this.

Cardiff is leading the way on
20mph in Wales
- we will rollout **20mph limits** across the city

“

We are investing **£10m** into a network of segregated **Cycleways across the city** and are on course to deliver 5 major, strategic Cycleways by 2022

”

To increase active travel and improve local air quality we will:

- 1** Build the highest quality, safe and fully-segregated cycle network across the city by 2026, with Primary Cycleways which will extend out from the city centre to the Bay and residential areas, together with a supporting network of feeder routes;
- 2** Complete a cycle loop around the city centre which will connect each of the six Cycleways with each other;
- 3** Expand the Nextbike hire service to at least 2,000 bikes across the city, developing regional links and making membership accessible to more people;
- 4** Rolling out a 'streets for health' initiative across the city, to enable all streets to be reclaimed as public spaces and become healthy, green, safe, child friendly, to encourage walking and cycling, with high-quality pedestrian crossings, biodiversity, planting and sustainable urban drainage systems (SUDS) and provide improved access for everyone, particularly those with restricted mobility;
- 5** Develop Active Travel Plans and accessible walking and cycling routes for all schools by working with children, teachers, parents and governors to promote walking, scooting and cycling to and from schools;
- 6** Make Cardiff's speed limit 20mph by default.

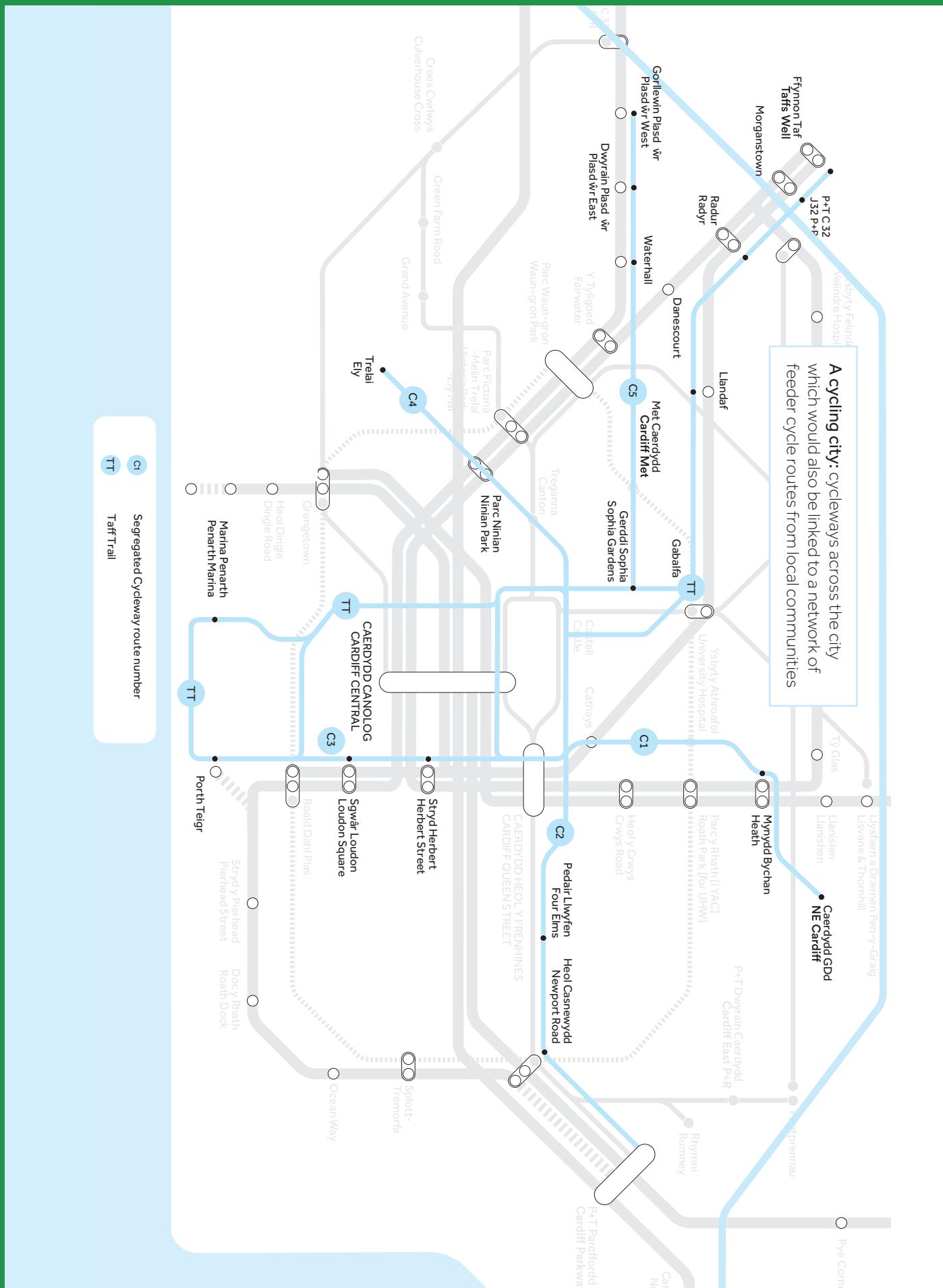


87%

of Green Paper responses supported a comprehensive network of **fully segregated cycleways** with a primary cycle route network



Cycleways



I Cycleway proposals for Castle Street



I New crossing on Taff Mead Embankment



4. The Future of the Car

We know that, for many people, cars are an important part of daily life. It is clear that we have to reduce the number of cars moving around the city, but we have to make those journeys which have to be made by car as efficient and sustainable as possible. Reducing car use and creating safe community spaces is not only good for the environment and for journey times, it will also make our streets better places to live and safer for our children.

New technology offers opportunities to replace our older, more polluting cars with cleaner vehicles, powered by electricity or hydrogen, for example. It is important that the city supports this transition. Although cleaner cars will help to reduce the impact on our air quality and environment, they do pollute and we will still need to seriously address congestion on our roads.

“

We will still need to seriously address congestion on our roads

”



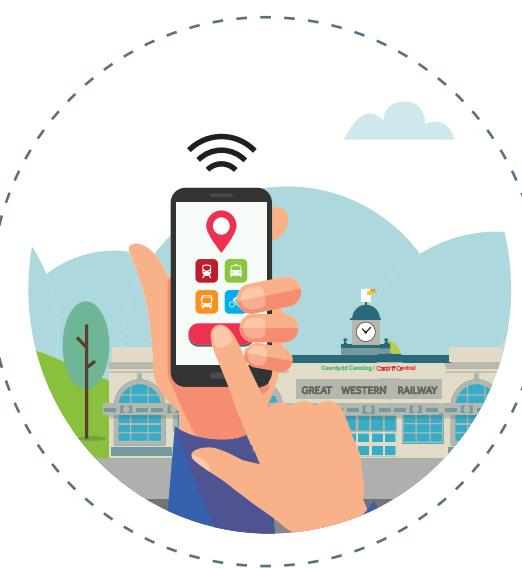
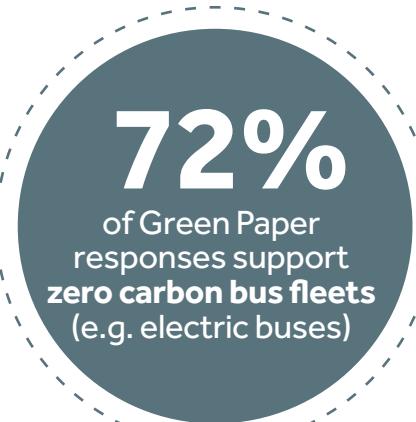
Already the transport infrastructure is under pressure. Our road network has not been designed to accommodate the volume of traffic it serves every day and, given the growth of the city and number of people commuting in from outside Cardiff action is urgently needed to address this.

Technology has also brought on-demand taxi services to the market as well as lift-sharing services. Self-driving cars (autonomous vehicles) may soon be viable and could help fill in the gaps in the transport network, but all these will still add to congestion. 'Mobility as a Service' offers a shift away from paying to own and use your car, towards buying travel as a service, as we've seen happen with movie and music streaming services.



To support the move towards cleaner vehicles and manage traffic on our road network, we will:

- 1** Introduce a comprehensive approach to parking across the whole city, including addressing unmanaged street parking in areas where local residents are regularly inconvenienced and tackling pavement parking;
- 2** Reduce the need to own private cars and the associated costs - including insurance, petrol, car tax and road repairs- by working with car club operators to provide city-wide, easy, 24-hours-a-day access to car club vehicles;
- 3** Encourage the uptake of electric vehicles by significantly increasing the number of publically-available electric vehicle charging points by 2025, and making all Council Fleet Cars and LGVs zero emission capable by 2025, and HGVs zero emission capable as soon as possible;
- 4** Support businesses and local communities by creating better accessibility in South East Cardiff, for example by completing the Eastern Bay Link road and connections with Llanrumney;
- 5** Introduce a complete SMART technology approach to manage traffic in Cardiff, including the use of real time travel information to monitor and respond to transport, traffic and parking data through SMART corridors;
- 6** Work with the taxi industry to achieve overall improved standards, services and fleet, with a phased but ambitious approach to allow drivers to convert to more sustainable vehicles.



A Capital City that works for Wales: supporting the wider region

Rapid bus links and new Metro lines/stations across the South East Wales region could change the way people travel.

We are already working with our regional partners, Welsh Government and Transport for Wales to make sure that the right transport infrastructure is in place to provide real choices for people travelling into Cardiff from the wider region. We want to support the delivery of 'Metro Plus' projects which will improve access to public transport for all areas in the region, making public transport journeys into Cardiff the easiest and quickest way to travel. Communities are going to benefit from, for example, new/expanded park and rides in Pentrebach and Pyle, a Transport Interchange Hub in Porth and a multimodal interchange at Barry Docks. An EV charging infrastructure network will be rolled out to support the use of low-emission vehicles.

We will also support work to identify and deliver park and ride sites and services for the main transport corridors from the wider region into Cardiff and for the regional rollout of the nextbike scheme. Projects are already being developed on key corridors.

Regional express bus project

We are proposing to implement a new express, direct bus service connecting main regional towns and areas – including Maerdy, Blackwood and Pontypridd - to Cardiff by 2024. These will be regular, affordable bus services on modern buses with USB and Wi-Fi. Changing between different modes and services would be easy at transport hubs and interchanges.

North West Corridor

We want to better connect the communities of Llantrisant, Talbot Green and Cardiff. This may include Bus Rapid Transit and tram-train. Work has already started to deliver a new transport interchange incorporating park and ride at J33 of the M4 that will give people transport choices at this key corridor gateway. Interchange opportunities for J34 are also being explored, together with the possibility of a new road link which would support the delivery of bus priority measures.

Northern Corridor

A SMART Corridor uses extensive real-time data to

intelligently manage the movement of traffic, public transport, pedestrians and cyclists into the city. It will also influence travel behaviour by helping people to make better informed travel decisions, supporting mode shift. This would help to:

- Better manage strategic corridors to control queuing and mitigate the impacts of reallocating road space to sustainable modes of travel;
- Improve air quality;
- Provide real-time travel information to encourage sustainable travel;
- Prioritise walking, cycling and public transport.

A pilot scheme is being developed for a major section of the A470 corridor between Coryton and Gabalfa and is expected to be introduced in 2020. If successful, the same principles could be rolled out and applied to other corridors.

North and South East Corridors

Options are being explored to improve transport links - walking and cycling routes, public transport and highway improvements - in the South East of the city which will benefit some of our least connected communities. Bus rapid transit could also improve links between Cardiff and Newport.

The plans will support growth as well as boosting the regional economy by:

- Providing new transport capacity and reducing journey times;
- Improving connectivity across the region to give better access to a wider range of jobs;
- Supporting the growth of business clusters in the larger cities;
- Improving well-being and access to opportunities.

South-West Corridor

The Penarth Cardiff corridor is critical for access from the Vale of Glamorgan but suffers from high levels of congestion and unreliable transport services. A number of options for improving active and sustainable travel provision are being developed and reviewed, including a pilot electric bicycle scheme, interchange facilities at Cogan Station, a Penarth Headland Link for active travel and a Cardiff Barrage bus link to deliver quicker and more reliable bus services which will help encourage modal shift.

| Connecting Cardiff and the region



Delivery timeline and Funding



This White Paper outlines the ambitious plans, which are required to make Cardiff the green, fair and prosperous city that we all want it to be.

We estimate that transforming Cardiff's transport system will cost between **£1-2billion**. To tackle climate change and the levels of inequality in our city we need a low carbon travel system which breaks our reliance on cars and connects all of our communities with jobs, opportunities and services. This is vital for the success of Cardiff as a city and for the national economy of Wales.

Making these plans a reality will require a partnership with every level of Government – most importantly with the Welsh Government and Transport for Wales. It will require collaborative working with our neighbouring authorities, with partners across the public and private sectors, and civic and community groups.

Paying for these schemes will require a shift in the way transport in Cardiff is funded. We propose to consider all possible delivery options and will work with Welsh Government to develop a comprehensive investment plan to bring forward this vision and make it a reality. As part of a robust decision making process we will consider a wide range of possible charging mechanisms which will include some form of Road User charging. Any revenues raised from such a scheme would be spent directly on public transport.

This could take many different forms but one example could entail a scheme whereby all vehicles driving into Cardiff would pay a low fee (e.g. £2/day) for crossing into a charging area. Exemptions for emergency vehicles, motorcycles, registered blue badge holders people with disabilities could form part of any scheme¹¹. Our preferred option would include an exemption for Cardiff residents from any charge.

In line with best practice this proposal will be tested alongside other delivery options that we will consider in our initial assessments, such as a Workplace Parking Levy, Low Emission or Clean Air Zones. Such schemes are becoming more widespread across the UK with many UK Cities – including Birmingham, Leicester, Bristol and Leeds - considering or implementing such schemes. No scheme will be taken forward unless we are satisfied that such a scheme will work for our residents and the City.

We fully understand and want to make clear that several key public transport projects and initiatives would need to be in place before any charging mechanism could be introduced. The timeline opposite shows the projects we believe would need to be up and running, and our aspirations for what the delivery for these projects would look like.



“
Our preferred option would include an exemption for Cardiff residents from any charge
”

Delivery timeline for key transport projects

Improvement to public transport across the region

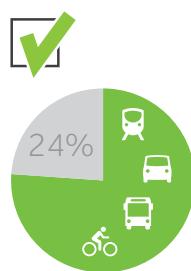
- 2020**
 - Transport for Wales to introduce extra train capacity on key Valley lines
- 2021**
 - New/Improved Park and Ride at J32/A470, J33 and Cardiff East
 - New bus stations at Waungron and University Hospital of Wales
- 2022**
 - Completion of Metro Plus Phase 1 projects e.g. Porth Interchange and Pontypool and New Inn/Pyle Park and Rides
 - Segregated cycle network first phase (six routes) completed
- 2023**
 - Cardiff Central Bus Station to be completed
 - Transport for Wales to introduce further train capacity on key Valley lines
 - Metro station opened at Crwys Road
 - Cardiff Parkway station opened at St Mellons
 - Regional express bus scheme implemented
- 2024**
 - Crossrail phase 1 - a new tram-train service from Radyr to Cardiff Bay, via the City Line and a new link south of Central and across Callaghan Square
 - Metro stations opened at Roath Park and Loudon Square

Introduction of charging mechanism

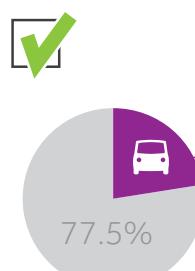
- 2025**
 - Transport for Wales to introduce additional services (Sundays and evenings)
- 2028**
 - Full Cycle network completed
 - Metro station opened at Gabalfa
 - Cardiff Circle tram-train line to be opened
 - Cardiff Crossrail tram-train line to be opened
 - Metro stations opened at Victoria Park, Newport Road, Velindre and Splott



Our city is growing and to tackle climate change, together we need to...



Make **76%** of all journeys by sustainable travel modes by **2030**



Make **22.5%** reduction in the number of car journeys by 2030 (from 2018)



2018



2030

Double the numbers travelling by bus by 2030 (from 2018)



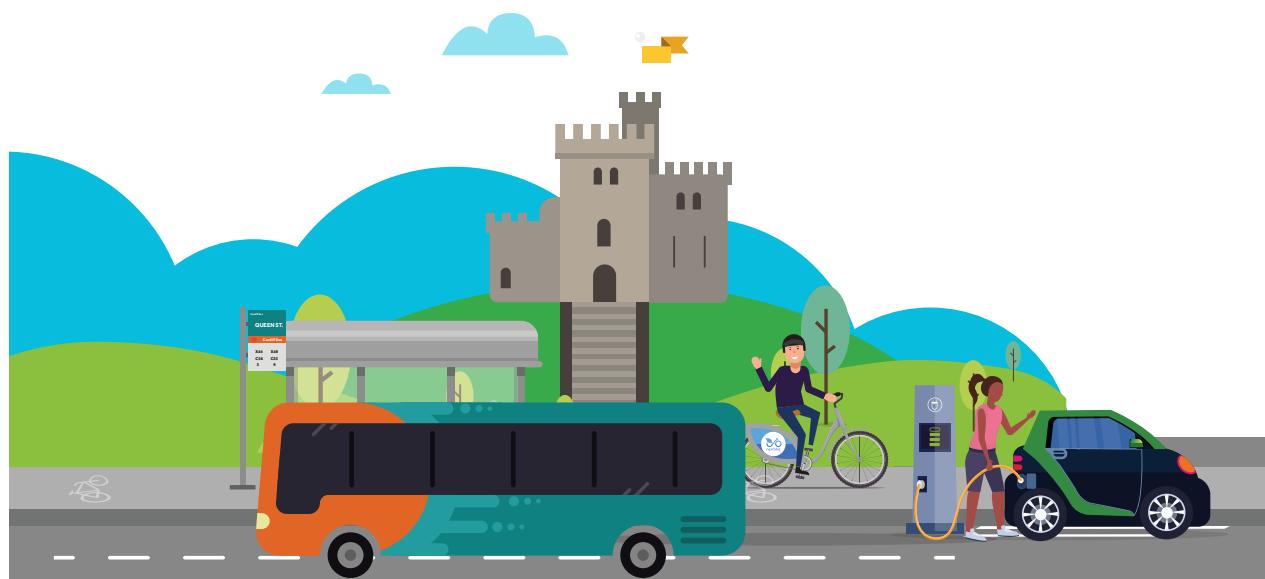
2018



2030

Doubling the numbers cycling by 2030 (from 2018)

Emissions from transport are one of the biggest contributors to climate change. To tackle climate change and reduce Cardiff's carbon emissions, we all need to take action to change our travel behaviour.



Can you help by...



COMMUTERS:

- Catching the bus/train at least once a week
- Cycling to work at least once a week
- Car sharing with a colleague
- Cutting business travel by having online meetings and working flexibly whenever possible

I/we will.....



SCHOOL JOURNEYS:

- Walking, scooting or cycling to school at least once a week
- Parking further away from the school and walking for part of the journey
- Car sharing with friends to school
- Talking to my school about how we can support healthier and active journeys to school

I/we will.....



CAR DRIVERS:

- Walking or cycling for short local journeys
- Car sharing whenever possible
- Switching to a low emission or electric car
- Drive at 20mph where people live

I/we will.....



FAMILIES:

- Walking or cycling for short local journeys
- Catching the bus/train for longer journeys
- Joining Cardiff's car club to save money on owning a car
- Using a car club to cut the number of cars in the household

I/we will.....



BUSINESSES:

- Helping your employees to travel actively by setting up a Cycle to Work scheme
- Signing the Healthy Travel Charter
- Supporting online meetings to cut business travel
- Joining Cardiff's car club to use for business travel

I/we will.....



STUDENTS:

- Walking or cycling for short journeys
- Catching the bus/train for longer journeys
- Joining Cardiff's car club instead of bringing your own car to Cardiff
- Car sharing with flatmates/friends for longer journeys

I/we will.....



This document is available in Welsh /
Mae'r ddogfen hon ar gael yn Gymraeg



CARDIFF COUNCIL

**Equality Impact Assessment
Corporate Assessment Template**



Policy/Strategy/Project/Procedure/Service/Function Title: Transport White Paper

New/Existing/Updating/Amending: New

Who is responsible for developing and implementing the Policy/Strategy/Project/Procedure/Service/Function?

Name: Paul Carter	Job Title: Operational Manager
-------------------	--------------------------------

Service Team:	Service Area: Planning, Transport and Environment
---------------	---------------------------------------------------

Assessment Date: October 2019

1. What are the objectives of the Policy/Strategy/Project/ Procedure/ Service/Function?

1. In 2018, the Transport and Clean Air Green Paper recognised the central importance of transport in creating a city which is healthier and stronger for future generations. The extensive consultation and engagement on the Green Paper shows clearly how much our transport system impacts on the daily lives of people across the city and how important it is that we tackle the long standing problems with the city's network.
2. The Draft Transport White Paper builds on the work of the Green Paper to set out our priorities for ensuring Cardiff is a well-connected city where everyone can easily, reliably and safely get to where they need to go in the greenest, healthiest and most affordable way. The White Paper sets out a vision for transport in the city which would see car use continuing to fall and ambitious modal split targets achieved through investment in transformative transport projects.
3. The Draft Transport White Paper builds on the work of the Green Paper to set out our priorities for ensuring Cardiff is a well-connected city where everyone can easily, reliably and safely get to where they need to go in the greenest, healthiest and most affordable way. The White Paper sets out a vision for transport in the city which would see car use continuing to fall and ambitious modal split targets achieved through investment in transformative transport projects.
4. The White Paper outlines four major priorities for the city:
 - A Cardiff Crossrail Tram line which would connect the city's newest communities (e.g. Plasdwr) as well as providing links to the city centre and key business developments for some of the city's most deprived communities (e.g. Splott, Tremorfa). The

**Equality Impact Assessment
Corporate Assessment Template**

	<p>line could also extend beyond Cardiff's boundaries, connecting the city with the wider region, for example, new housing developments in Rhondda Cynon Taff.</p> <ul style="list-style-type: none">- The Cardiff Circle Line would connect the Coryton Line to the Taff Vale Line, north of Radyr. This would provide new park and ride opportunities from J32 of the M4 and allow for more frequent services on the Coryton and City lines.- Rapid Bus Transport which will provide cleaner, greener vehicles, travelling on dedicated bus corridors with smart network management giving buses priority. New park and ride facilities will connect the city with the wider region.- Active Travel, to enable more people to walk and cycle for more journeys, making our city safer, cleaner and quieter. Investment in five fully segregated cycleways and a network of supporting routes as well as interventions to provide high quality facilities for walking will help to deliver the ambitious target for active travel set out in the policy. <p>5. In addition to the four key priorities, the White Paper outlines a number of other actions which will help to deliver the scale of change required. For example, working closely with Welsh Government and Transport for Wales on the delivery of the Metro – including new and better stations – and fully integrated ticketing; delivering lower speeds where people live through the continuing commitment to 20mph limits; developing a 'Healthy Streets' programme to support active travel and play in our local communities; tackling dangerous and inconsiderate driving and parking behaviour around our schools, and supporting the move towards cleaner vehicles and managing traffic on our road network through facilitating charging infrastructure for electric vehicles, developing the car club offer in the city and using the latest technology to provide a new, up to date, Real Time Information system.</p>
--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

2. Please provide background information on the Policy/Strategy/Project/Procedure/Service/Function and any research done [e.g. service users data against demographic statistics, similar EIAs done etc.]

The Transport White Paper is a high level strategy document which has been developed from a number of other technical documents, studies, plans etc. For example, it has been directly informed by the results of the Clean Air and Transport Green Paper consultation, which ran from 26th March to the 1st July 2018, generated over 3500 individual responses as well as a number of collective responses from

**Equality Impact Assessment
Corporate Assessment Template**

organisations. Technical work is underway on many of the projects which have been included in the White Paper (e.g. the North West Cardiff corridor, A470 Smart Corridor, City Centre projects). The White Paper uses data from a number of sources (for example, Inrix congestion data, Census, Public Health Wales air quality data). It also references projects which are being delivered by other stakeholders, such as Transport for Wales and surrounding regional authorities.

Detailed, scheme based EIAs will be developed for each of the individual schemes from the White Paper which are taken forward for development and implementation.

3 Assess Impact on the Protected Characteristics

3.1 Age

Will this Policy/Strategy/Project/Procedure/Service/Function have a **differential impact [positive/negative/]** on younger/older people?

	Yes	No	N/A
Up to 18 years	Y		
18 - 65 years	Y		
Over 65 years	Y		

Please give details/consequences of the differential impact, and provide supporting evidence, if any.

The White Paper has the potential to facilitate positive impacts by ensuring Cardiff is a well-connected city where everyone can easily, reliably and safely get to where they need to go in the greenest, healthiest and most affordable way by providing physical improvements to the transport network (e.g. cycleways for all age and ability cycling), better services (e.g. bus/train) and information which is more easily accessible and understandable. This may particularly benefit older and younger people who often have fewer choices of and/or less access to transport options, for example, through providing accessible public transport services (e.g. step-free access) and enhanced active travel facilities (e.g. for all age and ability cycling, improved pavement surfaces and crossings). Similarly, reducing traffic speeds in local communities through 20mph limits may also be beneficial for older and younger people in terms of casualty prevention.

What action(s) can you take to address the differential impact?

Detailed, scheme based EIAs will be developed for each of the individual schemes from the White Paper which are taken forward for development and implementation. These will assess any differential impacts on an individual scheme basis and identify appropriate actions. This will include physical/emotional/informational barriers, as

**Equality Impact Assessment
Corporate Assessment Template**

appropriate.

3.2 Disability

Will this Policy/Strategy/Project/Procedure/Service/Function have a **differential impact [positive/negative]** on disabled people?

	Yes	No	N/A
Hearing Impairment	Y		
Physical Impairment	Y		
Visual Impairment	Y		
Learning Disability	Y		
Long-Standing Illness or Health Condition	Y		
Mental Health	Y		
Substance Misuse	Y		
Other	Y		

Please give details/consequences of the differential impact, and provide supporting evidence, if any.

The White Paper has the potential to facilitate positive impacts as outlined above. This may particularly benefit people with disabilities who may experience more barriers, have fewer choices of and/or less access to transport options. The provision of accessible public transport services (e.g. step-free access to buses, trains and trams, ensuring stations/bus stops are accessible) may have a significant positive impact. Similarly, providing cycling infrastructure suitable for all ages and abilities and improving pedestrian facilities (e.g. crossings, pavements, dropped kerbs) will facilitate opportunities for active travel for people with disabilities.

What action(s) can you take to address the differential impact?

Detailed, scheme based EIAs will be developed for each of the individual schemes from the White Paper which are taken forward for development and implementation. These will assess any differential impacts on an individual scheme basis and identify appropriate actions. This will include physical/emotional/informational barriers, as appropriate.

3.3 Gender Reassignment

Will this Policy/Strategy/Project/Procedure/Service/Function have a **differential impact [positive/negative]** on transgender people?

CARDIFF COUNCIL

**Equality Impact Assessment
Corporate Assessment Template**

	Yes	No	N/A
Transgender People (People who are proposing to undergo, are undergoing, or have undergone a process [or part of a process] to reassign their sex by changing physiological or other attributes of sex)	Y		

Please give details/consequences of the differential impact, and provide supporting evidence, if any.
The White Paper has the potential to facilitate positive impacts as outlined above. Personal safety and security, together with vulnerability to hate crimes are well documented concerns of individuals from transgender groups. The White Paper offers an opportunity to address these concerns, for example, through appropriate design such as improved passive surveillance through the location of bus stops, for example, and street lighting.
What action(s) can you take to address the differential impact?
Detailed, scheme based EIAs will be developed for each of the individual schemes from the White Paper which are taken forward for development and implementation. These will assess any differential impacts on an individual scheme basis and identify appropriate actions. This will include physical/emotional/informational barriers, as appropriate.

3.4. Marriage and Civil Partnership

Will this Policy/Strategy/Project/Procedure/Service/Function have a **differential impact [positive/negative]** on marriage and civil partnership?

	Yes	No	N/A
Marriage			Y
Civil Partnership			Y

Please give details/consequences of the differential impact, and provide supporting evidence, if any.
The White Paper has the potential to facilitate positive impacts as outlined above, but possibly not specifically relating to marriage and civil partnership.
What action(s) can you take to address the differential impact?
Detailed, scheme based EIAs will be developed for each of the individual schemes from

CARDIFF COUNCIL

Equality Impact Assessment Corporate Assessment Template

the White Paper which are taken forward for development and implementation. These will assess any differential impacts on an individual scheme basis and identify appropriate actions. This will include physical/emotional/informational barriers, as appropriate.

3.5 Pregnancy and Maternity

Will this Policy/Strategy/Project/Procedure/Service/Function have a **differential impact [positive/negative]** on pregnancy and maternity?

	Yes	No	N/A
Pregnancy	Y		
Maternity	Y		

Please give details/consequences of the differential impact, and provide supporting evidence, if any.

The White Paper has the potential to facilitate positive impacts as outlined above. Women who are pregnant and/or who are travelling with children have particular accessibility needs, furthermore there are additional needs of young children. Additionally, evidence indicates that a higher proportion of women are the parents/guardians/ carers with primary/main responsibility for the school run, for example, the UK National Travel Survey 2014 found that more trips to school are made by women than men, with the highest number of trips being made by women aged 30 - 49. This may impact on journey choice and also has journey time implications. Improving active travel facilities (e.g. better pavement surfaces, dropped kerbs and crossing facilities) may facilitate active travel journeys for parents of young children.

What action(s) can you take to address the differential impact?

Detailed, scheme based EIAs will be developed for each of the individual schemes from the White Paper which are taken forward for development and implementation. These will assess any differential impacts on an individual scheme basis and identify appropriate actions. This will include physical/emotional/informational barriers, as appropriate.

3.6 Race

Will this Policy/Strategy/Project//Procedure/Service/Function have a **differential impact [positive/negative]** on the following groups?

	Yes	No	N/A
White	Y		

CARDIFF COUNCIL

**Equality Impact Assessment
Corporate Assessment Template**

Mixed / Multiple Ethnic Groups	Y	
Asian / Asian British	Y	
Black / African / Caribbean / Black British	Y	
Other Ethnic Groups	Y	

Please give details/consequences of the differential impact, and provide supporting evidence, if any.

The White Paper has the potential to facilitate positive impacts as outlined above. However, promoting active and healthy travel may have a positive impact on all groups but as evidence suggests that black and minority ethnic groups cycle less it may provide a positive differential impact for these groups in particular. For example, the 2017 Bike Life Cardiff report indicates that 12% of bike riders are from black and minority ethnic groups, down from 16% in 2015. Whilst this is broadly in line with the percentage of Cardiff's population from a non-white background, 16.7% (Stats Wales 2018), low levels of participation in cycling by black and minority ethnic groups is widely reported elsewhere. For example, a TfL study suggests that less than 7% of all cyclists are BMEs (TfL 2011 What are the barriers to cycling amongst ethnic minority groups and people from deprived backgrounds?). Participation in physical activity more widely is also often lower in black and minority ethnic groups, so an intervention which increases opportunities for active and healthy travel may again particularly benefit these groups.

What action(s) can you take to address the differential impact?

Detailed, scheme based EIAs will be developed for each of the individual schemes from the White Paper which are taken forward for development and implementation. These will assess any differential impacts on an individual scheme basis and identify appropriate actions. This will include physical/emotional/informational barriers, as appropriate.

3.7 Religion, Belief or Non-Belief

Will this Policy/Strategy/Project/Procedure/Service/Function have a **differential impact [positive/negative]** on people with different religions, beliefs or non-beliefs?

	Yes	No	N/A
Buddhist	Y		
Christian	Y		
Hindu	Y		
Humanist	Y		
Jewish	Y		
Muslim	Y		
Sikh	Y		

CARDIFF COUNCIL

Equality Impact Assessment Corporate Assessment Template

Other	Y		
-------	---	--	--

Please give details/consequences of the differential impact, and provide supporting evidence, if any.

The White Paper has the potential to facilitate positive impacts as outlined above. Improving accessibility within communities more widely may also make it easier to access places of worship and faith-based facilities, enhancing community cohesion.

What action(s) can you take to address the differential impact?

Detailed, scheme based EIAs will be developed for each of the individual schemes from the White Paper which are taken forward for development and implementation. These will assess any differential impacts on an individual scheme basis and identify appropriate actions. This will include physical/emotional/informational barriers, as appropriate.

3.8 Sex

Will this Policy/Strategy/Project/Procedure/Service/Function have a **differential impact [positive/negative]** on men and/or women?

	Yes	No	N/A
Men	Y		
Women	Y		

Please give details/consequences of the differential impact, and provide supporting evidence, if any.

The White Paper has the potential to facilitate positive impacts as outlined above.

As outlined above (Pregnancy and Maternity), a higher proportion of women are the parents/guardians/carers with primary/main responsibility for the school run and therefore improvements to journeys to school will have a particular benefit for them.

In addition, there is a significant body of evidence (e.g. Sport Wales, British Heart Foundation) which illustrates the long term trend of girls and women having lower levels of participation in sport and physical activity. For example, across Wales, 59% of boys and 42% of girls aged 4 to 15 years were active for at least one hour per day in five or more days (BHF 2015).

In relation to cycling specifically, the Bike Life Cardiff report 'Women: Reducing the gender gap' indicates that there is a ratio of 1:19 female to male bike riders, 70% of women never ride a bike and 31% of women living in Cardiff do not ride a bike but would like to.

**Equality Impact Assessment
Corporate Assessment Template**

Improving opportunities for regular walking and cycling may make a significant contribution to encouraging healthy and active lifestyles. There is a growing body of evidence which suggests a higher proportion of women in the UK experience poorer health for longer. A Public Health England research September 2018 cites women as experiencing 19.3 years/23% of their lives in poor health compared with 16.2 years/20% for men. Obesity is highlighted as one of the two major risk factors for ill health, alongside smoking.

<https://www.independent.co.uk/news/uk/home-news/uk-rich-poor-health-inequality-life-expectancy-england-a8532006.html>

Safety and security are also often key concerns for women when travelling. The White Paper offers an opportunity to address these concerns, for example, through appropriate design such as improved passive surveillance through the location of bus stops, for example, and street lighting.

What action(s) can you take to address the differential impact?

Detailed, scheme based EIAs will be developed for each of the individual schemes from the White Paper which are taken forward for development and implementation. These will assess any differential impacts on an individual scheme basis and identify appropriate actions. This will include physical/emotional/informational barriers, as appropriate.

3.9 Sexual Orientation

Will this Policy/Strategy/Project/Procedure/Service/Function have a **differential impact [positive/negative]** on the following groups?

	Yes	No	N/A
Bisexual	Y		
Gay Men	Y		
Gay Women/Lesbians	Y		
Heterosexual/Straight	Y		

Please give details/consequences of the differential impact, and provide supporting evidence, if any.

The White Paper has the potential to facilitate positive impacts as outlined above. Personal safety and security, together with vulnerability to hate crimes are well documented concerns of individuals from lesbian, gay and bisexual groups. The White Paper offers an opportunity to address these concerns, for example, through appropriate design such as improved passive surveillance through the location of bus

CARDIFF COUNCIL

Equality Impact Assessment Corporate Assessment Template

stops, for example, and street lighting.

What action(s) can you take to address the differential impact?

Detailed, scheme based EIAs will be developed for each of the individual schemes from the White Paper which are taken forward for development and implementation. These will assess any differential impacts on an individual scheme basis and identify appropriate actions. This will include physical/emotional/informational barriers, as appropriate.

3.10 Welsh Language

Will this Policy/Strategy/Project/Procedure/Service/Function have a **differential impact [positive/negative]** on Welsh Language?

	Yes	No	N/A
Welsh Language	Y		

Please give details/consequences of the differential impact, and provide supporting evidence, if any.

The White Paper has the potential to facilitate positive impacts as outlined above. Improving access by active and sustainable modes of travel may improve access to learning opportunities, including those relating to Welsh language, in addition to supporting access to other cultural activities. All information, signage etc relating to new schemes will be produced bilingually.

What action(s) can you take to address the differential impact?

Detailed, scheme based EIAs will be developed for each of the individual schemes from the White Paper which are taken forward for development and implementation. These will assess any differential impacts on an individual scheme basis and identify appropriate actions. This will include physical/emotional/informational barriers, as appropriate.

CARDIFF COUNCIL

Equality Impact Assessment Corporate Assessment Template

4. Consultation and Engagement

What arrangements have been made to consult/engage with the various Equalities Groups?

Engagement will be carried out with stakeholder groups on an ongoing basis relating to the White Paper. Arrangements will be made to consult with the Equalities Groups at an early stage in the development of any interventions which are taken forward from the White Paper.

5. Summary of Actions [Listed in the Sections above]

Groups	Actions
Age	Please see specific section
Disability	Please see specific section
Gender Reassignment	Please see specific section
Marriage & Civil Partnership	Please see specific section
Pregnancy & Maternity	Please see specific section
Race	Please see specific section
Religion/Belief	Please see specific section
Sex	Please see specific section
Sexual Orientation	Please see specific section
Welsh Language	Please see specific section
Generic Over-Arching [applicable to all the above groups]	

6. Further Action

Any recommendations for action that you plan to take as a result of this Equality Impact Assessment (listed in Summary of Actions) should be included as part of your Service Area's Business Plan to be monitored on a regular basis.

7. Authorisation

The Template should be completed by the Lead Officer of the identified Policy/Strategy/Project/Function and approved by the appropriate Manager in each Service Area.

Completed By : Cheryl Owen	Date: 23/10/19
Designation: Section Leader	
Approved By:	
Designation:	
Service Area:	

CARDIFF COUNCIL

**Equality Impact Assessment
Corporate Assessment Template**

- 7.1 On completion of this Assessment, please ensure that the Form is posted on your Directorate's Page on CIS - *Council Wide/Management Systems/Equality Impact Assessments* - so that there is a record of all assessments undertaken in the Council.

For further information or assistance, please contact the Citizen Focus Team on 029 2087 3059 or email citizenfocus@cardiff.gov.uk

**CYNGOR CAERDYDD
CARDIFF COUNCIL**

ENVIRONMENTAL SCRUTINY COMMITTEE

21 JANUARY 2020

EDUCATION CAMPAIGN TO SUPPORT IMPROVING RECYCLING PERFORMANCE

Reason for the Report

1. To provide the Committee with an opportunity to consider the report titled 'Education Campaign to Support Improving Recycling Performance' that will be received at the Cabinet meeting on Thursday 23rd January. The main purpose of this item is to review:
 - Outline proposals for a new education campaign that will focus upon recycling performance;
 - The draft strategy titled 'Working together to improve recycling for Cardiff' (**Appendix1**).

Background

2. Welsh Government set the first statutory recycling targets in the UK back in 2010, with Cardiff achieving the 58% target for 2016/17, up from 39% in 2010. Cardiff is facing a challenge to reach the 2019/20 target of 64 per cent and the 2024/25 target of 70 per cent.
3. Recycling performance in Cardiff has remained constant over the last three years, with only a 1% improvement in recycling performance to 59% in 2018/19.
4. The Council currently collects 40,000 tonnes of co-mingled dry recycling per annum, which is presented by residents in green plastic bags. Following processing in the Material Recovery Facility 24% is rejected due to contamination – this represents nearly 10,000 tonnes of material per annum.

5. Contamination presents both practical and operational issues, such as creating additional tonnages that take up space in collection vehicles, increasing the number of collection vehicles required and making the task of sorting the material both challenging and costly.
6. The majority of householders aim to recycle materials effectively, but in some cases just one householder including the wrong materials may mean that a whole collection needs to be rejected and not recycled.
7. In Cardiff, the main contaminants in co-mingled dry recycling are:
 - Food;
 - Nappies;
 - Textiles.
8. Contamination also impacts garden waste and in 2018/19 approximately 1,000 tonnes of these materials were rejected.
9. Guidance and literature is available on the Council website and via the direct provision of education material to residents.
10. Digital systems for recycling collection management (BarTec) and enforcement management (StarTraq) are currently in place.
11. Recycling performance at Household Recycling Centres is at 75% with an objective of achieving recycling performance of over 80%.
12. The majority of residents who attend Household Recycling Centres already segregate their recycling prior to arriving at the centres. However, there are still residents who only bring black bags to the recycling centres and do not segregate their recycling.

Issues

13. **Managing Contamination of Recycling** - The current process of dealing with contaminated recycling is to leave recycling in-situ and for the Street Scene Education and Enforcement Team to deliver intervention by education, followed by enforcement. The process has two drawbacks:

- No information is provided at the time to the resident as to why bags and bins have not been collected, therefore, residents understandably report the uncollected bag as a missed collection.
 - The opportunity for residents to address the contamination issue themselves and avoid future issues is missed.
14. The outcome of the current approach is an increase in demand on C2C and cleansing services in relation to the missed bags. This in turn creates a reduction in confidence in the waste management service. Complaints about this aspect of service are high.
15. **Proposed Way Forward** - To manage contamination of recycling more effectively, it is proposed that in future collection crews will capture property details where contamination of recycling is evident. The initial phase will be education to inform residents there is a concern with contamination in their recycling.
16. The education phase will include the placement of a 'Pink Sticker' advising residents that there are incorrect items within their recycling; a copy of this sticker is attached to this report as **Appendix 2**. The sticker informs the resident to remove the recycling bag from the street and take out any contaminated items. The sticker provides further information to residents via a QR code.
17. Should a second breach be noted at the property, then an education letter will be issued to the householder informing them of the problem and re-enforcing the correct materials to be placed in the recycling bags.
18. The issuing of Fixed Penalty Notices will be by Environmental Enforcement Officers, and they will only issue a Fixed Penalty Notice after the education stage has been breached.
19. The education and Section 46 notices sent to residents as part of the process will be via hybrid printing to minimise costs. The Street Scene Education & Enforcement Team will undertake any enforcement in line with the Street Scene & Enforcement Policy.

20. It is anticipated that recycling performance will improve with the implementation of this new approach as contamination has an impact on the quality and quantity of recyclable material.
21. **Draft Strategy – ‘Working together to improve recycling for Cardiff’** – The draft strategy titled – ‘Working together to improve recycling for Cardiff’ is attached to this report as **Appendix 1**. The draft strategy is split into eight sections, these emphasise the importance of recycling, provide context on the Cardiff position and identify what can be done to improve Cardiff’s recycling performance. The eight sections are summarised as:
- **Foreword** – An introduction and message from the Cabinet Member for Clean Streets, Recycling & Environment;
 - **Why is recycling important?** – A summary of reasons explaining why it is important to improve recycling rates in Cardiff;
 - **How good is Cardiff at recycling?** – Information on Cardiff’s recycling achievements and challenges;
 - **How can we work together to improve recycling?** – Advice to the public on improving the presentation of recycled materials;
 - **Managing contamination of recycling** – Information on the new ‘Pink Sticker’, education and enforcement scheme that the Council is looking to introduce to reduce recycling contamination levels;
 - **Separating recycling materials for Household Waste Recycling Centres** – A message on the importance of the public using Household Waste Recycling Centres to recycle and not just to dispose of waste;
 - **Improving awareness and behaviour change** – An explanation of the commitments made by the Council to improve recycling performance;
 - **Did you know?** – A series of facts and figures on food recycling, garden waste, wider recycling and energy from waste.
22. **Improving Performance at Household Waste Recycling Centres** - Improving recycling at Household Waste Recycling Centres to over 80% will require residents to separate recycling from residual waste. This is the approach that has been taken by most other local authorities in Wales.

23. It is proposed that residents are asked to separate their recycling from any residual waste when they use either of Cardiff's Household Waste Recycling Centres. Education officers will be available to assist residents to complete this process. This change will require a clear implementation strategy and it is anticipated that the change would become effective in Summer 2020.

Cabinet Report - Financial Implications

24. The Cabinet report titled 'Education Campaign to Support Improving Recycling Performance' includes a section of financial implications. These have been provided by Finance staff in the Resources Directorate, and include the following comments:
- *The Street Scene Education and Enforcement Policy report sets out a series of initiatives including a new education campaign. This policy can be supported by financial resources already allocated to the service in respect to both personnel and expenditure on items such as postage. In the event of any initiative requiring resources outside of the current budget allocation then a reprioritisation of activities is undertaken or alternative funding mechanisms to be identified.*

Cabinet Report - Legal Implications

25. The Cabinet report titled 'Education Campaign to Support Improving Recycling Performance' includes a section of legal implications. These have been provided by Legal staff in the Governance & Legal Services Directorate, and include the following comments:
- *All decisions taken by or on behalf of the Council must (a) be within the legal powers of the Council; (b) comply with any procedural requirement imposed by law; (c) be within the powers of the body or person exercising powers on behalf of the Council; (d) be undertaken in accordance with the procedural requirements imposed by the Council e.g. standing orders and financial regulations; (e) be fully and properly informed; (f) be properly motivated; (g) be taken having regard to the Council's fiduciary duty to its taxpayers; and (h) be reasonable and proper in all the circumstances.*

- *Well-being of Future Generations (Wales) Act 2015 requires the Council to consider how the proposals will contribute towards meeting its well being objectives (set out in the Corporate Plan). Members must also be satisfied that the proposals comply with the sustainable development principle, which requires that the needs of the present are met without compromising the ability of future generations to meet their own needs.*
- *The report identifies that the Equality Impact Assessment has been completed. The purpose of the Equality Impact Assessment is to ensure that the Council has understood the potential impacts of the proposal in terms of equality so that it can ensure that it is making proportionate and rational decisions having due regard to its public sector equality duty pursuant to s.149 Equality Act 2010.*

26. **Cabinet Report Recommendations** – The Cabinet report titled ‘Education Campaign to Support Improving Recycling Performance’ recommends that the Cabinet:

- *Approve the strategy ‘Working together to improve recycling for Cardiff’.*
- *Approve in principle the requirement for residents to separate their recycling and residual waste when utilising Household Waste Recycling Centres in Cardiff and delegation is sought for the Assistant Director Street Scene and the Cabinet Member for Clean Streets, Recycling and Environment to approve the detail of the scheme.*

Way Forward

27. The Cabinet Member for Clean Streets, Recycling & Environment has been invited to attend the meeting. He will be supported by officers from the People & Communities Directorate.

Legal Implications

28. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not making policy decisions. As the recommendations in this report are to consider and review matters there are no direct legal implications. However, legal implications may arise if and when the matters under review are implemented with or

without any modifications. Any report with recommendations for decision that goes to the Cabinet/Council will set out any legal implications arising from those recommendations. All decisions taken by or on behalf of the Council must (a) be within the legal powers of the Council; (b) comply with any procedural requirement imposed by law; (c) be within the powers of the body or person exercising powers on behalf of the Council; (d) be undertaken in accordance with the procedural requirements imposed by the Council e.g. Scrutiny Procedure Rules; (e) be fully and properly informed; (f) be properly motivated; (g) be taken having regard to the Council's fiduciary duty to its taxpayers; and (h) be reasonable and proper in all the circumstances.

Financial Implications

29. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not making policy decisions. As the recommendations in this report are to consider and review matters there are no direct financial implications at this stage in relation to any of the work programme. However, financial implications may arise if and when the matters under review are implemented with or without any modifications. Any report with recommendations for decision that goes to Cabinet/Council will set out any financial implications arising from those recommendations.

RECOMMENDATIONS

30. The Committee is recommended to:
- (i) Consider the information in this report and the information presented at the meeting;
 - (ii) Determine whether they would like to make any comments, observations or recommendations to the Cabinet on this matter; and,
 - (iii) Decide the way forward for any future scrutiny of the issues discussed.

Davina Fiore

Director of Governance & Legal Services

15 January 2020

This page is intentionally left blank

Working together to improve recycling for Cardiff



January 2020, Version 3.0

Foreword



Councillor Michael Michael

Cabinet Member for Clean Streets, Recycling and Environment.

Page 270

Cardiff is Britain's leading major city for recycling; however, we now need to make Cardiff a world-leading city in this vital area of environmental sustainability. Getting everyone involved in recycling is critical if we are to address ongoing climate concerns and support our future generations.

Waste is something we can all do something about – reuse and recycling of the things we use every day will make a significant difference to the waste that pollutes and impacts negatively on our environment. To successfully recycle material needs to be of a good quality and this is an area where we know we need to improve. Just some simple steps and a little additional thought will make a huge difference to the amount of waste that can be recycled here in Wales and the benefits put back into our economy.

I am very proud of the real efforts Cardiff's residents have made so far to improve sustainability across the City and Wales, and I hope that you will continue to support this important agenda.

Signature of Michael Michael

Councillor Michael Michael

Why is recycling important

Recycling is one of the 3 R's – Reduce, Reuse, Recycle

The truth is we all need to improve our habits in using less stuff. The things we do use need to be reused as much as possible before being recycled to minimise waste.

1. Recycling conserves natural resources

- Recycling plastic means creating less new plastic from hydrocarbons
- Recycling metals means less mining and extraction of new metal ores
- Recycling glass reduces the need to use raw materials
- Recycling reduces the need to grow, harvest and extract new raw materials from the planet.
- Recycling keeps waste out of the environment.

2. Recycling saves energy

- Recycling aluminium from old cans and foil uses 95% less energy than making it from scratch.
- The energy saved by recycling of one glass bottle could power a 100-watt light bulb for 1 hour.

3. Recycling cuts climate-changing emissions

- Recycling food removes harmful methane from the atmosphere. Methane is a harmful greenhouse gas that is 25 times more potent than carbon dioxide
- Recycling reduces incineration of waste which generates carbon emissions.

4. Recycling creates jobs

- If the United Kingdom met a 70% recycling target it is calculated to create 50,000 new jobs – 30,000 directly employed in the recycling sector and 20,000 in the supply chain and wider economy.

How good is Cardiff at recycling?

Cardiff is Britain's leading major city for recycling with recycling at 59.19% in 2018/19

Cardiff produced 170,500 Tonnes of waste of which 101,000 Tonnes was recycled

Green bags presented by Cardiff residents are often contaminated causing a loss of 24% of all recycling

Cardiff residents present 40,000 Tonnes of co-mingled recycling but nearly 10,000 Tonnes is rejected as they are the wrong materials. The rejected material ends up going to Energy from Waste rather than being recycled.

Garden waste is a free service available to all

Cardiff collects grass cuttings, leaves & twigs and turns it into compost through a process called open windrow composting. Unfortunately, contamination is a problem here too. Unbelievably, garden gnomes, sheds and even asbestos are presented in with the green waste – these definitely can't be composted.

Residents in Cardiff present 64% recycling at Household Waste Recycling Centres

On average for every 3 bags residents bring only 2 are recycled, the target is to recycle at least 80%

How can we work together to improve recycling?

Wash your recycling

Your recycling should be clean to support improving recycling. Having ketchup or pasta sauce all over paper and card means material become unsuitable for recycling.

We all need to recycle food and absorbent hygiene products

A significant amount of food and nappies are found in both comingled recycling bags and black bins. By using the correct recycling services provided by the Council you will improve recycling performance and your bin will not smell so much. Food waste should only go in your kerbside caddy, nappies can be collected separately but you need to register for this service.

Do not contaminate your recycling – check online

Just because your jumper says it can be recycled it does not mean you can place it in your green recycling bag. This is contamination and may mean other recyclable items are lost in the recycling process.

Separate recyclable items before going to Household Recycling Centres

Separate your recycling before going to the recycling centres and this will make your trip easier. If you bring black bags you will be asked to separate your recycling from other materials.

Managing Contamination of recycling



Cardiff Council website provides information on recycling and contamination.

A new 'Pink Sticker' system will inform residents there is contamination in their recycling and asks them to clean up their waste.

The resident's property will receive correspondence to support education and improving behaviour.

Formal Notice and enforcement only takes place after education.

1st Pink Sticker
'Resident cleans up recycling'

2nd Pink Sticker
'Education Letter'

Further Pink Stickers
'Formal Written Notice'

Further Pink Stickers
'Fixed Penalty Notice'

Separating recycling materials for household recycling centres



Household Recycling Centres are for recycling and not just to dispose of excess waste.

Cardiff Council will require all residents to show they are recycling at the Household Recycling Centres and therefore will not accept black bags.

The recycling centres have a significant range of recycling, from engine oil & car batteries through to paints & carpets.

Improving awareness and behaviour change

Cardiff Council is committed to improving recycling performance by:

- Providing services to residents and businesses to support recycling
- Providing information and guidance to residents and businesses on recycling
- Working with its Partners and Stakeholders to drive a Citywide approach to improving recycling
- Supporting initiatives such as ‘No Straw Stand’ and ‘Refill’ that promotes awareness about reuse
- Work with Partners and Stakeholders to support keeping recycling in Wales and the UK and the promotion of a circular economy for recycling in Wales

Did you know?

Food Recycling

Cardiff recycles over 16,000 tonnes of food each year. The Anaerobic Digestion plant in Cardiff generates electricity for 4,000 homes and creates fertilizer for farming & agriculture. The plant can deal with 35,000 Tonnes of food so there is ample capacity to recycle more food.

Garden Waste

Cardiff recycles 18,000 tonnes of garden waste each year. Incoming waste is checked for contamination, shredded, formed into windrows and regularly turned to optimise the natural composting process. The product is screened to a range of grades for agricultural use.

Other Recycling

Cardiff produces a range of materials for recycling with household materials such as cans, glass, paper and plastic having weekly collections. Recycling in the household recycling centres covers a wider range of recycling. To recycle some products such as carpets and paint costs money; however some recyclable material like white milk bottles are sold for income.

Energy from Waste

Cardiff no longer sends residual waste (non-recyclable) to landfill. Cardiff sends 70,000 tonnes of waste to the Cardiff Energy Recovery Facility (ERF). The facility burns 350,000 tonnes of residual (non-recyclable) waste creating 30 Megawatts of electricity, generating enough electricity for over 50,000 homes. Furthermore, the ash from burning is recycled into building products and this is transported by rail to Bristol removing 160,000 road miles each year.

Links for further information

DRAFT



This page is intentionally left blank