

# Changing how we move around a growing city





# Forewords

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We all know Cardiff's transport network needs to change. Too many of us have been stuck in traffic trying to drop off our children, or late for work because the bus didn't turn up, and whilst a growing number want to walk or cycle, the facilities to do so are often inadequate.

But it's not just about our own inconvenience and frustration. There is now a more alarming and pressing matter. Pollution levels in Cardiff are now damaging our health. Improving the air we breathe has become a matter of life or death.

It would be simple to just blame everything on car travel, and say we expect everyone to suddenly become a cyclist. But we understand that for some people car travel is simply essential and we don't want to make it more difficult for people to go about their daily lives.

Our job is to improve people's lives, giving people the opportunity to choose transport options that are healthier, that help us save money, that make it safe to enjoy cycling and walking on a daily basis, and that help us not

spend hour after hour sat in traffic on the school run or the daily commute.

We have an idea of the kind of Cardiff we want. We have bold ambitions for our city. This paper proposes ideas of changes we could make that we believe would improve our city. They are all possible. But we want to have a conversation with the people of Cardiff about the issues, and how changes could impact their lives because, ultimately, we will all need to shape our future together.

This process will help us decide together the future direction of this city, so we can create the change that improves all our lives and makes Cardiff a healthier and stronger city for current and future generations.

**Councillor Caro Wild**  
**Cabinet Member for**  
**Transport & Strategic Planning**



How we get from A to B has a huge impact on our health, the environment, and our communities. I have recently explored this more in my Annual Report, 'Moving Forwards: healthy travel for all in Cardiff and the Vale'. We are at a crucial moment - high levels of illness in our area are caused or made worse by how we travel and the air we breathe; but there are also once-in-a-generation opportunities open to us to solve this, with the development of the Metro in Cardiff and the surrounding region, and legislation requiring and enabling us to prevent future illnesses, improve the health of future generations, and improve air quality.

I really welcome the publication of this Green Paper on such an important subject, and we are working closely with Cardiff Council and other partners on these issues. We urge residents to engage in this conversation on how we can all travel in a more healthy and sustainable way. If we get this right we will be healthier and happier, and Cardiff will be one of the best places in Europe to live, work and visit.

**Dr Sharon Hopkins**  
**Director of Public Health,**  
**Cardiff and Vale University Health Board**



# How this document works

The document is made up of six themes, each of which has ideas and proposals that we believe could improve transport and air quality in Cardiff. They are based on good practice examples from other progressive cities from across the world, and from ideas taken from a variety of groups and individuals across Cardiff and beyond.

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### **The Future of The Metro & Buses**

The Metro forms the heart of a fully integrated public transport network that is modern, clean, efficient and affordable.

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### **Active Healthy City**

Cardiff becomes one of the best places in Europe for active travel.

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### **Clean Air City**

All parts of Cardiff will have clean air. No citizen will have to suffer ill health as a consequence of high levels of pollution.

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### **International Capital City of Business, Work and Culture**

A vibrant 'destination capital city centre' supporting a thriving business economy, major events and a rich, diverse culture.

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### **The Future for Cars**

More Cardiff citizens feel able to either share or not own a car. Many will choose zero carbon cars.

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### **Smart City**

As the digital world evolves, Cardiff will use the latest technology to support an integrated transport system in which travellers are well informed and able to make smart travel choices.

# How you can get involved

We want to hear your views and prompt discussions. Each idea is numbered and you can feed back on some or all of them. For each idea we want to get your general views, perhaps let us know how it would impact you personally, or those in your organisation or community. You can:



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**Respond in writing to:** Cardiff Research Centre, Room 401, County Hall, Atlantic Wharf, Cardiff, CF10 4UW



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**Drop off your completed paper copy** at any Hub or library



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**Take part in a consultation event organised by the council or its partners;** a list of organised consultation events can be found at the web address above.



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**Email comments directly to us:**  
[consultation@cardiff.gov.uk](mailto:consultation@cardiff.gov.uk)



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**Organise a consultation event for your group, community or workplace** and gather people's views on one or more of the sections.



# Why does transport matter to Cardiff?

Cardiff is growing faster than any other major city in the UK outside of London, and is projected to grow by more than every other local authority in Wales combined.

Over 300m transport trips are made on our network by residents each year, and we all know that too many of these trips are by car. Driving in Cardiff isn't much fun – drivers spend an average of four working days a year stuck in traffic during peak periods. 90,000 commuters also come in and out of Cardiff each day from outside of the city.

*"The latest figures from Public Health Wales suggest that the number of deaths per year that can be attributed to poor air quality has increased to over 225 across Cardiff and the Vale of Glamorgan."*

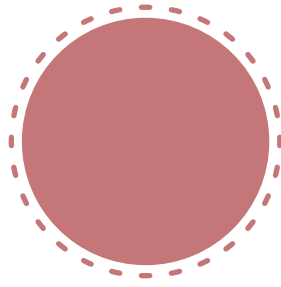
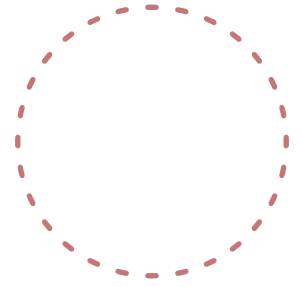
This traffic is the main contributor to air quality and congestion generally. It has an effect on everyone's quality of life, health and wellbeing in one way or another. The people who suffer most from poor air quality are the very young, the very old and those suffering ill health. We also know that poor air quality is worse in the more deprived southern areas of the City, and is caused primarily by cars from outside of these communities.

The population of Cardiff is 360,000 and is projected to grow by an additional 72,000 people over the next 20 years. This growth will bring about great cultural and economic opportunities, but it will also bring about additional pressures on the quality of our air and the potential for even more traffic.

Cardiff is at an important crossroads. If we want a fairer, cleaner, healthier and more prosperous city tomorrow we must make some brave changes today. If we don't, then inequality, air quality and congestion will get worse.

Cardiff has always risen to the challenge when it has had to change: from building docks and railways that helped transport coal from South Wales to the world, to a city that has managed to refocus its economy after de-industrialisation. Now Cardiff has to change again.

**This Green Paper will set out what a fairer, cleaner, healthier, prosperous, and more convenient city could look like, and gives you a chance to help us decide how we get there.**



# The Future of the Metro and Buses



The Metro forms the heart of a fully integrated public transport network that is modern, clean, efficient and affordable.

## What's happening?

### South Wales Metro

The Welsh Government are soon to decide which operator will take forward the new South Wales Metro and wider rail network responsibilities.

Over £750m will be invested in upgrading the core valley lines, adding new modern vehicles and improving stations.

We believe the new operator will bring forward new technology and begin the implementation of a tram solution alongside heavy rail lines. We anticipate there will be additional stations added to the network in Cardiff to meet the demands of a growing city.

Cardiff Council will work with the new Transport for Wales body and the new operator to ensure that a tram system is prioritised with the ability to add and extend routes.

### Buses

Bus passenger numbers in Cardiff are not increasing at the rate we would all like. There is confusion over routes, different operators with no transferable ticket, and the situation is not helped by not having a bus station.

The new Central Transport Interchange will help drive a reconfiguration of the bus network, adding more clarity to stops and routes.

Bus priority schemes have been introduced on key corridors to improve reliability and efficiency of bus journeys and greater reliability, and more priority measures are planned. We are also developing new

interchange hubs at the University Hospital Wales and Cardiff West to facilitate interchange between services and modes of travel.

We are working with the developers of the strategic site north of M4 Junction 33 to secure a new purpose-built Park and Ride facility as part of the new housing and commercial development. We are supporting Park and Ride facilities in other appropriate locations in Cardiff and neighbouring areas, offering people an attractive alternative to the car.

We are working with Network Rail and rail operators to identify opportunities to develop Active Travel routes to stations and improved on-station passenger facilities.



# The big ideas: what more could be done?



## 1. Realign the Bus Services Network

The introduction of the Metro offers the opportunity to comprehensively review the overall bus network. We could look to realign how the network works, creating better connectivity between locations and modes of transport. For example other cities have switched to routes that run in circles around the centre with co-ordinated connections inwards like the spokes of a wheel.

The outer routes could, for the time being, run on diesel while smaller electric buses, existing trains and new trams, provide the spoke connections. New rapid bus routes could be clearly mapped out alongside the new Metro lines and other transport modes to create a transport 'masterplan' for the city.

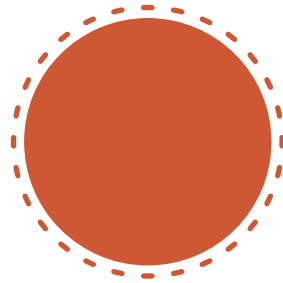
## 2. Integrated Ticketing

A number of cities across the world have developed integrated ticketing systems. If you have visited London in recent years, you may have encountered the Oyster Card – a plastic card like a bank card which allows you to hop on and off buses, trains and tubes as long as you have credit on the card. Transport authorities are increasingly

moving towards a payment system where ticket fares are deducted straight from your bank card by reading devices on the bus/train/ticket barrier. Proposals for the south Wales Metro include integrated ticketing but we could extend this to include Cardiff buses, and car and bike hire within the city.

# 3. Zero Carbon Bus Fleet

With key bus operation partners, we will investigate options for developing a bus fleet that is powered by electricity or hydrogen and so does not contribute to poor air quality. There are many cities around the world and some, like Milton Keynes, in the UK where electric and hydrogen buses are already operating. The buses currently come with a far higher price tag but we could learn from this considerable body of knowledge and make the right choices for Cardiff.

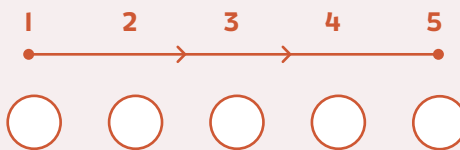


# What are your views on our 3 big ideas regarding the future of the South Wales Metro and buses?

On a scale of 1 to 5, (1 being low and 5 being high) how much do you support our big ideas?

**1.** Realign Bus Services with new City Network and Effective Orbital Bus Hub Network

1      2      3      4      5



**2.** Integrated Ticketing

**3.** Zero Carbon Bus Fleet

Do you have any other ideas, big or small regarding the future of the South Wales Metro and buses?

## What more can you do?

If you have never used a bus, try it!

Could you make bus travel a routine for certain journeys?

## Get in touch

[cardiff.gov.uk/askcardiff](https://cardiff.gov.uk/askcardiff)  
[consultation@cardiff.gov.uk](mailto:consultation@cardiff.gov.uk)  
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# Active Healthy City



Cardiff becomes one of the best places in Europe for active travel.



## What's happening?

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More people are walking to work, to school, to college and to the shops.

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Over a five-year period, there has been a significant increase in cycling for all journeys.

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The numbers of cyclists within the city centre has risen by around 65% between 2002 and 2016.

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The Nextbike cycle hire scheme will launch in May 2018 with 50 Stations and 500 bikes.

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Working with communities, the council has introduced 20mph pedestrian-friendly zones around the city, with more planned.



# The big ideas: what more could be done?

## 4. Develop Active Travel Zones in the city centre and in neighbourhoods

An active travel zone is an area designated as a place where walking, cycling and non-motorised transport take priority. The benefits of such zones are cleaner air, a healthier lifestyle, safer, quieter streets and more lively, sociable spaces. Children are more likely to play outdoors, cafes can place seating outside, and there is space for plants, trees, lawns and benches. Streets could be closed to vehicles at certain times of the day – for example, at the start and close of school or between the end of school and 5.30pm to allow children to play. Areas in the city centre could be developed as exciting new public spaces, like squares and green pockets, for all to enjoy.

Many cities around the world are creating areas where people come first. Sometimes this means excluding all types of vehicles, or it can mean combining cycle, bus and tram lanes with much wider pavements and plazas.

### **The benefits of doing this are many:**

- cleaner air
- encouraging walking/cycling, which helps improve physical health
- more social interaction, which helps reduce loneliness
- a less stressful environment
- opportunities for retailers with greater numbers of shoppers stopping and browsing
- opportunities for open-air seating and street food stalls
- opportunities for cultural and artistic activities, and safer major event management.

We would encourage people living in active travel zones to take up active travel. For example, those who have never cycled before could use an affordable cycle hire scheme. We would provide special support to people of limited mobility, helping them use the streets without having to rely on a motor vehicle.

## 5. Comprehensive Cycle Superhighway & Primary Cycle Route Network

Our vision is to develop Cardiff into a cycling city where cycling is a normal, practical and safe choice for short trips for people of all ages and abilities. We are already committed to introducing fully segregated Cycle Superhighways in Cardiff. However, we need

further public support and funding to introduce a comprehensive network, including the delivery of more localised cycling infrastructure, in order to be faster and bolder in implementing our cycling strategy

## 6. Total City 20 mph zone

The vision of Cardiff as a 20mph city is consistent with encouraging more use of public transport, walking and cycling. Work to increase the number of 20mph zones is ongoing and we have learnt a great deal from our pilot areas. We will continue to implement 20mph zones, ensuring that all people understand the process, and taking

account of the fact that designing, consulting and procuring contractors places a significant demand on resources. However, we could speed up this process if the resources were available to make larger areas, or the whole city (excluding key arterial roads) a single 20mph zone.



### Play Streets - A city where children can play freely and safely outside of their own homes

It is estimated there are now more than 80 designated 'play streets' in England and Wales. Dozens of roads are now being closed to traffic for up to three hours a week as part of a nationwide drive to bring back 'play streets'.

# What are your views on our 3 big ideas for making Cardiff an active healthy city?

On a scale of 1 to 5, (1 being low and 5 being high) how much do you support our big ideas?



**4.** Develop Active Travel Zones in the city centre and in neighbourhoods

**5.** Comprehensive Cycle Superhighway & Primary Cycle Route Network

**6.** Total City 20 mph zone

Do you have any other ideas, big or small for helping Cardiff to become a more active healthy city?

## What more can you do?

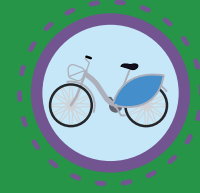
Get that old bike out of the garage and mend that puncture

If you have a child you could talk with other parents/guardians about a new 'walking bus' scheme

## Get in touch

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# Clean Air City



All parts of Cardiff will have clean air. No citizen will die or have to suffer ill health as a consequence of high levels of pollution.

## What's happening?

Poor air quality, caused primarily by traffic congestion, is now recognised across the UK and the rest of the world as a public health priority. It has significant impacts on health, child development and environmental quality.

Clean air is polluted mainly by nitrogen oxides (specifically NO<sub>2</sub>) and what is known as "particulate matter" or "particulates". In 2012, the International Agency for Research on Cancer listed diesel exhaust pollution as a Class I carcinogen (causes cancer). The levels of NO<sub>2</sub> found in Cardiff are the highest in Wales, and in some parts of the city exceed EU pollution limits.

### **The Health Crisis in Cardiff**

Recent work by Public Health Wales estimates that the equivalent of over 225 deaths each year – or 5% of all deaths – can be attributed to particulate matter and nitrogen dioxide (NO<sub>2</sub>) in the Cardiff and Vale Health Board area, with thousands more suffering from long-term illnesses.

Dirty air is now a greater public health risk than alcohol or obesity. And the people who suffer most from poor air quality are the very young, the very old and those suffering ill health. We also know that poor air quality is worse in the more deprived southern areas of the City, and is caused primarily by cars from outside of these communities. This situation is untenable and requires urgent action.

Cardiff Council has recently been legally directed by Welsh Government to undertake a feasibility study to identify the option that, in the shortest possible time, will deliver compliance with legal limits for air quality.

This study, which will report in September 2018, will consider the scale of the current air pollution challenge, all of the options and measures currently in place or planned (many of which are set out in this paper) and will recommend what will need to happen next to reduce air pollution to legal levels, in the shortest time possible.

Cardiff is not alone in having to tackle this issue. Similar feasibility studies have been recently directed by government in Bristol, Manchester & Leeds. They have all recommended that action be taken, including many of the big ideas contained within this Green Paper, like improved public transport in the city and city-region, better cycling and walking routes and having more electric vehicles. They have also recommended that that Clean Air Zones should be developed.



# The big ideas: what more could be done?



## 7. Clean Air Zones

In cities across the world, Clean Air Zones are being put in place. The Mayors of Paris, Mexico City, Madrid and Athens have all recently committed to stop the use of all diesel-powered cars and trucks by the middle of the next decade. Copenhagen's mayor wants to begin restrictions as early as next year.

In cities like Manchester, Bristol, Leeds and Glasgow plans for Clean Air Zones (or similar) are now well advanced, and London have already introduced a Toxicity Charge (T-Charge), with plans for an Ultra Low Emission Zone where all vehicles must meet exhaust emission standards or pay a daily charge on top of the congestion charge to be in place by April 2019.

**Until the feasibility work is done, we won't know if a Clean Air Zone is needed in Cardiff to reduce air pollution.** But we don't want government to impose a solution on Cardiff that doesn't work for the people of Cardiff. That's why we want to start a conversation on this important issue now. This is an opportunity for us to be bold and shape a system that will help us tackle the challenge of traffic congestion in a growing city, while also protecting the health and wellbeing of current and future generations. Most importantly of all, we want any system to be fair.

### What is a Clean Air Zone?

A Clean Air Zone is normally an area where targeted action is taken to improve air quality, in a way that improves health outcomes and supports economic growth. There are a number of different types of clean air zone models in operation or in development in the UK and Europe that aim to reduce congestion, lower pollution and raise funds to give people a realistic transport alternative to using their cars. In many Zones access is restricted, or charges are in place, for vehicles that don't meet certain emission standards.

### What area do they typically cover?

Some Clean Air Zones cover the whole city (Stuttgart, Oxford), while others cover only the most polluted districts, typically the city centre (London, Milan, Berlin, Glasgow).

### What type of vehicles are typically affected?

There are a number of different models in place across Europe and in development in the UK:

- Some clean air zones ban the most polluting vehicles from entry (Stuttgart, Berlin)
- Some target only the most polluting vehicles with a charge (London – T-charge).

- Others are adopting a phased approach, where the Zone will charge only buses, HGVs and taxis at first, with additional measures for other vehicles introduced over a period of years (Glasgow, Leeds)
- Others are in development that will ban all petrol and diesel vehicles entering the city (Oxford, from 2020).

There are often exemptions for newer vehicles which meet higher emission standards, emergency services vehicles, electric vehicles, scooters and mopeds.

### **If there was a charge, what would the money raised be used for?**

Any funds raised from Clean Air Zones have to be ring-fenced for spending on sustainable transport improvements, like the ones contained in this Green Paper, and could be spent on things like:

1. Lowering bus fares and adding new routes, using clean new electric buses.
2. School transport, such as increased school bus services and bus passes for children.
3. Improving walking and cycling paths, so people have an alternative to paying a charge.

## 8. Active Travel Targets for the Public Sector and Business

Cardiff's Public Services Board, which represents the main public sector organisations responsible for Cardiff, has committed to increase active travel amongst its staff. Plans will be developed in 2018 to support staff in these organisations, and key partners, to take up healthy travel, setting clear, challenging but achievable monitored targets. Active Travel Plans will also be developed with schools to reduce the numbers of cars on the "school run."

By working with regional partners and the business community, we could help people choose more sustainable forms of travel; working in partnership to build the infrastructure that ensures people have safe and attractive alternatives to car travel. This partnership approach would show leadership across the public and business sectors to meet clean air targets and improve our city.

## 9. Parking Levies & Charges

In 2012, Nottingham introduced a workplace parking levy requiring workplaces to pay for each parking space provided (charging £387 for each parking space for businesses with more than 10 employees) The levy has raised between £8million and £10million a year, which has been used to improve public transport options, including a new tramline.

Cardiff currently has average parking prices compared to other cities in the UK. Cardiff could introduce a workplace levy similar to the one in Nottingham, or seek to increase its general parking charges. This would dissuade people from driving into town, while also raising funds for public transport alternatives.

# What are your views on our 3 big ideas for making Cardiff an clean air city?

On a scale of 1 to 5, (1 being low and 5 being high) how much do you support our big ideas?



**7.** Clean Air Zones

**8.** Active Travel Targets for the Public Sector and Business

**9.** Parking Levies

Do you have any other ideas, big or small for helping Cardiff to improve the quality of its air?

## What more can you do?

Consider how you could make changes to your routine to cut down on journeys and the use of a car

Discuss with your workplace or place of study about improved cycling facilities or access to membership of the new nextbike scheme

## Get in touch

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[consultation@cardiff.gov.uk](mailto:consultation@cardiff.gov.uk)  
[@CardiffCouncil](https://twitter.com/CardiffCouncil)

# Business, Work and Culture



A vibrant 'destination city centre' with a thriving business economy, supporting major events and a rich, diverse culture.

## What's happening?

### A city for business

Cardiff is one of the fastest growing and most competitive cities in the UK with a workforce of over 230,000 and 20 million annual visitors. Over the past two years, over 20,000 jobs have been added to the city's economy. Many of these are held by the 90,000 daily commuters travelling from outside the city. Businesses are increasingly seeking locations where they can access both a sizable talent pool and consumer market, and transport also has a big role in helping to shape how easy it is to get around places when you arrive.

### An accessible city

The car remains the prevailing means of getting to work and back. Recent data however shows that congestion costs the average driver £1,119 a year. Conversely, active means of transport are growing in popularity. Over 45% of city workers have at some point walked to work, with a similar number cycling.

Rail continues to grow in popularity. Shopping trips by rail have increased by 50% between 2007 and 2016. Between 2014 and 2016, journeys to work by rail increased by 1.8%.

Over half of city centre shoppers over the past year used the city's bus system – more than any other form of transport identified in the 2017 transport survey. Commuting trends, however, show a downward trajectory for bus use in the city.

### A destination capital city

Cardiff is the capital city of Wales. It is already a popular destination for numerous major international sporting and entertainment events. A great place for visitors who enjoy its shops, cultural events and nightlife, and as its reputation continues to grow, we want this to be for the right reasons. We want the city centre to be an attractive exciting 'destination'.

### Metro Central

We are continuing to deliver an outstanding international gateway to Cardiff – the new transport Interchange. This will include Cardiff Central rail station and new links for bus, tram, and bicycle. As well as the focus for business and major events. The Central Transport Interchange will be the core of movement both for the city and region.



# The big ideas: what more could be done?



## 10. Creating a high-quality capital city centre environment

Cardiff City Centre is one of the major assets the region and nation possesses to attract business and visitors, as well as a great place for local residents to live. Creating an international high-quality, people-focussed, active travel city centre will underpin major economic benefits and growth.

We want to use the city centre to celebrate the diverse culture and heritage of modern Cardiff and be a showcase for Wales on the international stage. In so doing, we will facilitate people to meet for leisure or business and enable traders and retailers to create innovative spaces for shopping, eating and entertainment.

## 11. Developing the South East Corridor

A major opportunity exists to increase accessibility for residents and businesses to the east of Cardiff, one of the city's most deprived and disconnected communities. Aligned with the new Industrial Strategy for the east the city, this would include a new park and ride rail station for St Mellons, the completion of the Eastern Bay Link road, further improvement to Queen Street Station, linked to improved cycling and walking routes.

## 12. Regional Park & Rides – Improved Regional Connections

Working with regional colleagues and the business community, we could accelerate plans to grow the region's park and ride network. New park and rides would be established to provide a more efficient route into the city centre for commuters. They would be based at junctions 33, 34 and north of junction 32 of the M4, and to the east and west of the city.

### New York City pedestrian lanes

New York City authority repurposed 26 acres of car lanes as pedestrian zones with some areas seeing retail activity increasing by 172%



# What are your views on our 3 big ideas to help make Cardiff an international capital of business, work and culture?

On a scale of 1 to 5, (1 being low and 5 being high) how much do you support our big ideas?

**10.** Creating a high-quality capital city centre environment

1      2      3      4      5

●—————>—————>—————●

**11.** Developing the South East Corridor

**12.** Regional Park & Rides – Improved Regional Connections Parking Levies

Do you have any other ideas, big or small to help make Cardiff an international capital of business, work and culture?

## What more can you do?

If you own a business you could support your staff to make more sustainable transport choices

Try one of the city's park & ride services

## Get in touch

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[consultation@cardiff.gov.uk](mailto:consultation@cardiff.gov.uk)  
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# The Future of Cars



More Cardiff citizens feel able to either share or not own a car. Many will choose zero carbon cars.

## What's happening?

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On average, private cars are parked for 95% of the time and cost on average £4,000 a year to own. This is a grossly inefficient use of something that places huge demands on the environment, and on people's health and wealth. In many countries across the world, car ownership shows signs of decline, particularly amongst younger people. This decline in car ownership is often associated with a city lifestyle where there are attractive and efficient alternatives: London is one such example.

In Cardiff a new car club will launch in spring 2018, offering members a complete self-service, app-based system that will provide easy access to a vehicle. Developing initiatives of this kind are important as we know that fewer cars will reduce traffic congestion whilst also freeing up usable space on our streets and the substantial area we allocate for parking at work, shopping and leisure destinations.

Taxis already support this approach, and we need to ensure this essential service is prioritised and developed further in future plans.

There is a steady growth in electric vehicle ownership across the UK. The owners, local authorities, and the private sector are grappling with how to provide a variety of different electric charging options, especially for those that cannot charge their car in a driveway. More charging points are coming to Cardiff but a wider network will be needed if the growth of electric vehicles continues.



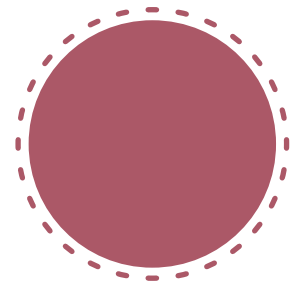
# The big ideas: what more could be done?

## 13. Zero carbon vehicles

Japan now has more electric car charging points than petrol stations. A new electric car is currently registered in the UK every 13 minutes. Only 114 electric vehicles are currently registered in Cardiff (Nov 2017) but this will increase. Hydrogen is also emerging as an alternative fuel. While electric and hydrogen cars produce less pollution, they still contribute to congestion. Cardiff could encourage growth in electric and hydrogen vehicles as replacements for older, polluting models.

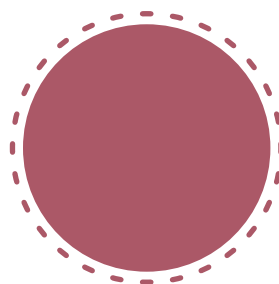
## 14. Comprehensive Network of Charging Points

The Council is committed to increasing the number of charging points around the city but it is unrealistic at this stage to expect every house in the city to have its own charging point. We could build on existing work with industry, retail and the community to bring forward a comprehensive network of charging points and hydrogen supply to encourage ownership of low carbon vehicles.



# 15. Car Clubs and Mobility as a Service

Instead of owning cars, there are indications that city dwellers around the world are choosing "mobility as a service" in which a person either joins a car club, or signs a contract with a service provider. A Cardiff Car Club is already operating but we could attract and develop a wider range of car sharing options, both market driven, including commercial car club operators and community based clubs, facilitated by communities and employers. This would give a variety of options to meet people's needs.



# What are your views on our 3 big ideas regarding the future of cars?

On a scale of 1 to 5, (1 being low and 5 being high) how much do you support our big ideas?



**13.** Zero carbon vehicles

**14.** Comprehensive Network of Charging Points

**15.** Car Clubs and Mobility as a Service

Do you have any other ideas, big or small regarding the future of cars?

## What more can you do?

Explore whether you could change to an electric car or more efficient vehicle

If your household has more than one car, discuss whether you could make do with fewer, and use taxi or new car share options

## Get in touch

[cardiff.gov.uk/askcardiff](https://cardiff.gov.uk/askcardiff)  
[consultation@cardiff.gov.uk](mailto:consultation@cardiff.gov.uk)  
[@CardiffCouncil](https://twitter.com/CardiffCouncil)

# Smart City



As the digital world evolves, Cardiff will use the latest technology to support an integrated transport system in which travellers are well informed and able to make smart travel choices.

## What's happening?

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Cardiff already has an extensive network of 'The Internet of Things' and Cardiff Council is using SMART technology to manage the traffic control systems, variable message signs and real-time information in bus shelters. The system provides API data for phone and internet applications. The system also includes data flow for car park management, automated bollards and air quality monitoring. Current improvements include:

- Parking sensors in 3,300 public parking spaces linked to a phone application that reduces the need for people to make unnecessary journeys on the search for parking spaces. The sensors improve the efficiency of enforcement and provide data to inform parking policies and future strategy.
- Intelligent lighting systems on strategic routes that monitor defects and better manage street lighting to control light levels, save energy and reduce costs.
- Technology to support Next Bike cycle hire, car clubs and the Cardiff Central Interchange hub.
- Upgrade of the real-time passenger information system.

# The big ideas: what more could be done?



## **16.** Maximise Digital Network/User Information

In partnership with the operator of the South Wales Metro, we will be able to use technology to support an integrated ticketing system that will enable people to pay for journeys across various modes of travel using phones, cards and on-line accounts. People will be better able to plan their

journeys using real-time information and previous journey information. This will give people more flexibility and the potential to create their own travel plans to suit their needs.

## **17.** Fully Embed Intelligent Street Management

Building on the success of the parking monitors, we can ensure that streets are safer and ready to cope with the growth of electric and autonomous vehicles. We can ensure that drivers are not adding to congestion by searching for parking spaces when there are none and that drivers are not making streets dangerous through parking

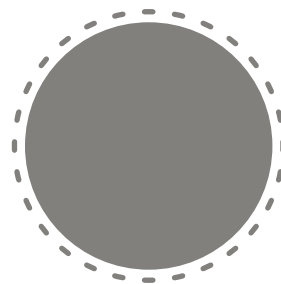
violations. We will be able to help drivers of electric vehicles find available charging points and manage the charging system so that there is a fair distribution of power for all. This could partly be achieved through improving our understanding of and support for our 'Internet of Things' network.



# 18. Autonomous Vehicles

Experts are predicting a growth of autonomous vehicles but no one is quite sure yet how they will operate in a city like Cardiff and what impact they will have. We are working with universities, industry and the UK Government to fully understand the implications and potential of this emerging technology and to ensure that it brings

maximum benefit to the people and business of Cardiff. Cardiff could lead the way in automation and autonomous vehicle growth by, for example, providing the relevant digital connectivity in certain areas or asking partners to trial new technology on certain routes.



# What are your views on our 3 big ideas to help make Cardiff a smart city?

On a scale of 1 to 5, (1 being low and 5 being high) how much do you support our big ideas?

**16.** Maximise Digital Network/  
User Information

1      2      3      4      5

●—————>—————>—————●

**17.** Fully Embed Intelligent Street  
Management/ Street/Pavement/  
Public Space Enforcement

**18.** Assess Autonomous Vehicles

Do you have any other ideas, big or small to help make Cardiff a smart city?

## What more can you do?

Download a transport app such as Waze or Moovit

Discuss how you can use mobile video conference technology to cut down on travel to meetings

## Get in touch

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# What happens next?

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The consultation on this Green Paper closes on the 1st July. The outcomes of the consultation will be used, alongside clearer direction from Welsh Government and any feasibility studies on air quality, outcomes from our Economy Green Paper, and discussions with the South Wales Metro operator, to inform the development of a White Paper on Transport and Clean Air, to be published in the Autumn.

# Contact Us:

**Complete our  
online survey at:**

[www.cardiff.gov.uk/askcardiff](http://www.cardiff.gov.uk/askcardiff)

**Email comments directly to us:**

[consultation@cardiff.gov.uk](mailto:consultation@cardiff.gov.uk)

**Respond in writing to:**

Cardiff Research Centre, County Hall,  
Atlantic Wharf, Cardiff, CF10 4UW

**Contact us on social media:**

Facebook/Twitter @CardiffCouncil

