

Cardiff Council

CARDIFF CITY REGION TRANSPORT
IMPLEMENTATION PLAN

Final - March 2010

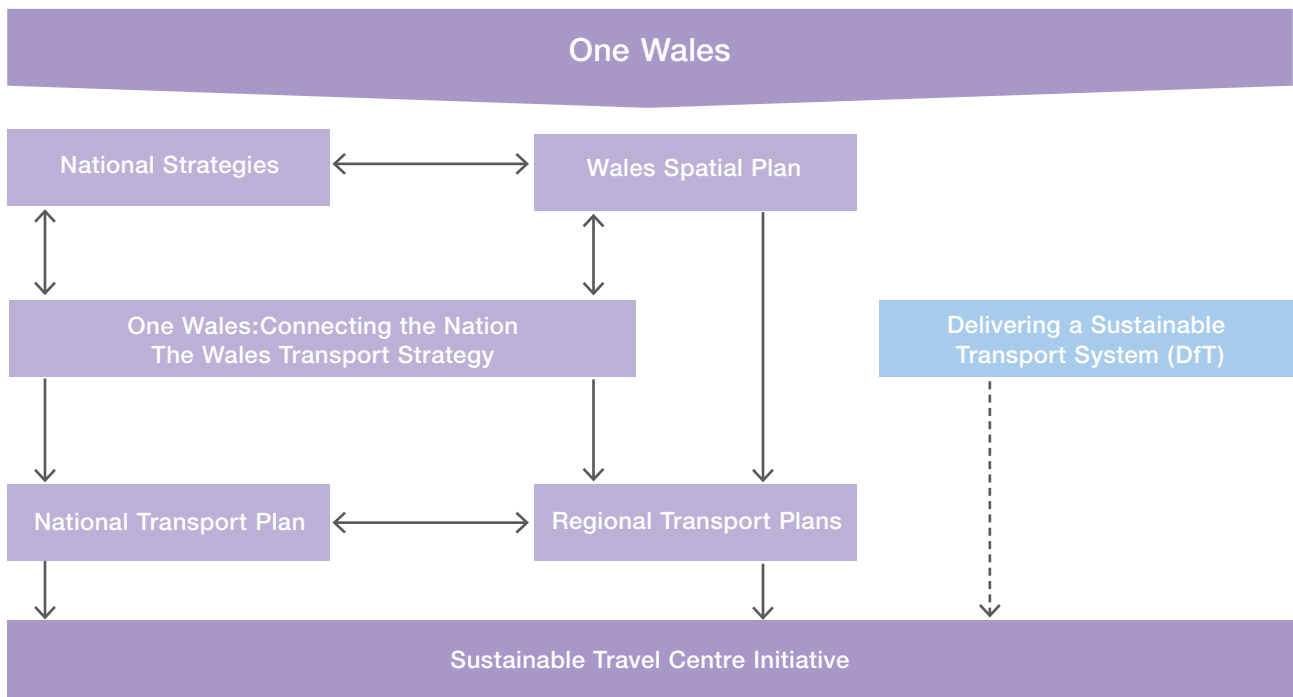
ARUP



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INTRODUCTION



A POLICY AND EMERGING BEST PRACTICE FRAMEWORK FOR SUSTAINABLE TRAVEL CENTRE INITIATIVE

Cardiff is the capital and most populous city of Wales. It is home to some 330,000 residents and some 210,000 jobs. Movement and transport to and within the city are essential to society and the economy. Problems in movement lead to negative impacts such as congestion, lost time, air pollution, restriction on development potential and lower quality of life.

In March 2009, the Welsh Assembly Government announced that Cardiff is to be developed as a sustainable travel centre. This is an initiative within the existing framework of Policy (see above).

The aim is to offer realistic alternatives to the private car for some journeys. Such alternatives will need to compete on time and cost, whilst broadening travel choices.

To meet the aims of the sustainable travel centre initiative, Cardiff Council has identified a number of measures. Some of these measures have already been implemented, including:

- Cardiff East Park and Ride - Phase 1 providing 300 spaces is completed with Phases 2 and 3 subject to funding
- City Centre Bus Box
- Cycle Hire Scheme
- City Centre Public Realm improvements have commenced and will be completed in conjunction with the City Centre bus box
- Pont y Werin Bridge is under construction and will open in June 2010

A wide range of further initiatives are programmed or planned, including:

- Partial Pedestrianisation of St Mary Street
- Civil Parking Enforcement
- Active Traffic Management
- Establishment of a Car Club

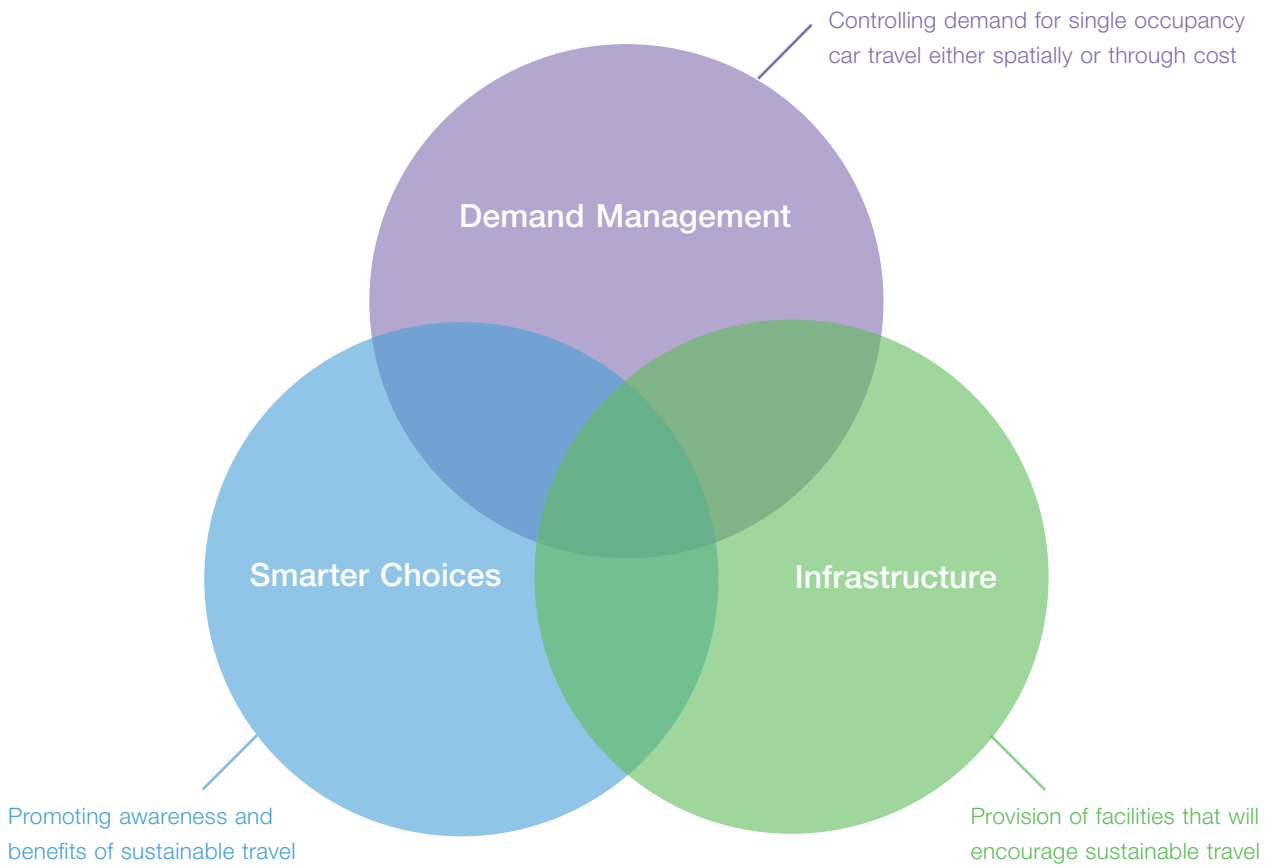
Arup has been commissioned to prepare a Transport Implementation Plan for Cardiff City Region, which meets the needs of the sustainable travel centre initiative.

The sphere of influence of Cardiff extends well beyond the administrative boundary. Thus, there is the need to consider movement around the wider city region. For this reason, and as stated in the Wales Spatial Plan, Cardiff needs to function as the focus of a 'networked city region'.

This City Region Transport Implementation Plan prioritises measures for funding and delivery. It considers the aims of the initiative and identifies relevant measures to meet travel needs.

The plan draws on the components of a sustainable travel system, namely:

- *infrastructure*
- *smarter choices*
- *demand management*



▲ COMPONENTS OF A SUSTAINABLE TRAVEL SYSTEM

CARDIFF CITY REGION AND TRANSPORT CORRIDORS



▲ A CARDIFF CITY REGION, AS DEFINED IN THE WALES SPATIAL PLAN

Cardiff has a far wider influence than its administrative boundary; business and leisure reach both nationally and internationally. However, in order to maximise return on the available resources, it is important to define a study region.

It is considered that both practically and in order to maintain consistency with policy, the definition of the Cardiff City Region used in the Wales Spatial Plan is applicable.

The Wales Spatial Plan stresses the importance of a networked region. It will thus be important to establish sustainable transport connections between settlements within the Cardiff City Region as well as reinforcing a central transport hub.

“A fully integrated high quality transport system is necessary for this to happen. Over the 20 year horizon of the Wales Spatial Plan, all the Area’s key settlements should be linked to Cardiff or Newport by suitable high capacity public transport.”

For the purposes of analysis, the Cardiff City Region has been considered in terms of travel corridors. These corridors, illustrated overleaf, are primarily radial following the key transport links between Cardiff and the key settlements. In addition, the City Core defines the densely urbanised area.



▲ TRAVEL CORRIDORS AND KEY SETTLEMENTS WITHIN THE CARDIFF CITY REGION

DRIVERS FOR CHANGE IN THE REGION

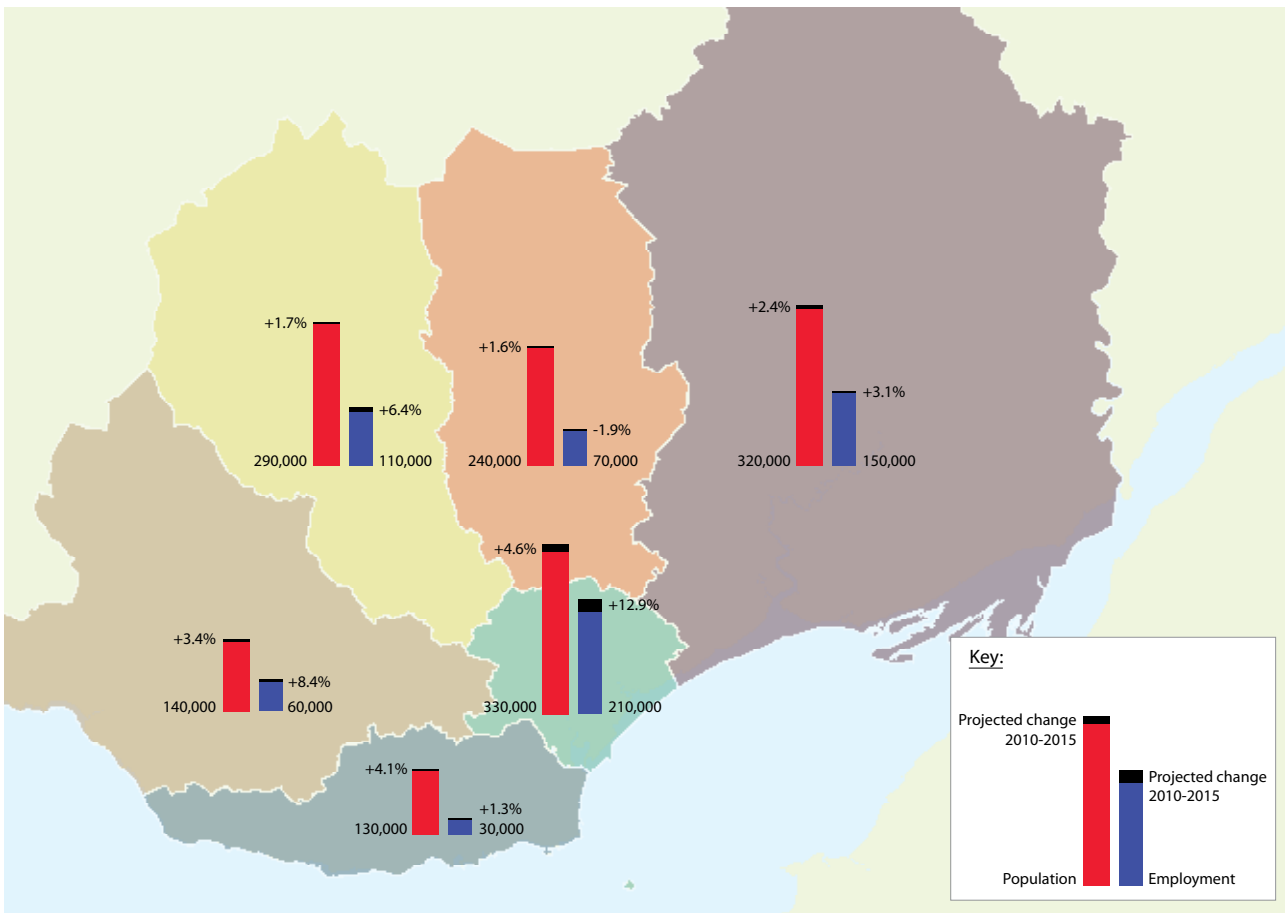
Understanding the reasons why changes are required is essential in order to propose the right initiatives and schemes. This section outlines the drivers for change in the Cardiff City Region and identifies where these impacts are most significant.

SUSTAINABLE TRAVEL

The Sustainable Travel Centre initiative and wider government policy aim to encourage sustainable travel and, where appropriate, manage demand for less sustainable travel patterns. Six themes are suggested to form a sustainable transport system. Five of these relate to the aims and objectives whilst the sixth, deliverability, is a key consideration.



▲ THEMES OF A SUSTAINABLE TRANSPORT SYSTEM



▲ POPULATION AND EMPLOYMENT, EXISTING AND PROJECTED CHANGE (2010-2015)

POPULATION AND EMPLOYMENT

The population of the Cardiff City Region is forecast to grow in the short term. However, this growth is not expected to be uniform with the greatest increases in the City Core.

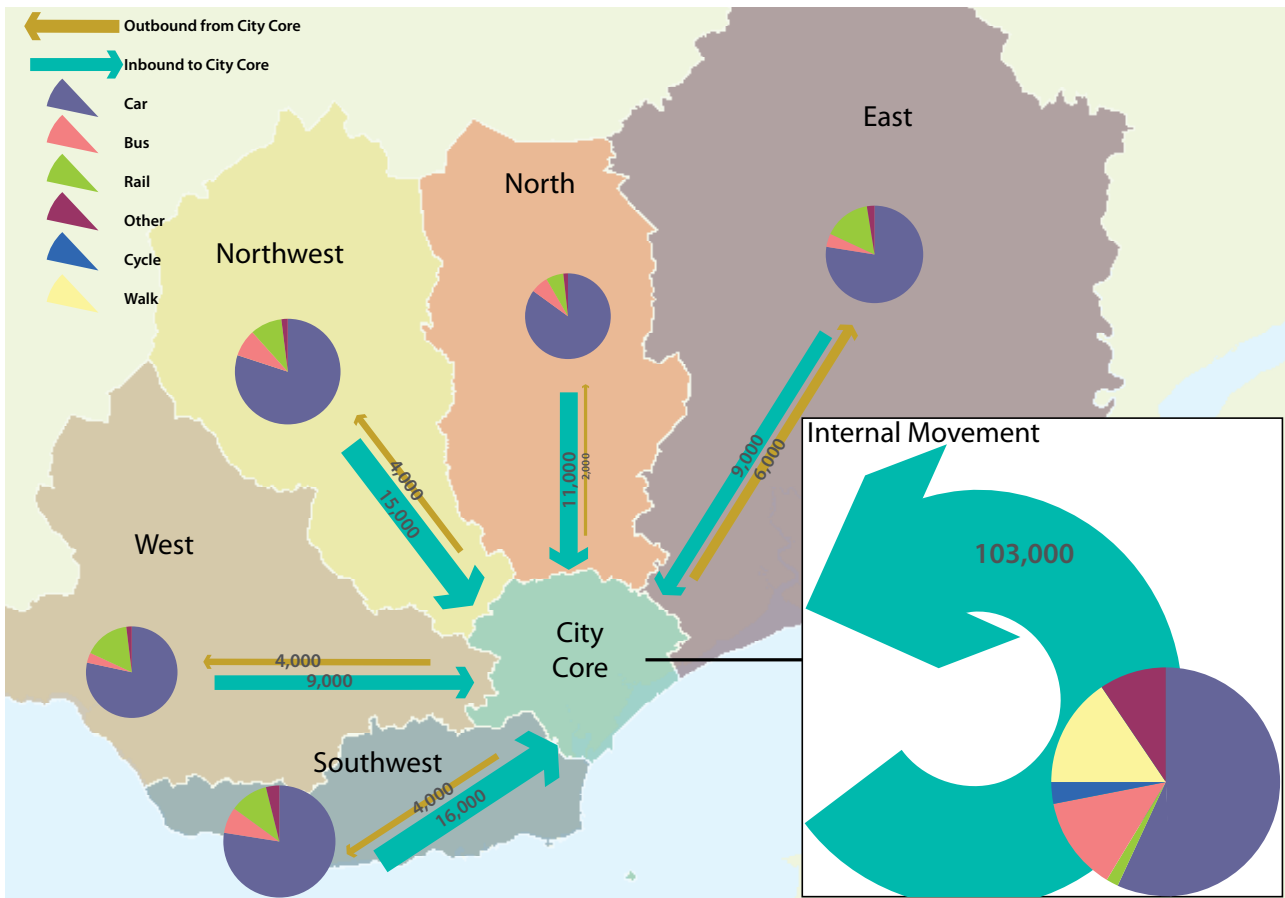
Distribution of employment is likely to vary across the region. Whilst the City Core and the Western corridor are expected to experience strong growth, the decline of the manufacturing sector combined with recent economic conditions contributes to lower rates of forecast growth elsewhere in the City Region. This will influence journey to work patterns across the region.

COMMUTING PATTERNS

The 2001 Census Journey to Work data provides information on the origin, destination and mode of transport used for journeys to work. The Cardiff City Region is characterised by a strong inbound commuting pattern to the City Core which is dominated by use of the private car. Over 75% of all commuting journeys to the City Core are made by car.

The tidality of movement is generally strongly inbound to the City Core. The exception to this being movement to and from the Eastern corridor which has 60/40 inbound/outbound split in the journey to work.

However, the significant in-commuting is overshadowed by the level of internal journeys to work, ie. journeys which have both their origin and destination within the City Core. These journeys (around 103,000 daily) have a more balanced modal share as a result of wider modal choice and shorter journeys. Whilst commuting by car remains the dominant form of transport at 58%, the urban bus network achieves a 13% modal share and cycling and walking account for a significant 18% of journeys to work.



▲ JOURNEY TO WORK PATTERNS AND MODAL SHARE (2001 CENSUS)

CONGESTION AND DELAYS

The region, and in particular the City Core, has experienced increasing congestion on key routes and at key junctions, especially those where routes converge.

Congestion regularly occurs on the M4, A470, A4232 and A48(M) particularly, but not exclusively, in the morning and evening peak periods. All of the radial commuting corridors are subject to congestion of varying levels and duration as a result of commuting patterns. Elsewhere, nearly all urban areas are subject to intermittent congestion and delays.

Delays on the road network have a knock-on impact to the regional and local bus and coach services. Despite priority measures, these services are significantly affected by road conditions. Delays to bus services erode reliability and public confidence in the services.

Overcrowding is also experienced on peak period rail services. Train lengthening works have improved the situation. However, in some cases rolling stock availability and required infrastructure works limit the short term scope for improvement.

DEVELOPMENT

The number of households in South East Wales is forecast to increase by 108,900 (18.6%) between 2003 and 2021. There is also forecast to be growth in the employment and leisure sectors. The Wales Spatial Plan identifies the need for a major new 'Premier' business park to be established in the Cardiff City Region. Within the City Core, the Local Development Plan (LDP) suggests three strategic options to accommodate increased development:

- North Eastern expansion of Cardiff
- North Western expansion of Cardiff
- Dispersed expansion



▲ CONGESTION OF SOME FORM AFFECTS NEARLY ALL TRANSPORT MODES

ELEMENTS OF A TRANSPORT IMPLEMENTATION PLAN

In order to draw up an Implementation Plan, consideration was given to a wide range of previous studies and current policy documents - most notably the National Transport Plan, SEWTA Regional Transport Plan, Network Rail Wales Route Utilisation Strategy (RUS) and recent papers prepared by Cardiff Council on the topic of the Sustainable Travel Centre initiative.

Following this review, a workshop was held with key representatives of the Welsh Assembly Government and Cardiff Council. The workshop included

extensive discussion of over 80 different transport schemes and initiatives and enabled an improved understanding of the status and deliverability of each of the schemes.

The locations of initiatives listed below that were selected for inclusion in the Cardiff City Centre Region Transport Implementation Plan are shown overleaf and individual proposals are broadly outlined on a corridor by corridor basis in the sections that follow.

Corridor	Measure
Key Priorities	
City Core	'Line One' – Rapid Transit linking Cardiff Bay to Heath Hospital
Northwest	Taffs Well Transport Hub, Stage I
Southwest	Barry Docks Transport Hub
City Core	Cardiff Central Transport Hub
West	M4 Junction 34 Park and Share
Intermediate / On-going	
North	Caerphilly Transport Hub
East	Expansion of Cardiff East Transport Hub
City Core	Cardiff Vale - Retail and Leisure
West	'Line Two' - Rapid Transit to Culverhouse Cross
West	M4 Junction 33 Park and Share
Southwest	Airport Express Bus link
Southwest	'Line One' - Rapid Transit extension to Penarth
North	Improvements to Rhymney line rail service
City Core	Pedestrian crossing upgrades
City Core	Cycle network and facilities
All Corridors	Travel Planning
All Corridors	Individualised Travel Marketing
All Corridors	'All Wales Entitlement Card'- Introduction and promotion
All Corridors	Publicity Campaign
All Corridors	Monitoring
Longer Term	
Northwest	Taffs Well Transport Hub, Stage II
West	'Line Three' – Rapid Transit to M4 Junction 33
East	'Line Four' – Rapid Transit Cardiff to Newport
City Core	Use of freight rail lines to Cardiff Bay
North	Electrification of the Valley Lines

CARDIFF CITY REGION TRANSPORT IMPLEMENTATION PLAN





Key

- Key Priorities
- Intermediate/Ongoing Measures
- Longer Term measures
- Rapid Transit
- Improved Rail
- Cardiff Vale Sustainable Travel
- Transport Hub
- Central Transport Hub
- Cardiff Vale Destination
- 2 Implementation Plan Scheme Number
(See following pages)

- SCHEMES NOT SHOWN**
- City Core Schemes:**
- 16. Upgrading of key pedestrian crossings in City Centre
 - 18. Completion of cycle network and facilities
- Smarter Choices:**
- 21. Individualised Travel Marketing
 - 22. Travel planning for schools and major employers
 - 23. Publicity Campaign
 - 24. Introduction of all Wales Entitlement Card
 - 25. Monitoring

EAST CORRIDOR



1. Expansion of Cardiff East Transport Hub
2. 'Line Four' – Rapid Transit Cardiff to Newport
3. Use of Freight Rail Lines to Cardiff Bay



▲ CARDIFF EAST PARK AND RIDE

1. EXPANSION OF CARDIFF EAST TRANSPORT HUB

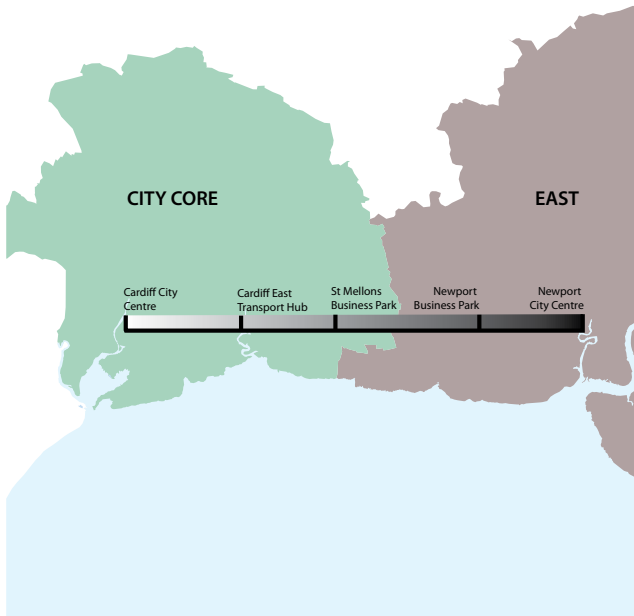
Cardiff East Park and Ride was opened in October 2009. Phase 1 of the Park and Ride includes 300 spaces and is ideally situated to intercept traffic travelling towards the City Core from the M4. The facility is served by a bus service with a 15 minute frequency and priority measures on the route to and from the city centre.

Since opening, the site has experienced significant demand reaching capacity at peak demand periods. Cardiff Council has plans to extend the facility to 1,000 spaces during the course of 2010 subject to funding. The success of this facility gives significant confidence to the establishment and popularity of Park and Ride within the Cardiff City Region.

It is recommended that Park and Ride provision continues to match demand subject to revenue funding and that the extension works are undertaken with a view to facilitating further expansion.

The facility may provide for future opportunities such as Park and Ride for cyclists arriving on the adjacent Rhymney Trail and by providing for Park and Share trips. This Transport Hub may also be an opportunity to provide a key interchange location for Line Four of the proposed Rapid Transit and for local bus services from the surrounding residential areas.





▲ LINE FOUR RAPID TRANSIT

2. 'LINE FOUR' – RAPID TRANSIT CARDIFF TO NEWPORT

Line Four of the proposed Rapid Transit network would connect Newport to destinations that are not served by existing heavy rail infrastructure.

The route would follow existing bus priority from the city centre to the Cardiff East Transport Hub. The route then continues on the A48 to a modified Junction 29a calling at St. Mellons Business Park before rejoining the A48 to the Newport West Business area and to the railway station in Newport city centre.



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▲ FREIGHT RAIL LINES IN CARDIFF DOCKS AREA

3. USE OF FREIGHT RAIL LINES TO CARDIFF BAY

There is the potential to connect to Cardiff Bay from the east using existing rail freight lines through the Cardiff Docks area. Such a rail connection would require involvement and cooperation with stakeholders.

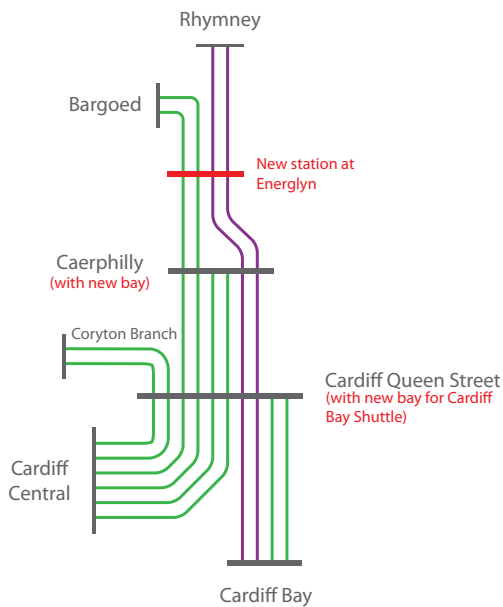
The connection could create a direct route from the eastern corridor, without the need for interchange at Cardiff Queen Street or Cardiff Central stations.

This route could also serve proposed new stations at St. Mellons and Coedkernew.

NORTH CORRIDOR



4. Improvements to Rhymney Line Rail service
5. Caerphilly Transport Hub
6. Electrification of the Valley lines



▲ NETWORK RAIL PROPOSED SERVICE ALTERATIONS

4. IMPROVEMENTS TO RHYMNEY LINE RAIL SERVICE

The Northern Corridor is connected to the City Core by the A469 and the Rhymney Valley Lines rail service. There is also a connection to the Northwest Corridor via the A468, the A472 and the A465 Heads of the Valleys.

The topography between Caerphilly and Cardiff combined with the favourable location of railway stations means that improvements to the existing heavy rail network, as detailed in the current Network Rail Route Utilisation Strategy (RUS) are the favoured strategy for this corridor.

The Network Rail RUS recommends several key improvements to the rail service over the period 2009-2014:

- Construction of a new station at Energlyn, to the north of Caerphilly town centre
- An increase in service frequency to six trains per hour
- Selected services operating non-stop from Caerphilly to Cardiff
- Selected services operating as through services to Cardiff Bay

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▲ CAERPHILLY TRANSPORT HUB

5. CAERPHILLY TRANSPORT HUB

To further improve the effectiveness of the rail service, there are scheduled improvement works to the Caerphilly Transport Hub. These include an additional rail platform, enhanced parking facilities and improved interchange between the bus and rail services.

© Paul White Photography



6. ELECTRIFICATION OF THE VALLEY LINES

Electrification of the Valley Lines network would offer major benefits in terms of faster journey times, higher capacity services, lower emissions and greatly improved journey quality and reliability.

Electric trains can also achieve enhanced acceleration/deceleration, a significant benefit on the Valley Lines network which is typified by regular stations.

Rail lines in the northern corridor represent an ideal first candidate for electrification. The corridor is constrained by topography and the rail line must therefore be considered a key asset in improving sustainable transport both within the corridor and to the City Core.

NORTHWEST CORRIDOR



7. Taffs Well Transport Hub



▲ TAFFS WELL - EXISTING RAIL BASED PARK & RIDE

7. TAFFS WELL TRANSPORT HUB

The existing Taffs Well railway station represents an ideal location for a Transport Hub. The station is located at the southern tip of the Northwest Corridor but is also connected to the Northern Corridor.

The proposed Transport Hub is currently served by frequent rail services on the Merthyr Tydfil to Cardiff, Aberdare to Cardiff and Treherbert to Cardiff lines. During the day, six trains per hour operate to and from Cardiff - providing a 'turn up and go' service. The site is well connected to the A470, a key commuter route. The Taff Trail, a regional cycling/walking route, passes through the site and provides connections to the surrounding area.

The area of land proposed for the Transport Hub is currently used for station parking.

The station currently operates as a Park and Ride and demand for this facility has increased over the last few years. The facility has been observed to achieve around 80% of total capacity by the end of the morning peak period.

It is proposed to develop the Transport Hub in two stages.

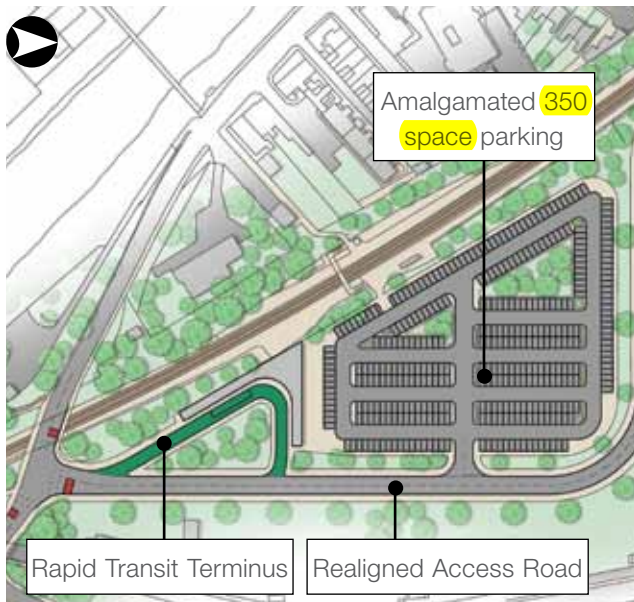


▲ STAGE I: RAIL PARK & RIDE EXPANSION

STAGE 1: RAIL BASED PARK AND RIDE WITH AN ADDITIONAL 250 PARKING SPACES

In order to achieve a strategic site, it is suggested that an **additional 250 spaces** are created. These spaces could be created in addition to the original 93 space area by relocating some of the existing industrial uses immediately surrounding the station, resulting in the creation of a larger surface car park.

By 2014, Network Rail is planning to increase capacity on this section of the rail network to eight trains per hour.



▲ STAGE II: TRANSPORT HUB

STAGE 2: TRANSPORT HUB SERVED BY RAIL AND RAPID TRANSIT VIA THE A470 CORRIDOR

The second stage of works, would create a Transport Hub connecting the site to areas of Cardiff not served by the rail service through the addition of a **Bus Rapid Transit service**. This facility would allow more frequent services reducing waiting time to five minutes or less.

Access to parking could be realigned to enclose the site and improve the surrounding development potential. It would be important for the parking area to retain the **potential for multi storey construction in the future.** The southern part of the site would be used as the Rapid Transit Terminus. This could include the provision of facilities for passengers such as a waiting room, ticket office, toilets and secure cycle parking.



▲ A470 RAPID TRANSIT PRIORITY MEASURES

Bus Rapid Transit would use the A470 with extensive priority measures provided through bus lanes, bus gates and traffic signal priority. On the approach to the city centre, the route would utilise proposed Line One infrastructure from the Maindy area of Cardiff.

WEST CORRIDOR



8. M4 Junction 34 Park and Share site

9. M4 Junction 33 Park and Share site

10. 'Line Two' - Rapid Transit to Culverhouse Cross

11. 'Line Three' - Rapid Transit to M4 Junction 33



© Google

A M4 JUNCTION 34

8. M4 JUNCTION 34 PARK AND SHARE

The area around M4 Junction 34, including the hard shoulders of the A4119, is already used by a notable number of vehicles as an informal Park and Share location. This practise illustrates a latent demand for such a facility but also creates a safety and congestion concern.

The creation of a formalised Park and Share facility within close proximity of junction 34 could accommodate existing demand and encourage other Park and Share users for trips to a variety of locations. It is suggested that an initial 250 spaces are constructed with potential for future extension. In addition to initial construction the facility would also have ongoing operational requirements including site security and management.

In the long term there may be the opportunity to make use of the nearby mainline railway line which runs to the south of junction 34 in order to develop the site as a multi-modal transport hub.



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▲ M4 JUNCTION 33 AND MOTORWAY SERVICE AREA

9. M4 JUNCTION 33 PARK AND SHARE SITE

M4 Junction 33 is the proposed site of a major business park development.

The proposed business park would occupy land to the north of the junction.

A Park and Share facility at the junction has previously been put forward. However, concerns have been expressed in relation to capacity and safety.

It is suggested that further investigation of the location is warranted including assessment of combining access for the motorway services and Business Park.



Source: Halcrow scheme for Cardiff Council

▲ PRIORITY MEASURES COWBRIDGE ROAD WEST

10. 'LINE TWO' – RAPID TRANSIT TO CULVERHOUSE CROSS

Culverhouse Cross is a key connection point into the city from the West and Southwest corridors. The Culverhouse Cross junction also serves an area of retail activity. The provision of a Rapid Transit route between Culverhouse Cross and the City Core would thus be desirable.

By using publicly owned land adjacent to the existing rail lines and into the Ely Mill development site, a public transport route could be developed. In order to create priority, it would be necessary to reallocate road space on Cowbridge Road West. The previous proposals (illustrated) from the 2002 Core Bus Network study would appear to still be appropriate in this respect.



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▲ 'LINE THREE' - RAPID TRANSIT VIA ELY PAPER MILL SITE

11. 'LINE THREE' – RAPID TRANSIT TO M4 JUNCTION 33

The area between the fringe of the City Core at Fairwater and the M4 Junction 33 has been identified as a future public transport corridor by Cardiff Council.

The route from the city centre would be shared with Line Two branching at the western end of Cowbridge Road East through Fairwater before joining the previous rail alignment to create a Park and Ride facility.

SOUTHWEST CORRIDOR



- 12. Pont y Werin Transport Hub
- 13. Airport Express Bus link
- 14. Barry Docks Transport Hub
- 15. 'Line One' - Rapid Transit Extension to Penarth



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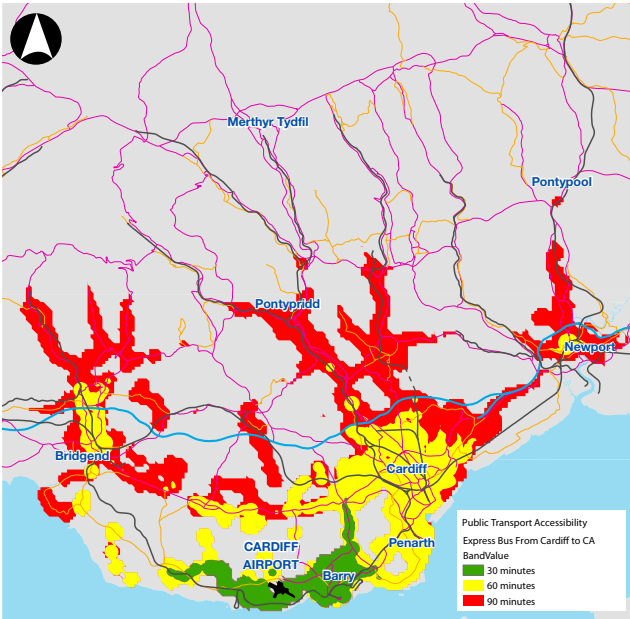
▲ ARTIST'S IMPRESSION OF COMPLETED BRIDGE

12. PONT Y WERIN TRANSPORT HUB

The completion of the Pont y Werin bridge will provide a missing link for pedestrians and cyclists between Penarth and Cardiff. The bridge is currently under construction and scheduled to open in Spring 2010.

Much of Penarth is within walking distance of the bridge and all of Penarth and Dinas Powys are within 5km cycling distance. The Cardiff side of the bridge lies on the route of the proposed Line One Rapid Transit route which provides a through city route to the Heath Hospital. Provision of an interchange with Line One Rapid Transit would enable journeys into or across the city.

Provision of cycle parking and cycle hire would offer choice for those wishing to change to the rapid transit service or continue their journey by bicycle. The onward route from the Pont y Werin bridge should be direct and well signed.

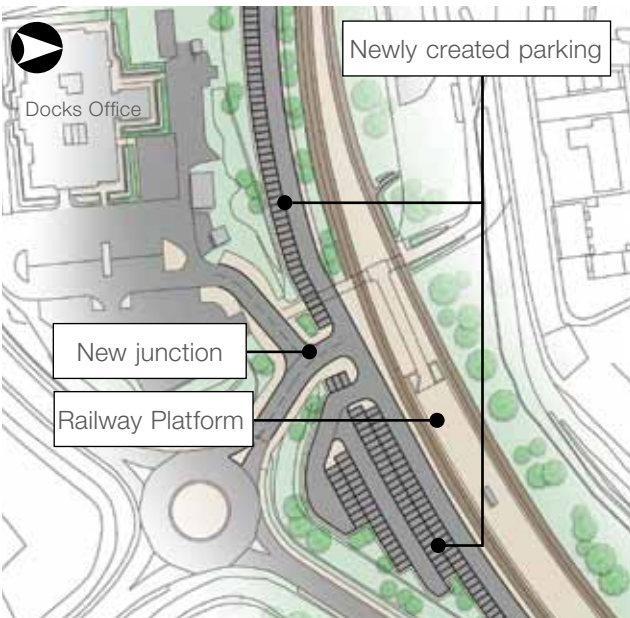


▲ IMPROVED ACCESSIBILITY TO CARDIFF AIRPORT

13. AIRPORT EXPRESS BUS LINK

The Welsh Assembly Government proposes to introduce an express bus service in order to improve access to Cardiff Airport.

The improved service would operate as a limited stop service with increased frequency, extended operating hours and improved journey times. Reliability would also be improved as a result of extensive priority measures. Close to the City Core, the express bus could use Line Two infrastructure to Culverhouse Cross.



▲ BARRY DOCKS TRANSPORT HUB

14. BARRY DOCKS TRANSPORT HUB

Barry is a key commuter origin to the City Core. The rail service provides four trains per hour.

An area of land adjacent to the station and owned by the Vale of Glamorgan Council could be utilised to establish around 140 at grade Park and Ride spaces. The facility can be directly accessed from the south via an existing roundabout on Ffordd y Mileniwm and is connected to the station via an existing subway.

Any construction should retain the potential for multi-storey parking on the site.



▲ PROPOSED RAPID TRANSIT IN PENARTH

15. 'LINE ONE' - RAPID TRANSIT EXTENSION TO PENARTH

There is strong demand for travel between Penarth and Cardiff Bay.

While improvements to cycle and pedestrian routes have recently been made, a Rapid Transit route to Cardiff Bay serving Roath Basin South and connecting to Penarth across the barrage would offer significant journey time savings over existing journeys by private car or public transport.

The barrage opening regime and road alignments in Penarth require further investigation. The line would serve the central area of Penarth as well as the proposed Penarth Heights development.

CITY CORE



- 16.** Pedestrian Crossing Upgrades
- 17.** 'Line One' - Rapid Transit
- 18.** Cycle Network and Facilities
- 19.** Cardiff Central Transport Hub
- 20.** Cardiff Vale - Retail and Leisure



▲ RECENTLY UPGRADED JUNCTION OF KINGSWAY/ DUKE STREET

16. PEDESTRIAN CROSSING UPGRADES

Public realm works in the city centre have included improvements to pedestrian facilities on Castle Street and St Mary Street. The revised crossings result in lower vehicle speeds and improved capacity, safety and visibility for pedestrian movements.

Further improvements of this nature could be considered at the following locations:

- Stuttgarter Strasse
- Dumfries Place
- Station Terrace

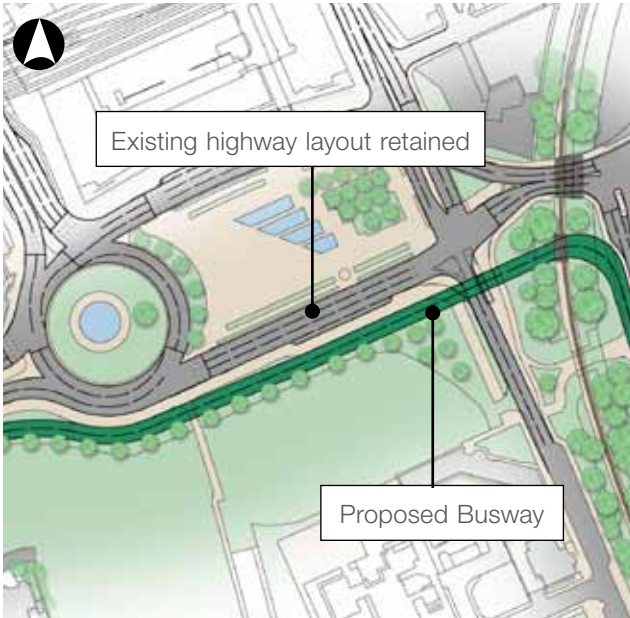


▲ BUS RAPID TRANSIT, NANCY

17. LINE ONE - RAPID TRANSIT

Line One connecting Cardiff Bay and the Heath Hospital via a cross city service is proposed as the first of the Rapid Transit lines. Line One can facilitate future development and contribute to the objectives of a sustainable city through modal shift and faster journey times.

The proposals for the system are fully detailed in 'Rapid Transit for Cardiff: A Vision' prepared by Arup in September 2009. The cost of the system is estimated at around £30m with an implementation programme of three years.



▲ SEGREGATION AND PRIORITY FOR RAPID TRANSIT

The Rapid Transit route would benefit from a significant level of priority measures and, in places, segregation. In addition to an attractive route, Rapid Transit would also offer a higher level of associated facilities including:

- Smart Ticketing
- ‘Metro’ level frequency of less than ten minutes
- Customer hosts to improve security and customer information
- Real time information
- Vehicle guidance technologies
- User friendly comfortable vehicles.



▲ CYCLE HIRE SCHEME

18. CYCLE NETWORK AND FACILITIES

Cardiff is a city well suited to cycling: being flat and compact in nature. Cycling can offer an alternative for trips which are five miles or less. Cycling at 12-15 mph is also extremely competitive for journey times in urban areas.

The completion of a strategic cycle network is required across the city, which would encourage cycling in Cardiff. This network combined with improved facilities such as secure cycle parking and expansion of the successful city centre cycle rental scheme could make cycling a viable alternative to public transport.



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▲ CARDIFF CENTRAL TRANSPORT HUB

19. CARDIFF CENTRAL TRANSPORT HUB

While the role of the central bus station has altered following the establishment of the Bus Box, Cardiff Central Railway Station remains the key interchange destination for the City Region.

Within the next five years, it is essential that the role of Central Station is reinforced within the context of a comprehensive Transport Hub catering for local, regional and national travel.

20. CARDIFF VALE - RETAIL AND LEISURE

The Western fringe of the City Core has four major retail/leisure areas:

- Valegate, Brooklands and Wenvoe Retail parks at Culverhouse Cross
- Capital Retail Park and Cardiff City Stadium Leckwith
- Cardiff Bay Retail Park, Grangetown
- Cardiff International Sports Village



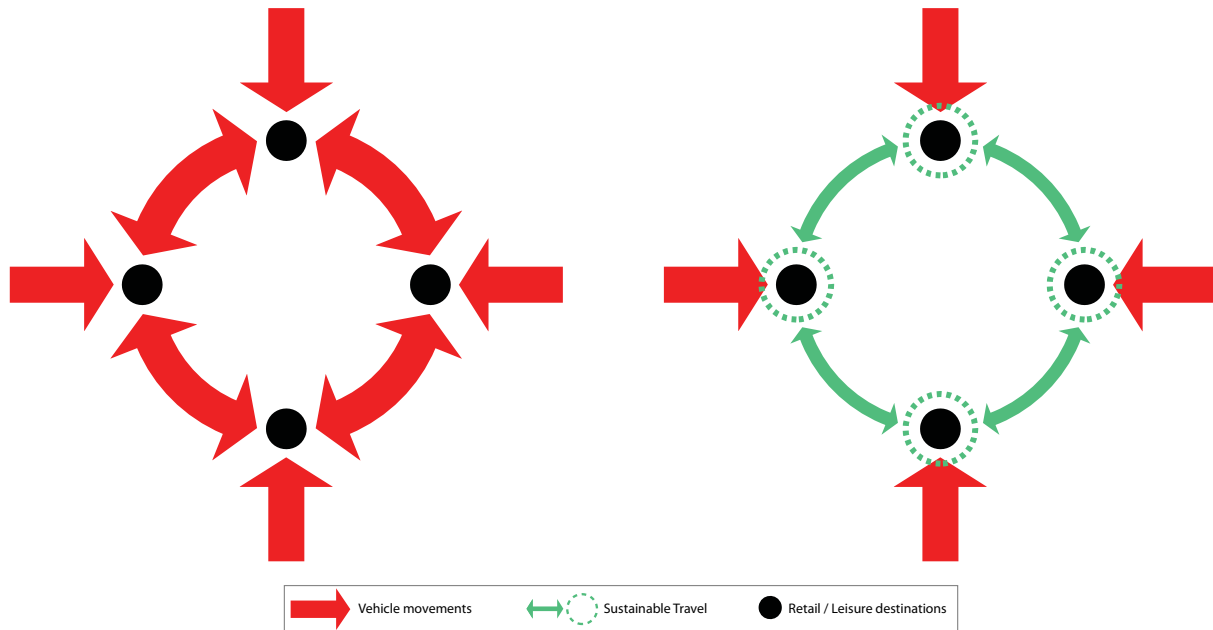
▲ CARDIFF VALE - RETAIL AND LEISURE DESTINATIONS

These well established areas of retail and leisure activity currently have little formalised relationship with one another. Nevertheless, movement between these destinations contributes to congestion at key intersections and along routes. The proposal is to integrate these destinations by providing sustainable transport between them, thereby enabling rationalisation of parking and enhancing future commercial viability.

Car drivers may select one destination to park. A direct and frequent transport service will link destinations. Goods could be handled through pick up and home delivery centres at each of the destinations enabling shoppers to arrange collection at their preferred centre or home delivery, as appropriate.

▼ CURRENT OPERATION WITH HIGH LEVELS OF MOVEMENT

▼ CARDIFF VALE PROPOSAL



At each of the destinations, unnecessary vehicle trips would be discouraged through improvements in the public realm. This approach has the most potential at Culverhouse Cross where individual stores are separated by major roads.

The connecting transport service could be a fleet of dedicated low emission vehicles with distinct branding and livery. The Cardiff Vale proposal will create potential for increased turnover for retail businesses and hence there is potential to receive financial support.

Cardiff Vale – Retail and Leisure would require significant involvement from, and investment by, both the public and private sectors. However, there are significant benefits that might justify such investment (see table below).

In addition to retail and leisure integration, Cardiff Vale could evolve to offer Park and Ride for commuters and major events at Cardiff City Stadium, Cardiff Bay and with connections to the City Core by Rapid Transit as follows:

- Culverhouse Cross – Line Two
- Capital Retail Park – Line Two
- Cardiff Bay Retail Park – Line One
- Cardiff International Sports Village – Line One

Current	Cardiff Vale - Retail and Leisure
Existing retail area in competition	Increased potential for linked trips, greater footfall and consequently greater turnover for retail businesses
Large parking areas	Reduced parking areas as a result of lower turnover in parked vehicles
Isolated retail areas	Networked retail destinations increasing accessibility to shoppers
Vehicle movements contribute to congestion	Decreased congestion resulting from reduced car trips between destinations
Air and Noise pollution	Reduced levels of car travel between areas
Destinations favour private car use and access	Improved accessibility by all modes
Time consuming movement between destinations	Direct centre to centre transport
Separated distribution and parking lead to large store footprints	Shared distribution and parking create new development areas

SMARTER CHOICES

Smarter Choices is a term used to describe a range of techniques for influencing travel behaviour and encouraging more sustainable travel modes such as walking, cycling and public transport.



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▲ CAR SHARING

21. INDIVIDUALISED TRAVEL MARKETING

Individualised Travel Marketing (ITM) involves engaging with people and discussing individual transport needs and solutions. ITM can have a particular focus or be more general covering all transport modes. ITM has been a key initiative in the English Sustainable Travel Towns with a proven success record.

The City Core offers the highest concentration of short distance trips and realistic alternatives.

Initial trials during the first year could be extended around the City Core over the five year plan.



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▲ INCREASING USE OF SUSTAINABLE MODES

22. TRAVEL PLANNING

Employment and education trips are key contributors to daily travel demand.

Establishing Travel Plans can encourage more sustainable travel resulting in improved and more reliable journeys.

Providing expert staff to advise and encourage travel planning can realise benefits from reduced parking requirements.

Initially, resources might be utilised to engage major employers and educational institutions where the potential for change is greatest. This could then be filtered down to smaller organisations.



▲ SUSTAINABLE TRAVEL TOWN PUBLICITY, NOTTINGHAM

23. PUBLICITY CAMPAIGN

To increase public awareness of travel options and benefits of sustainable travel a publicity campaign combined with readily available resources could be launched.

The www.keepcardiffmoving.co.uk website could be associated with the campaign in order for it to become a key portal for information and journey planning.



▲ SMART CARD TECHNOLOGIES

24. ALL WALES ENTITLEMENT CARD

The Welsh Assembly is planning to introduce a contactless Smart Card. Whilst the card is primarily intended for transport, the system can also be extended to other transactions. Such technologies have been introduced to significant success elsewhere, most notably the Oyster Card in London. They enable a simplification of travel, eliminating ticketing decisions and cash exchange, and reducing boarding times.

The Cardiff City Region could look to pioneer applications of this technology as soon as a reliable system can be implemented.



▲ MONITORING OF SUSTAINABLE TRAVEL INITIATIVES

25. MONITORING

In order to understand the baseline conditions, the potential for change and the results of initiatives, it is essential that monitoring is undertaken .

This will enable future funding to be targeted at the most successful measures and an understanding to be gained of travel patterns and issues.

TOWARDS IMPLEMENTATION

The Sustainable Travel Centre initiative is already underway and Cardiff Council has completed significant milestones in terms of the city centre public realm improvements and the opening of Phase 1 of the Cardiff East Park and Ride.

The different elements and proposals outlined in this plan are intended to form components of 'One System' – a sustainable system of movement aimed at the themes of sustainable travel supporting the needs of the Cardiff City Region. Each element has its merits and some initiatives are either on-going or are planned extensions to services / facilities. Notwithstanding this, it is recommended that, in the context of plan delivery and progress, there are **key elements of the Plan that need to be prioritised. In our view, these include the following:**

- Line One Rapid Transit (circa £30M)
- **Taffs Well Transport Hub (Phase 1 <£1M)**
- Cardiff Central Transport Hub
- Barry Docks Transport Hub (<£1M)
- M4 Junction 34 Park and Share (<£1M)

In each case, the next steps are as follows:

- preparation of business case in support of applications for funding
- masterplanning and preliminary design
- stakeholder and public consultation



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