

Cardiff Local Development Plan 2006 - 2026



Background Technical Paper No.5 Transportation

September 2013



CARDIFF LOCAL DEVELOPMENT PLAN 2006-2026 (DEPOSIT PLAN) BACKGROUND TECHNICAL PAPER TRANSPORTATION

SUMMARY OF TRANSPORT EVIDENCE BASE FOR DEPOSIT PLAN

1. Introduction

This paper provides a summary of the technical documents which form the transport evidence base to support the LDP Deposit Plan. The paper summarises the findings of key technical documents which have informed the approach to addressing the transport impacts of development proposals in the LDP Preferred Strategy and subsequently, as outlined in the LDP Deposit Plan and the policies to support implementation of appropriate transport measures and achieve necessary mitigation.

2. Cardiff Travel Behaviour Baseline Report by Sustrans & Socialdata, December 2011

Travel behaviour research in Cardiff and Penarth was undertaken in 2011 by Sustrans and Socialdata for the Welsh Government funded Personalised Travel Planning Project. The results show that travel to work represents only 24% of all car trips, and that most personal travel by car is for leisure (28%), shopping and personal business (26%) or other purposes (22%). The data also reveals that for approximately 55% of car trips in Cardiff and Penarth, the car is chosen in preference to sustainable travel alternatives purely for subjective reasons (e.g. lack of information or poor perceptions of travel time, costs, comfort and infrastructure) rather than necessity. Furthermore it suggests that of these car trips:

- 31% could be made by public transport,
- 37% could be made by cycling, and
- 13% could be made on foot.

The results also indicate that large proportions of the population live within 3km of their destinations distances which could potentially be travelled on foot or by bicycle.

The results also show that the current weekly travel mode split (2011) is 64%:36% car based:non-car based. To achieve a mode split of 50:50 in 2026 for all trips on Cardiff's transport network including transport movements from new development envisaged within the LDP Preferred Strategy, it will be necessary to achieve a significant modal shift in movements (all trip purposes) generated by the existing settlement/population.

A copy of the report is included in **Appendix A**

3. Cardiff Local Development Plan 2006-2026 Preferred Strategy - Background Technical Paper No. 12 Transportation Technical Paper

This paper was prepared to support the proposals outlined in the LDP Preferred Strategy published for consultation in October 2012. The paper outlines the transport modelling work carried out by the Council to quantify the transport impacts of growth projected within the LDP Plan period. It further explains the scale of those impacts and the measures necessary to address them, highlighting the central role of transport in delivering the LDP.

The key findings are:

- Local knowledge and research of travel behaviour, patterns and trends, in combination with modelling work carried out by the Council has shown that ensuring **50% of all trips on the transport network** are made by sustainable modes, is necessary to accommodate the additional vehicular trips on the highway network which will be generated by new development;
- Achievement of the Plan's key objectives will be dependent upon developments being integrated with extensive and high quality sustainable transport infrastructure. Some will be large scale, such as new public transport corridors, but others will be local improvements, but no less important, permitting access to community facilities without the need for a car, as well as being supported by smarter choices programmes; and
- All major development sites will need to be supported by significant new transport infrastructure and improvements to existing transport facilities in advance of its beneficial occupation.

A copy of the report is included in **Appendix B**

4. **Rapid Transit for Cardiff: LDP 2006-2026 Strategic Transport Infrastructure by Arup, April 2013**

This study was commissioned to understand how transport can best be provided to support the development set out in the Preferred Strategy and achieve the target of a 50:50 modal split for all journeys in Cardiff.

The report sets out 'a high level plan' which sets out the options and recommendations for providing transport links to the strategic sites in association with a range of measures covering the city and wider region'.

The study proposes four strategic rapid corridors (southern, north west, north east and eastern) which would developed in an integrated manner to serve the strategic LDP sites and support mode shift. The study recommends a number of options within each corridor which require further detailed investigations in conjunction the master planning of the LDP strategic sites. This will involve refinement of demand forecasts, route design and service options and financial assessments as well as engagement with developers, and consultation with neighbouring local authorities, Sewta, Welsh Government and potential public transport operators.

A copy of the report is included in **Appendix C**

5. **North West and North East Cardiff Corridor Studies**

The Council is collaborating with developers and land owners to develop master plans for the 3 strategic sites in North West Cardiff. This work aims to develop the conceptual proposals that were identified in the *Rapid Transit for Cardiff: LDP 2006-2026 Strategic Transport Infrastructure* report by Arup as part of the Council's option appraisal exercise by examining the physical, operational and financial practicalities associated with the delivery of infrastructure and services. The primary focus will be on determining what forms of provision could be delivered to support the scale of growth currently contemplated in North West and North East Cardiff.

5(a) North West Cardiff Corridor Study (for Cardiff Council/Plymouth Estates/Curzon Real Estate/Castell- Y-Mynach Estate) by Arup, September 2013

The three strategic land allocations in north-west Cardiff could collectively achieve approximately 10,250 new homes and 6,500 new jobs. This study follows on from the recommendations in the Arup: Rapid Transit for Cardiff: LDP 2006-2026 Strategic Transport Infrastructure and provides a preliminary assessment of the physical, operational and financial practicalities of a new public transport corridor to connect the three strategic sites in North West Cardiff to Cardiff City Centre.

The study sets out to identify a recommended route alignment and form of public transport provision that can be taken forward for more detailed design development. Having regard to the Welsh Transport Planning and Appraisal Guidance (WelTAG), the process of determining the study recommendations was influenced by the following key priorities:

- achieving convenient access to each of the strategic sites;
- minimising journey times to central Cardiff so as to provide an attractive alternative to car use for existing and new communities on the NW corridor;
- minimising passenger wait times by achieving a high frequency of service;
- deliverability, having regard to potential construction costs, external sources of funding, phasing of implementation and risk;
- the scope to cater for travel demand from existing communities;
- the potential to provide an onward extension into Rhondda Cynon Taf and attract patronage from that area; and
- the scope to intercept journeys to/from central Cardiff via park and ride facilities.

These priorities provide the basis for a comparative analysis of the relative merits of the various options for the provision Bus Rapid Transit, Rail and Tram-Train.

This concludes that a BRT option would have patronage and cost related advantages over the rail based options and that achieving an attractive BRT service is dependent on the reallocation of existing road space and the ability to address any associated impacts (e.g. displacement of on-street parking).

The report recommends further technical work to develop and finalise options including the identification of the route corridor extending into Rhondda Cynon Taf. This work will progress up until the LDP is submitted for examination and will feed into the ongoing development of strategic site master plans by developers and land owners working in collaboration with the Council within the context of the strategic site schematic master plans included in the Deposit LDP.

A copy of the report is included in **Appendix D**

A further study is in progress to assess recommended route alignments and form of public transport provision through the RCT area. This study will be completed before Deposit LDP consultation in October 2013.

5(b) North East Cardiff Proposals, Transport Masterplan by Vectos, August 2013

The North East Cardiff proposals relate to two strategic sites of the Deposit LDP, which together have the potential to accommodate up to 6,000 dwellings. The preparation of the Transport Masterplan follows an identical brief to the North West

Cardiff Study which has investigated the conceptual proposals that were identified in the *Rapid Transit for Cardiff: LDP 2006-2026 Strategic Transport Infrastructure* report by Arup for that area.

The Transport Masterplan for the North East Cardiff Proposals has been developed following regular meetings between the Council, landowners and the respective transport consultants. It is based upon the fundamental principle of creating a 'sense of place', providing infrastructure in a way that maximises accessibility and social inclusion, allows the city to function efficiently and aims to achieve a 50/50 sustainable travel mode split, in line with the objectives of the Draft LDP. The Transport Masterplan includes a Walking Strategy, a Cycling Strategy, and a Public Transport Strategy, which together with Council initiatives to tackle city centre parking and the allocation of road space, will help achieve a step-change in travel behaviour in North East Cardiff. These strategies are supported by the design and layout of the Masterplan itself, which seeks to make travelling by sustainable transport modes as attractive and convenient as possible.

Further work will be undertaken to develop the infrastructure options and phased delivery.

A copy of the report is included in **Appendix E**

6. Cardiff Strategic Cycle Network Plan (2011)

In 2011 Cardiff Council approved Enfys, its strategic cycle network plan which we plan to implement over the subsequent 5 years. The plan was based on extensive research and consultation and defines a core network of numbered cycle routes linking between the neighbourhoods of Cardiff and the city centre. The aim of the Enfys network plan is to create a joined up cycling network which will promote cycling as a natural and attractive choice. The Plan is supported by a Cycle Design Guide which provides guidance on the design of on road and off road cycling infrastructure, reflecting acknowledged good practice. More information is available at <http://www.keepingcardiffmoving.co.uk/cycle/enfys-cardiff-cycle-network/>.

The Enfys network will be progressively extended to reach all parts of the city including neighbourhoods which will be created through new urban extensions. The LDP policies require developments to facilitate these extensions where it is necessary to provide sustainable access.

Copies of the plan, strategic network map and design guide are included in **Appendix F**

7. South East Wales Transport Alliance (Sewta) Regional Transport Plan (RTP) 2010

Sewta is the regional transport consortium for South East Wales made up of 10 local authorities including Cardiff and other transport stakeholders.

Under the provisions of the Transport (Wales) Act 2006, Regional Transport Plans replaced the Local Transport Plans formerly produced by each local planning authority in Wales.

The Sewta RTP sets out a vision of "A modern, accessible, integrated and sustainable transport system for South East Wales which increases

opportunity, promotes prosperity for all and protects the environment; where walking, cycling, public transport and sustainable freight provide real travel alternatives”

To deliver this vision the RTP identifies a range of strategic objectives, policies, and actions, together with a five-year rolling programme of schemes to develop and improve the transport network.

Managing demand for private car travel, making better use of the existing transport network and encouraging use of sustainable and active transport modes are key themes of the RTP which will provide the strategic framework for regional and local level transport improvements across the region.

The RTP identifies a number of key strategic transport projects that will support the delivery of Cardiff's LDP such as improvements to the regional rail network and services (including a new station at St Mellons), strategic bus corridors, walking and cycling facilities and the highway network.

A copy of the RTP is included in **Appendix G** and it can be accessed online at: <http://www.sewta.gov.uk/regional-transport-plan>

8. Sewta Rail Strategy by Jacobs, March 2013

The Sewta Rail Strategy sets out a 20 year programme of investment in the South East Wales rail network. The strategy is planned to encourage growth of both rail passengers and freight in an environmentally sustainable form.

The key changes in the rail network over this period will be re-signalling of the Cardiff area, including capacity increases for passengers and freight, electrification and re-franchising of passenger services.

The Rail Strategy sets out a package of measures that will create a rail network meeting the economic and social needs of the region. The strategy is complementary with the possible development of a **South Wales Metro**, which is part of a bigger vision currently under consideration. It also ties in with the planned electrification of the Valleys Line Network by 2020 and highlights how this will improve the performance of the rolling stock, reduce journey times and enabling rail services to serving additional new stations such as St Fagans and St Mellons which are proposed in the strategy.

The improvements to the performance and reach of the regional rail network will help to facilitate the rising demand for rail travel for trips into Cardiff and helping to alleviate pressure exerted upon Cardiff's highway network by daily commuter movements in the city. The strategy proposals therefore support the policies and proposals in the LDP which seek to maximise the accessibility of new developments by sustainable travel modes.

A copy of the report is included in **Appendix H** and it can be accessed online at: <http://www.sewta.gov.uk/other-documents/sewta-rail-strategy/>

9. The South East Wales Integrated Transport Task Force Study, March 2013

In December 2012 the Minister for Local Government and Communities set up a Task Force, involving public and private sector representatives, to drive forward the development of an integrated transport system for south east Wales. The South East

Wales Integrated Transport Task Force Final Report was presented to Edwina Hart, the Minister for Economy, Science and Transport on 31st March 2013. The report was published on 30th April and approved by the Sewta Board in June 2013.

The report includes a vision for the regional public transport system, and sets out packages of proposals for the region, including a Phase One package of projects valued at £90m, accelerating schemes from the National Transport Plan and the Regional Transport Plan. A longer term Phase Two package of schemes is also proposed for the post 2015 period.

The Phase One package of schemes includes further work to develop bus corridors including key corridors connecting to Cardiff, and the implementation of the planned Cardiff strategic cycling and walking networks. Key strategic projects related to Cardiff earmarked in the report for development in Phase 2 and supporting development in the LDP include the potential rail/rapid transit links between central Cardiff and strategic development sites in North West Cardiff linking into Rhondda Cynon Taff. Other Phase 2 projects include the Eastern Bay Link Road and the potential light rail link between Cardiff Queen St - Callaghan Square - Cardiff Bay - Cardiff Enterprise Zone and Cardiff Central. Arrangements and governance for the delivery of these schemes are addressed in the report and will be determined by the the Minister for Economy, Science and Transport who will also decide on scheme funding.

A copy of the report is included in Appendix I

10. Bute Avenue Revised Proposals for The Square by Arup, July 1999

The report by Arup shows a plan prepared by Mott MacDonald (Figure 2.1) that provides for an alignment of a high standard segregated public transport system linking Cardiff Bay to the City Centre.

Figure 2.1 is included in Appendix J

11. Road Traffic Forecasts by Department for Transport (DfT), July 2013

The latest road traffic forecasts prepared by the DfT are what may happen in the UK based on:

- Current understanding of how people make travel choices
- The expected path of key drivers of travel demand
- Assuming no change in government policy beyond that already announced.

The published report is for traffic demand, congestion and emissions in England between 2010 and 2040. The results for Wales in the accompanying data tables (Table 4 All Outputs - Area Types) show that in large urban areas, traffic growth measured in billion vehicle kilometres and billion vehicle miles is likely to increase by 20.3% between 2010 and 2025 and 38.4% between 2010 and 2040. Average vehicle delays (measured as lost seconds per vehicle kilometre) will increase by 21.0% and 40.7% for the respective periods and vehicle speeds will reduce on average by 4.5% and 8.3% respectively. Cardiff being the largest urban area is likely to experience higher levels of traffic growth and resulting congestion than for the average of the large urban areas for Wales. The data tables show large reductions in vehicle emissions between 2010 and 2025 (- 21.9% for CO₂, -91.7% PM₁₀ and - 63.9% NO_x).

The report for England is provided in **Appendix K** and it can be accessed online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/212474/road-transport-forecasts-2013.pdf

The published data tables are accessible online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/225484/english-welsh-growth-speed-kilometres.xls

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/225485/english-welsh-growth-speed-miles.xls

12. Express/Core Bus Network Study by Halcrow, 2002

The express/core bus network study by Halcrow identifies bus priority measures on the main bus routes in Cardiff including bus gates, bus lanes and signal improvements. Many of the bus corridor enhancements identified have been implemented and some require further review given current constraints.

A copy of the report is included in **Appendix L**

13. Rapid Transit for Cardiff: Scoping, Feasibility, Engineering and Economic Study by TRL and AEA Technology Rail, October 2004

The Rapid Transit for Cardiff study by TRL and AEA Technology Rail investigated the feasibility of options with the aim of establishing a Rapid Transit network. This study formed the basis for further investigation and assessment of routes in Cardiff.

A copy of the report is included in **Appendix M**

14. Greater Cardiff Area Park and Ride Study by Halcrow Group Ltd, June 2004

The feasibility study was undertaken to identify appropriate sites for Park and Ride in the wider Cardiff Area. Two of the sites identified have been implemented at Cardiff East (Llanrumney Reserve in Pentwyn) and Cardiff West (Leckwith). The document contains commercially sensitive information and is therefore not published with the above technical papers. However, the bus-based park and ride site plan is provided. It is envisaged that in the future it will be more effective to intercept traffic with park and ride sites outside of Cardiff rather than within the urban areas providing travel choices that are more sustainable than the private car.

A copy of the site plan is included in **Appendix N**

15. Cardiff City Region Transport Implementation Plan by Arup, March 2010

This City Region Transport Implementation Plan considered the movement around the wider city region and prioritised measures for funding and delivery. The plan draws on the components of a sustainable travel system, namely infrastructure, smarter choices and demand management. The plan identified inter alia the potential to use the freight rail lines to Cardiff Bay in the east and a new transport link across Cardiff Barrage.

A copy of the site plan is included in **Appendix O**



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