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M4 Corridor Enhancement Measures

Stage 1 Review of Problems and Goals

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1 Executive Summary

This report has been prepared at the completion of the first stage of engagement with the public and strategic stakeholders in which the people were requested to comment on a proposed set of problems, goals and aims for the M4 Corridor Enhancement Measures (M4 CEM) programme.

The report sets out a modified vision for the M4 CEM programme derived from the Deputy First Minister and Minister for the Economy and Transport's statement on the National Transport Plan in July 2009. It then proposes a set of aims derived from strategic objectives which were outlined for the public in a brochure distributed in April 2006, and reworded into plain English. These have been further modified to take on board comments raised in the engagement process.

A current understanding of the transport problems on the M4 corridor is then considered, originating with the problems established in a WeITAG planning Stage workshop held in October 2007, which were also reworded into a plain English version and presented for comment in the engagement process. The latest problems have been modified, with additional problems included, to reflect comments made during the engagement. The problems have also been grouped under four categories:

- Capacity
- Resilience
- Safety
- Sustainable development.

The revised transport planning objectives that aimed to provide a level of service compatible with the framework set out in the National Transport Plan for transport provision in South East Wales have then been considered, described here as goals and, reworded in plain English. These goals have also been modified, with additional goals included, to reflect comments made during the engagement.

The proposed vision, aims, problems and goals from this first stage of the engagement are:

VISION

The overarching purpose of the M4 Corridor Enhancement Measures programme is to resolve issues of capacity, safety and resilience along the M4 corridor in south-east Wales.

AIMS

- 1) Make it easier and safer for people to access their homes, workplaces and services by walking, cycling, public transport or road.
- 2) Deliver a more efficient and sustainable transport network supporting and encouraging long-term prosperity in the region, across Wales, and enabling access to international markets.
- 3) To produce positive effects overall on people and the environment, making a positive contribution to the overarching Welsh Assembly Government goals to reduce greenhouse gas emissions and to making Wales more resilient to the effects of climate change.

PROBLEMS

Capacity

1. A greater volume of traffic uses the M4 around Newport than it was designed to accommodate, resulting in regular congestion at peak times over extended periods.
2. The M4 around Newport is used as a convenient cross town connection for local traffic, with insufficient local road capacity.
3. HGVs do not operate efficiently on the motorway around Newport.
4. There is insufficient capacity through some of the junctions (eg 3 lane capacity drops to 2 lane capacity).
5. The 2-lane Brynglas tunnels are a major capacity constraint.
6. The M4 cannot cope with increased traffic from new developments.

Resilience

7. Difficulties maintaining adequate traffic flows on the M4 and alternative highway routes at times of temporary disruption; alternative routes are not able to cope with M4 traffic.
8. The road and rail transport system in and around the M4 corridor is at increasing risk of disruption due to extreme weather events.
9. When there are problems on the M4, there is severe disruption and congestion on the local and regional highway network.
10. The M4 requires essential major maintenance within the next 5-10 years; this will involve prolonged lane and speed restrictions, thus increasing congestion problems.
11. There is insufficient advance information to inform travel decisions when there is a problem on the M4.

Safety

12. The current accident rates on the M4 between Magor and Castleton are higher than average for UK motorways.
13. The existing M4 is an inadequate standard compared to modern design standards.
14. Some people's driving behaviour leads to increased accidents (eg speeding, lane hogging, unlicensed drivers).

Sustainable Development

15. There is a lack of adequate sustainable integrated transport alternatives for existing road users.
16. Traffic noise from the motorway is a problem for local residents in certain areas.
17. The existing transport network acts as a constraint to economic growth and adversely impacts the current economy.
18. Traffic levels are forecast to continue to increase therefore capacity and resilience issues will worsen over time.
19. The high volumes of congested, slow moving traffic on the motorway around Newport add to air pollution problems and greenhouse gas emissions.
20. The existing transportation system does not meet the aspirations of national and local government planning policies.

GOALS

When the M4 CEM programme is concluded we will benefit from:

1. Safer, easier and more reliable travel East-West in South Wales.
2. Improved transport connections within Wales and to England, the Republic of Ireland and the rest of Europe on all modes on the international transport network.
3. More effective and integrated use of alternatives to the M4, including other parts of the transport network and other modes of transport for local and longer distance journeys around Newport.
4. Best possible use of the existing M4, local road network and other transport networks.
5. More reliable journey times along the M4 corridor.
6. Increased level of choice for all people making journeys within the transport corridor by all modes between Magor and Castleton, commensurate with demand for alternatives.
7. Improved safety on the M4 Corridor between Magor and Castleton.
8. Improved air quality in areas next to the M4 around Newport.

9. Reduced disturbance to people from high noise levels, from all transport modes and traffic within the M4 corridor.
10. Reduced greenhouse gas emissions per vehicle and/or person kilometre.
11. Improved travel experience into South Wales along the M4 Corridor.
12. An M4 attractive for longer distance journeys that discourages local traffic use.
13. Improved traffic management in and around Newport on the M4 Corridor.
14. Easier access to local key services and residential and commercial centres.
15. A cultural shift in travel behaviour towards more sustainable choices.

2 Introduction

This report presents the development of the vision, aims, problems and goals for the M4 Corridor Enhancement programme following on from the New M4 Project, incorporating the vision from the National Transport Plan and taking account of comments received from the stage 1 Engagement. This engagement included a series of drop-in exhibitions in the M4 Corridor area and workshops for local councils and strategic stakeholders.

3 Vision

As part of the New M4 Project the following vision had been articulated for the transport system in South East Wales:

VISION

To provide as part of a wider integrated transport strategy for South East Wales, enhanced capacity and resilience on the transport corridor between Magor and Castleton.

This was the vision that led to the development of the New M4 Project and the M4 Corridor Enhancement Measures (M4 CEM) programme (called the Corridor Efficiency Improvements at that time). Then, on 15 July 2009, the Deputy First Minister and Minister for the Economy and Transport delivered a statement on the National Transport Plan. From this statement the following vision has been articulated for the M4 CEM programme:

VISION

The overarching purpose of the M4 Corridor Enhancement Measures programme is to resolve issues of capacity, safety and resilience along the M4 corridor in south-east Wales.

4 Strategic Objectives (Aims)

The following Strategic Objectives were outlined for the public in a brochure distributed in April 2006, prior to public information exhibitions:

STRATEGIC OBJECTIVES

- **Social:** to deliver enhanced accessibility to services and employment opportunities for people, whilst retaining a choice for road users.
- **Economic:** to deliver a more efficient transport capability for road traffic on the primary economic gateway to South Wales, to facilitate growth in regional and national prosperity.
- **Environmental:** to prevent, reduce and where practicable offset any significant adverse effects on environmental receptors.

The Strategic Objectives were rephrased in plain English by the Engagement team and presented as Aims at the exhibitions and workshops, as follows:

AIMS

- 1) Make it easier for people to reach services such as shops, hospitals, leisure service and places of work, by road, public transport, walking or cycling.
- 2) To support and encourage prosperity in the region and across Wales by delivering a more efficient transport network on this important economic gateway to South Wales.
- 3) To prevent and reduce negative effects of the M4 CEM programme on people and the environment and, where practicable, provide improvements to balance against them.

The comments received from the drop-in exhibitions, the local councils' workshop and the strategic stakeholders' workshop have been reviewed and the following amendments to the Aims are proposed:

AIMS

- 1) Make it easier and safer for people to access their homes, workplaces and services by walking, cycling, public transport or road.
- 2) Deliver a more efficient and sustainable transport network supporting and encouraging long-term prosperity in the region, across Wales, and enabling access to international markets.
- 3) To produce positive effects overall on people and the environment, making a positive contribution to the overarching Welsh Assembly Government goals to reduce greenhouse gas emissions and to making Wales more resilient to the effects of climate change.

5 Wel TAG Planning Stage Problems

As part of the New M4 Project, a WelTAG Planning Stage Workshop, held on 24 October 2007, reached a common understanding of problems with transport in South East Wales. The problems identified at the Workshop were:

PROBLEMS

1. There is a lack of resilience* in the road network around Newport.
2. There is a mismatch between demand and available capacity on the motorway around Newport.
3. Problem 1 and 2 will worsen over time.
4. The existing transport system acts as a constraint to economic growth.
5. There will be capacity restrictions during essential major maintenance on the existing M4 within the next 5-10 years.
6. HGVs do not operate efficiently on the motorway around Newport.
7. There is an air pollution problem associated with the motorway around Newport.
8. Traffic congestion on the M4 around Newport contributes to emission of greenhouse gases.
9. The transport system is at increasing risk from extreme weather events.
10. There is an environmental noise problem associated with the motorway around Newport.
11. The existing transportation system does not meet the Wales Spatial Plan aspirations as a gateway to Wales.
12. The existing transportation system does not meet the aspirations of the local development plans.
13. The current accident rate on the existing M4 is higher than average.
14. The existing M4 is a barrier to intra-regional travel.

* *Resilience is the ability of a network to cope with sudden changes in demand or operation, eg traffic throughput could be maintained during periods of temporary disruption.*

6 Problems expressed in plain English

The WelTAG Planning Stage problems were reviewed by the Engagement team and expressed in plain English as follows:

PROBLEMS

1. Difficulties maintaining adequate traffic flows on the M4 at times of temporary disruption (for example, following accidents, problems caused by severe weather, or during major events).
2. A greater volume of traffic uses the M4 around Newport than it was designed to accommodate, resulting in regular congestion at peak times.
3. Traffic levels are forecast to continue to increase, therefore problems 1 and 2 will worsen over time.
4. The existing transport network acts as a constraint to economic growth (for example, as freight companies see increasing delays in deliveries, they may decide not to invest in South Wales).
5. The M4 requires essential major maintenance within the next 5-10 years; this will involve prolonged lane and speed restrictions, thus increasing congestion problems.
6. HGVs cope badly with congestion as they take longer to get going again once they've stopped, thus adding to the congestion.
7. The congested, slow moving traffic on the motorway around Newport adds to air pollution problems.
8. Stop-start traffic movement on the M4 results in greater greenhouse gas emissions than free-flowing traffic.
9. The road and rail transport system in and around the M4 corridor is at increasing risk of disruption due to extreme weather events (for example flooding).
10. Traffic noise from the motorway is a problem for local residents.
11. WAG's aim for an improved gateway into Wales is not currently met by the M4 corridor.
12. The existing transport system limits what local Councils can do to develop their areas.
13. The current accident rates on the M4 between Magor and Castleton are higher than average for UK motorways.
14. The current problems on the M4 between Magor and Castleton at times have a significant knock-on effect, severely disrupting travel within South Wales.

These problems were presented for comment at the Drop-in Exhibitions and workshops.

7 Proposed changes to problems following Stage 1 Engagement

The comments received from the drop-in exhibitions, the local councils' workshop and the strategic stakeholders' workshop have been reviewed and the following amendments and additions to the Problems are proposed under four themes:

PROBLEMS

Capacity

1. A greater volume of traffic uses the M4 around Newport than it was designed to accommodate, resulting in regular congestion at peak times over extended periods.
2. The M4 around Newport is used as a convenient cross town connection for local traffic, with insufficient local road capacity.
3. HGVs do not operate efficiently on the motorway around Newport.
4. There is insufficient capacity through some of the junctions (eg 3 lane capacity drops to 2 lane capacity).
5. The 2-lane Brynglas tunnels are a major capacity constraint.
6. The M4 cannot cope with increased traffic from new developments.

Resilience

7. Difficulties maintaining adequate traffic flows on the M4 and alternative highway routes at times of temporary disruption; alternative routes are not able to cope with M4 traffic.
8. The road and rail transport system in and around the M4 corridor is at increasing risk of disruption due to extreme weather events.
9. When there are problems on the M4, there is severe disruption and congestion on the local and regional highway network.
10. The M4 requires essential major maintenance within the next 5-10 years; this will involve prolonged lane and speed restrictions, thus increasing congestion problems.
11. There is insufficient advance information to inform travel decisions when there is a problem on the M4.

Safety

12. The current accident rates on the M4 between Magor and Castleton are higher than average for UK motorways.
13. The existing M4 is an inadequate standard compared to modern design standards.
14. Some people's driving behaviour leads to increased accidents (eg speeding, lane hogging, unlicensed drivers).

Sustainable Development

15. There is a lack of adequate sustainable integrated transport alternatives for existing road users.
16. Traffic noise from the motorway is a problem for local residents in certain areas.
17. The existing transport network acts as a constraint to economic growth and adversely impacts the current economy.
18. Traffic levels are forecast to continue to increase therefore capacity and resilience issues will worsen over time.
19. The high volumes of congested, slow moving traffic on the motorway around Newport add to air pollution problems and greenhouse gas emissions.
20. The existing transportation system does not meet the aspirations of national and local government planning policies.

8 Transport Planning Objectives for the Corridor Enhancement Measures

Funding to cover the cost of providing the New M4 motorway is not likely to be available in the immediate future within current and projected Welsh Assembly expenditure budgets, particularly in the context of the current economic climate. Revised Transport Planning Objectives (TPOs) have thus been considered that aim to provide a level of service that is compatible with the framework set out in the National Transport Plan for transport provision in South East Wales.

These were the original transport planning objectives from which the Goals described in section 6 were derived:

TRANSPORT PLANNING OBJECTIVES

1. To improve connectivity within Wales and Internationally along the east-west strategic corridor in South Wales.
2. To discourage the use of the motorway around Newport as a local distributor road.
3. To make better use of the existing highway asset.
4. To increase journey time reliability.
5. To increase travel choice for all.
6. To improve accessibility to key centres and services.
7. To improve the transport network management around Newport.
8. To improve travel safety on the transport network around Newport.
9. To improve air quality around Newport.
10. To reduce the number of people subjected to high noise levels.
11. To reduce greenhouse gas emissions per vehicle and/or person kilometre.
12. To enhance the traveller experience through the gateway to South Wales.

9 Goals (Objectives in plain English)

The WelTAG Planning Stage TPOs were reviewed by the Engagement team and expressed in plain English as follows:

GOALS

1. Make it easier and quicker to travel East-West in South Wales.
2. Improve transport connections to England, the Republic of Ireland and the rest of Europe on the international transport network.
3. Promote more effective use of alternatives to the M4, including other parts of the transport network and other modes of transport for local journeys around Newport.
4. Make best possible use of the existing M4 and local road network.
5. Make journey times along the M4 corridor more reliable.
6. Increase the level of choice for all people making journeys within the transport corridor between Magor and Castleton.
7. Make it easier for people to access key services as well as residential and commercial centres.
8. Improve safety on the M4 between Magor and Castleton.
9. Improve air quality in areas next to the M4 around Newport.
10. Reduce the disturbance to people of high noise levels, from M4 traffic between Magor and Castleton.
11. Reduce greenhouse gas emissions per vehicle and/or person kilometre.
12. Improve the travel experience into S. Wales along the M4 Corridor.

These goals were presented for comment at the Drop-in Exhibitions and workshops.

10 Proposed Changes to Goals following Stage 1 Engagement

The comments received from the drop-in exhibitions, the local councils' workshop and the strategic stakeholders' workshop have been reviewed and the following amendments and additions to the Goals are proposed.

GOALS

When the M4 CEM programme is concluded we will benefit from:

1. Safer, easier and more reliable travel East-West in South Wales.
2. Improved transport connections within Wales and to England, the Republic of Ireland and the rest of Europe on all modes on the international transport network.
3. More effective and integrated use of alternatives to the M4, including other parts of the transport network and other modes of transport for local and longer distance journeys around Newport.
4. best possible use of the existing M4, local road network and other transport networks.
5. More reliable journey times along the M4 corridor.
6. Increased level of choice for all people making journeys within the transport corridor by all modes between Magor and Castleton, commensurate with demand for alternatives.
7. Improved safety on the M4 Corridor between Magor and Castleton.
8. Improved air quality in areas next to the M4 around Newport.
9. Reduced disturbance to people from high noise levels, from all transport modes and traffic within the M4 corridor.
10. Reduced greenhouse gas emissions per vehicle and/or person kilometre.
11. Improved travel experience into South Wales along the M4 Corridor.
12. An M4 attractive for longer distance journeys that discourages local traffic use.
13. Improved traffic management in and around Newport on the M4 Corridor.
14. Easier access to local key services and residential and commercial centres.
15. A cultural shift in travel behaviour towards more sustainable choices.

11 Suggested Solutions

In the feedback gathered from the drop-in exhibitions and the workshops there were many comments that were proposed solutions, rather than suggested problems or goals. These suggestions are listed below:

New Road Building

Alternative diversion to the Brynglas tunnels.

Southern relief road/New M4 motorway/ new route around Newport/ off the coast.

New junction on M48 to access Caldicot/Magor/Rogiet.

More improvements to the A465 Heads of the Valleys road.

Create road between Celtic Springs and Rogerstone roundabout so traffic from Cardiff can avoid J28 and access Rhymney Valley, Sirhowy Valley and Ebbw Vale.

Combine new M4 with a lagoon barrage.

Enhancements to Existing Roads

Remove some of the motorway junctions, or restrict access/egress.

Remove some roundabouts on the SDR/Improve flow on SDR.

Increase number of lanes on M4 (online widening).

Improve existing roads.

Controlled motorway.

Improve J28 roundabout – too small for amount of traffic.

Upgrade steelworks road to 3 lane dual carriageway.

Provide hard shoulders throughout.

Implement hard shoulder running.

Ramp metering at junctions.

Reinstate motorway access westbound at J25.

Network Management

Road works at night only.

Improve traffic management for diversion routes.

Better winter planning (gritting/snow removal). Clear alternative routes before closing tunnels.

Incident management by use of central reserve crossovers and contraflows.

Freight Alternatives

Freight interchange terminal (train and shipping) – particularly at Newport docks.

Give HGVS priority on motorway.

Restrict HGVS to certain times or lane restrictions.

Public Transport

Park and Ride hubs (Severn Tunnel junction, Coldra)

Improve and subsidise public transport (bus, train and coach) – quality, extend evening/night service, increase frequency.

Magor railway halt/station.

Improve resilience on rail network.

More fast buses between Bristol/Newport/Cardiff.

Ebbw Vale rail link to Newport.

Regulate commercial bus services.

Run late night public transport services when there are major evening events at the Millennium Stadium.

A tram/light rail service between Severn Tunnel Junction and Cardiff.

Include English buses on the free passes for elderly.

Integrated rail/bus passes.

Integrated road/rail connections.

Provide bus routes between junctions on M4, integrated with regular bus routes/times.

Environmental

Noise barriers along existing M4.

Improved glazing for affected people.

Plant more daffodils! Increase visual biodiversity adjacent to the corridor.

Provide low noise surfacing throughout M4.

Promote use of electric vehicles.

Provide art along the motorway.

Incentivise fuel efficient cars.

Planning

Locate key services in town centres (not out of town).

Information, Education and Travel Behaviour

Following an incident motorway variable message signs should give prior warning of delays and alternatives at or before Severn Bridge crossing going west and prior to junctions.

Provide advance information to inform travel choice decisions.

School travel plans.

Prioritise use of A465, A449, A470 as alternative routes to reduce M4 demand.

Provide park and share facilities at key junctions.

Encourage local employers to offer more flexible working arrangements so people can avoid the peak travel times. Schools could be more flexible too.

Increase driver understanding of safer and more economical driving techniques.

Invest in broadband to reduce need for travel.

Strict enforcement of traffic regulations on the M4.

Economy

Reverse/Reduce/remove bridge tolls.

Seek EU funding for Pan-European route improvement.

Major civil engineering project to provide a large number of new jobs.