

**TRANSPORT WALES**  
WELSH ASSEMBLY GOVERNMENT

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**M4 ROUTE CORRIDOR**

RE-EXAMINATION OF ROUTE CORRIDORS  
(CVRL Ref: 5767)

Workshop Report for 23 February 2006



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## 1 INTRODUCTION

A half-day Re-examination of Route Corridors workshop for the New M4 project was held on 23 February 2006 at the Wales Millennium Centre, Cardiff. The purpose of the workshop was to look at the route corridor of the road scheme in the light of strategic change factors, to consider whether the decision to pursue a southern corridor remains valid.

The Welsh Assembly Government (Assembly Government)/Arup required an independent facilitator to conduct the workshop to ensure objectivity and broad participation. Capital Value & Risk Limited (CVRL) was commissioned to perform this role.

The workshop was preceded by a briefing meeting on 13 February 2006, attended by Martin Bates (Assembly Government), Janette Shaw, (Arup), Susan Thomas (Arup) and Glyn Harrison (CVRL).

In advance of the workshop, participants were provided with an Agenda and Workshop Information Pack, prepared by Arup, setting out the background to the Re-examination, the evolution of the scheme so far, and key factors which have changed since corridor selection in 1992, including the sustainable development responsibilities of the Assembly Government. Copies of the Information pack are included in the Appendix, together with the Roles and Rules of the Workshop prepared by CVRL. A copy of the Agenda can be found at 3.3.

Glyn Harrison facilitated the workshop with support from Amanda Harrison. A list of attendees is included at 3.1.

This report provides details of the process and findings of the M4 Re-Examination of Route Corridors workshop, including supporting information in the form of presentations and handouts made or circulated on the day. The supporting information should be read in tandem with the main text for comprehensive understanding.

## 2 WORKSHOP PROCESS AND FINDINGS

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### 2 WORKSHOP PROCESS AND FINDINGS

#### 2.1 WORKSHOP PROCESS

The workshop was facilitated by Glyn Harrison and divided into two principal sessions, the first comprising scene setting presentations and the second involving discussion of issues and impacts.

##### 2.1.1 Workshop Process: First Session

The first session commenced with a presentation by Martin Bates of the Transport Wales (Assembly Government) on the purpose of the workshop, and the need for the scheme. This was followed by Dan Saville of Arup who described the route selection process and outcomes which took place in the early 1990s, based on three primary corridors for the M4 Relief Road around Newport – north, south and on-line. Copies of these presentations can be found in the Appendix.

During this session points of clarification were raised and responded to by the presenters.

##### 2.1.2 Workshop Process: Second Session

Following the presentations, the workshop moved on to consider how key changes and the advent of sustainable development testing might potentially affect the three corridors - tying in, respectively with the content of sections 4 and 5 of the Workshop Information Pack.

##### *Strategic Change Factors*

The format entailed a short introduction by Janette Shaw of Arup on the key factors referred to in the Information Pack, a summary description of the impact of change on each of the three corridors and Arup's interpretation of whether this made the position better or worse, or was more or less the same as it was at the time of corridor selection.

A handout of Arup's observations was circulated at the meeting. Glyn Harrison read out the observation, before entering Arup's interpretation of performance into a matrix (blank matrix circulated to participants at the workshop). This "performance score" was then used as a starting point for discussion, with a view to reaching an agreed position. Copies of handouts are provided in the Appendix.

## 2 WORKSHOP PROCESS AND FINDINGS

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Each factor was taken in turn with the discussion facilitated and chaired by Glyn Harrison. The matrix was considered and filled in systematically, cell by cell and column by column, following agreement by Workshop participants.

The wider group discussion prompted the identification of a number of key issues in relation to each change factor which were recorded as discussion progressed and used to inform the judgement on performance.

### *Sustainable Development*

Janette Shaw of Arup gave a short introduction to sustainable development and testing, based on the three pillars - social, economic and environment. She referred to objective-led assessment techniques, such as WelTag, currently being developed by the Assembly Government for use in the planning of transport projects. Although retrospective sustainability testing of past decisions is not encouraged, Arup had conducted a very high-level “what-if” sweep on the three corridors, using the contemporary strategic social, economic and environmental objectives for the New M4 project. The findings of this hypothetical comparative exercise, using a matrix with rankings 1 to 3 (1 best; 3 worst), were explained.

A handout of Arup’s interpretation of ranking and a blank matrix were circulated, copies of which can be found in the Appendix.

Using Arup’s position as a starting point, a discussion on the sustainable performance of the New M4 corridors was facilitated and chaired by Glyn Harrison. As before, key issues in relation to each objective and corridor were recorded and used to inform the judgement of the Workshop participants on sustainability ranking.

## 2.2 WORKSHOP FINDINGS

### 2.2.1 Key Issues

The key issues and findings of participants of the Workshop, as recorded, are set out below:

- Δ 1-6 raised in discussion on strategic land use changes
- Δ 7-8 raised in discussion on changes in protective designations
- Δ 9-15 raised in discussion on changes in legislation and policy
- Δ 16-19 raised in discussion on sustainable development

Some brief explanatory notes are provided beneath the table.

## 2 WORKSHOP PROCESS AND FINDINGS

No	Issue	Workshop Comments	Impact on Corridor Selection
1	Southern Distributor Route <sup>1</sup> included in early consideration of route selection	Recorded during Land Use discussion.	None
2	SDR western extension <sup>2</sup> : has this been included in consideration of corridor selection?	Yes it is included. Recorded during Land Use discussion.	Does not affect corridor choice but potentially provides flexibility on southern route alignment
3	Whole of Newport & Monmouthshire UDPs are important considerations in choice of corridor selection	Recorded during Land Use discussion.	Supports southern corridor
4	Minister's announcement to include the new M4 in the trunk road forward programme was taken into account in consideration of the UDP	Recorded during Land Use discussion.	Same as 3
5	Junction strategy is not a strategic external factor but needs to be incorporated as part of the design process for the preferred route	Junction strategy and route alignment to pick up secondary development issues. Recorded during Land Use discussion. Creates further pressure on both southern and northern corridor secondary development.	On balance, probably more sensitive for southern corridor due to SSSI.

<sup>1</sup> Refers to Newport Southern Distributor road and whether it was accounted for in early selection studies.

<sup>2</sup> The western arm of the SDR (Duffryn Link) is recommended for exclusion from the Newport Unitary Development Plan by the plan Inspector (2005).

## 2 WORKSHOP PROCESS AND FINDINGS

No	Issue	Workshop Comments	Impact on Corridor Selection
6	The southern corridor dotted route <sup>3</sup> through Newport eastern expansion area would be more constrained	Recorded during Land Use discussion.	No - a previously discarded option route
7	Include SAC reference on northern corridor and online summaries description for protective designations <sup>4</sup>		None
8	Note that the Severn Estuary is also a designated SPA		See comment 14
9	Take out words "there can be no doubt that" in summary comments <sup>5</sup> on legislation & policy		None
10	Protected species risk is probably worse in the north		Yes
11	General biodiversity matters in addition to designated & protected species is probably worse for north		Yes
12	Air quality management area in Newport	Requires further investigation.	Not a determinant for corridor choice.
13	Wales Premier Business Park sites under consideration.		Not a determinant for corridor choice.
14	SPA would require appropriate assessment, which makes the southern route worse		Yes

<sup>3</sup> See Figure 1 of Workshop Information Pack

<sup>4</sup> SAC is not included in Handout at 4.2

<sup>5</sup> Refers to Handout 4.3.2



## 2 WORKSHOP PROCESS AND FINDINGS

No	Issue	Workshop Comments	Impact on Corridor Selection
15	Newport Wetlands <sup>6</sup> are to be treated as an SPA alongside the Severn Estuary		Yes
16	Sustainable development: undertake accessibility modelling for northern and southern corridors before a distinction can be made between them.	This will be impacted by junction strategy.	Yes
17	Environment: online widening has effects on residents in Newport that can only be mitigated, not compensated.		Yes
18	Workshop to acknowledge that any fundamental changes to this project would fundamentally undermine the local UDPs		Yes
19	Noted that sub-objectives <sup>7</sup> will be developed and tested.		No

<sup>6</sup> Newport Wetlands – habitats created at Nash to compensate for those lost to the Cardiff Bay Barrage scheme

<sup>7</sup> Refers to sub-objectives to the three headline social, economic and environmental objectives for the New M4 (see 3.3 below)

## 2 WORKSHOP PROCESS AND FINDINGS

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### 2.2.2 Strategic Change Factors

The agreed Workshop matrix position on the performance of each corridor in comparison with 1992, taking account of change in the headline factors is given below:

<b>Strategic Change Factors</b>	<b>Land Use</b>	<b>Protective Designations</b>	<b>Legislation/Policy</b>
<b>Route Corridors</b>			
<b>North</b>	Worse	Same	Worse
<b>South</b>	Better	Worse	Worse
<b>On-line</b>	Worse	Same	Same

## 2 WORKSHOP PROCESS AND FINDINGS

### 2.2.3 Sustainable Development

The consensus position of the Workshop on comparative ranking against the sustainability objectives (1 – best; 3 – worst) is given below:

Objectives	Social	Economic	Environmental	Workshop Comments
Route Corridors	To deliver enhanced accessibility to services and employment opportunities for people, whilst retaining a choice for road users.	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.	To prevent, reduce and where practicable offset any significant adverse effects on environmental receptors.	
North	1	2	Unable to be assessed at the workshop	For social score, it is provisional. Refer to issue 16
South	1	1	Unable to be assessed at the workshop	For social score, it is provisional. Refer to issue 16
On-line	3	3	Unable to be assessed at the workshop	Overall online worst for social.

Note: agreement on the rating for environmental objective could not be established at the workshop as several participants were of the view that this was very difficult to assess at this stage.

There was discussion towards the end of the workshop, prompted by the foregoing assessments, concerning procedural requirements on Strategic Environmental Assessment (SEA) in relation to the New M4 project. No definitive view emerged and it was resolved that further advice would be sought from the Assembly Government's legal team.

## 2 WORKSHOP PROCESS AND FINDINGS

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### 2.3 WORKSHOP SUMMARY

The workshop concluded that environmental risks and constraints have increased along all route corridors but not so as to preclude progress of the scheme on the southern corridor. In progressing the southern route, the issues and constraints identified at the workshop must be addressed, in particular the impact of development on the Gwent Levels suite of SSSIs; historic landscape; archaeology; and flood risk.

Notwithstanding the above findings, however, a number of procedural questions arose, both during, and more specifically, at the end of the workshop on the applicability of the SEA Directive and the associated requirement for sustainability testing beyond that presently undertaken or intended. The following questions were raised.

- Δ Should the project be included in the SEA of the Wales Transport Strategy?
- Δ Is a strategic environmental assessment required for this project, and should the policy integration tool be applied?
- Δ Does this have any implications for corridor selection?

The following advice was given by Assembly Government officers on those questions subsequent to the workshop:

The Assembly Government is aware of its legal obligations regarding the application of SEA to the forthcoming Wales Transport Strategy and daughter transport plans such as the Trunk Road Forward Programme. The Assembly Government is of the opinion that continuing work on the schemes within the Trunk Road Forward Programme, such as the New M4 Project, within this transitional period will not prejudice the SEA of the Transport Strategy.

### 3 WORKSHOP LOGISTICS

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#### 3 WORKSHOP LOGISTICS

##### 3.1 ATTENDANCE

The workshop participants were:

Martin Bates	WAG - New M4 Project Director
Tony Parker	WAG - Director of Rail and New Roads
Cath Mullin	WAG - Strategic Transport Planning Unit
Tim Dorken	WAG - Environmental Advisor
Graham Evans	WAG - New M4 Unit
Hywel Butts	WAG - Transport Planning Policy
Natalie Grohmann	WAG - Spatial Planning Unit
Louise George	WAG - Nature Conservation & Biodiversity
Juliet Martinez	WDA - SE Wales Spatial Plan Coordinator
Sue Howard	CCW - Team Leader for Cardiff & Newport
Jessica Poole	CCW - Senior Conservation Officer (Cardiff & Newport)
Mike Evans	EA - Project Manager
Tom Lewis	EA - South East Area External Relations Team Leader
Dan Saville	Arup New M4 Project Manager
Janette Shaw	Arup Planning and Environment
Susan Thomas	Arup New M4 Project Communications
Stuart Watkins	Arup Transport Planning

##### 3.2 THE CAPITAL VALUE & RISK LIMITED TEAM

Facilitator: Glyn Harrison  
Assistant: Amanda Harrison

## 3 WORKSHOP LOGISTICS

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### 3.3 AGENDA

1.	1pm	Introduction (10 mins)	Facilitator
CONTEXT PRESENTATION SESSION			
2.		Purpose of Workshop (5 mins)	Martin Bates (WAG)
3.		Need for the Scheme (5 mins)	Martin Bates (WAG)
4.		Route Selection (10 mins)	Dan Saville (Arup)
PARTICIPATION SESSION			
5.	1.30pm	Key Strategic Change Factors and Impact on Route Corridors (90 mins) Matrix – discussion and completion	Facilitator/ Janette Shaw (Arup)
6.	3pm	Tea	
7.	3.15pm	Sustainable Development (60 mins) Matrix – discussion and completion	Facilitator/ Janette Shaw (Arup)
CONCLUDING SESSION			
8.	4.15pm	Summing Up <ul style="list-style-type: none"><li>• Key Issues</li><li>• Impact on Route Corridor Selection</li></ul>	Facilitator

## APPENDIX WORKSHOP INFORMATION

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### APPENDIX WORKSHOP INFORMATION

#### WORKSHOP INFORMATION PACK

Given below is the scheme information pack provided by Ove Arup & Partners available to stakeholders prior the workshop.

Transport Wales

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**New M4 Project**

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Re-examination of Route  
Corridors : Workshop  
Information Pack



Transport Wales

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**New M4 Project**

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Re-examination of Route  
Corridors : Workshop  
Information Pack

February 2006

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party

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Job number 117300



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			Prepared by	Checked by	Approved by
		Name	Janette Shaw	Susan Thomas	Dan Saville
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		Name	Janette Shaw	Susan Thomas	Dan Saville

Issue Document Verification with Document

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# 1 Introduction

## 1.1 Context

In December 2004 the Economic Development and Transport Minister, Andrew Davies, announced as part of his 2004 Transport Review, which took into account Wales: A Better Country and the Spatial Plan, that the New M4 Magor to Castleton was being moved from "On Hold" to Phase 2 of the Trunk Road Forward Programme. This re-activated work on the project.

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**TRAFNIDIAETH CYMRU**  
Getting you there!  
Hwyluso'ch fforddi

**M4 - South East Wales**

The motorway is running close to capacity in South East Wales. Traffic volumes are continuing to grow. Several measures are being implemented to help address this, including:

- Make Better Use of existing motorway (short-term measures to improve traffic flow)
- Widening the M4 from dual 2 to dual 3 lanes between Castleton (J29) and Coynton (J32) - scheme programmed to start before March 2007.

However, these measures will not address the need for additional capacity around Newport and a more resilient network if we are to have a more prosperous Wales. A scheme for a new length of motorway South of Newport was in the 'on-hold' section of the Trunk Road Forward Programme pending the Wales Spatial Plan and other studies. The Spatial Plan approved by the Assembly on 17 November 2004 identifies the need for additional capacity on the M4 here and the scheme has been advanced to Phase 2 of the Programme.

The proposed new dual 3-lane motorway is considered the optimum long-term solution to achieve the Assembly's objectives. It would be some 24km long, linking Junction 23A at Magor and Junction 29 at Castleton. It would have one intermediate junction at Newport, just east of the River Usk. Care will be taken to minimise the effect on the Gwent Levels SSSIs.

Studies will be carried out to investigate funding and procurement methods for the Scheme. These studies will include an analysis of private/public funding partnerships. The current proposal is that the new motorway will be tolled, giving users a premium service with flexibility to allow it to be incorporated into any national road pricing scheme later. The existing motorway will not be tolled and will provide local connections. By this means, the benefits of the additional road capacity can be locked into the M4 Corridor but there will still be a choice for road users. The proposals will go through the normal statutory procedures to determine whether they should be implemented.

With the New Road, major maintenance of the existing motorway can be carried out. These works, which are being deferred to minimise disruption to traffic, will accompany measures to encourage car sharing and modal shift to keep Wales' economy flowing while reducing the growth of commuter car traffic. Proposals include using some of the existing M4 for only Buses, Coaches etc and vehicles carrying more than one person. There will also be investment in park and ride facilities and enhancements to the local rail network.

## 1.2 Catalyst for Workshop

The catalyst for the workshop was a statement made by the Planning Inspector reporting on the Newport UDP Inquiry in August 2005.

In referring to representations made by the Countryside Council for Wales (CCW) against longstanding employment allocations on the Gwent Levels Sites of Special Scientific Interest (SSSIs), the UDP Inspector found that, despite historic commitments, these allocations should have been reviewed in the light of the City Council's duties under the Countryside and Rights of Way (CRoW) Act 2000.

The same duties and obligations apply to other public bodies, including the Welsh Assembly Government (WAG). The development of a new motorway on the Gwent Levels has some parallels, being an historic commitment to development announced by the Secretary of State for Wales in 1995.

The need for re-examination was re-iterated by CCW in November 2005 when they recommended "that the Assembly needs to demonstrate what tests they have carried out, what other options have been considered and why they are proposing this route."

Although the above prompts are related to SSSIs in particular, Transport Wales has undertaken to re-examine the corridor of the New M4 in the light of strategic change factors which have occurred since the selection of a southern route. To be open and inclusive, it has chosen to conduct the re-examination by means of a collaborative workshop.

## 1.3 Content of Information Pack

This Information Pack outlines the history of the scheme, briefly summarising the need for the road and the evolution of a route to the south of Newport. It then identifies strategic change factors and impacts, in advance of discussion at the workshop.

## 2 The Need for the Scheme

### 2.1 Existing Problem

The M4 around Newport does not conform to present motorway standards. It lacks a continuous hard shoulder, has closely spaced junctions with sub-standard slip road visibility and narrows to a restricted two lane section through the Brynglas Tunnels. Heavy congestion occurs along this stretch, and either side of it, at peak hours. Traffic forecasts indicate that the motorway is already at or near capacity and if nothing is done, traffic congestion and traffic related problems will increase.

Traffic conditions on this section of the motorway were identified as a matter of particular concern by the South Wales Area Traffic Study (SWATS, commissioned by the Welsh Office in 1989/90) and, in 1991, the then Secretary of State for Wales, announced additions to the roads programme, including a Relief Road around Newport.



*Congestion on the M4 around Newport*

It is notable that, since the early stages of the project, growth in traffic using the M4 has occurred at a higher rate than previously predicted by national forecasts (NRTF). This has resulted in congestion during weekday peak periods.

The Wales Spatial Plan adopted by the Assembly Government on 17 November 2004 recognised the existing problem by confirming that there was a need for additional capacity on the M4 in South Wales as part of the wider integrated transport strategy for South East Wales.

### 2.2 Non Road Options

Providing relief from the anticipated effects of increasing traffic on the M4 motorway around Newport, by means other than building the New M4, has been considered.

A study in January 1994 investigated the potential for passenger and freight modal transfer, given varying strategies of significant investment in public transport. The broad conclusions were that if policies with regard to road and rail were to continue, the case for a road remained strong. However, if a national strategy of road pricing and high public transport investment were to be pursued, the case for the M4 Relief Road might be altered.

In accordance with its new approach to transport problems, the Welsh Office, in 1997, commenced the M4 Common Appraisal Framework (CAF) Study, a forerunner of the multi-modal appraisals under GOMMMS (England) and STAG (Scotland). CAF compared various transport alternatives for addressing the forecast traffic problems on the M4 around Newport (between Magor and Castleton), and appraised the options on the basis of acceptable environmental, financial, economic and safety criteria. Various packaged scenarios of traffic management and public transport measures, including rail schemes, were tested.

## 3 Route Selection

Development of the New M4 (formerly the M4 Relief Road) proceeded in tandem with the consideration of non-road alternatives and progress on the scheme, over a prolonged period, reflected the greater emphasis on road-building which preceded the general shift in UK policy on transport in 1998.

### 3.1 Corridor Selection

Initial studies were carried out between 1992 and 1993 to gather basic data on the environment, traffic, engineering, planning constraints and topography in a study area (see **Figure 1**) of approximately 110 square miles between Cardiff and Caldicot (east-west), and Cwmbran and the Severn Estuary (north-south).

Using the basic data collected, a full range of possible routes was identified both to the north and south of Newport. Together with all the sub options, the total number of options identified was in excess of 2,000 and was aimed at an exhaustive selection process that would leave no feasible opportunity unexplored.

Route options and sub-options were assessed on the basis of environment, cost, traffic, engineering and economics. The following narrative summarises the findings at the time (1993). The principal corridors and variants are shown in **Figure 1**.

#### 3.1.1 Northern Corridor

The best route option north of Newport was found to be not as good as those to the south. It was nearly 4 miles longer, would cause major impacts on the landscape where it crossed the valleys and hillsides north of Newport and would not attract sufficiently high levels of traffic from the existing M4 motorway. In economic terms it performed much less well than the southern routes. For these reasons it was discarded.

#### 3.1.2 On-line Widening

The option for widening the existing M4 motorway between Magor and Castleton was also assessed. To meet desirable standards some 340 residential properties would need to be demolished, primarily in the High Cross and St Julian's areas of Newport. The effects of construction noise, vibration, dust and access for construction traffic would be very significant through the urban area and the long-term increases in traffic noise and exhaust fumes would adversely affect residential areas bordering the motorway. Disruption to traffic during construction would be substantial. In economic terms it also performed less well than the southern routes.

On-line widening was discarded at this time on the basis of economic performance and adverse property impacts.

A revised on-line widening scheme with reduced design standards was also investigated during the CAF study in 1997.

#### 3.1.3 Northern/On-line Variant

An option which combined widening of the west section of the existing M4 motorway up to Malpas with a new alignment passing to the north of Caerleon was also considered. This option required extensive property demolition (approximately 70 residential properties) and had a considerable impact on Caerleon. This was combined with high cost and poor economic performance. For these reasons it was discarded.

#### 3.1.4 Southern Corridor

The southern route options were shorter and had superior economic benefits, the main disadvantages being their impact on ecology and archaeology. At the time it was acknowledged that the environmental impacts of southern route options should not be underestimated.

#### 3.1.5 Southern/On-line Variants

Route options were examined which passed through the Liswerry area of south Newport seeking to take advantage of a gap in

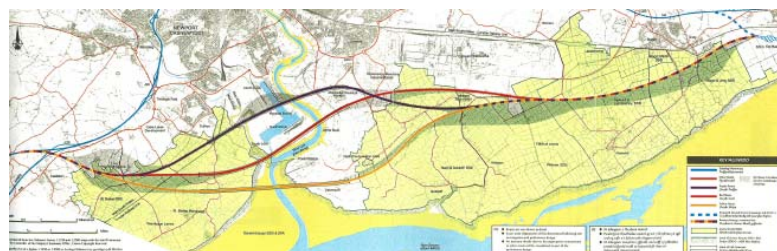
development to the west of Llanwern Steelworks. One option rejoined the existing M4 motorway about 1½ miles east of Junction 24 (Coldra) while the other ran parallel to the north side of the Steelworks before rejoining the southern route options south of Magor. Both of these options would cause disruption to retail and industrial developments at the Newport Retail and Leeway Industrial Parks and at Llanwern Steelworks (still fully operational at the time). They would also pass close to the residential areas of Traston and Liswerry and occupy part of the Liswerry High School Playing Fields. Due to the high impact upon built-up area these options did not compare favourably with the other routes south of Newport and were discarded.

### 3.1.6 Preferred Corridor

In summary, the on-line corridor was discarded on grounds of performance and property impact. The southern option was chosen over the northern corridor because of its superior economic benefits and lesser impacts on landscape and visual amenity, having regard to the topographical complexity and proximity to settlement of the northern routes.

## 3.2 Public Consultation and Preferred Route

Three routes, purple, red and yellow, were presented to the public in July 1993, all of which commenced to the west of the Second Severn Toll Plaza, passed to the south of Magor and Newport, and terminated west of Junction 29 (M4/A48(M)) near Castleton.



The consultation in 1993 raised concerns about the impact of the scheme on the Gwent Levels and on communities.

Following re-assessment, a second consultation in September 1994 presented alternatives to the north of Magor and east of Castleton, the blue routes, with an optimised purple/red route in between. Across the Docks and River Usk specific consultation with public bodies took place. These modifications were generally supported leading to announcement of the Preferred Route in 1995.

The principal environmental determinant behind selection of the Preferred Route was that of minimising interference with or disturbance to the sensitive landscapes and habitats of the Gwent Levels.

## 3.3 Preferred Route Modifications

The Preferred Route was modified in 1997 in the vicinity of Duffryn and Coedkernew. Here, a 2km length of the route was realigned southwards by up to 200m to avoid conflict with the LG development.

Progress on the making of Orders for the scheme was postponed in 2002, pending completion of the Wales Spatial Plan; this coincided with the announcement of cessation of steel production at Llanwern Steelworks. The closure offered the opportunity to relocate the Preferred Route in this area. Although no formal alignment change was made, an agreement to widen the preferred route TR111 protected corridor through this area was reached with Newport City Council.

Following adoption of the Wales Spatial Plan in November 2004 the Assembly Minister announced the decision to develop the New M4 along the preferred route, as modified, with a view to minimising impact on the Gwent Levels SSSIs. Formal identification of a suitable route will be concluded following the results of this Route Corridor Re-examination Workshop.



## 4 Key Strategic Change Factors

As identified above the decision to go south of Newport occurred in 1993. The purpose of this high level workshop exercise with Transport Wales' advisors is to see how robust that selection is in the light of more recent factors, predominantly but not exclusively environmental, which are relevant to route choice.

For the purpose of the workshop, *key strategic change factors* are defined as those factors external to the scheme which might have influenced corridor choice had they been in place at the time. These factors include physical land use change, new statutory designations and major policy and legislative change (one of which is the CRoW Act referred to in the Introduction).

Other factors relevant to the original choice, namely cost, traffic and engineering remain, but have not been subject to key changes which alter the balance between the route corridors.

### 4.1 Land Use

Land use changes relevant to strategic level consideration include:

- substantive new development in/affecting the on-line or off-line (north or south) corridors
- proposed development in/affecting the on-line or off-line (north or south) corridors

#### 4.1.1 Northern Corridor

The northern route corridor is characterised by hills and valleys to the north of Newport and options within the corridor entail threading the route through gaps in settlements occupying the river valleys and slopes. It occupies land in the administrative districts of Newport, Monmouthshire and Torfaen. With the exception of an option which joined the existing route around Junction 26 west of the Brynglas Tunnels thereafter becoming part of the on-line widening corridor, the

northern corridor is lengthy so as to avoid built-up areas. Key features of a road along the northern corridor are significant numbers of crossing structures and substantial earthworks (cuttings and embankments), necessitated by the topography.

From west to east (see **Figure 1**), the “gap” at Rogerstone (around the former power station) is now occupied by housing and other development.



*New housing at Rogerstone*

At Llantarnam, new industrial development has taken place to the north of the village and the Malpas Relief Road A4042 has been constructed, introducing a significant cutting across the corridor. East of Llantarnam the corridor threads between the settlements of Ponthir and Caerleon, crossing an area where there has been consolidation since the early 1990s.

Thereafter, the northern corridor traverses uplands around



*New housing at Langstone*

Llanhennock before passing through the linear settlement of Langstone to meet the M4. Langstone has come under considerable development pressure over the last decade and former gaps along the A48 have been filled in.

The northern corridor variant exploited an undeveloped area north of Caerleon and to the east of Malpas. Since the early 1990s the Malpas Relief Road (protected at the time) has been built but otherwise remains undeveloped. The remainder of this corridor, to the west of the new road, crosses an elevated zone, partially woodland, partially housing and partially occupied by a training/community centre in a parkland setting. Significant demolition would be necessary to create a deep cutting for the road.

The physical characteristics of this route remain much the same as when the route was first considered. In the urban area there are no future development proposals identified.

#### **4.1.2 Southern Corridor**

The southern corridor is characterised by flat coastal levels to the south of Newport which are sparsely developed and populated. Key physical features include a longer crossing of the River Usk than required on the northern corridor and avoidance or negotiation of riverside industry and docks in Newport. Prior to route selection the southern corridor contained a number of variants, including shorter route options to the north of the Llanwern steelworks and longer route options south of Magor and with an estuarine crossing near the mouth of the river.

As the preferred southern route has been safeguarded since 1995, there have been no built developments adding to route constraint – as have occurred along the northern corridor.

The closure of a substantial part of the Llanwern Steelworks and its re-allocation for regenerative land uses, including residential and employment uses, has altered the future environment of the southern corridor, creating opportunities. Former variants of the southern corridor (routes to the north of the steelworks) now occupy land within Newport's identified Eastern Expansion Area.

At the western end of the southern corridor, extensive business developments have taken place within Newport's Western Expansion Area around Duffryn, between the corridor and the A48.

Although not directly related to the land use of the southern corridor of the New M4, the Newport Southern Distributor Road (SDR), a major new/improved road, has been built to the south side of the city, including a new crossing of the River Usk.

#### **4.1.3 On-line Corridor**

The existing M4 corridor variously passes through open and built up areas of Newport, being most constrained by existing development in the areas of St Julian's, around the Brynglas Tunnels and at High Cross. To achieve an improved standard widening through this area would involve significant demolition (some 340 properties). This situation still pertains.

The most substantive direct change along the on-line corridor since 1993 has been the construction of the Malpas Relief Road and associated highway works, including slips onto the M4. Possible improvements to Junction 28 could increase the physical constraints through this area.

Outside the confines of the existing highway, towards the western end of the corridor there has been considerable business development south of the M4 and around the A48 in the locality of Duffryn, forming part of Newport's Western Expansion Area. In the Llanwern area at the eastern end of the M4 corridor, the M4 forms the boundary of Newport's Eastern Expansion Area, albeit adjacent to open countryside areas which are expected to remain undeveloped. Elsewhere conditions generally remain similar to those in 1993.

## 4.2 Protective Designations

Spatially significant protective designations, potentially having an affect on a corridor (rather than a route option), occur at all hierarchical levels; those of primary interest to this project offer statutory protection at the national level or higher. In this area, such designations are principally limited to Conservation Areas, Sites of Special Scientific Interest (SSSI) and those SSSIs also having Special Area of Conservation/Special Protection Area (SAC/SPA) status at European level. Other spatially extensive/substantive designations are registered Landscapes, Parks and Gardens of Historic Interest – these are nationally relevant but are not afforded statutory protection. The re-examination does not consider designations resulting from features such as Listed Buildings or Ancient Monuments (because they are specific to detailed routeing choice).

It is notable that the local level designation, Special Landscape Area, widely applicable for a considerable time and variously affecting each corridor, has been recommended for deletion in Newport and modified in Monmouthshire, following respective Unitary Development Plan Inquiries.

### 4.2.1 Northern Corridor

The northern corridor generally avoids nationally designated areas although it occupies significant tracts of former/modified Special Landscape Area – a local level of protection, in place when the corridor was considered in the early 1990s. The parkland site of the community/training centre, along the shorter variant (3.1.3 refers), now has non-statutory protection as an historic park/garden.

### 4.2.2 Southern Corridor

The southern corridor, featuring fewer recently disturbed landscapes, is characterised by its crossing of four spatially extensive SSSIs on the Gwent Levels. These SSSIs were notified in the 1980s. Since

adoption of the southern corridor the most relevant notifications which have occurred are the statutory SSSI/SAC designation of the (lower) River Usk and non-statutory registration of the Gwent Levels as a Landscape of Historic Interest in Wales. At local level the Gwent Levels were formerly identified as Special Landscape Area and still are defined as an Archaeologically Sensitive Area.



*Lower Usk SAC*

### 4.2.3 On-line Corridor

The existing M4 borders former/modified Special Landscape Areas, crosses the River Usk SSSI/SAC and, around Junction 28, borders expansive historic landscapes associated with the Grade 1 Listed Building of Tredegar House.

## 4.3 Legislation and Policy

### Legislative Changes

Clearly there have been numerous legislative changes since 1993 which could have a direct or indirect bearing on the New M4 project. This re-examination focuses on those which may differentiate between route corridors.

The **Countryside and Rights of Way (CRoW) Act 2000** has considerable scope, covering access to the countryside, improvements to public rights of way, clarifying procedures on AONBs and, most relevant to the New M4, strengthening the protection of SSSIs. The Act has the effect of:

- strengthening the protection of SSSIs by altering the duties of public bodies, including the Assembly Government, under Section 28G of the Wildlife and Countryside Act 1981 – from *minimise impacts and mitigate for loss/damage* to **further the conservation and enhancement** of the flora, fauna.....by *reason of which the site is of special scientific interest*
- imposing, under Section 74, a duty on the Assembly Government **to further the conservation** of living organisms and types of *habitat* listed of importance for biodiversity. The list, produced in 2003, includes, inter alia, “coastal and flood plain grazing marsh” – found between reens on the Gwent Levels.

The **Conservation (Natural Habitats) Regulations 1994** transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The Regulations provide for the designation and protection of 'European sites' and the protection of 'European protected species'. Under the Regulations, competent authorities such as the Assembly Government, have a general duty, in the exercise of their functions, to have regard to the EC Habitats Directive.

The River Usk and Severn Estuary have been designated European sites wherein consent may only be granted once it has been shown, through appropriate assessment, that proposed operations will not adversely affect the integrity of the site. In respect of protected species which might be affected, the Regulations make it an offence to deliberately affect protected animals or plants except by licence; licenses may be granted but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that there will

be no detrimental effect on the wild population of the species concerned.

Although relevant, this re-examination concentrates on European sites since the presence and populations of European protected species are insufficiently determined in respect of all corridors, although general remarks can be made on the basis of habitat potential.

There follows a summary consideration of how these legislative factors and criteria might have informed corridor selection.

#### 4.3.1 Northern Corridor

The northern corridor does not involve the crossing of SSSIs, with the exception of the River Usk. The River Usk is also a SAC. All potential routes cross the river, but it might be postulated, in the absence of detailed evidence, that the constraint imposed by legislative obligations is less onerous in the northern corridor where the river crossing is shorter – other factors, however, may apply some counterbalance eg closer proximity to fish spawning grounds.

Habitats of biodiversity significance do occur in the northern corridor but their quantum and extent has not been investigated.

#### 4.3.2 Southern Corridor

The southern corridor involves the extensive crossing of SSSIs on the Gwent Levels, notified for interests associated with the reens drainage (a length of 12 km), a long crossing over the tidal stretch of the River Usk SAC (>450m), and incorporates tracts of coastal and flood plain grazing marsh habitat of biodiversity interest. These habitats harbour protected species.

The change in the duty on the Assembly Government under the CRoW Act gives rise to an increased risk in the determination process, during which the measures taken in respect of the reen network's integrity, quality and quantity will be carefully examined to see whether they amount to conservation and enhancement. In

addition the Act affords an increased protection and demonstration of appropriate response to habitats and species protected by the road.

The crossing of the River Usk (SAC), as the crossings on the other corridors, will be subject to testing under the Habitat Regulations. It is the length of the crossing in the southern corridor which has the potential for increased risk associated with the SAC.

#### 4.3.3 On-line Corridor

The on-line option occupies an already developed corridor, directly and indirectly affecting fewer natural environments than the northern or southern corridor options. The primary concern lies in the crossing of the River Usk.

#### Policy Changes

There have been policy modifications at all levels since route selection in 1993, not least policies produced by the Assembly Government since its formation. The New M4 will be tested against these policies regardless of route, including:

- Transport Framework 2001
- Trunk Road Forward Programme 2002
- A Winning Wales 2002
- Planning Policy Wales 2002
- Wales a Better Country 2003 (Strategic Agenda)
- Wales Spatial Plan 2004
- Starting to Live Differently 2004 (Sustainability Scheme)
- Transport Review 2004
- Wales a Vibrant Economy 2005
- Environment Strategy for Wales 2005 (consultation stage)

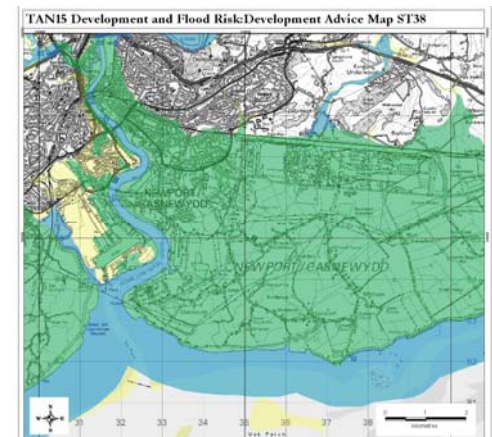
- Transport Strategy for Wales 2006 (awaited)

At local level there has been a change in structure from two tier to single tier authorities and both Monmouthshire and Newport are about to or have adopted their respective Unitary Development Plans.

It is not the purpose of this re-examination to go through the testing process for each corridor, not least because materially relevant generic policies and local development plan commitments have effectively been considered in previous sections. Also the announced route is committed in development plans and has already influenced spatial policy and planning at local level in a way which means that a comparison with 1993 is not possible.

Hence the purpose of this section is merely to pick up policy change, having a clear spatial dimension, which has not been alluded to or dealt with elsewhere in this pack. One such policy development, affecting spatial planning throughout the UK, relates to building in areas of flood risk (represented by TAN 15 in Wales).

Flood risk maps indicate that whilst all corridors cross some limited areas at risk of flooding in the river valleys, only the southern corridor is almost entirely located within an acknowledged flood zone – Zone C1. Zone C1 denotes floodplain, in this case coastal, served by significant flood defences (the sea wall) wherein development can take place subject to justification and acceptability.



## 5 Sustainable Development

Under Section 121 of the **Government of Wales Act 1998** the Assembly Government has a responsibility to promote sustainable development in the exercise of its functions. With this in mind and having regard to Welsh assessment requirements for transport projects (WelTAG), the following high level objectives have been developed for the New M4 to test and direct development in relation to the three pillars of sustainability: social, economic and environmental:

**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.

These objectives have been adopted to underpin the sustainability of the New M4 and project vision:

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

The notion of sustainability is to balance the environmental dimension with the social and economic aspects of development. A broad comparison of the route corridors, based on the high level objectives of the New M4, will be a subject for discussion at the workshop.

**FIGURE**

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FIGURE 1



### WORKSHOP RULES

### THE WORKSHOP PROCESS

### THE PARTICIPANTS

In order for the workshop to be successful, total commitment is required from each individual. Therefore, it is of fundamental importance that:

- Δ Everybody contributes fully
- Δ Political and seniority barriers are ignored
- Δ Everyone tables all their ideas or reservations on every issue
- Δ The focus of the discussions is maintained without diversions
- Δ The correct level of detail is maintained without dropping into too much detail or glossing over important items
- Δ Everyone participates in fully in the activities
- Δ It is a 'No Blame' culture. We are looking for participation, not victims

In order to achieve full concentration with no distraction, all participants are expected to:

- Δ Attend for the whole duration
- Δ Switch off all mobile phones and pagers
- Δ Give others the chance to speak without interruption
- Δ The Workshop is intense and hard work and requires a high level of concentration. Therefore, participants should feel free to dress comfortably

### THE FACILITATOR

In order that the participants, who will come from many different areas of experience and expertise, feel free to contribute to the debate the project team has employed the services of an independent facilitator who will facilitate the workshop on their behalf. The facilitator has neither involvement in the scheme nor any personal stake in its outcome. This person has one aim – to ensure that the workshop objectives as described earlier are met, and to this end, he will ensure that a structured process is followed which allows everyone to participate in the exercise.

## APPENDIX      WORKSHOP INFORMATION

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Glyn Harrison of CVRL is a professional facilitator, Value, and Risk Manager, who will be facilitating the workshop. It will be Glyn's role to:

- Δ act independently,
- Δ extract and review information and ideas objectively from the various participants in attendance
- Δ manipulate effectively the group dynamics of the workshop
- Δ create an environment in which the group is able to operate in a non-adversarial way
- Δ achieve the objectives of the workshop
- Δ record events and produce the workshop report

### **STAKEHOLDERS**

Key stakeholders participate in the Workshop in order to ensure that those with a potential input to or output from the scheme are part of the workshop process. This will enable a greater understanding of the issues involved in achieving a successful outcome.

### WORKSHOP HANDOUTS

#### **Participation Session: Arup Observations Handout (Refers to Strategic Change Factors in Section 4 of Workshop Pack)**

#### 4.1 Land Use

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##### **4.1.1 Northern Corridor**

*Impact of Changes: The physical constraints along the northern corridor have significantly increased because of new built development, particularly in the pinch points identified. Whilst a number of these points are in valley locations where the road would pass through on structure, development along the line of these structures has exacerbated the complexity and impact of road development in the northern corridor.*

##### **4.1.2 Southern Corridor**

*Impact of Changes: The southern corridor generally traverses less populated areas which have not been subject to development pressures – there are some exceptions. Accordingly built-development impediments to motorway provision have not increased, being positively prohibited along the preferred line. Closure of Llanwern has facilitated alignment improvements.*

##### **4.1.3 On-line Corridor**

*Impact of Changes: The land use constraints along the on-line corridor can be regarded as having become more constrained than they were in the early 1990s which is consistent with a road which lies on the fringes and, in some places, well inside the urban area where development pressures are at their greatest.*

#### 4.2 Protective Designations

---

##### **4.2.1 Northern Corridor**

*Impact of Changes: The removal of Special Landscape Area status does not diminish the landscape value of the area but more specifically leaves it to be protected by other policy means. Historic Park status is an added constraint to the northern variant.*

##### **4.2.2 Southern Corridor**

*Impact of Changes: The SSSI status was present and the sensitivity and protected nature of the Levels recognised at the stage of corridor selection – the degree of protection afforded SSSIs and the obligation of public bodies, then and now, is considered under Legislation. The SAC designation of the River Usk affords greater protection of habitats/species in the designated area- it increases risk and extends the*

*evidence requirements of supporting information (to meet the expectations of Appropriate Assessment under the Habitat Regulations). Similarly the Historic Landscape designation, a material factor, has increased the degree of constraint on the southern corridor and the mitigation required.*

### **4.2.3 On-line Corridor**

*Impact of Changes: Whilst there have been some changes in the status of protected areas, there have been no alterations which significantly change the balance of sensitivity along this route.*

## **4.3 Legislation and Policy**

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### Legislation

#### **4.3.1 Northern Corridor**

*Impact of Changes: Whilst legislation pertaining to SSSIs, habitats of biodiversity interest, European sites and protected species are relevant to the northern corridor, no exceptional considerations due to extensive presence arise.*

#### **4.3.2 Southern Corridor**

*Impact of Changes: There can be no doubt that the introduction of new legislation and legislative changes in respect of natural habitats and species have placed a greater onus on the Assembly Government to demonstrate the acceptability of development in the southern corridor, increasing the risks associated with the route.*

#### **4.3.3 On-line Corridor**

*Impact of Changes: Legislative changes do affect the corridor but to a lesser degree than elsewhere.*

### Policy

*Impact of Changes: Building in areas of flood risk is similar to other material factors in the demand for more detailed testing and justification before permission is possible; and as with those other factors it introduces further risks into the permitting/determination process all of which pre-eminently affect the southern corridor.*

**Participation Session: Arup Observations Handout (Refers to Sustainable Development in Section 5 of Workshop Pack)**

*A broad comparative exercise, based on the high level objectives of the New M4, indicates the following performance.*

**Social Objective:** *The northern and southern corridors both increase accessibility (because of the increased capacity and potential for improvements on the existing M4) but on-line widening performs worst against the social accessibility objective. This factor discriminates against the on-line corridor but is neutral in respect of the other two.*

**Economic Objective:** *In conventional transport economic assessment terms the objective is served by the most efficient route, favouring the southern corridor over the others.*

*Brownfield regeneration and development for employment correlates with regional and national prosperity and such opportunities are better served by the southern corridor than the northern corridor.<sup>1</sup>*

*Taking the above and journey time reliability into account, the relative performance of the three corridors, against the economic objective, favours the southern corridor over the others.*

**Environmental Objective:** *The overall environmental picture is mixed. The southern corridor predominantly affects natural and historic landscape resources; the on-line option disproportionately affects people and property; the northern corridor falls somewhere between, affecting communities and upland landscapes.*

*Significant adverse effects on environmental receptors occur in all cases but if reduced down to the compensability (as opposed to the acceptability) of loss, then natural (irreplaceable) environments tend to take priority. On this basis, it can be said that the on-line option outperforms the other two, with the increased value apportioned to the Gwent Levels since 1993 balancing the landscape disadvantages of the northern corridor.*

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<sup>1</sup> It is acknowledged that land use planning for economic development reflects the southern corridor which has been safeguarded for a decade.

## APPENDIX      WORKSHOP INFORMATION

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### WORKSHOP PRESENTATION

Given below are the presentation slides used during the workshop.

# New M4 Project Re-examination of Route Corridors

**Martin Bates**  
**Project Director**

ARUP



## Purpose of Workshop

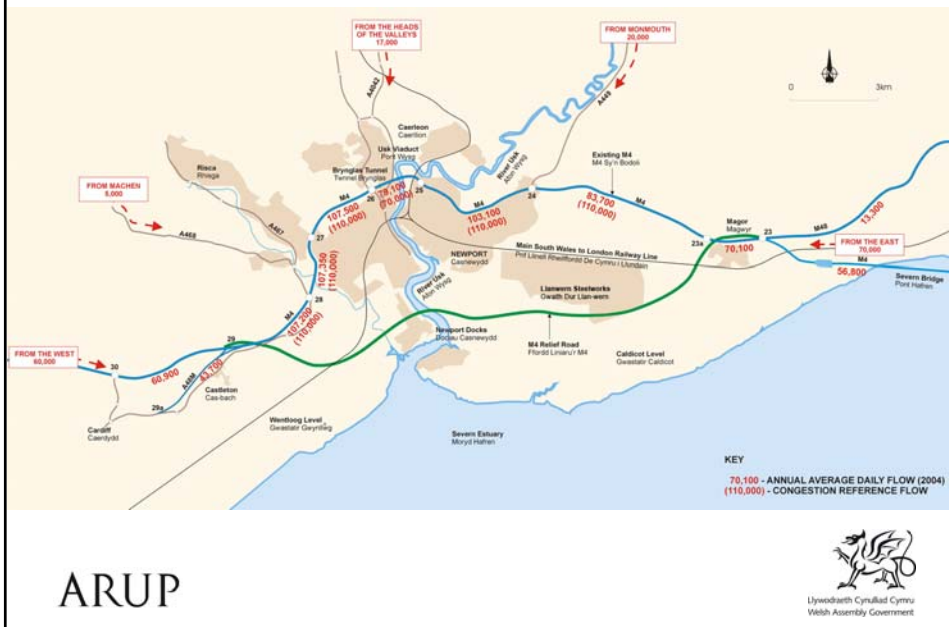
**To determine whether advice given to the then Welsh  
Office Minister to take only Southern Corridor  
options for a M4 Relief Road, forward to Public  
Consultation in 1993 is still valid**

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## Plan of Existing M4 & New M4 – Plan 1



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## 1997–1999 Common Appraisal Framework (CAF) Study

**This Study compared various transport alternatives for addressing the forecast traffic problems on the M4 around Newport**

**Four Scenarios were tested:**

**Traffic/Demand Management**

**Enhancing Public Transport #**

**Road Building**

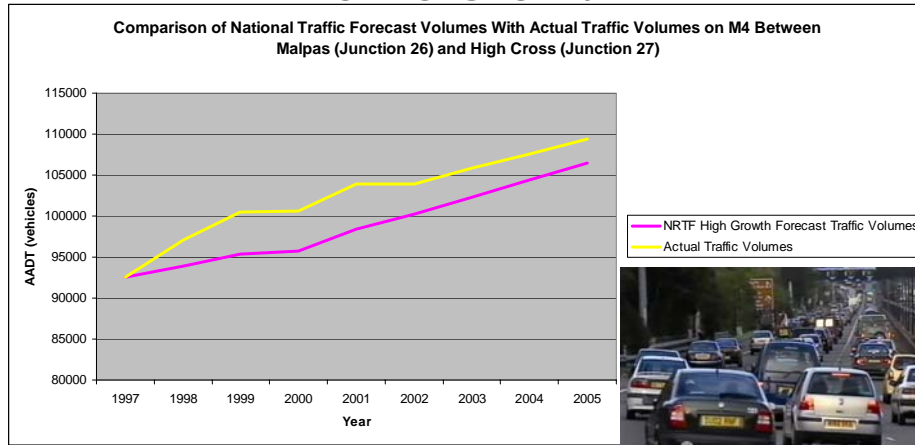
**Hybrid Scenario (inc Tolling Existing Motorway)**

**# Had Benefits BUT did not address congestion on M4**

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## Traffic Growth



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17 November 2004

**Wales Spatial Plan adopted by the Assembly, confirmed there was a need for additional capacity on the M4 in South East Wales**

7 December 2004

**Andrew Davies, Minister for Economic Development and Transport unveiled £8bn 15-year programme to deliver a world class integrated transport system throughout Wales**

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## 2004 Trunk Road Forward Programme

- **Announcement included:**
  - **New M4 Magor to Castleton, which was transferred from “On Hold” to “Phase 2”;** and
  - **Provision of measures to improve safety, manage demand and to encourage the use of multi-occupancy vehicles on the existing M4 between Magor and Castleton.**
- **Studies to be carried out to investigate funding and procurement method for the Project.**

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## New M4 Project Corridor Selection 1992

**Dan Saville**  
**Arup Project Manager**

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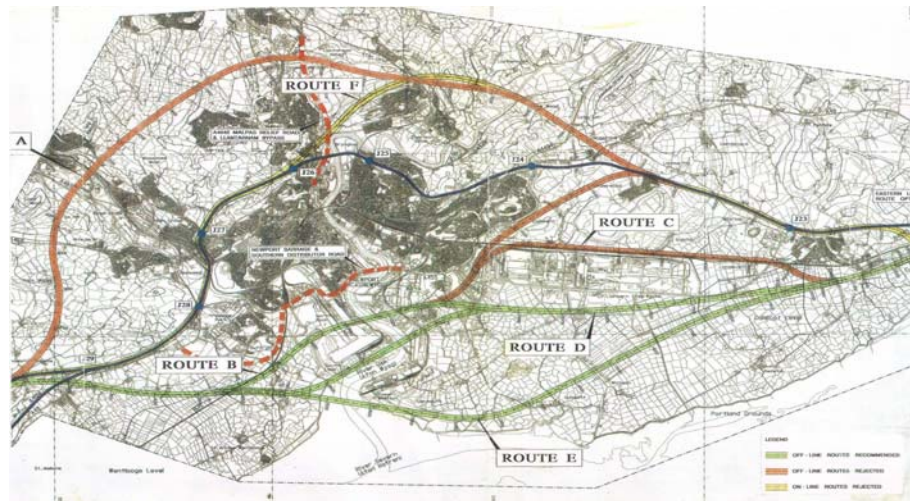
## Corridor Selection 1992

- Study Area
- “Spaghetti” Drawing
- Assessment of Nodal Links

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## Corridors – IIOR August 1992



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## Corridor Selection 1992

### **Environmental**

**There is less environmental impact with southern corridors than northern corridors although it was noted that a southern corridor would not be free from serious adverse impacts.**

**On line widening would involve significant property demolition and require a second Brynglas tunnel bore**

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## Corridor Selection 1992

### **Cost**

**Northern links attract higher costs than southern links, although the differences were small**

**On line widening would attract significant delay and construction costs**

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# Corridor Selection 1992

## Engineering

Based on a combined assessment of geotechnical uncertainties and infrastructure disruption, corridors to the south were considered to pose least engineering uncertainty.

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# Corridor Selection 1992

## Economics

NPVs generally increase from the northernmost options to the southernmost.

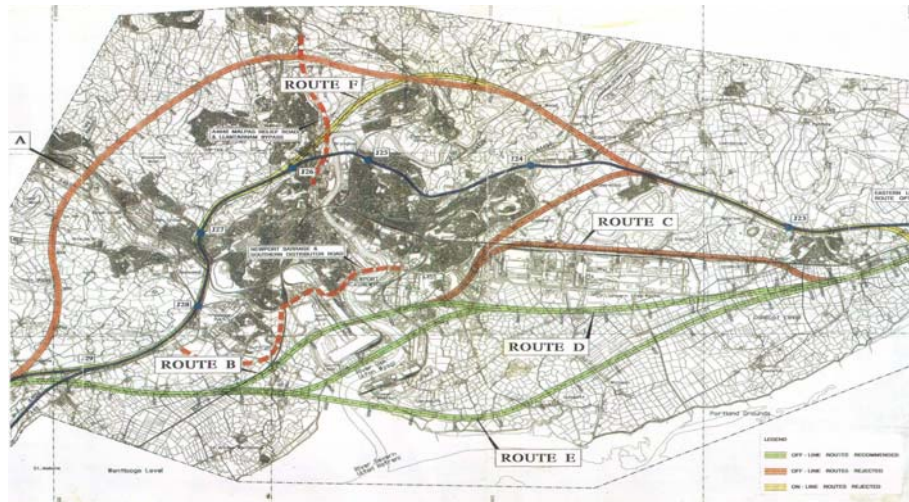
OFF LINE		ECONOMICS	
ROUTE	COST (£m)	NPV	
		LOW	HIGH
North A	240	-70	+45
South B	220	+8	+137
South C	230	+16	+150
South D	270	+14	+151
South E	240	+25	+160

ON LINE		ECONOMICS	
ROUTE	COST (£m)	NPV	
		LOW	HIGH
1	280	-83	-13
2	300	-106	-9
F	330	-74	+35

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## Corridors – IIOR August 1992



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## Corridor Selection 1992

### Summary

1. The best options for a New M4 Relief Road lie to the south of Newport
2. The northern corridor had significantly inferior economic benefits and would have major landscape impacts.
3. The on-line widening options have considerably inferior economic benefits, would demolish a number of properties and are more expensive to build than the southern and northern corridors.

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# Corridor Selection 1992

## Public Consultations – July 1993

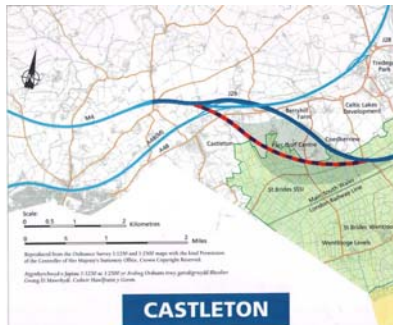


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# Corridor Selection 1992

## Public Consultations – Sept 1994



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