



Nick Ramsay AM
Chair
Public Accounts Committee

8 October 2019

Dear Chair

M4 PROJECT COSTS

I am responding to your email of 22 July and further letter of 25 July, in which you requested additional information following the Committee session on 15 July. I am sorry for the delay in so doing, but it has taken a little time to pull all the relevant detail together in the form requested.

Use of data and presentation

Cost estimates were produced at each stage of the M4 Project development using the cost price base and VAT treatment that was appropriate to each development phase.

The price base year was kept at 2015 throughout the Inquiry process to aid comparison and assessment of scope changes during the Inquiry, such as the additional off-slip proposed near Magor services and the accommodation works developed in Newport Docks during the course of the Inquiry.

In accordance with Treasury 'Green Book' guidance, VAT was excluded from assessments during development the stages of the project.

To enable a comparison with other Welsh Government capital programmes, the M4 Project cost estimate was updated to 2019 prices and VAT included, with certain sunk costs excluded, for the relevant Cabinet discussions in April of this year.

A cost comparison table at Annex A summarises this information providing estimates in both the price base the estimate was originally produced and adjusted to 2019 prices.

The WelTAG Stage 1/2 'Scheme level' appraisal estimate of £998m has been used as the 'base cost' for the M4 Project as it is considered most appropriate for comparison with the later project level estimates. Both this and an accompanying



Business Case were published in 2014 to accompany the strategic decision to proceed with a project, and as such this figure included in the table in Annex A. Those reports are available on the internet at the following links.

WelTAG Report:

<http://bailey.persona-pi.com/Public-Inquiries/M4-Newport/C%20-%20Core%20Documents/4.%20Scheme%20Development%20and%20Alternatives/4.5.5%20-%20Welsh%20Government%20M4%20Corridor%20around%20Newport%20-%20Motorway%20South%20of%20Newport.%20WelTAG%20Stage%201%20%26%202%20-%28Scheme%29%20Appraisal..pdf>

Business Case:

<http://bailey.persona-pi.com/Public-Inquiries/M4-Newport/C%20-%20Core%20Documents/4.%20Scheme%20Development%20and%20Alternatives/4.5.17%20-%20M4%20Corridor%20around%20Newport%20-%20Motorway%20to%20the%20South%20of%20Newport%20Business%20Case.pdf>

This scheme level estimate was subsequently revised to reflect scope changes during the project development, such as; enhancements to junctions, additional environmental mitigation measures arising from liaison with Natural Resources Wales, and the significant accommodation works within Newport docks.

Net development costs

Expenditure on the M4 Project from 2013, to the point of the decision not to proceed with making the statutory Orders, was £114.109m, as stated in the evidence paper, with additional budget to 'wind up' the project of up to £9.2m. Whilst any winding up costs will be minimised within that budget, assuming the full amount is used, the development plus winding up expenditure would total around £123m.

The total purchase value of the land and property still in Welsh Government's ownership (that was purchased since 2013 and held for the scheme) is £3.728m. Rental income is excluded from this assessment as it is largely used to offset estate management costs. Properties acquired in this area in relation to previous iterations of a project prior to 2013, and still in Welsh Government ownership, are listed in Annex A but excluded from this summation to provide consideration in parallel with the post 2013 M4 Project development costs.

Should a decision be taken to dispose of all these assets, the actual realisable value will be determined by market conditions at the time of sale. However, deducting the acquisition value for these assets from the total development plus winding-up expenditure to provide a rough guide, gives a figure of around £119m of what could reasonably be defined as the net development and winding-up expenditure for the M4 Project, as at this point in time. We will in due course update the Committee with a more definitive figure, but this is necessarily some way away.

Land acquisition and disposal

Welsh Government will await the outcome and decision of the Commission before deciding on how best to proceed with route protection and with the properties that are in Welsh Government ownership.

In the event that any of the properties held in Welsh Government are declared surplus then they will be disposed of in accordance with our normal procedures, which includes consideration of the Crichel Down rules, where, among other considerations, the previous owner has the opportunity to buy it back.

Please find attached (Annex B) a revised table clarifying the position with the properties in lines 31-35 of the original table in the evidence paper. We can confirm that these properties have not been sold, and remain in the ownership of the Welsh Government.

On 2 August 2019 we received a further query from you on the dates and values of acquisition of 10 properties in connection with the M4 Project. Of those 10, five were acquired direct by the Welsh Government Transport Department and the other five were inherited from predecessor bodies such as the Welsh Development Agency, which then transferred into Welsh Government and subsequently assigned the land and properties to the Transport Department.

Any discrepancies between the July 2019 Public Accounts Committee evidence paper and data you may be referencing (such as Land Registry) may be due to records of different stages in the acquisition process. A 6 – 12 months' difference in timescale is not unusual for the period from which Welsh Government buy and or complete on a property with vacant possession to the details being updated on the Land Registry. Officials shall endeavour to provide additional clarity in reporting the 'date of sale' in future as the contractual completion date.

Further details on the 5 directly acquired properties are provided as follows, using the line numbering of the July 2019 Public Accounts Committee Evidence paper Annex A:

Line 4 – Woodland House – Review of the deeds documents confirms August 2007 (as stated in the letter to the Committee dated 26 March 2015 from WAO) as the date of contractual completion. Oct 2006, as stated in the July 2019 PAC Evidence paper and in a 2014 FOI will have been the date of agreement to acquire.

Line 6 – Horseshoe Cottage – The Welsh Office contractually completed acquisition of the property in August 1997, as stated in the July 2019 Evidence paper and in a 2014 FOI. The date of 16 Jan 1998 provided in the WAO letter to the Committee dated 26 March 2015 could relate to the date it was registered at the Land registry, however our review of land registry shows the registration date as February 1998.

Line 26 – Ysgubor Newydd, Coedkernew – 31 March 2004, as stated in the July 2019 Evidence paper and in a 2014 FOI, recorded the date of registration of the sale with Land Registry. The Jan 2004 date provided in the WAO letter to the Committee dated 26 March 2015 likely relates to the date of contractual completion.

Line 28 – The Maerdy, Coedkernew – We have re-checked and the sale of this property was completed on 4 November 2003. We previously stated in the July 2019 Evidence paper and in

a 2014 FOI the date of November 2011 which is incorrect and appears to be a typographical error.

Line 30 – The Stud Farm, Coedkernew – the date of March 2003 as stated in the July 2019 Evidence paper and in a 2014 FOI is understood to be the date of contractual completion. 26 March 2004, as stated in the WAO letter to the Committee dated 26 March 2015 is understood to be the date of registration of the sale with Land Registry

The other properties you queried were: Berry Hill Farm, Queensway Meadows, Land at Tatton Farm, Site of Marshfield and Former LG Hynix site. All were acquired historically, some 40 years ago, before coming into the Welsh Government Transport portfolio. Access to records are therefore more limited, however further explanation is provided as follows.

Line 18 – Berry Hill Farm – I can confirm November 1996, as stated in the WAO letter to the Committee dated 26 March 2015, is when a predecessor organisation inherited the land. January 1980, as stated in the July 2019 Evidence paper and in a 2014 FOI will relate to the original acquisition by a predecessor body.

Line 20 – Queensway Meadows – The range of dates (Oct 1980 – Jan 1982) stated in the July 2019 Evidence paper and in a 2014 FOI covering Queensway Meadows are consistent with the WAO letter to the Committee dated 26 March 2015. The WAO also includes dates for Tatton Farm which is linked to this property. By the time they were transferred to the Transport Department these plots had been combined into one and so just the first purchase date was reported. We can confirm WAO's letter is correct that components of Tatton Farm were purchased in March 1994 and March 2000 for a total of £2.17m.

Line 22 – Site at Marshfield – We have re-checked and can clarify exactly that the purchase of this property was completed in March 1997, rather than April as stated in the July 2019 Evidence paper. We are unable to find evidence to confirm the figure of £6,250 contained in the WAO's letter to PAC dated 26 March 2015, but the value appears commensurate for the plot.

Line 23 – Former LG Hynix site – The July 2019 Evidence paper reports the Hynix site acquisition value as £7m which I can confirm is correct. The WAO letter to the Committee dated 26 March 2015 reported both the Hynix and P&T plots with a combined value of £13m, which is consistent with our records for that plot also. The difference in reporting is therefore due to the land associated with Imperial House and whether it is deemed linked to the M4 Project or not. The 2014 FOI data, referenced by WAO, considered it linked, whereas at the time of the 2019 PAC Evidence paper it was considered not due to the additional information available in relation to the project at that time. Importantly, all records are consistent in terms of combined purchase dates and values.

Cost estimates for suggested alternative 20

Annex C to this letter provides a detailed breakdown of the cost estimate of the objectors' alternative No.20 suggested during the Public Inquiry.

The cost estimate at the time of Public Inquiry was benchmarked to the A303 Stonehenge project. The tunnelling works were around 50% of the total alternative No.20 cost estimate.

Annex C also provides a comparison to the more recently published '*Infrastructure and Project Authority tunnel benchmarking Case Study: Benchmarking tunnelling costs and production rates in the UK*' ("*the IPA report*") as referred to in the Committee session on 15 July 2019.

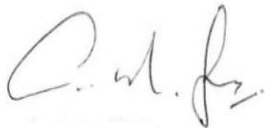
A comparison of the Alt. 20 Cost Estimate with the 3 benchmarking methods of the '*Infrastructure and Project Authority*'. By diameter the IPA report figures give a higher cost. By volume the Alternative No.20 rates are the higher cost. By unit volume they are similar.

I understand from your letter of 25 July that the Objectors Suggested Alternatives Report has now been circulated to Committee members.

Please do not hesitate to contact me should you require any further information.

With best wishes.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'A. Slade', with a stylized flourish at the end.

Andrew Slade
Director General
Economy, Skills and Natural Resources

M4 Corridor around Newport Project – Construction Cost and VAT Estimate Tracker						
Component	(1)	(1a)	(2)	(3)	(4)	(4a)
	WelTAG Stage 1 & 2 Scheme Level Appraisal Estimate / 2014 Business Case Estimate*		Estimate at start of Inquiry	Updated Estimate during Inquiry due to adding project scope i.e. sliproads.	Updated Estimate during Inquiry due to adding Newport Docks Works	(4) updated to inform statutory decision making
Price Base	2010	2019	2015	2015	2015	2019
Date Published	2014	Not previously calculated	Dec 2016	Mar 2017	Dec 2017	Not published
Preliminaries including Traffic Management	Not broken down to these categories		£212.0m	£213.1m	£213.1m	Not broken down to these categories
Roadworks			£268.0m	£269.2m	£269.2m	
Structures			£296.9m	£297.0m	£314.5m	
Landscaping and environmental works			£44.8m	£44.9m	£44.9m	
Works by other authorities			£38.3m	£38.8m	£38.8m	
Land and Compensation Costs			£92.0m	£92.3m	£92.3m	
Risk and Optimism Bias			£141.3m	£138.0m	£120.4m	
Project Estimate excluding VAT			£1,093.2m	£1,093.2m	£1,093.2m	
Reclassification and reconfiguration of Caerleon Junction (including Optimism Bias			£16.2m	£16.2m	£16.2m	
Newport Docks Works			-	-	£167.5m	
Newport Docks Works – Risk and Contingencies			-	-		
Project Estimate excluding VAT	£998m	£1,161m	£1,071.2m	£1,109.3m	£1,276.8m	£1,382m
VAT [calculated for (4a) and ratio applied to others]	£132.8m	£154m	£142.5m	£147.5m	£170m	£184m
Project Estimate including irrecoverable VAT	£1,131m	£1,315m	£1,214m	£1,257m	£1,447m	£1,566m

Notes:

- * PAC letter of 25/7/19 referred to the WelTAG Stage 1 2013 report estimate of £936m. The more appropriate cost for comparison is the 2014 WelTAG Stage 1/2 Scheme Level estimate and 2014 Business Case estimate of £998m.
- Vat was not applied at the time of the estimate of (1), (2) and (3). Irrecoverable VAT applied now to them and (1a) for comparison purposes. Quantum is the 13.3% percentage calculated for (4a). Exact measure of VAT remained to be agreed with HMRC.
- All estimates exclude statutory process development costs for ease of comparison with (4a) £1,566m investment decision cost estimate which was concerned with the forward costs rather than 'sunk' costs.
- Final totals rounded to 0dp.

Table of all property acquisition and sale transactions (matter of public record):

No.	Description of Land	Basis of Purchase / Sale	Date of Purchase	Value Paid (Land and Buildings)	*Date of Sale	Sale Price
Properties Acquired						
1	Longhouse Farm, Coedkernew	s.246 (2A) Off Line Discretionary Application submitted by owner requesting purchase.	Nov-06	£720,000	In WG ownership	NA
2	Land at the Stud Farm, Coedkernew	s.246 (2A) Off Line Discretionary Application submitted by owner requesting purchase.	Jan-00	£315,000 (incl. no. 23)	NA – <i>Farm sold (see 23)</i>	NA (see 23)
3	Undy House, Undy, Magor	Statutory Blight Notice served by representatives of deceased owner requesting purchase.	Aug-07	£660,000	In WG ownership	NA
4	Woodland House, Magor	Statutory Blight Notice served by owner requesting purchase.	Aug-07	£1,107,000	In WG ownership	NA
5	Old Cottage, Knollbury, Magor	s.248 Discretionary Application submitted by owner requesting purchase.	Mar-95	£130,000	In WG ownership	NA
6	Horseshoe Cottage, Knollbury, Magor	s.246 (2A) Off Line Discretionary Application submitted by owner requesting purchase.	Aug-97	£132,500	In WG ownership	NA
7	Barecroft House, Barecroft Common, Magor	Statutory Blight Notice served by owner requesting purchase.	May-96	£158,500	In WG ownership	NA
8	Cae-Glas, Nash Road, Newport	Statutory Blight Notice served by owner requesting purchase.	Dec-06	£300,000 (incl. below)	In WG ownership	NA
8	Annex at Cae Glas, Nash Road, Newport	Statutory Blight Notice served by owner requesting purchase.	Dec-06	Part of above	In WG ownership	NA
9	Greenfield House, Nash Road, Newport	Statutory Blight Notice served by owner requesting purchase.	Mar-07	£300,000	In WG ownership	NA
10	The Conifers, Coedkernew	Statutory Blight Notice served by owner requesting purchase.	Apr-15	£725,000	In WG ownership	NA
11	White Cottage, Coedkernew	Statutory Blight Notice served by owner requesting purchase.	Dec-15	£555,000	In WG ownership	N/A

12	San Remo, Coedkernew	Statutory Blight Notice served by owner requesting purchase.	Apr-16	£350,000	In WG ownership	N/A
13	The Glen, Coedkernew	Statutory Blight Notice served by owner requesting purchase.	Oct-15	£430,000	In WG ownership	N/A
14	Spring Cottage, Coedkernew	Statutory Blight Notice served by owner requesting purchase.	Jun-16	£355,000	In WG ownership	N/A
15	Quarry Cottage, Coedkernew	Statutory Blight Notice served by owner requesting purchase.	Jun-17	£453,000	In WG ownership	N/A
16	Danygraig, Coedkernew	s.246 (2A) Off Line Discretionary Application submitted by owner requesting purchase.	Aug-19	£495,000	In WG ownership	N/A
17	Dunline, Knollbury	Statutory Blight Notice served by owner requesting purchase.	Mar-17	£365,000	In WG ownership	N/A
18	Coedkernew House, Coedkernew	s.246 (2A) Off Line Discretionary application submitted by owner requesting purchase.	Apr-19	£575,000	In WG ownership	N/A
19	The Croft, Coedkernew	Statutory Blight Notice served by owner requesting purchase.	Apr-19	£400,000	In WG ownership	N/A
20	Little Orchard, Coedkernew	s.246 (2A) Off Line Discretionary application submitted by owner requesting purchase.	Dec-18	£400,000	In WG ownership	N/A
21	Old Court Farm, Rogiet	Statutory Blight Notice served by owner requesting purchase.	Mar-18	£2,354,617	In WG ownership	N/A
22	Court Farm, Rogiet	Statutory Blight Notice served by owner requesting purchase.	May-18	£1,714,085	In WG ownership	N/A

Properties Inherited from a Predecessor Body

23	Berry Hill Farm	Land inherited by Welsh Government from a predecessor body.	Jan-80	£1,350,000	In WG ownership	NA
24	Wentloog, Newport	Land inherited by Welsh Government from a predecessor body.	Mar-97	£235,000	In WG ownership	NA
25	Queensway Meadows, Newport	Land inherited by Welsh Government from a predecessor body.	Oct 1980 – Jan 1982		In WG ownership	NA
26	Land at Tatton Farm	Land inherited by Welsh Government from a predecessor body.	May-00	£630,000	In WG ownership	NA

27	Land at Marshfield	Land inherited by Welsh Government from a predecessor body.	Apr-97		In WG ownership	NA
28	Former LG Hynix Site	Land inherited by Welsh Government from a predecessor body.	Sep-04	£7,000,000	In WG ownership	NA

***Properties Acquired and Subsequently Sold**

29	Lower Lakes Farm, Newport	s.248 Discretionary Application submitted by owner requesting purchase.	Jan-95	£170,000	Jan-97	£135,000
30	Pye Corner House, Nash	s.246 (2A) Off Line Discretionary Application submitted by owner requesting purchase.	Apr-96	£120,000	Jan-02	£178,000
31	Ysgubor Newydd, Coedkernew	Statutory Blight Notice served by owner requesting purchase.	Sep-96	£220,000	Mar-04	£361,000
32	Moorbarn, Nash	s.246 (2A) Off Line Discretionary Application submitted by owner requesting purchase.	Dec-96	£192,500	Jul-97	£167,000
33	The Maerdy, Coedkernew	s.246 (2A) Off Line Discretionary Application submitted by owner requesting purchase.	Apr-03	£680,000	Nov-11	£605,000
34	Rose Cottage, Knollbury	s. 246(2A) Discretionary Purchase application submitted by owner requesting purchase.	May-10	£360,000	Jul-11	£244,735

35	The Stud Farm, Coedkernew	s.246 (2A) Off Line Discretionary application submitted by owner requesting purchase.	Jan-00	£315,000 (formed part of no. 2)	Mar 2003 – <i>With some land being retained for M4 proposals (no. 2).</i>	£450,000
			Total	£24.2m	Total	£2.1m

Annex C

Tunnel Alternative - Supplementary Information

- 1 The table below shows the isolated cost estimate of tunnelling is £4,947m, therefore around 50%. This is for three tunnels; two 15m diameter bores at 16,358m long and a further 8m diameter pilot tunnel. There would also need to be a further 851m of tunnel portals making a total tunnelling and portal length of 17,209m of the 24,000m total route. In addition to the direct cost of tunnelling would be the staff and preliminaries costs plus allowances risks associated with the works. As this is a high level budget estimate with no defined design the project risk and optimum bias were set accordingly.

Table 1 – Breakdown of Alternative 20 Cost Estimate

	Tunnel costs £m	Infrastructure outside of the tunnel costs £m	Total Estimate £m
Prelims staff and accommodation etc. these costs are excluded from the IPA benchmarking	1,176	119	1,295
Construction costs	4,957	219	5,176
Contractor risk	794	39	833
Total Construction Cost	6,928	377	7,304
Client supervision and other development costs	323	48	371
Land & Compensation costs	15	50	65
Project Risk & Optimism bias	2,053	27	2,080
Project Estimate excl. VAT & Inflation	9,319	501	9,820

- 2 The 'Infrastructure and Project Authority tunnel benchmarking Case Study: Benchmarking tunnelling costs and production rates in the UK' was first published in December 2018 and revised in March 2019 and was therefore not available for the budget assessment for the tunnel alternative which was undertaken in early 2017. The base cost used in the assessment of the tunnelling costs was from the contractor's tender pricing of the proposed A303 stonehenge 12m tunnel. The cost per meter of which was adjusted for the tunnel sizes required for this alternative.
- 3 The 'Infrastructure and Project Authority tunnel benchmarking Case Study: Benchmarking tunnelling costs and production rates in the UK' benchmarks the cost of transport tunnels in three ways
 - Cost per diameter of tunnel
 - Cost per Volume of tunnel
 - Cost per unit volume (£m/KM/M2 of face)
 -

The benchmarking analysed 8 transport tunnels ranging from 5.5m diameter to 11.5m diameter therefore the data in the benchmarking does not cover the diameter of the two main tunnels or

the volume of material excavated for the M4. Below is a table comparing the M4 tunnels against the three Benchmarking cost bases.

The benchmarking only covers direct tunnelling costs not prelims and risk etc.

Table 2 – Comparison of Alternative 20 Cost Estimate with IPA Rates

Description	M4 Project Alternative 20 estimate £m	IPA Benchmarking Equivalent £m	Notes
Cost £m per km by tunnel diameter			
Alternative 20 15m diameter tunnels	110	191	No 15m dia tunnel in IPA benchmarking max where tunnel dia 11.5m. Pro rata IPA 11.5m (£112m) to 15m dia.
Alternative 20 8m diameter tunnel	31	15-33	Alt 20 cost is pro-rata from the above 15m dia rate. IPA equivalent is 8.1m dia.
Project cost plotted against the volume of tunnelling			
8m diameter tunnel as alternative 20 pro rata from 15m dia tunnel 16.4km long, 823,000m ³	512	350	
15m diameter tunnel as alternative 20, 16.4km long volume 2,891,000m ³	1,799	1,337	IPA Graph only shows trend line for volumes up to 800,000m ³ with a cost of approximately £370m at this point if pro rata trend line for extra volume up to 2,891,000m ³
Cost per unit volume (£m/km/m² of face area) plotted against tunnel length for 16km tunnel			
8m diameter tunnel as alternative 20 pro rata from 15m dia tunnel	0.62	0.58	
15m diameter tunnel as alternative 20	0.62	0.58	