

Thirty Minutes to Cardiff & A Swansea Bay Metro?

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...to provoke discussion!
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Please note: This presentation is based entirely on the views of Prof Mark Barry based on his knowledge and/or material already in the public domain and does not represent in any way the views, thoughts, intentions, plans, policies or strategies of Welsh Government, Transport for Wales, Cardiff University or any other organisation.

Mark Barry, Professor of Practice in Connectivity at Cardiff University's School of Geography and Planning

I have been working on #southwalesmetro since 2010

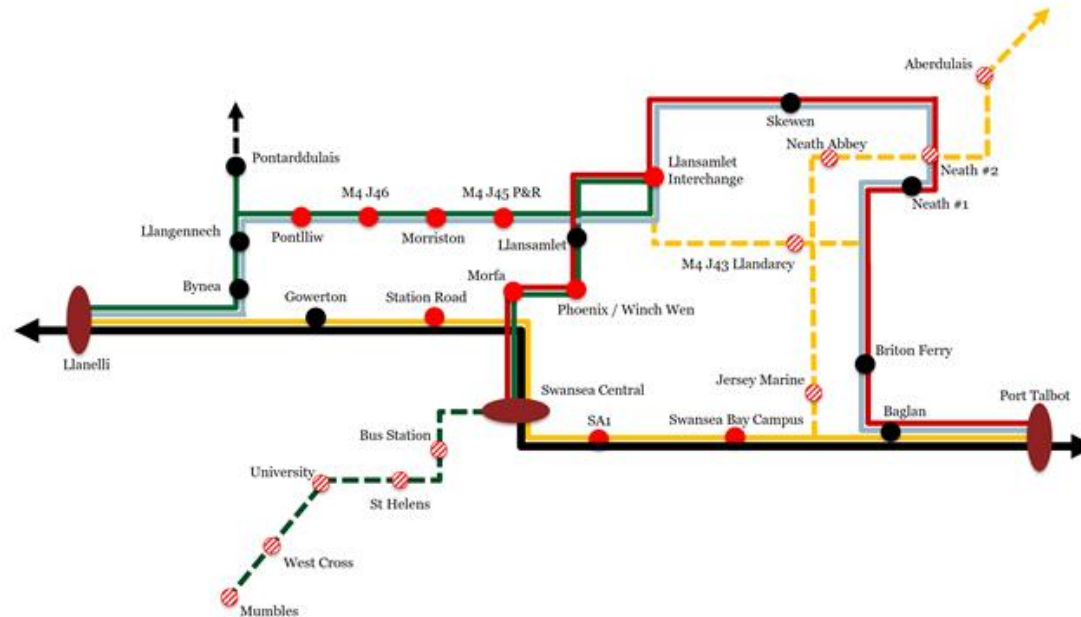


Procurement in progress....which means I can't discuss it!
So some thoughts re: A Swansea Bay Metro!

A Swansea Bay Metro...

A radical ~£1Bn investment in rail links to and within Swansea Bay to deliver a major boost to the regional economy:

- > 30-minute journeys to Cardiff and 2 hour 15 minutes to London & Heathrow
- > The foundation of a rail based Swansea Bay Metro
- > New development and regeneration opportunities across the region



A move beyond a tactical argument about electrification to a more strategic discussion about the vision and future connectivity of Swansea Bay

A Swansea Bay Metro...

***But first a quick look back at
UK HSR developments...***

High Speed Two (HS2)

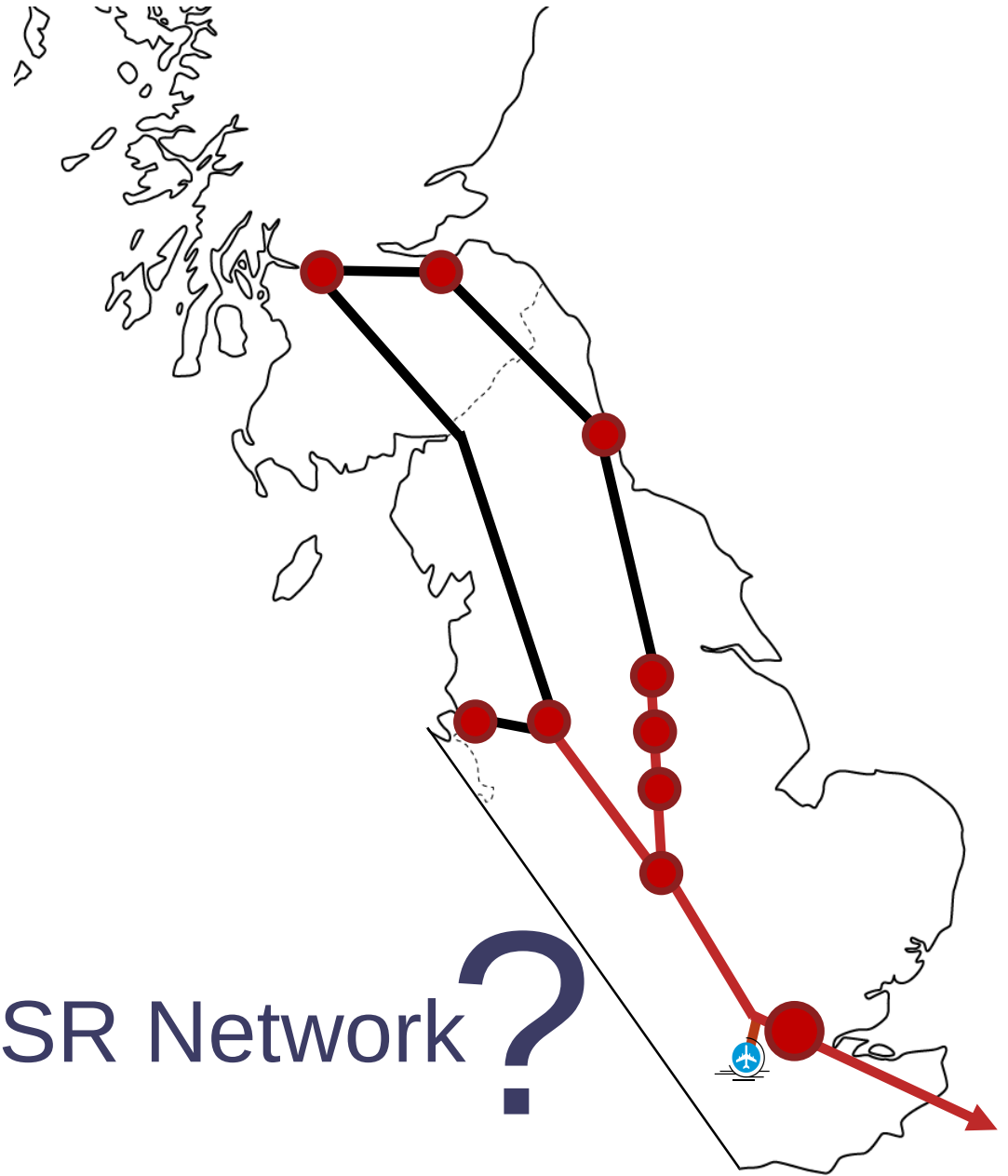
- More capacity to relieve WCML
- >30 minute journey time reductions from major English/Scottish cities to London
- Direct services to HS1 and Europe
- Modal shift from air to rail
- CO₂ reductions

DfT calculates +ve Economic Benefits?

- £32 billion to construct (*now more*)
- Generating benefits of around £44 billion
- & revenues totalling a further £27 billion.
- 1st phase alone generates >40,000 jobs



UK High Speed Rail... *A National Network?*



But is this really a UK HSR Network?

Not really!

Ignores Wales and SW England

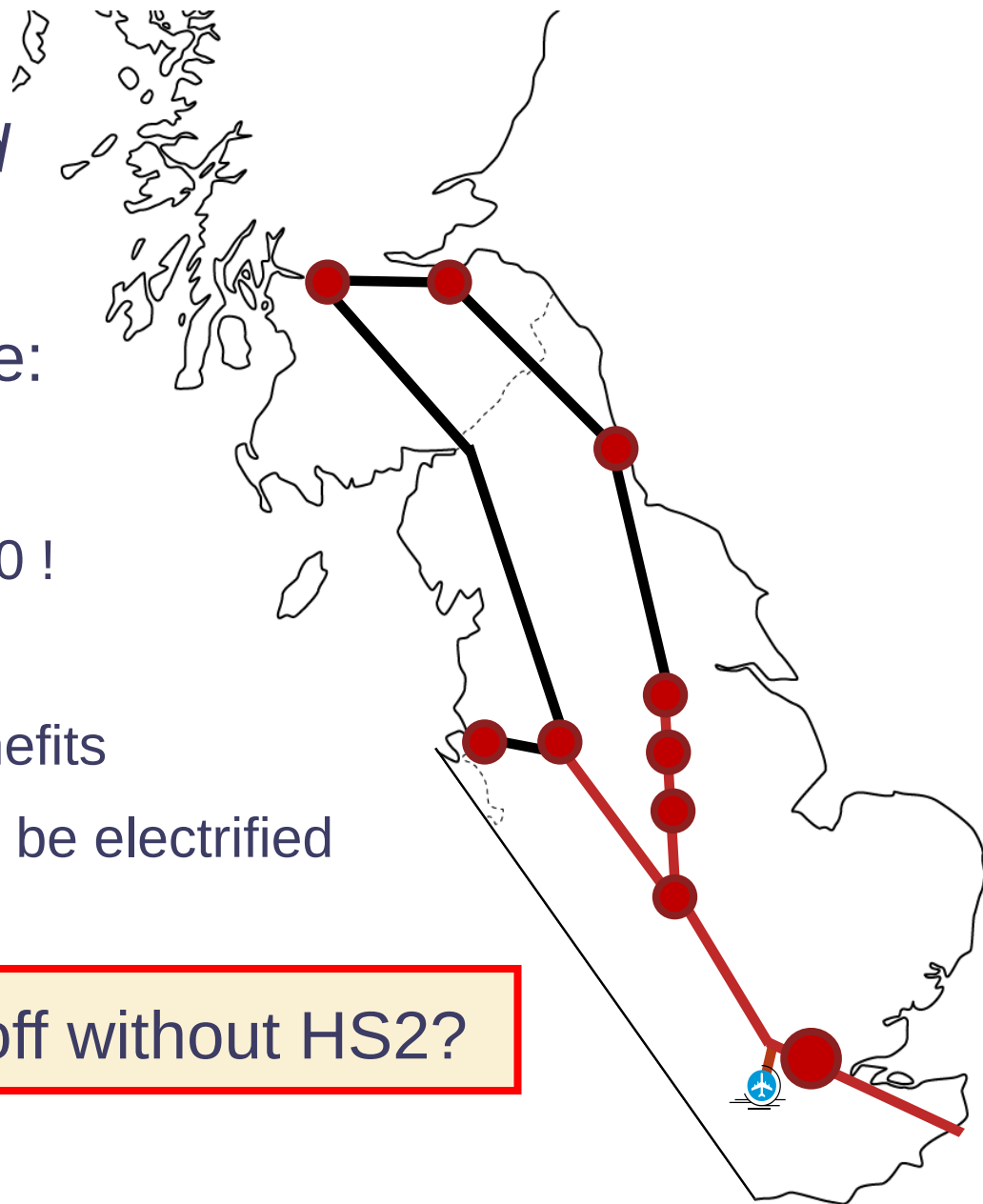
Greengauge21 /KPMG calculate:

- 21,000 less jobs in Wales to 2040 !
- 0.04 % lower annual growth to 2040 !
- £600 average lower income !
- Both Bristol & Cardiff suffer dis-benefits
- Calculation assumed GWML would be electrified

Ref: Greengauge21/KPMG, March 2010 "High Speed Rail in Britain, Consequences for employment and economic growth"

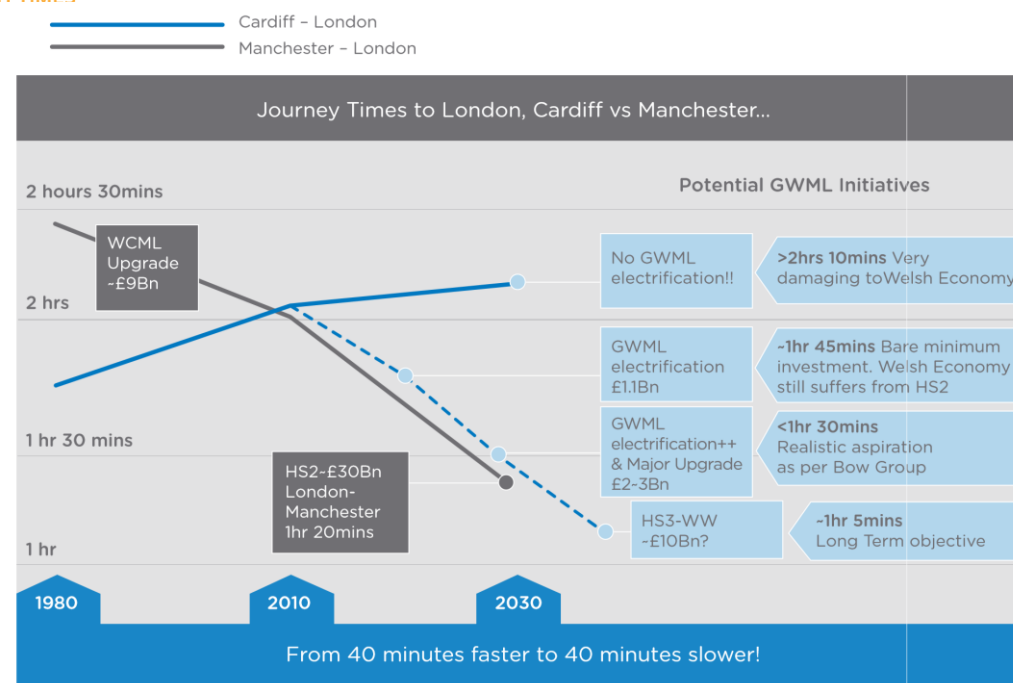
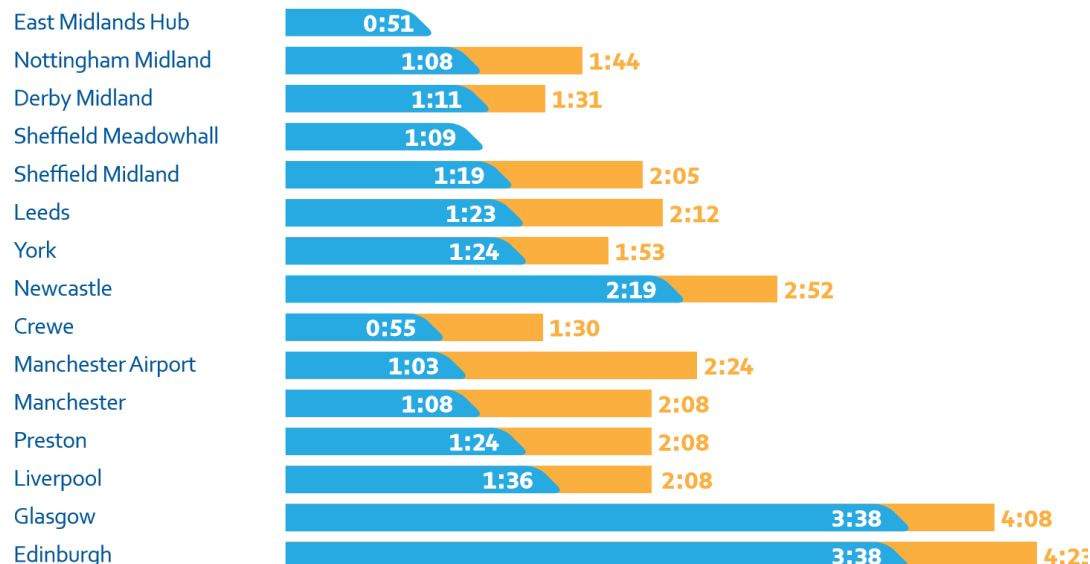
Wales and SW England better off without HS2?

Not balancing the UK economy



Journey times

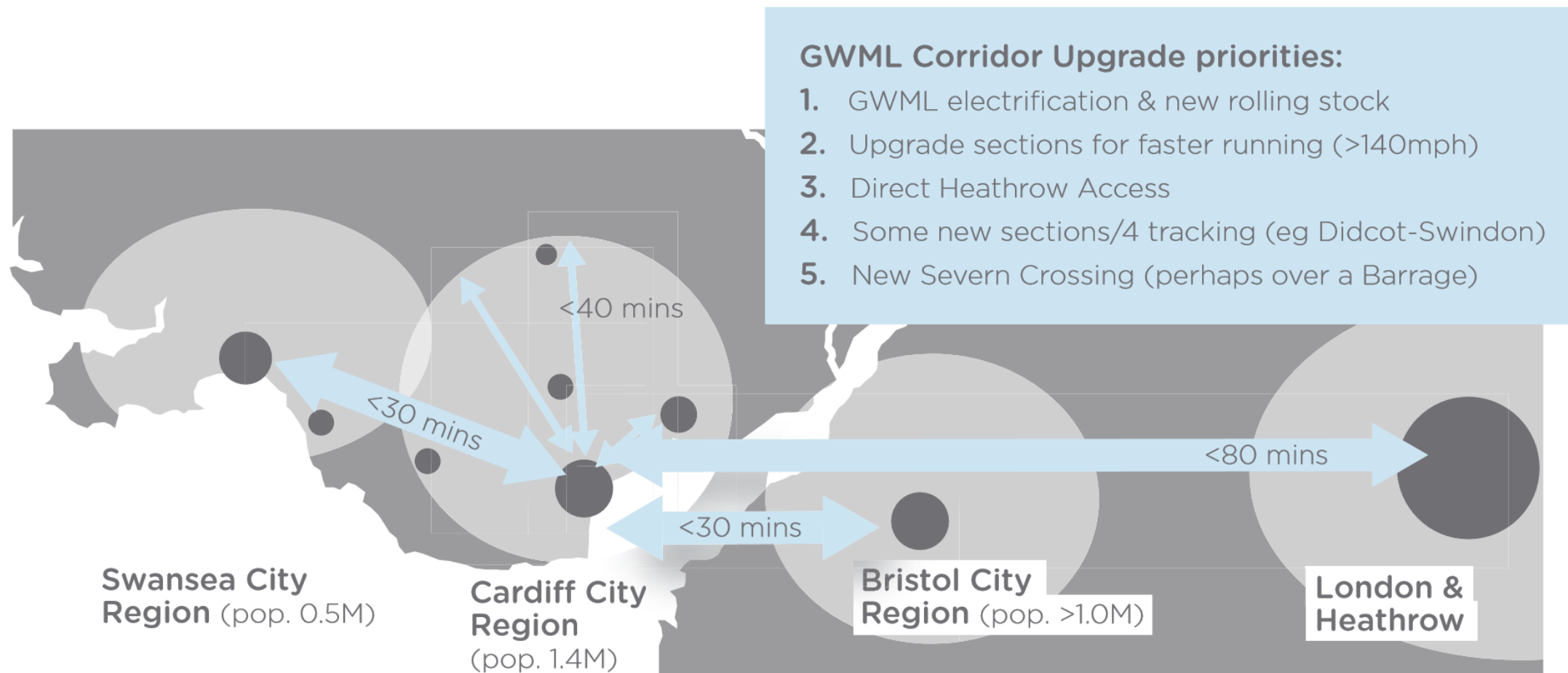
London to



Post GWML Electrification & HS2...

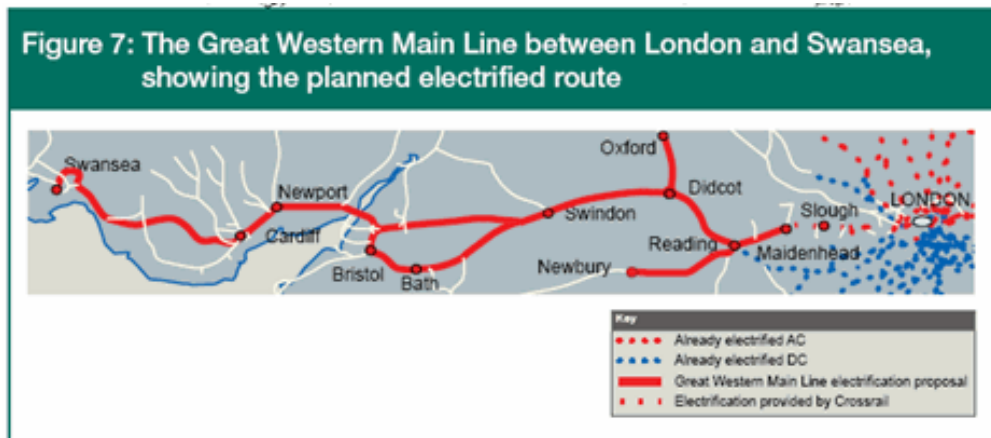
- > Cardiff to London in one hour 45 mins
- > Swansea to London in two hours 45 mins
- > Manchester to London in one hour!

So what about the GWML? *Long term strategic plan...*



Swansea Bay Metro

GWML Electrification - What happened 2009~2017...?



Source: Network Rail.



- **Yes, then no, then yes...**
- **Looked good in 2012**
- **Then Cost overruns delays**
- **Diesel electric bi-modes effectively killed the case for electrification to Swansea**
- **This is a policy and industry issues not NR – lack of long term strategic thinking**

Swansea needs a pragmatic, unconstrained and ambitious response....

Transport investment in respect of Swansea Bay needs to be presented in terms of its economic benefits and impact



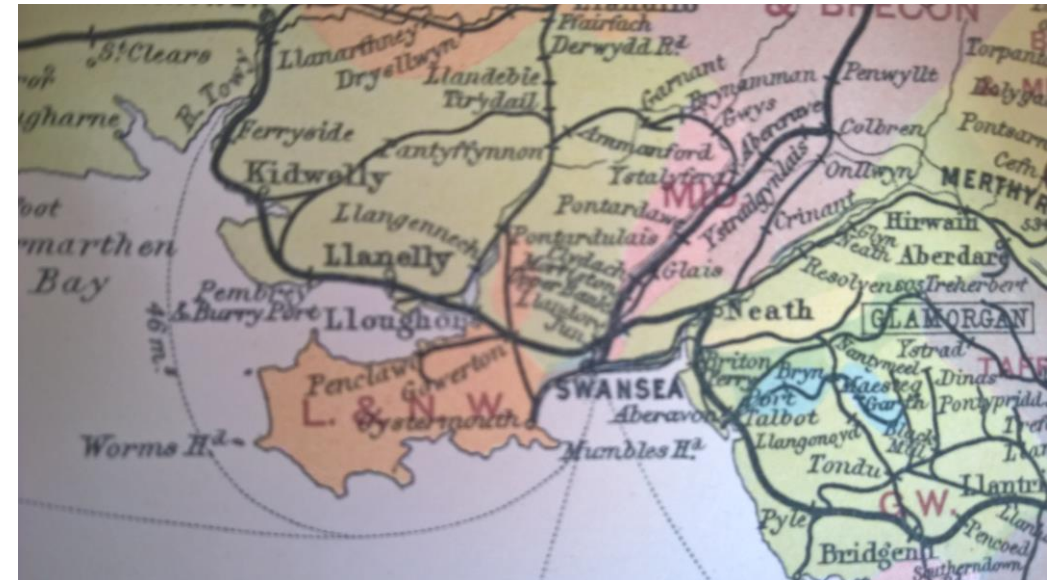
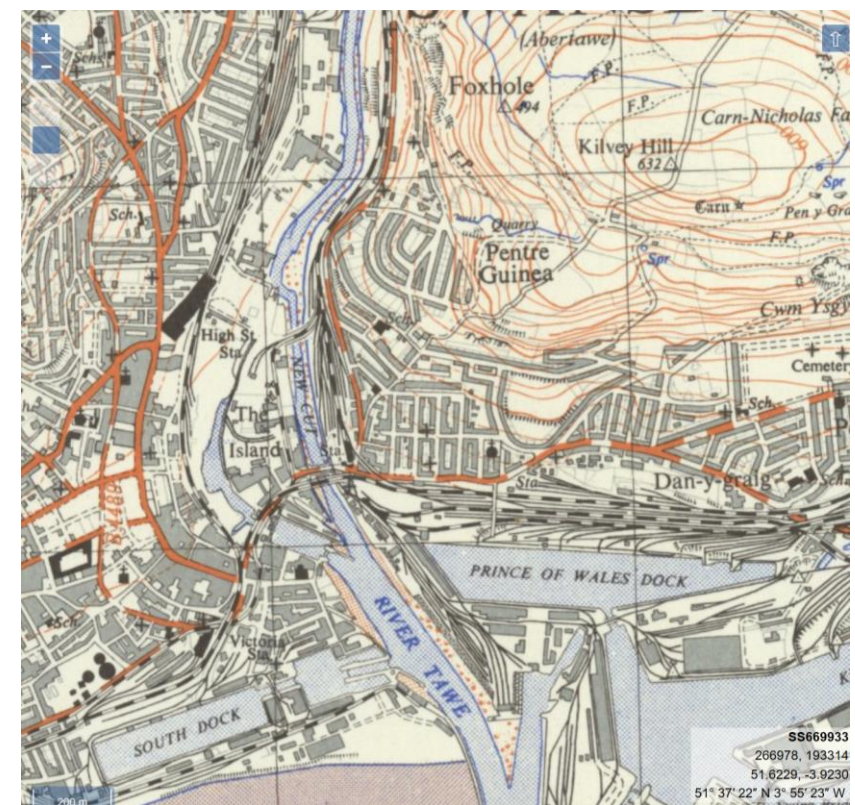
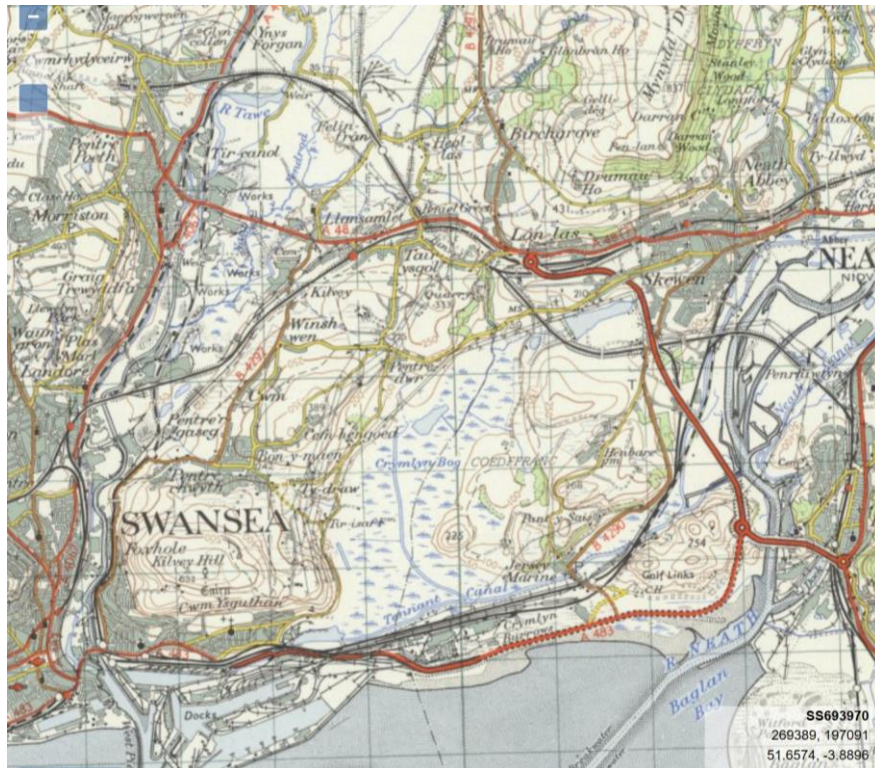
To support this ambition there are two key considerations in respect of transport:

1. To enable the Swansea Bay region to function as a more coherent economic entity
 - by increasing the labour market catchment area of the regions key economic centres
 - and especially the centre of Swansea
2. Improving the links and reducing journey times between the Swansea Bay Region and West Wales, Mid Wales, Cardiff Capital Region, Bristol, London & Heathrow

Swansea Bay Metro

First, some history...

- > Swansea Bay used to have a more extensive rail network
- > Mainly to serve docks/freight
- > Two city centre stations - inc Victoria Station
- > Current Swansea Station was a “through” station
- > Lessons from the past?

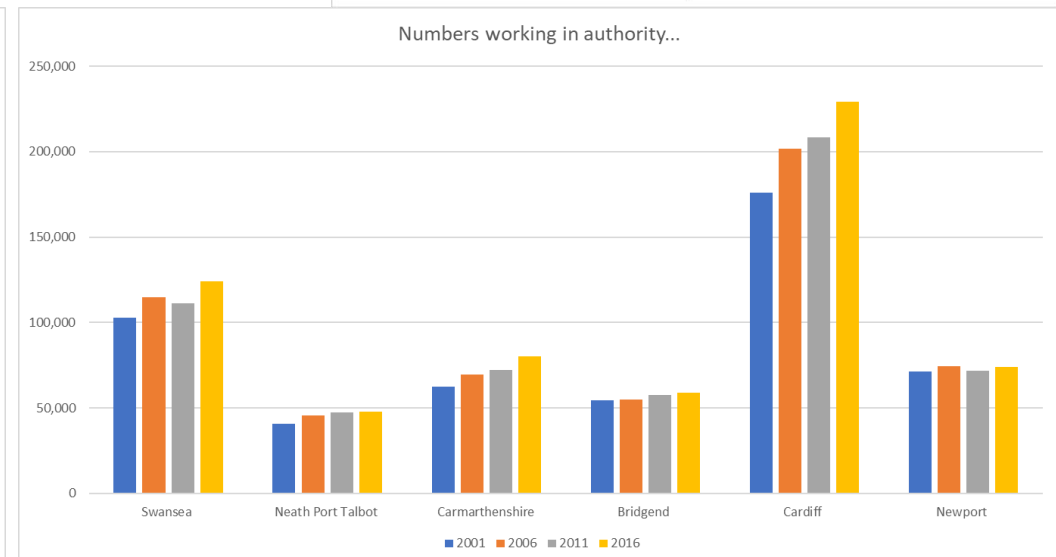
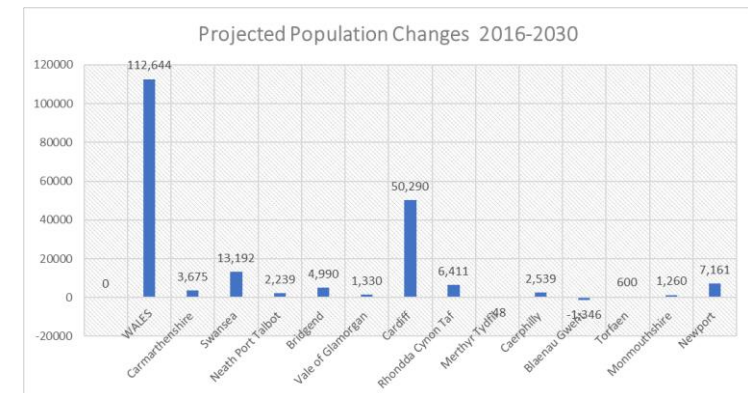
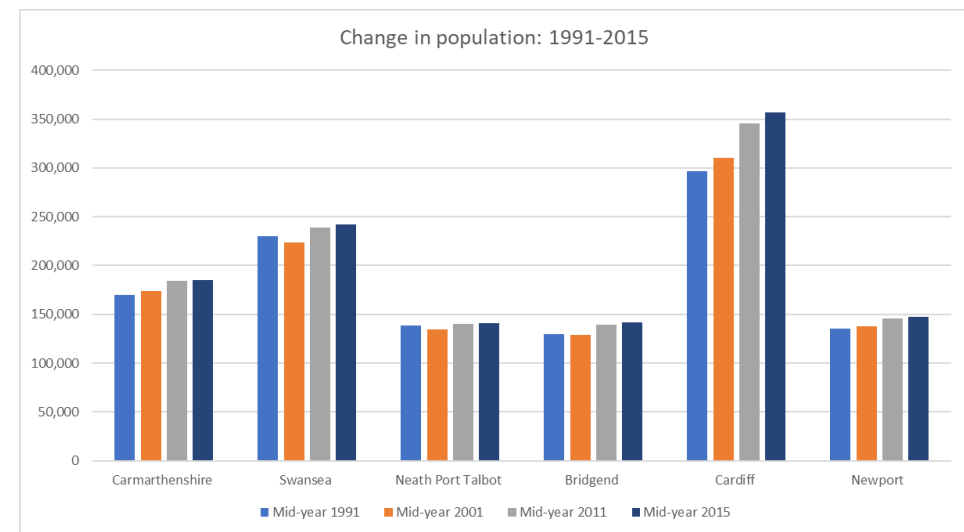
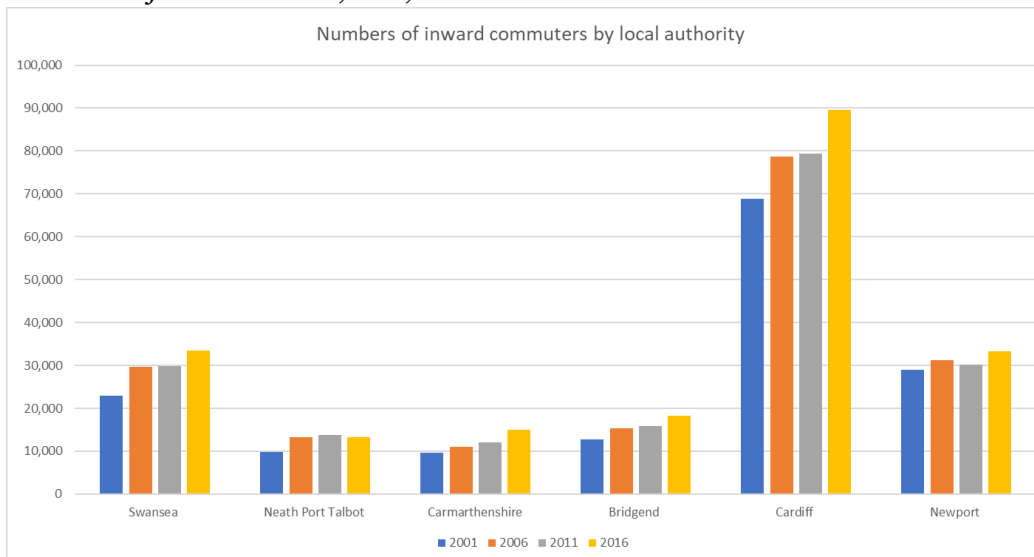


Swansea Bay Metro

Demographic Profile...

- > Wales' second city
- > Growing population – est. in 2015 >240k and expected to reach 260k by 2030
- > Carmarthen, Neath Port Talbot & Swansea LAs ~500k
- > Wider contiguous “urban area” has pop. ~300k (2011 ONS BUA figures) and density of 34 persons / Hectare (Vs 43 in Cardiff BUA and 40 in Gtr Manchester BUA)
- > Increase in Swansea's workplace employment & inward commuting
- > *cf Cardiff LA ~350k, BUA 450k, wider “region” (inc Newport) of 1.5M*

Data from StatsWales, ONS, NOMIS

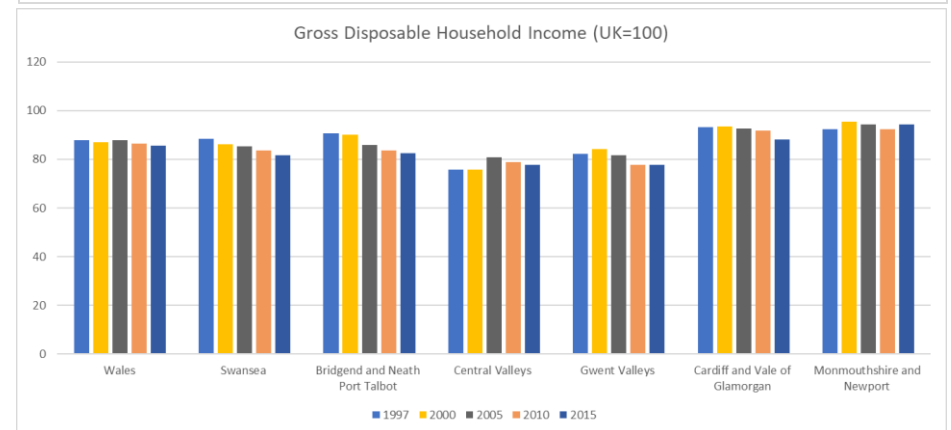
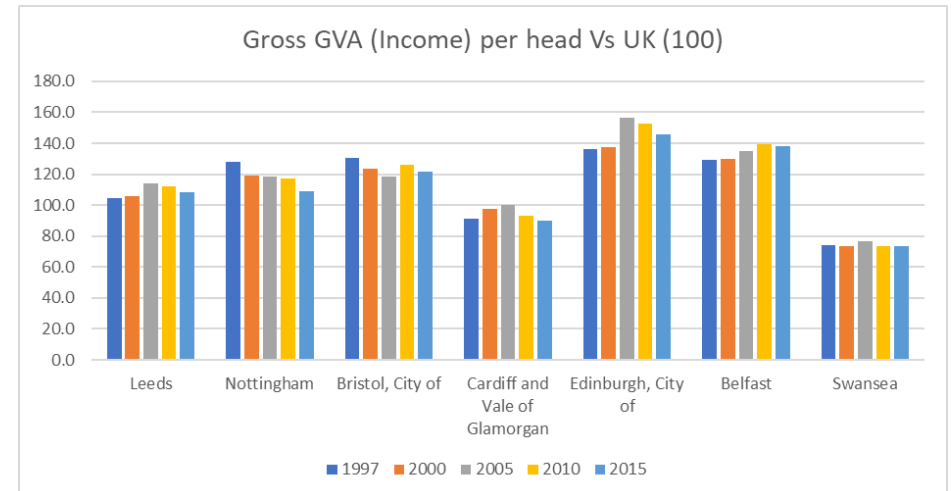
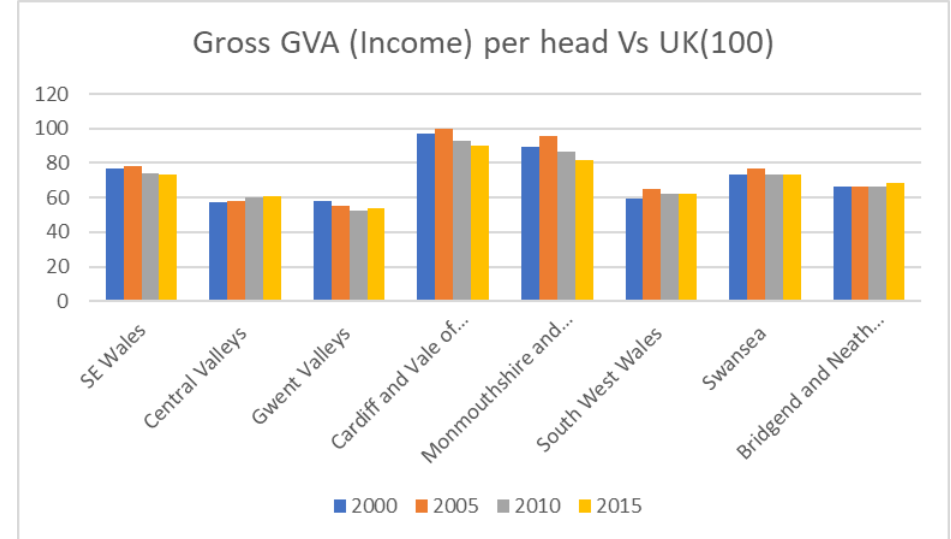
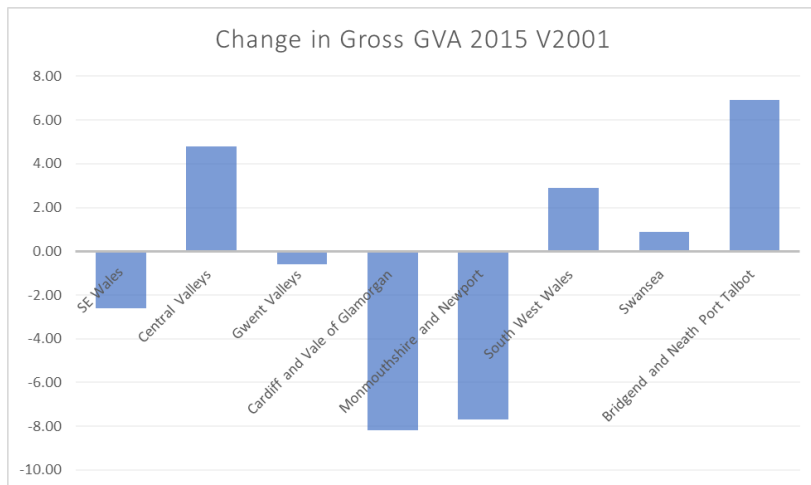


Swansea Bay Metro

Economic profile...

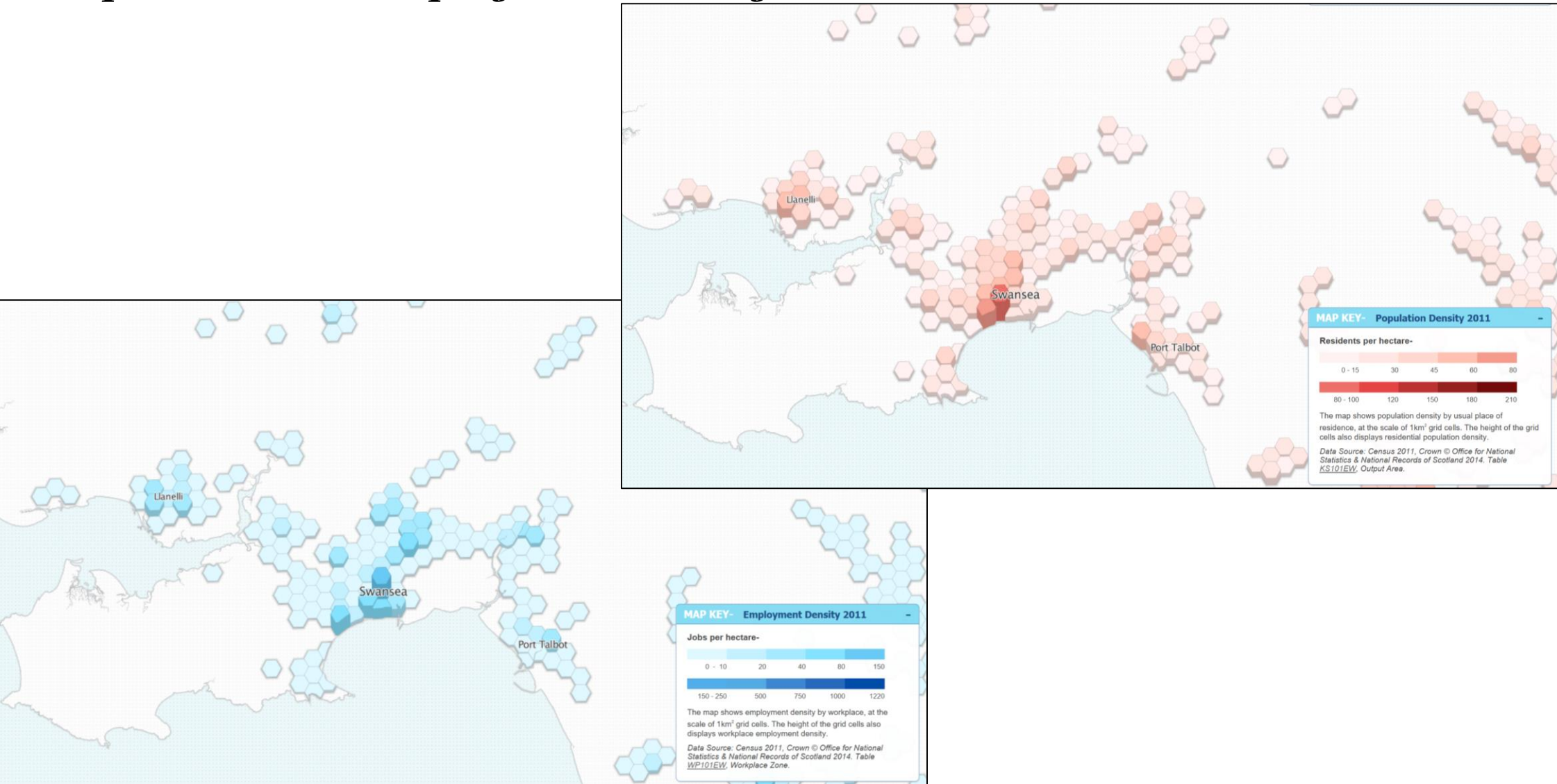
- > Small GVA/cap growth in Swansea since 2001 (not as much Neath Port Talbot)
- > Like much of Wales - below UK average and well below other major UK cities
- > Like Cardiff, Swansea supports more employment than 2001 but jobs created are “less valuable” than the UK average in GVA terms
- > Growth opportunities (inc. those set out in City Deal)

Data from StatsWales, ONS



Swansea Bay Metro

Population and Employment Density...

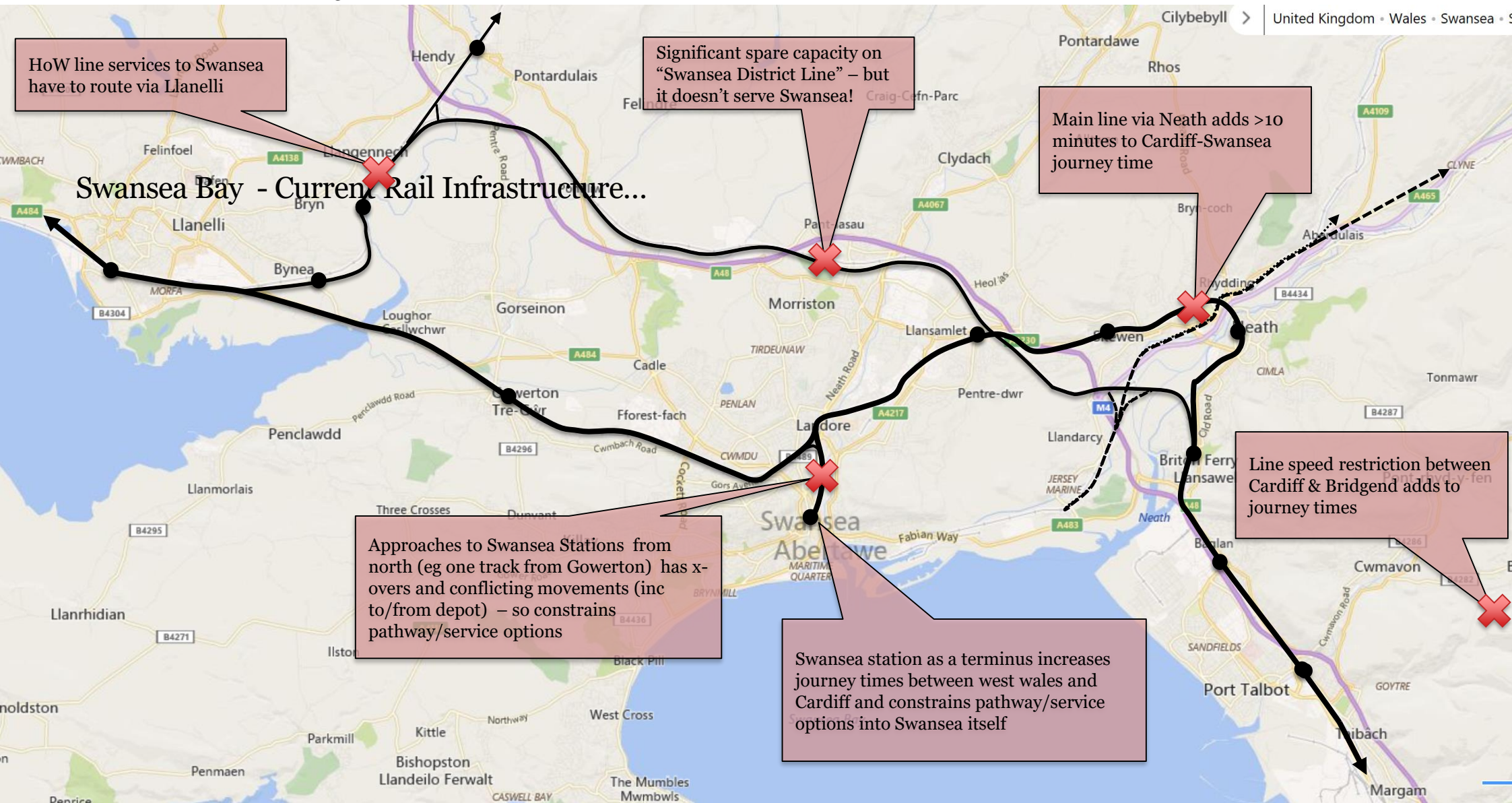


Credit: Duncan Smith, at the Centre for Advanced Spatial Analysis, University College London

Lumino City http://luminocity3d.org/indexRetina.html#population_density_2011/11/51.6998/-3.9579

Swansea Bay Metro

Current Rail Infrastructure & Constraints...

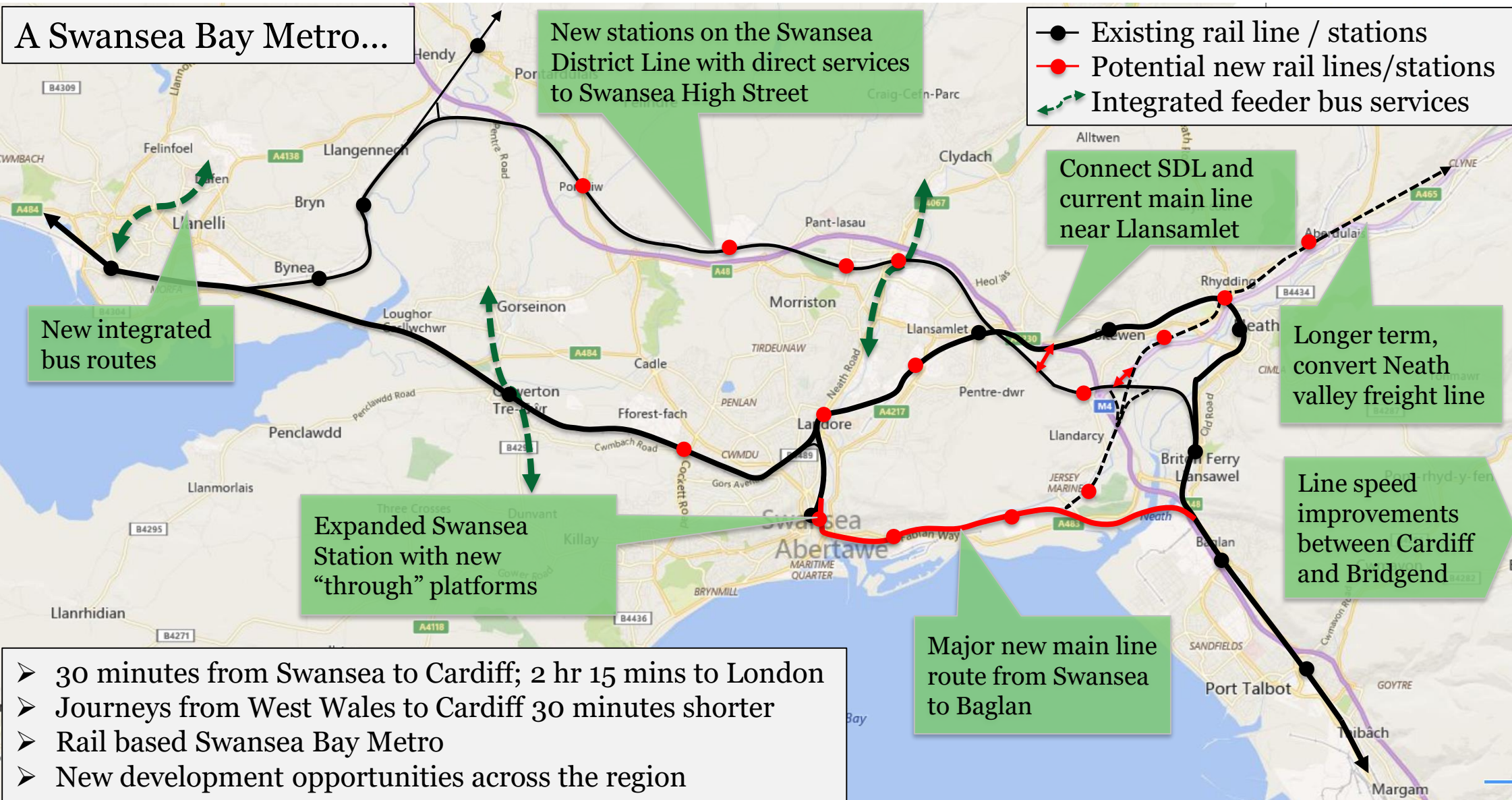


Major healthcare, educational and planned development sites...



Swansea Bay Metro

Potential Additional Infrastructure...

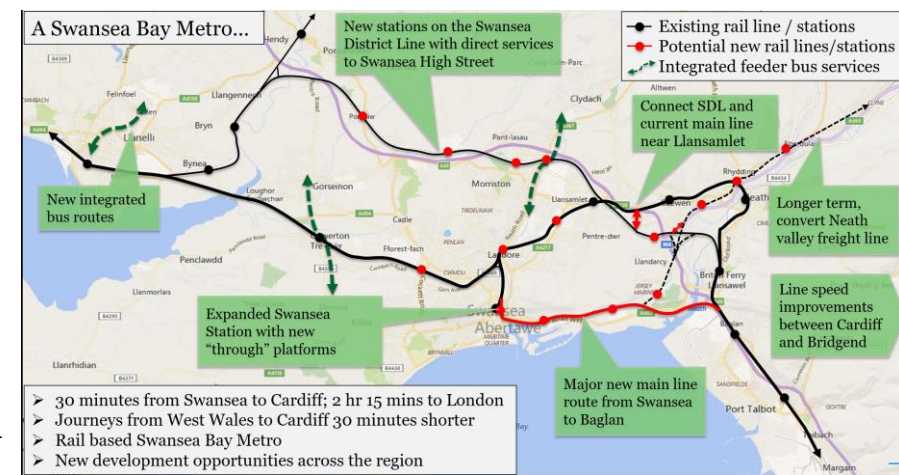


Swansea Bay Metro...

Key Features & Benefits

Key features of The Swansea Bay Metro

- > Thirty minutes from Swansea to Cardiff and 2hr 15min to London
- > Services from West Wales to Cardiff /London up to thirty minutes faster than today
- > Fast & frequent services from new stations across the region to Swansea City Centre, Llanelli, Neath & Port Talbot

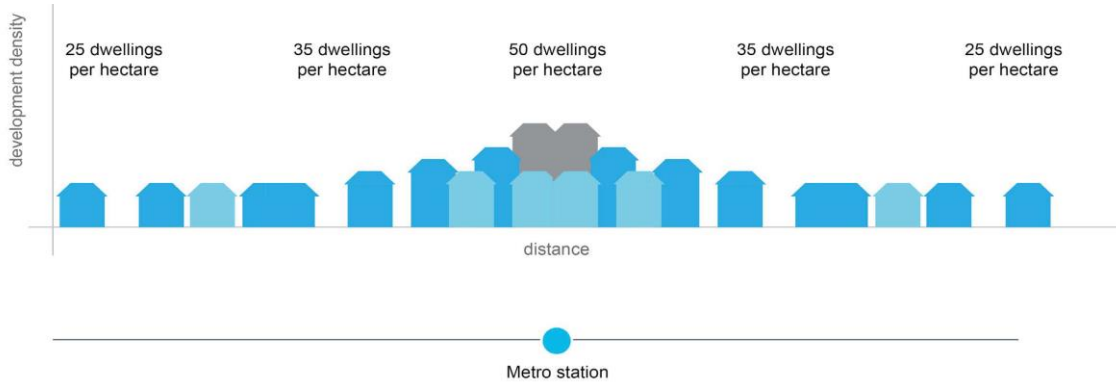


Primary benefits of The Swansea Bay Metro

- > Creates a cohesive & joined up Swansea Bay region of over 300,00 people
- > Provides employers and employees with more workplace choices
- > Easier access to public services from across the region
- > Enhances development potential from Swansea City Centre, along Fabian Way through SA1 and the Bay Campus all the way to Baglan
- > Enables local economic development and regeneration across the region and especially at its key centres Neath, Llanelli, Port Talbot and Swansea City Centre
- > Opportunities for application of "transit oriented development" (TOD) across the region
- > Increased public transport use, lower carbon emissions and improved air quality

Swansea Bay Metro...

Better planning, design and integrated regional land use planning



Increase development density around stations/corridors (TOD)

Placemaking/ masterplanning to ensure stations integrate with their communities; Exploit footfall and commercial opportunities



High quality simple design guidelines for Metro stations

Swansea Bay Metro... Transit Oriented Development

Principles and Benefits...

Many examples of how these are defined

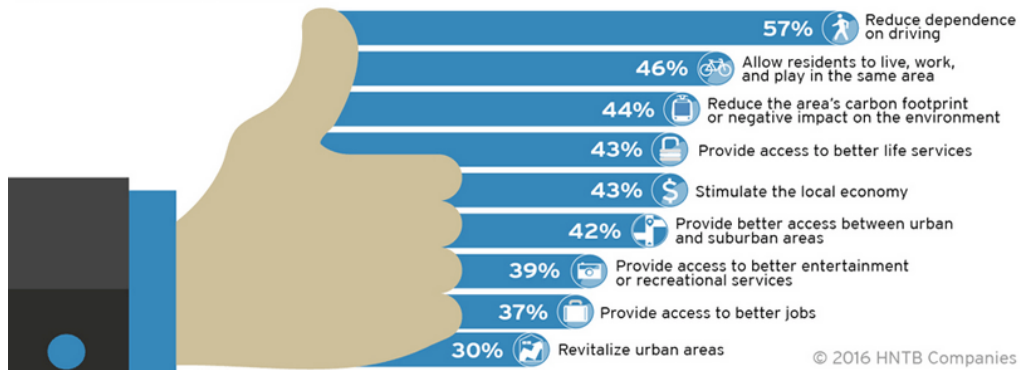


TOD Principles



BENEFITS OF TRANSIT ORIENTED DEVELOPMENT

Americans believe transit oriented development provides an array of benefits ranging from lifestyle to environmental to economic.



TOD Can Offer a Wide Range of Benefits Beyond Transit Ridership

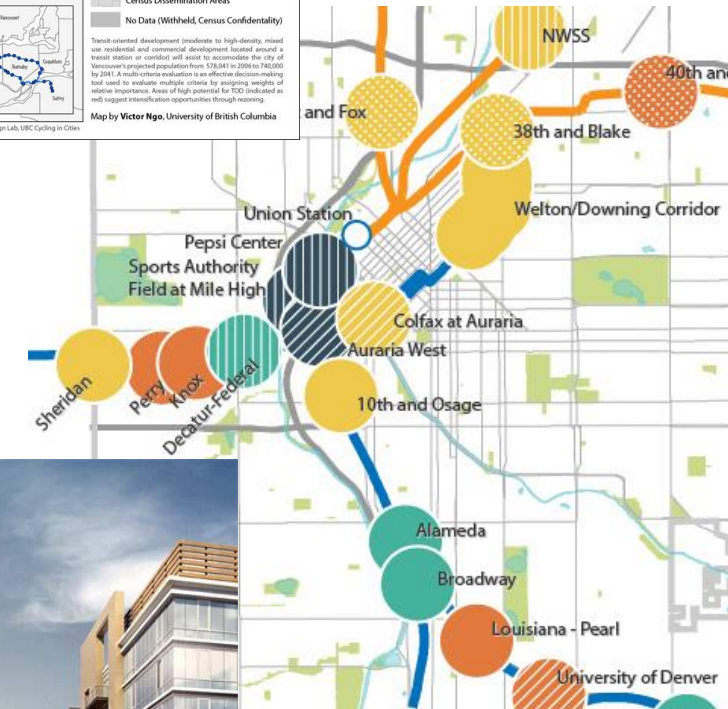
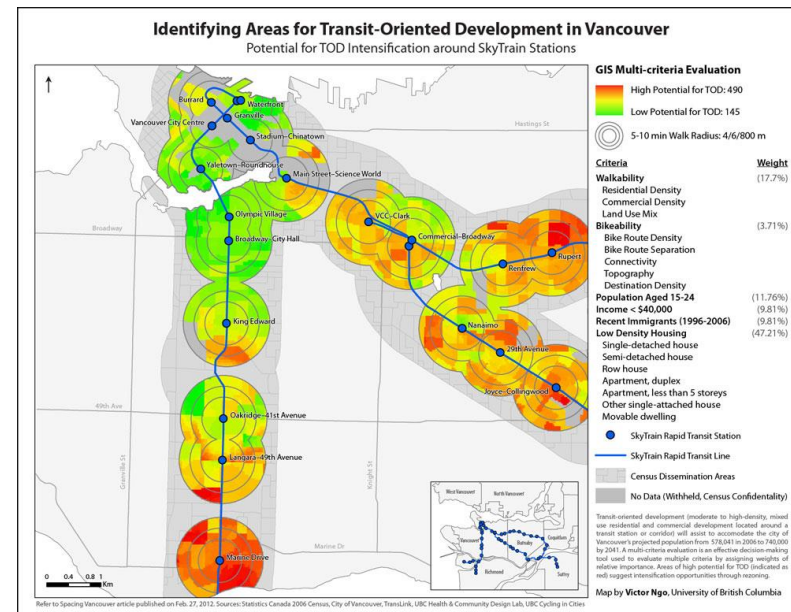
Economic development	Fiscal benefits	Household benefits	Environmental benefits
• Increases productivity and saves time • Encourages concentration of business activity • Increases economic competitiveness and promotes a green economy • Increases property values and development potential	• Savings on cost to build and maintain highways and roads • Generates stronger tax revenues	• Savings from reduced cost of driving • Improved access to jobs, schools and other destinations • Promotes health	• Reduces greenhouse gas emissions • Preserves agricultural land and assists with food security • Promotes energy independence

Swansea Bay Metro...

Transit Oriented Development

Plenty of examples world wide...

- > Barcelona
- > Vancouver
- > Denver... beginning to happen
(eg Bellevue in S Denver)

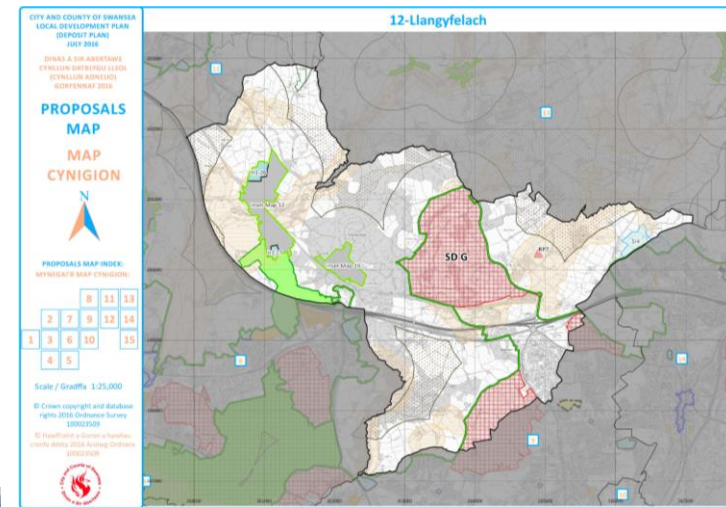


Swansea Bay Metro...

Development & Regeneration Opportunities

Better connectivity enhances development potential across the region, for example:

- > Parc Tawe & Swansea Station
- > SA1, Fabian Way, Bay Campus
- > Felindre
- > Neath Valley

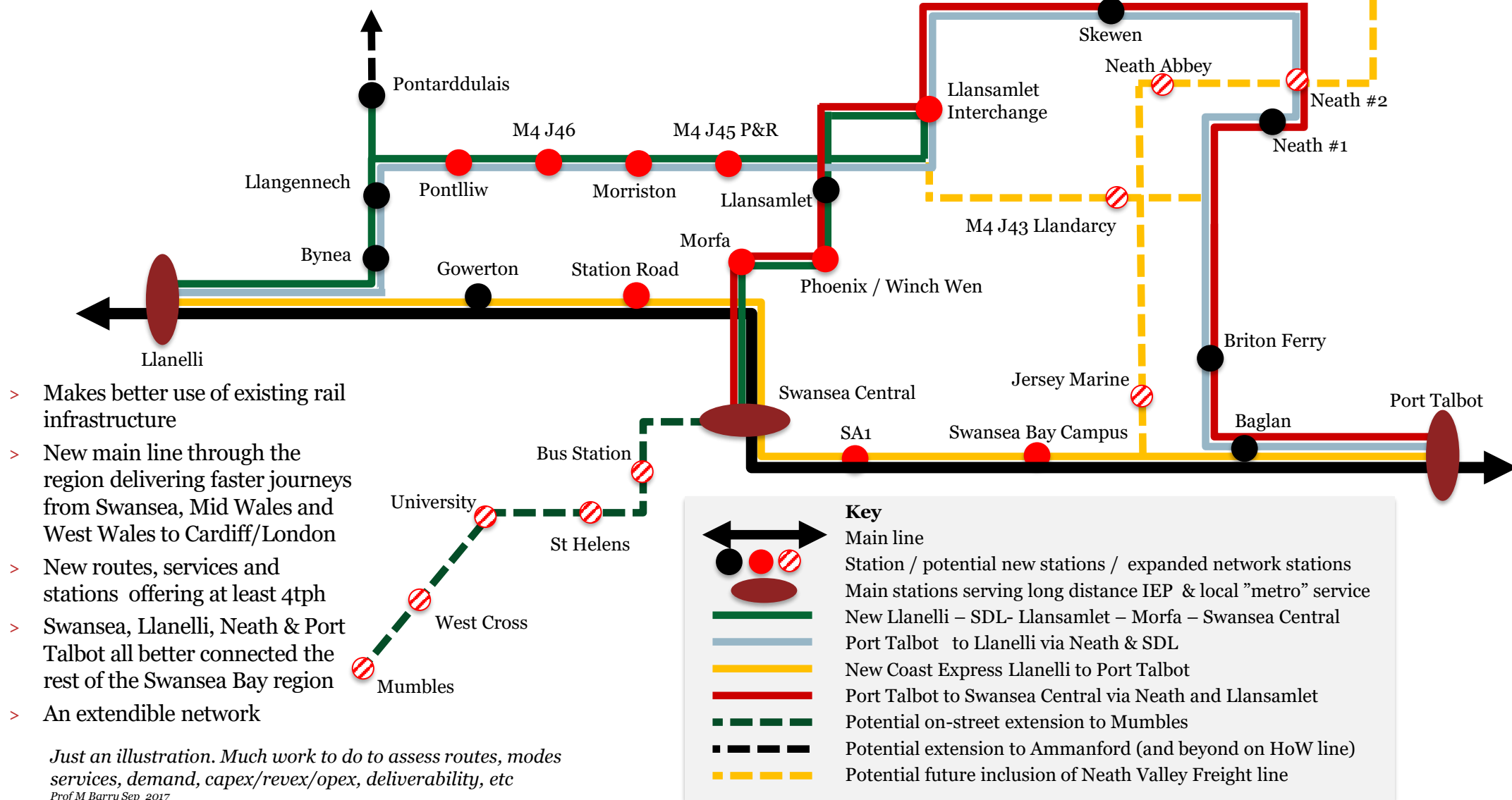


Transit
Oriented
Development (TOD)

Swansea Bay Metro...

Vision

A high quality rapid transit network with fast and frequent services, providing people & employers with more workplace choices, connecting major developments & public services and enabling place based regeneration to help grow the economy of the entire Swansea Bay Region



Swansea Bay Metro...

Suggested next steps

To scope and better quantify the opportunities, costs, risks, benefits, etc. we suggest a high level opportunity analysis / feasibility study to:

- > Explore how faster journey times between Cardiff and Swansea can be delivered – inc. new infrastructure
- > How the existing rail infrastructure in the Swansea Bay area could be better utilised and extended to deliver a more effective rapid transit system for Swansea Bay – A Swansea Bay Metro
- > Develop proposals within context of socio economic topology of Swansea Bay region – esp new and potential developments, existing transport constraints and demographic profile and distribution

In doing so:

- > Develop and appraise a range of potential interventions and assess costs, benefits & deliverability
- > Set out recommendations and assess at a high level the economic impact of an overall programme
- > Assess alternative and emerging rail technologies (LR, Tram-train, moving block signalling, traction power, etc)
- > Assess the most appropriate/deliverable modes for key rail and other corridors
- > Undertake a high level demand analysis (some trip rate benchmarking vs other city regions)
- > Prepare an initial assessment of the broader economic impact

All to be prepared and delivered in a format that includes an Outline Strategic Case using Weltag guidelines

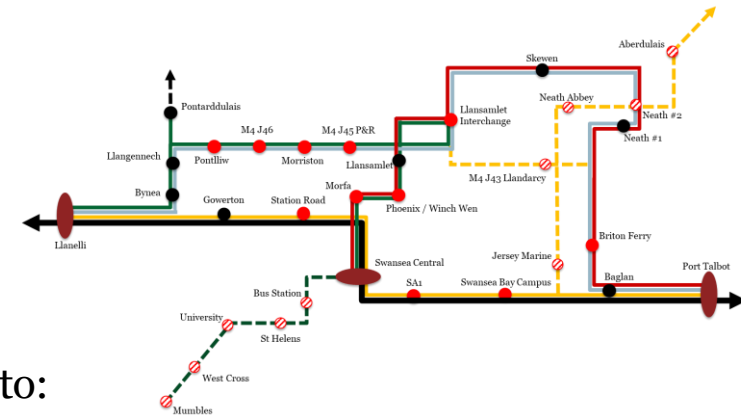


Illustration of a potential Swansea Bay Metro (Mark Barry, Aug 2017)



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