

Target and results methodology

Gross Value Added (GVA) target methodology

The LEP Strategy (2012) targeted GVA growth above and beyond the projected growth rate, through targeted economic intervention.

“By 2020 we will have exceeded the expected growth, in terms of GVA of the overall Cornwall and Isles of Scilly economy by an additional £338 million; per person employed this will be an additional £1,450 per annum.”

Calculations

The GVA data is derived from Cambridge Econometrics. The LEP target is based on a 3% growth rate starting in 2013. By 2020 the difference between the CE projection and the LEP target would be £338 million an increase of 4.5%.

Table 1: GVA

Year	CE projection	LEP target	Difference	£ %
2007	6599	6599	0	0.0
2008	6584	6584	0	0.0
2009	5891	5891	0	0.0
2010	6075	6075	0	0.0
2011	6146	6146	0	0.0
2012	6152	6152	0	0.0
2013	6268	6336	68	1.1
2014	6406	6526	120	1.9
2015	6560	6722	162	2.5
2016	6700	6924	224	3.3
2017	6868	7132	264	3.8
2018	7059	7345	287	4.1
2019	7249	7566	316	4.4
2020	7455	7793	338	4.5

Source: www.cornwallandislesofscillylep.com/assets/file/GVA%20calc%20June%20.pdf

Methodology for EU SIF output targets: baseline and value for money

EU SIF outputs were calculated utilising a range of methodologies. The approach taken followed these steps:

Step One: baseline data collation for each of the nationally identified output targets (for example:)¹

1. Business base:
 - a. Registered businesses - in 2012 there were 21,105 registered enterprises in C&IoS
 - b. Estimated total number: c65,000 businesses (South West Regional Accounts) in C&IoS. Figure incorporates all registered enterprises and also self employed who fall beneath the VAT registration level
2. Workplace employment – 192,100 employees (workplace employment figure)
3. Business investment in R&D – 0.19% of GDP
4. Number of unemployed people: 13,700: a rate of 5.7%, below the UK rate of 8.1%
5. Inactive population: 27.2% of people aged 16-64 are economically inactive (89,800 people). This is higher than the UK figure of 23%.

Step Two: Partner input regarding business absorption capacity

- From an informed (partner and delivery agency) viewpoint, estimation of the potential future absorption capacity of investment (e.g. 21,105 registered businesses, Programme can support 10% of these)
- Discussion of business numbers in identified Smart Specialisation areas

Step Three: Review of Convergence Programme achieved figures²

- Review of 'conversion rates' e.g. business assists to jobs for Convergence Programme
- For 'new' outputs: discussion of available baseline data and knowledge of C&IoS context

Step Four: Review of Convergence delivery costs per output (Unit Costs)³

- Utilising HM Government information and C&IoS Convergence Programme information

Step Five: Review of nature of proposed investment activity

- For example capital projects, revenue projects
- Level of risk

Step Six: Determination of achievable Output figures utilising all available information from this process

Methodology for traffic modelling, economic appraisal and value for money assessment

This technical note details the methodology used for the traffic modelling, economic appraisal (including GVA impact) and value for money assessments of the schemes that have been included as part of the Cornwall and Isles of Scilly Strategic Economic Plan (SEP).

The methodology used has been based on WebTAG guidance for traffic modelling and economic appraisal (detailed at <https://www.gov.uk/transport-analysis-guidance-webtag>) and current DfT guidance on value-for-money (VfM) assessment⁴.

¹ National data sources: ONS, Annual Population Survey, ASHE, BRES, Census, Eurostat

² C&IoS Convergence programme DCLG

³ Regeneris Consulting (2013), England ERDF Programme 2014-20: Output Unit Costs and Definitions and delivery Agency information specific to C&IoS

⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267296/vfm-advice-local-decision-makers.pdf

The methodology builds on existing work that has been carried out for Cornwall Council over the period from 2010 to 2014. This work includes building and calibrating traffic models (in line with WebTAG) for 11 key towns in Cornwall, in order to provide evidence for the emerging Local Plan.

TRAFFIC MODELLING

The traffic modelling approach has used a methodology consistent with the DfT WebTAG guidance for modelling and scheme appraisal. The modelling work used existing traffic models as the basis for the assessments. The models have been developed by Parsons Brinckerhoff for Cornwall Council, and have been calibrated and validated to DfT standards detailed in WebTAG.

Table 1 shows a list of the models used for the scheme assessments of all the SEP schemes.

SEP Scheme	Model Used for Assessment	Modelling Software	Model Base Year	Modelled Time Periods	Model Developed For
Bodmin: The Ultimate Cycling Town	Bodmin Transport Model	VISUM	2009	AM, IP, PM	Local Plan
Redruth Gateway	CPR Traffic Model	SATURN		AM, IP, PM	Local Plan
A39 Falmouth Gateway	Falmouth Traffic Model	SATURN		AM, PM	Local Plan
Cornwall Gateway: A38 Carkeel	Saltash Traffic Model	SATURN		AM, PM	Local Plan
Truro A390 Corridor	Saltash Traffic Model	SATURN		AM, IP, PM	Local Plan and Assessment of Truro Major Scheme
Great Western Mainline Signalling	Cornwall Countywide Model	SATURN	2008	AM, PM	Core Strategy
Traincare Centre, Penzance	Not assessed				
West Cornwall Transport Interchange	Cornwall Countywide Model	SATURN	2008	AM, PM	Core Strategy
Cornwall Travel App	Cornwall Countywide Model	SATURN	2008	AM, PM	Core Strategy

Many of the models were developed for use in assessing the impact of developments allocations and mitigation schemes to provide evidence for the emerging Local Plan. These models were all constructed in the period from 2011 – 2013, and are referred to in this note as the *Town Frameworks models*. The models were used to develop a transport strategy for each of the towns, which would allow the development allocated in the Local Plan to be accommodated. The strategies include a range of highway interventions, public transport and sustainable measures.

The Cornwall Countywide traffic model has been used to assess some of the strategic schemes. This model was developed by Mott MacDonald in 2006 and updated by Parsons Brinckerhoff in 2010. This model is referred to as the *Core Strategy model*.

All the models detailed above are highways only models, but have been used to assess all SEP schemes, including the public transport and walking and cycling schemes. The methodology used to do this is detailed in Section 2.3 of this note.

Base Model Development

[*Town Frameworks Models*](#)

The Town Frameworks traffic models were constructed in SATURN using guidance detailed in WebTAG and DMRB. The models were accurately calibrated and validated using DMRB (now detailed in WebTAG) procedures. This process shows that the models meet DMRB calibration criteria, demonstrating that the models are robust and fit-for-purpose for use in forecasting future traffic flows. The models are fully compliant with DMRB convergence criteria showing the models are stable and robust.

A Local Model Validation Report (LMVR) was developed for each of the Town Frameworks models. These can be provided on request.

[Bodmin VISUM Model](#)

The Bodmin Transport Model is an existing VISUM model that is held by Cornwall Council; the model was developed by WSP to assess the Bodmin Masterplan. This model was reviewed for suitability for use as part of Local Plan work; this review is documented in a technical note '*Base Model Review*' which summarises observations as well as proposed improvements to the existing model to make it fit for purpose for the emerging Local Plan. Following the update, the model calibration and validation processes is detailed in the '*Bodmin Highway Model – Local Model Validation Report*' produced in September 2009.

[Cornwall Countywide Model](#)

The Cornwall Countywide SATURN model covers the whole of Cornwall with a number of key towns modelled in detail. This model was developed by Mott MacDonald in 2006, by combining a number of individual models for the Cornish towns. The model covers the major roads across the whole of Cornwall. Areas outside of Cornwall are represented by a number of large zones and a skeletal road network.

The 2006 model was updated by Parsons Brinckerhoff in 2010 and recalibrated to a base year of 2008. The recalibration process is detailed in the *Core Strategy Local Model Validation Report (March 2011)*. This can be provided on request.

Demand Forecasting

Demand forecasts for all the models, were produced for 2030 to incorporate forecast traffic growth from committed developments, future developments associated with the Local Plan and background traffic growth from TEMPRO associated with increasing car ownership, trip making and long-term growth in the economy. Development growth was incorporated using trip rates to calculate trip generation (by development type), and Census data to inform trip distribution. These demand forecasts produced future year (2030) trip matrices for use in the transport models.

For each model, a Technical Note was produced detailing the forecasting methodology, the development allocations and assessment of mitigation schemes; these notes can be provided on request.

[Modelling Public Transport and Sustainable Transport Schemes](#)

Where included with the town package schemes, future year demand matrices were also produced incorporating the proposed sustainable transport and public transport measures within the towns. This process was carried out for each of the Town Frameworks models.

This approach used guidance detailed in WebTAG Unit A5.4⁵ to reduce future vehicle demand due to vehicle trips transferring to sustainable modes and ensures that future year demand is not overestimated. In addition, future year traffic growth forecasts were compared to growth predictions in TEMPRO to ensure that future growth was not overestimated.

The detailed methodology used during the modelling of sustainable measures is documented in the '*Cornwall Towns Models – Application of Mode Shift*' Technical Note produced by Parsons Brinckerhoff in May 2012; this note is included as Appendix A.

⁵ www.gov.uk/government/uploads/system/uploads/attachment_data/file/286935/webtag-tag-unit-a5-4-marginal-external-congestion-costs.pdf

Modelling of Strategic Public Transport Schemes

To model the impact of the strategic public transport schemes, the Countywide SATURN model was used. Again, the approach (using WebTAG Unit A5.4) was to reduce traffic demand to reflect the level of mode switch that would be achieved from the public transport measures.

The modelling approach is documented in more detail in the 'Core Strategy Modelling Scheme Testing Note' produced by Parsons Brinckerhoff in June 2012.

Economic Appraisal

The economic appraisal of each scheme has been carried out using TUBA, using outputs from the transport models. In most cases, this appraisal only used the neutral month AM and PM peak hour matrices and does not include interpeak, off-peak or seasonal time periods; also, no accident benefits have been included. The appraisal is therefore considered to be a conservative estimate of scheme benefits.

As the transport models generally only include future year traffic forecasts for 2030, the TUBA modelling used the base year models as the opening year, and the 2030 models as the future year. For the assessment of the public transport and sustainable schemes, the reduction in traffic demand as a result of the schemes was only included in 2030 (and not in the base year models).

Annualisation factors of 253 were used for both the AM and PM peak periods, to represent the 253 typical weekdays per year.

No benefits have been calculated for accident savings.

Costs

The scheme cost estimates detailed in the *Scheme Summary Reports, Section 3* were used as the cost input. These costs include construction, land, design and supervision costs, and also include risk and optimism bias. Risk costs have been calculated from the Quantified Risk Assessment (QRA) of each scheme. Optimism bias has been included at an appropriate level for the scheme of scheme development, as detailed in WebTAG Unit A1.2⁶.

1.1 Benefit to Cost Ratio

The above approach produces a benefit-to-cost ratio (BCR) for each scheme. This BCR has been taken forward to the value for money assessments.

GVA IMPACT ASSESSMENT

In addition to the BCRs, an assessment has been carried for each scheme to estimate the GVA impact. This section details the methodology used in this assessment.

Town Frameworks Models

The modelling work carried out as part of the Town Frameworks project was used to develop transport strategies for each town for 2030. These strategies consist of a package of highway interventions, public transport and sustainable measures that would mitigate the impact from the development allocations for the town, and allow this development (to 2030) to come forward.

The development allocations for each town include allocations for residential, employment and retail development. Employment and retail allocations were converted to jobs using information detailed in the Homes and Communities Agency *Employment Densities Guide*⁷, Section 3.

The modelling work undertaken to develop the transport strategies demonstrates that the development can be accommodated if the package of measures in the transport strategy is provided. The assumption in the GVA

⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/275128/webtag-tag-unit-a1-2-scheme-costs.pdf

⁷ <https://www.homesandcommunities.co.uk/download-doc/6155/10397>

calculations is therefore that the full strategy measures are required for the full development allocations to be realised.

The assessment methodology used the process detailed below to portion out development allocations to particular schemes within the strategy, based on where developments had the most impact on the transport network. This was then used to attribute a level of housing and jobs to each individual scheme within the strategy. The methodology to achieve this is detailed below:

- 1) Where development planning consent had already been gained, the conditions of these consents were examined to determine whether particular schemes must be provided before development could go ahead. Where the development was conditional on mitigation schemes that formed part of the town transport strategy, the development was attributed to this scheme, as the development cannot occur until the scheme has been provided.
- 2) For highways schemes, the process portions out the development allocations to particular schemes. This was carried out by using the transport model to determine the distribution of trips to and from the particular development sites, and how much of this traffic would travel through the individual schemes. The information was used to allocation a proportion (%) of the development to each individual scheme. For example, if a development generates 100 trips, of which 20 pass through a particular junction scheme then 20% of the development would be attributed. Using these percentages, an allocation of houses and jobs was attributed to each scheme; this approach allocates development dependency to schemes which are most impacted by the development.
- 3) For public transport and sustainable schemes, the traffic model was used to identify the volume of vehicle trips that would be removed from the network as a result of the measures. From this, the number of houses and employment space (using the housing to employment ratio of the original development allocation) that could be accommodated before the demand reached the initial level was calculated, using trips rates for development types. These housing and job levels were then attributed to the public transport or sustainable scheme.

The above approach results in an allocation of housing and jobs that would be unlocked by each scheme or measure within the transport package, depending on the impact of the development allocations on those schemes.

Strategic (Countywide) Schemes

For the strategic schemes which have been assessed using the Countywide model, the approach to determining the level of housing and employment that would be unlocked by the scheme is the same as that detailed in point 3 above.

Jobs Created by Housing Developments

The HCA *Employment Densities Guide* (referenced in Section 4.2.2 above) states in Paragraph 4.31 that *'It is clear that where there is more housing there will be greater demand for local goods and services, e.g. leisure facilities, schools, cinemas, cafes, bakeries etc. and in turn this will generate employment'*. The report states that this level of job increase as a result of additional housing would be 150 jobs per 1,000 increase in population (outside of London). Using an average household occupancy in Cornwall of 2.27 people per house⁸, this equates to 0.34 jobs per dwelling. This factor was therefore used to calculate the level of employment generated by the housing allocations unlocked by each scheme.

Construction Jobs

For the West Cornwall Transport Interchange (WCTI) scheme, a detailed *Economic Impact Study* was carried out by Ecorys. This study carried out a detailed assessment of the impact of the WCTI scheme on the Cornish economy. This study calculated the temporary employment that would be generated as result of the construction work required to build the schemes. This approach calculates the temporary employment using the relationship between turnover, employment and GVA to translate scheme costs (i.e. increased turnover) to employment. The temporary jobs are also converted to full time equivalents (FTEs) by '*applying the convention that 10 person years equate to one FTE job*'. This process (detailed in Section 12.3 of the report) therefore allows the employment generated during the construction phase to be calculated.

Total Employment

The above processes allow the total employment that would be unlocked by each scheme to be assessed. This consists of the employment (from employment sites), employment associated with increased housing and construction employment.

Calculation of GVA Impact

The Ecorys WCTI *Economic Impact Study* calculated the GVA impact of the scheme by converting the employment that would be unlocked by the scheme (in jobs) to GVA using a GVA per worker figure of £36,673 (for industrial developments), based on data from 2009.

This £36,673 figure has therefore been used to convert the total number of jobs unlocked by each scheme to GVA.

VALUE FOR MONEY ASSESSMENT

Following the economic appraisal, a value for money (VfM) assessment of each scheme has been carried out. This process has followed DfT guidance on VfM assessment as referenced in Paragraph 1.1.2 of this note.

The VfM assessments also consider the outputs from the full scheme appraisal, detailed in the scheme Appraisal Summary Table (AST). The ASTs are included within the *Scheme Summary Report, Annexes 2-?*

The ASTs have been produced for each scheme using the *Cornwall Assessment Toolkit*, which was the methodology used to prioritise schemes for the Local Transport Board (LTB). This process is detailed in the *Cornwall and Isles of Scilly LTB Assurance Framework*; Parts 1 and 2 of this have been approved by the DfT and Part 3 should be approved shortly.

The VfM assessment therefore considers the qualitative scheme impacts from the AST to judge whether the BCR calculated from the economic appraisal would be likely to increase or decrease as a result of the qualitative (non-monetised impacts). This is the approach detailed in the DfT guidance note '*Value for Money Assessment: Advice Note for Local Transport Decision Makers*' Table 5. No adjusted BCRs have been calculated as only travel time and vehicle operating cost benefits have been monetised.

VfM Categorisation

The VfM categorisation has used the categories detailed in the DfT guidance note (reference above); these are:

- Very High VfM if BCR > 4.0;
- High VfM if BCR between 2.0 and 4.0;
- Medium VfM if BCR between 1.5 and 2.0;
- Low VfM if BCR between 1.0 and 1.5;
- Poor VfM if BCR <1.0.

Headline results methodology and sources

Statement	Method/Source
Exceed predicted Gross Value Added (GVA) growth by an additional £338m (5% stretch) by 2020 (£190m by 2017)	www.cornwallandislesofscillylep.com/assets/file/GVA%20calc%20June%20.pdf
Investment in 18,313 additional new jobs by 2020 with 4,801 of these accelerated directly by LGF to 2017	<p>4,500 job outputs identified in EU SIF strategy (see Methodology for EU SIF output targets: baseline and value for money section), minus EU SIF Conditions for Growth job outputs (1,440) combined with LGF job outputs for Tranche 1 (11,643) and Tranche 2 (3,610) (see section LGF bid).</p> <p>Note 1.</p> <p><i>A number of job outputs identified in the LGF bid will also be attributable to EU SIF outputs, where both sources are contributing to projects. This element of 'double counting' is recognised here and will be removed on negotiation and agreement of appropriate split between outputs and sources.</i></p>
Delivery of 13,953 homes to 2020 with accelerated delivery of 6,394 of these by end of 2017 as a direct result of LGF.	See all data contained within Parsons Brinkerhoff economic appraisal and modelling data.
Higher level skills (Level 4+) attainment converges with UK average by 2020	Higher Level Skills (Level 4+) for 16-64 age to be raised from 30.6% (Cornwall) to 34.2% (UK) – Source Nomis APS 2012. LEP Priority 2 Evidence Base Page 31
GCSE attainment converges with national average by 2020	Key stage 4 qualifications to be raised from 54.8% (Cornwall) to 58.6% (National All Schools) LEP Priority 2 Evidence Base Page 34
Exceed the national target of 15% renewable energy production	<p>http://www.cornwall.gov.uk/media/3624737/Green-Cornwall-Strategy-2011-2020.pdf</p> <p>http://www.cornwall.gov.uk/media/3624738/Green-Cornwall-impact-analysis.pdf Page 6</p>
Support 100 new businesses in future ready technologies	Identified in EU SIF strategy (smart specialisation)

Conditions for Growth	
Statement	Method/Source
Secure air connectivity to London Gatwick and secure international hub airport link by 2020.	See Conditions for Growth Section of SEP See Tranche 2 LGF bid Enterprise zone, space and aerospace cluster package
Unlock delivery of 5,115 additional new homes by 2020	See Tranche 1 and 2 LGF bid
Superfast roll-out to address remaining 5% of the properties through alternative technologies and support 4,275 businesses to exploit it for growth opportunities	Identified in EU SIF strategy
13.5% increase in rail passengers	See Tranche 1 LGF bid
10% increase in bus passengers	See Tranche 1 LGF bid
4275 additional enterprises accessing ICT products and services	Identified in EU SIF strategy
Support 1,280 enterprises	Identified in EU SIF strategy
Unlock 15,992 new jobs	See Tranche 1 and 2 LGF bid, absorbing the 1,440 jobs identified in the EU SIF outputs under Conditions for Growth
34,303 participants involved with skills training	Identified in EU SIF strategy
Growth for Business	
Statement	Method/Source
1920 existing enterprises will be supported	
336 new enterprises will be supported	Identified in EU SIF strategy
2160 jobs will be created	Identified in EU SIF strategy
346 companies will be cooperating with Research Institutions	Identified in EU SIF strategy
10 enterprises with new to market products	Identified in EU SIF strategy
230 enterprises with new to firm products	Identified in EU SIF strategy
18,902 participants involved with skills training	Identified in EU SIF strategy
Future Cornwall	
Statement	Method/Source
Create over 100 new businesses in the	Identified in EU SIF strategy

identified smart specialisation areas and within Green and Marine industries by 2020	
Create 700 new high paid jobs by 2020	Identified in EU SIF strategy
Support the increase in renewable energy production to meet and exceed the national 15% generation target by 2020	Identified in EU SIF strategy
Introduce 40 new to the market products, processes or services by 2020	Identified in EU SIF strategy
1,166 participants involved with skills training	Identified in EU SIF strategy

LGF workings (funding, jobs, homes)

1st Tranche

Project	LGF £m	New Jobs	New Homes
Great Western Mainline Signalling and Half Hour Service	8.900	75	63
West Cornwall Transport Interchange	4.530	210	
The Night Riviera Service	7.000	60	
Truro Western Corridor	8.217	3,800	2677
Bodmin Cycle Town	5.830	536	1,003
Cornwall Gateway: A38 Carkeel	3.546	1,298	534
Falmouth Gateway	0.869	224	289
Newquay Strategic Route	2.000	361	2791
Redruth Gateway	4.900	396	650
Cornwall Bus Network	8.000	909	280
Isles of Scilly Water and Sewerage package	11.719	50	50
1st Tranche Total	£65.511m	7919	8337

2nd Tranche

Project	LGF £m	New Jobs	New Homes
SFA Match	10		
Raising aspirations	4		
Flooding resilience and development programme	24.2	1010	1580
Enterprise zone, space and aerospace cluster	11.15	3200	
Marine and renewable energy Infrastructure packages	20.5	803	
2nd Tranche Total	£69.85m	5013	1580

Total

LGF £m	New Jobs	New Homes
£135.361m	12932	9917