

Weston Package Phase 1
Major Scheme Business Case

Appendix 3.7

NATA Worksheets (including TEE Tables) – Low Cost Option



West of England Partnership

Bath & North East
Somerset Council



North
Somerset
Council

South Gloucestershire
Council



South West RDA

Economy:Economic Efficiency of the Transport System(TEE)			WP1 LOW COST OPTION					
Consumers	ALL MODES	Road	Bus	Rail				
User benefits	TOTAL							
Travel Time	22079	19062	3028	-11				
Vehicle operating costs	-5884	-5884	0	0				
User charges	16	0	0	16				
During Construction & Maintenance	0	0	0	0				
NET CONSUMER BENEFITS	16211	13178	3028	5				
Business								
User benefits		Personal	Freight	Personal	Freight	Personal	Freight	
Travel Time	23466	11565	11634	424	0	-158	0	
Vehicle operating costs	-281	-15	-266	0	0	0	0	
User charges	3	0	0	0	0	3	0	
During Construction & Maintenance	0	0	0	0	0	0	0	
Subtotal	23188	11551	11368	424	0	-155	0	
Private Sector Provider Impacts								
Revenue	905	0	1737	-832				
Operating costs	-3955	0	-3955	0				
Investment costs	0	0	0	0				
Grant/subsidy	0	0	0	0				
Subtotal	-3050	0	-2218	-832				
Other business Impacts								
Developer contributions	-1371	-1371	0	0				
NET BUSINESS IMPACT	18767							
TOTAL								
Present Value of Transport Economic Efficiency Benefits (PVB)	34978							
Note: Benefits appear as positive numbers, while costs appear as negative numbers.								
Note: All entries are present values discounted to 2002, in 2002 prices								
Public Accounts								
Local Government Funding	ALL MODES	Road	Bus	Rail				
Revenue	0	0	0	0				
Operating costs	2432	2432	0	0				
Investment costs	3112	3112	0	0				
Developer Contributions	-1371	-1371	0	0				
Grant/Subsidy Payments	0	0	0	0				
NET IMPACT	4172	4172	0	0				
Central Government Funding								
Revenue	0	0	0	0				
Operating costs	0	0	0	0				
Investment costs	13218	13218	0	0				
Developer Contributions	0	0	0	0				
Grant/Subsidy Payments	0	0	0	0				
Indirect Tax Revenues	-3019	-3131	251	-140				
NET IMPACT	10199	10087	251	-140				
TOTAL								
TOTAL Present Value of Costs (PVC)	14371							
Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.								
Note: All entries are present values discounted to 2002, in 2002 prices								
Analysis of Monetised Costs and Benefits								
Non-Exchequer Impacts								
Consumer User Benefits	16211							
Business User Benefits	23188							
Private Sector Provider Impacts	-3050							
Other Business Impacts	-1371							
Accident Benefits	3880							
Carbon Benefits	-476							
Net present Value of Benefits (PVB)	38382							
Local Government Funding	4172							
Central Government Funding	10199							
Net present Value Costs (PVC)	14371							
Overall Impact								
Net present Value (NPV)	24011							
Benefit to Cost Ratio (BCR)	2.67							
Appraisal Period	2015 to 2074							
Note: There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.								

No. of households experiencing 'Without Scheme' & 'With Scheme' noise levels (given in dB_{Leq}) in 15th Year After Opening

	With Scheme	<45	45-47.9	48-50.9	51-53.9	54-56.9	57-59.9	60-62.9	63-65.9	66-68.9	69-71.9	72-74.9	75-77.9	78-80.9	81+
Without Scheme															
<45		7372	54	0	0	0	0	0	0	0	0	0	0	0	0
45-47.9		271	3298	75	6	0	0	0	0	0	0	0	0	0	0
48-50.9		0	223	2597	124	1	0	0	0	0	0	0	0	0	0
51-53.9		0	0	168	2148	152	0	1	0	0	0	0	0	0	0
54-56.9		0	0	0	135	1384	70	0	0	0	0	0	0	0	0
57-59.9		0	0	0	2	125	1142	71	0	0	0	0	0	0	0
60-62.9		0	0	0	0	0	54	1303	42	0	0	0	0	0	0
63-65.9		0	0	0	0	0	0	153	1273	27	0	0	0	0	0
66-68.9		0	0	0	0	0	0	2	24	1004	5	0	0	0	0
69-71.9		0	0	0	0	0	2	6	1	15	272	2	0	0	0
72-74.9		0	0	0	0	0	0	0	0	0	2	24	1	0	0
75-77.9		0	0	0	0	0	0	0	0	0	0	0	3	0	0
78-80.9		0	0	0	0	0	0	0	0	0	0	0	0	0	0
81+		0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Net Present Value of Noise of Proposal
(60 Year Period)**

855,591

*positive value reflects a **net benefit** (i.e. noise reduction)

Estimated Population Annoyed (Without Scheme):

4730

Estimated Population Annoyed (With Scheme):

4678

**Net Noise Annoyance Change in 15th Year After
Opening (no. of people):**

-52

*positive value reflects an **increase** in people annoyed by noise

Traffic Data Sources: Atkins model

Population Data Sources: WebTAG default level of 2.36 per dwelling.

Assumptions:

- The terrain of the study area is flat.
- No benefit from any low noise surfaces.
- Average traffic speeds are based upon the speed limit for the road.
- Percentage HGV assumed 5.1 for most links.
- Only major links have been included within the noise model.

Assessment scores:

- Change in number of people annoyed: -52
- NPV: £855,591

Qualitative Comments:

The decrease in the number of people annoyed is mostly due to a redistribution of traffic over the network. An estimated 78 properties would be exposed to a level above 68 dBLAeq. Nighttime noise levels likely to remain unchanged.

Worksheet 1b: Local Air Quality - Plan Level Summary Table (Low Cost Scheme)

PM₁₀ SUMMARY OF ROUTES - LC Scheme	0-50m (i)	50-100m (ii)	100-500m (iii)	150-200m (iv)	0-200m (v=i+ii+iii+iv)
Total properties across all routes (min)	1396	2732	3793	4771	12692
Total Properties across all routes (some)	1396	2732	3793	4771	12692
Do-minimum PM ₁₀ assessment across all routes	22418	42974	59265	74390	199047
Do-something PM ₁₀ assessment across all routes	22380	42945	59251	74386	198961
NET TOTAL ASSESSMENT FOR PM₁₀, ALL ROUTES	-85*				
Number of properties with an improvement	2943				
Number of properties with no change	1479				
Number of properties with deterioration	4069				

* Based on un-rounded values

Reference Sources: DfT (2004) Transport Analysis Guidance (WebTAG) Unit 3.3.3 Local Air Quality Sub-objective; Design Manual for Roads and Bridges, Volume 11.3.1, Advice note HA 207/07 (2007); Air Quality Archive website for background concentrations:-www.airquality.co.uk

Quantitative measures: 4069 properties experiencing worse air quality
2943 experiencing improved air quality
1479 experience no change

Assessment scores: PM₁₀ score is -85, **overall improvement in air quality** with Low Cost Scheme

Qualitative comments: Improvements due to reduction in congestion.

NO₂ SUMMARY OF ROUTES - LC Scheme	0-50m (i)	50-100m (ii)	100-500m (iii)	150-200m (iv)	0-200m (v=i+ii+iii+iv)
Total properties across all routes (min)	1396	2732	3793	4771	12692
Total Properties across all routes (some)	1396	2732	3793	4771	12692
Do-minimum NO ₂ assessment across all routes	16835	30296	40878	50932	138941
Do-something NO ₂ assessment across all routes	16786	30266	40860	50918	138831
NET TOTAL ASSESSMENT FOR NO₂, ALL ROUTE	-111*				
Number of properties with an improvement	2946				
Number of properties with no change	199				
Number of properties with deterioration	5346				

* Based on unrounded values

Reference Sources: DfT (2004) Transport Analysis Guidance (WebTAG) Unit 3.3.3 Local Air Quality Sub-objective; Design Manual for Roads and Bridges, Volume 11.3.1, Advice note HA 207/07 (2007); Air Quality Archive website for background concentrations:-www.airquality.co.uk

Quantitative measures: 5346 properties experiencing worse air quality
2946 experiencing improved air quality
199 experience no change

Assessment scores: NO₂ score is -111, **overall improvement in air quality** with Low Cost Scheme

Qualitative comments: Improvements due to reduction in congestion.

Worksheet 1: Regional Air Quality - Strategy and Plan Level – Low Cost Option

Nitrogen Oxides

Option Name: <u> C (LC) </u> Present Year: <u>2007</u> Future Year: <u>2016</u>					
Tonnes per year					
	Do-Minimum		Do-Something	Do-Something compared with	
	Present	Future	Future	Present Do-Min	Future Do-Min
NO _x	A	B	C	D=C-A	E=C-B
NO _x	1509	795	775	-735	-19.7

Option Name: <u> C (LC) </u> Present Year: <u>2007</u> Future Year: <u>2031</u>					
Tonnes per year					
	Do-Minimum		Do-Something	Do-Something compared with	
	Present	Future	Future	Present Do-Min	Future Do-Min
NO _x	A	B	C	D=C-A	E=C-B
NO _x	1509	797	782	-727	-15.0

Qualitative Comments: There would be a **2.5 % reduction in NO_x emissions** with the Low Cost Option in 2016 and a **1.9 % reduction in NO_x emissions** with the Low Cost Option in 2031. (Calculated using unrounded figures)

Data Sources: DfT (2004) Transport Appraisal Guidance (WebTAG) Unit 3.3.4 Regional Air Quality Sub-objective.

Particulate Matter

Option Name: <u> C (LC) </u> Present Year: <u>2007</u> Future Year: <u>2016</u>					
Tonnes per year					
	Do-Minimum		Do-Something	Do-Something compared with	
	Present	Future	Future	Present Do-Min	Future Do-Min
PM ₁₀	A	B	C	D=C-A	E=C-B
PM ₁₀	43.2	19.6	19.2	-24.0	-0.4

Option Name: <u> C (LC) </u> Present Year: <u>2007</u> Future Year: <u>2031</u>					
Tonnes per year					
	Do-Minimum		Do-Something	Do-Something compared with	
	Present	Future	Future	Present Do-Min	Future Do-Min
PM ₁₀	A	B	C	D=C-A	E=C-B
PM ₁₀	43.2	20.3	20.0	23.2	-0.3

Qualitative Comments: There would be a **2.1 % reduction in PM₁₀ emissions** with the Low Cost Option in 2016 and a **1.5 % reduction in PM₁₀ emissions** with the Low Cost Option in 2031. (Calculated using unrounded figures)

Data Sources: DfT (2004) Transport Appraisal Guidance (WebTAG) Unit 3.3.4 Regional Air Quality Sub-objective.

Greenhouse Gases Worksheet 1 – Low Cost Option

APPRAISAL- Greenhouse Gases

Proposal Name: Option C (LC)

Current Year of Appraisal: 2007

Proposal Opening year: 2016

Project (Road/Rail or Road and Rail): Road

Overall Assessment Score:

Net Present Value of Carbon Emissions of Proposal (£): 2,309

(60 Year Period)

*positive value reflects a **net benefit** (i.e. carbon emissions reduction)

Quantitative Assessment:

Change in Carbon Emissions over 60 year appraisal period (tonnes): -73

(between with scheme and without scheme scenarios)

Change in Carbon Emissions in Opening year (tonnes): -2

(between with scheme and without scheme scenarios)

Qualitative Comments:

Reduction in emissions due to reduction in delays and congestion

Sensitivity

Analysis:

Upper bound Net Present Value of Carbon Emissions of Proposal (£): 3,853

Lower bound Net Present Value of Carbon Emissions of Proposal (£): 1,537

Data Sources:

DfT (October, 2006) Transport Analysis Guidance (WebTAG) Unit 3.3.5 The Greenhouse Gases Sub-objective

Highways Agency Design Manual for Roads and Bridges; Volume 11.3.1, Advice note HA 207/07 (2007), spreadsheet version 1.03c

Landscape and Townscape Worksheet (Plan Level) – Option C: Low Cost Option

Features	Description	Scale it matters	Rarity	Importance	Substitutability	Impact	Additional Mitigation
Pattern	A mixture of urban form types predominantly large scale retail characterised by large buildings and extensive car parking. Some residential and mixed use areas.	Local significance	Not rare as a typical urban form	Locally important	Loss of land to highway not substitutable	Changes in character are small scale. Slight adverse	Design should allow for integration with adjacent buildings and with improvements to frontages
Tranquillity	All locations are busy with moving vehicles and are relatively noisy	Local level	A sense of tranquillity is rare in this noisy and busy environment	Important at local level	A small reduction in tranquillity is not substitutable	Small loss of tranquillity due to increase in traffic. Slight adverse	No mitigation
Cultural	Located within the urban area or close to the urban fringe	Located near to retail and commercial property and some residential. Local significance	A common local landscape pattern	Important at local level	Small loss of landscape elements are substitutable	Limited adverse impact due to small scale nature of proposals. Neutral.	No mitigation

Features	Description	Scale it matters	Rarity	Importance	Substitutability	Impact	Additional Mitigation
Landcover	Urban area, predominantly retail and commercial with some residential, with highway land including verges and embankments. Some small areas of private land	Local scale	Locally common	Important at local level	Contained within existing highway land	Loss of existing boundary planting and other landscape elements. Slight adverse	Scope for enhancing frontages and higher quality public realm along with replacement planting.
Summary of character	Typical urban areas, mostly large scale retail and commercial in form, with large buildings and surrounding car parks.	Local changes to landscape and townscape	Locally common	Locally important	Typical highway and associated verges, footpaths and planting can be replaced	Small scale changes with neutral impact	Adequate highway and public realm design with planting to replace that lost

Reference Source(s): Guidance for Landscape and Visual Impact Assessment, DMRB Volume 11

Summary assessment score: Slight adverse in the short term. Neutral in the medium term, but with potential to bring benefits with good integration of new highway with existing building frontages.

Qualitative comments: Small scale improvements can be contained within existing highway. Higher quality public realm and replacement planting to provide possible enhancements and benefits. in the medium term

Worksheet for Environment: Heritage of Historic Resources - Plan Level
(Source: WebTAG Worksheet Heritage of Historic Resources, TAG Unit 3.3.9)

Option C: Low Cost Option

Part 1		Part 2			Part 3
Feature	Description	Scale it matters	Significance	Rarity	Impact
Form	Drove Roundabout – no known buried archaeological resource	Unknown	Unknown	Unknown	No direct impact on known archaeology and therefore <i>Neutral</i> . If unknown archaeology is present, it is thought highly likely this could be preserved by record through standard archaeological mitigation measures. The same is true for the remaining features
	Town Gateway – no known buried archaeological resource	Unknown	Unknown	Unknown	No direct impact on known archaeology and therefore <i>Neutral</i> .
	Elmham Way Bus Priority – no known buried archaeological resource.	Unknown	Unknown	Unknown	No direct impact on known archaeology and therefore <i>Neutral</i>
	Worle Station Improvements – no known buried archaeological resource.	Unknown	Unknown	Unknown	No direct impact on known archaeology and therefore <i>Neutral</i> . It is likely that unknown archaeology could be mitigated through
	Queen’s Way Bus Priority – no known buried archaeological resource	Unknown	Unknown	Unknown	No direct impact on known archaeology and therefore <i>Neutral</i>
	Junction 21, M5 – no known buried archaeological resource.	Unknown	Unknown	Unknown	No direct impact on known archaeology and therefore <i>Neutral</i>
Survival	For all sites – survival of unknown buried archaeology is not quantifiable, though possible in all of the	Potentially of local to national importance	Significance of unknown archaeology potentially negligible to national	Unknown, but may be rare on a local or national contest	Unknown

Part 1		Part 2			Part 3
Feature	Description	Scale it matters	Significance	Rarity	Impact
Condition	Condition of potential buried archaeology unknown	Unknown	Unknown	Unknown	Unknown
Complexity	Unknown	Unknown	Unknown	Unknown	Unknown
Context	Contexts are varied – some sites developed whilst at least one is a Greenfield site	Unknown	Unknown	Unknown	Unknown
Period	Unknown	Unknown	Unknown	Unknown	Unknown

Reference Source(s): Historic Environment Record and other data synthesised within an archaeological desk-based assessment used

Summary assessment score: Neutral - although this would be conditional on the implementation of programmes of archaeological investigation and follow-up mitigation where necessary

Qualitative comments: most of the elements of this option would not be likely to require archaeological mitigation. However, the Worle Station site may require a programme of archaeological investigation to determine the potential buried archaeological resource. This would inform a robust mitigation strategy.

Worksheet for Environment: Biodiversity – Plan Level

(Source: WebTAG Biodiversity Worksheet, TAG Unit 3.3.10)

Low Cost Scheme

Area	Description of feature / attribute	Scale (at which attribute matters)	Importance (of attribute)	Trend (in relation to target)	Biodiversity and earth heritage value	Magnitude of impact	Assessment Score
Severn Estuary Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Special Area of Conservation (SAC) North Somerset and Mendips (part of) SAC	Important for intertidal mudflats and sandflats, sandbanks, Sabellaria reefs, saltmarsh, shingle and coastal grazing marsh. It is also important as a wintering ground for a range of migratory wildfowl.	International	Very High importance at the international scale	Not known	Very High	Negligible No direct or indirect impacts predicted.	Neutral
Regional Wildlife Sites: Borrow Pits at Bristol Road Bridge; Borrow Pits at Banwell Road Bridge; Uphill Great Rhyne; Ellenborough Park; Apple Farm Meadow; River Banwell (part of); Borrow Pit at Moor Lane Bridge; Grumplepill Rhyne (part of)	Primarily standing water habitats with associated marginal habitats, with Apple Farm Meadow being unimproved grassland and the River Banwell being running water habitat.	Regional	High importance at the regional scale.	Not known	High	Negligible Indirect impacts from dust and potential pollution incidences will be mitigated for.	Neutral
Coastal and Floodplain Grazing Marsh	A small area of habitat that is unmanaged with extensive and expanding areas of scrub and tall herb communities.	UP to National UK Priority Habitat	Medium - Limited potential for substitution	Losses in the whole UK have been significant in the last 60 years. The habitat within the Option is currently degraded in character and existing trends indicate a further loss of its character in the short to medium term	Medium – but degraded due to lack of management	Minor negative Loss of habitat	Slight adverse
Species-rich neutral grassland	Road verge comprising species-rich areas, relatively small in extent. It is, however, species-rich and the habitat could be considered to fall within the lowland meadows UK BAP Priority Habitat. The desk study suggests the potential presence of some locally uncommon species of vascular plant including pyramidal orchid (<i>Anacamptis pyramidalis</i>) and fig-leaved goosefoot (<i>Chenopodium ficifolium</i>).	Local	Medium importance at the local scale	Lowland neutral grassland has suffered a sharp decline in extent over the last 50 years. An estimated 97% of unimproved neutral grasslands (including lowland meadows) had been lost by 1984 with further losses since then (UK BAP). Some loss at site due to succession.	Lower	Minor negative Minor loss of habitat	Slight Adverse
Species-poor semi-improved and improved grassland	Low biodiversity but valued due to the extent of the habitat and potential for species such as breeding birds.	Local	Low importance at the local scale	Grassland possibly declining at site due to minimal management	Lower	Intermediate negative Loss of habitat	Slight Adverse
Tall herb communities	Dominated by rosebay willowherb (<i>Chamerion angustifolium</i>), bristly ox-tongue (<i>Picris echioides</i>) and creeping thistle (<i>Cirsium arvense</i>).	Local	Low importance at the local scale	Expanding range at site	Lower	Minor negative Loss of habitat	Slight adverse
Linear Features (hedgerows, rhynes and ditches)	The hedgerows are species-poor, being dominated by hawthorn (<i>Crataegus monogyna</i>). Rhynes very limited in extent and generally heavily shaded.	Up to Regional North Somerset BAP Habitat	Medium importance and the regional scale. Typical hedgerow species for North Somerset include: hawthorn, blackthorn, willows, ash, hazel, elder, field maple and oak.	Declining through loss and lack of, or inappropriate management.	Medium	Minor negative Some loss of and disruption to hedgerow habitat likely.	Slight adverse
Scrub	Low diversity scrub, dominated by hawthorn and blackthorn (<i>Prunus spinosa</i>).	Local	Low importance at the local scale	Expanding range	Lower	Intermediate negative Loss of habitat	Slight adverse
Secondary Woodland and Plantation	Relatively recent in origin with species-poor ground flora.	Local – Woodland is a North Somerset BAP Habitat but recent woodland of low diversity	Medium importance at the local scale	Currently approximately 1890ha of lowland mixed deciduous woodland in North Somerset. Trend within the region unknown.	Lower	Minor Negative	Slight Adverse
Urban Habitats	A small area of derelict, hard standing.	Local - Urban habitats are a North	Very low importance at the local scale	None	Negligible	Minor negative Loss of habitat	Neutral

Area	Description of feature / attribute	Scale (at which attribute matters)	Importance (of attribute)	Trend (in relation to target)	Biodiversity and earth heritage value	Magnitude of impact	Assessment Score
		Somerset BAP Habitat, but area is minimal and hardstanding					
Reptiles	Records for reptile species and suitable habitat within the schemes in Option C.	National	High importance and rarity at the national scale. Reptiles receive a limited degree of protection in the UK under the Wildlife and Countryside Act 1981 (as amended).	All UK reptile species declining.	High	Minor negative Loss of habitat	Slight adverse
Breeding birds	Potential for Red and Amber list species (Gregory et al, 2002), such as house sparrow, song thrush, starling and linnet	National to Local	Up to High importance at the national scale. Good potential breeding and/or foraging habitat	Red list species are those that are Globally Threatened; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery. Amber list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.	High	Minor Negative Loss of nesting and foraging habitat	Slight Adverse
Barn owl	Previously recorded and the rough grassland and tall herb habitats provide potential foraging habitat.	National	High importance at the national scale. Protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).	Nationally the species is in decline	High	Minor negative Loss of potential foraging habitat	Slight adverse
Bats	Bat species have been recorded within the area, including pipistrelle (<i>Pipistrellus</i> sp.).	International	High importance at the international scale. Bats are protected under the Conservation Regulations (1994) as amended and Schedule 5 of Wildlife and Countryside Act.	Although it remains the most abundant and widespread bat species in the UK, the pipistrelle is thought to have undergone a significant decline in numbers this century.	Very High	Minor Negative Loss of foraging habitat	Slight Adverse
Badger	There are records of badger setts within the vicinity. Badgers may utilise some of the area for foraging	Local	Medium importance and rarity at the local scale. Badgers are protected under the Badgers Act 1992, which makes it an offence to kill or injure badgers, disturb badgers within their setts, or cause damage to a badger sett.	Although not rare in the UK, badgers receive a high level of legal protection due to concerns over their welfare and threats from persecution.	Lower	Minor negative Loss of foraging habitat	Slight adverse
Brown hare	Potential foraging opportunities.	National	High importance at the national scale. UK BAP Species Action Plan.	Formerly considered abundant, the brown hare appears to have undergone a substantial decline in numbers since the early 1960s, with population estimates now varying between 817,500 and 1,250,000.	High – however disturbance from recreational uses means the habitat suitability likely to be low	Minor negative Loss of potential habitat	Slight adverse
Hedgehog	Potential foraging opportunities	National	High importance at the national scale UK BAP priority list species	The species is in decline nationally	High	Minor negative Loss of potential foraging habitat	Slight adverse
Common Toad	Suitable terrestrial and aquatic habitats, within and adjacent to the site	National	High importance at the national scale UK BAP priority list species	Nationally the species is in decline	High - potential foraging habitat and potential breeding site nearby	Minor negative Loss of terrestrial habitat	Slight Adverse

Reference Source(s): 'Magic' website www.magic.gov.uk; UK Biodiversity Action Plan; Action for Nature: North Somerset Biodiversity Action Plan 2005; Bristol Regional Environmental Records Centre;

Summary assessment score: Slight Adverse

Qualitative comments: There will be a minor loss of habitats that is generally restricted to improved or amenity grassland, but includes some areas of rough grassland and potentially some species-rich grassland. Slight adverse impacts are recorded for most habitat types and species, but Neutral impacts are predicted on internationally, nationally and regionally designated sites.

Worksheet for Environment: Water Environment – Plan Level

(Source: WebTAG Biodiversity Worksheet, TAG Unit 3.3.11)

Low Cost Option

Description of study area / Summary of potential impacts	Feature	Attributes	Quality	Scale	Rarity	Substitutability	Importance	Magnitude	Significance
<p>Entire Scheme Potential Impact: pollutants in surface water drainage resulting in a reduction of quality of receiving watercourse. Increased risk of accidental</p>	River Banwell.	Fisheries / biodiversity. Water supply. Value to economy.	Low	River Banwell: Regional;	Low	Low	Low	Negligible	Insignificant
<p>Entire Scheme Potential Impact: pollutants in surface water drainage resulting in a reduction of quality of receiving watercourse.</p>	Tributaries and local drainage system.	Water abstraction. Drainage.	Low	Local drainage network: Local;	Low	Low	Low	Negligible	Insignificant
<p>Entire Scheme Potential Impact: Impermeable surfaces leading to increased surface water runoff.</p>	Floodplain	Storage & conveyance of flood flows. Biodiversity.	Low	Local	Low	Negligible	High	Negligible	Insignificant

<p>Entire Scheme Potential Impact: Loss of floodplain storage.</p> <p>Impedance of flood flows</p> <p>Increased risk of flooding to site.</p>	Floodplain	Storage & conveyance of flood flows. Biodiversity. Aesthetics.	Low	Local	Low	Moderate: It is assumed that the adverse impact of increased flood risk will be reduced / bettered by providing compensatory floodplain measures and	High	Minor	Low Significance
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Summary assessment score: Slight Adverse

Qualitative comments: Principal risks to the scheme relate to an increase in surface water runoff from the new hard standing areas. This will potentially increase flows within receiving watercourses. However with appropriate attenuation measures and a restricted discharge rate the scheme should have a negligible impact in terms of flood risk. Associated with runoff is an increase in contaminants entering the road drainage network which is anticipated to have a negligible impact upon the water quality of the receiving watercourse providing appropriate pollution control measures such as SuDS and petrol interceptors are incorporated into the highway drainage system. The magnitude of this impact and type of pollution control required will be dependent upon traffic flows, existing water quality and the Q95 (low flow) of the receiving watercourse. The transportation scheme is mostly located within the 1 in 100 year floodplain and so is not only at risk of flooding itself but will increase the risk of flooding to others without adequate mitigation measures. Overall the scheme will result in impacts of slight adverse significance due to the permanent alteration in the hydrological regime of the floodplain, fluvial system and associated ecology.

Worksheet 1 Environment: Physical Fitness – Low Cost Option

Factor	Better	Neutral	Worse
Pedestrian access	X		
Cycling access		X	

Reference Source(s): Scheme Drawings TN4_1, CTR/ABN/001, CTRABM/050/G2, CTRABN/30/002, 005, 006 and 008.

Summary assessment score: **Slight beneficial.**

Qualitative comments: It is assumed that no travel is over 30 minutes at each of the proposals within the Low Cost Option. Existing pedestrian access is relatively good and would be maintained or improved through the provision of signalised pedestrian crossings. The existing cycling provision is limited in places and would be improved through the provision of cycle lanes and cycle advance areas. Improved facilities would be used by children travelling to school and for commuting.

Worksheet 1 Environment: Journey Ambience – Low Cost Option

Factor	Sub-factor	Better	Neutral	Worse
Traveller Care	Cleanliness	X		
	Facilities	X		
	Information	X		
	Environment		X	
Travellers' Views		X		
Traveller Stress	Frustration	X		
	Fear of potential accidents	X		
	Route uncertainty	X		

The Reference Sources are the Weston Park Environmental Statement Persimmon Homes Ltd (May 2007), Scheme Drawings TN4_1, CTR/ABN/001, CTRABM/050/G2, CTRABN/30/002, 005, 006, 008 and 012.

Summary assessment score: **Moderate beneficial.**

Qualitative comments: Most of the schemes in the Low Cost Option are based on a similar alignment to that which currently exists. Junction improvements, signal improvements and directional signage would improve traffic flow and reduce frustration. Fear of potential accidents would be reduced through improved junctions and sightlines and provision of cycle lanes would reduce vehicle/cyclist interaction and reduce risk of associated accidents.

Assessment of Security Sub-objective

Low Cost Scheme

Table 1 (Element 1) Junction 21 Improvements

Factor	Better	Neutral	Worse
Surveillance		X	
Pedestrian/cycle route security		X	
Public transport waiting facilities		X	
Crossing facilities		X	

Existing footways and crossing facilities would be maintained under the proposed scheme.

Table 2 (Element 4a) Town Gateway

Factor	Better	Neutral	Worse
Surveillance		X	
Pedestrian/cycle route security	X		
Public transport waiting facilities		X	
Crossing facilities	X		

Footways would be provided on both the northern and southern sides of Marchfields Way and on the southern side of Winterstoke Road, and new crossing facilities on Marchfields Way and at the junction of Marchfields Way and Winterstoke Road towards the town centre. These crossing facilities will significantly improve the security for school pupils walking or cycling to Wyvern Community School.

Table 3 (Element 4b) Drove Roundabout

Factor	Better	Neutral	Worse
Surveillance		X	
Pedestrian/cycle route security		X	
Public transport waiting facilities		X	
Crossing facilities		X	

Existing signalised pedestrian and cycle crossing facilities would be revised at three of the four spurs off Drove roundabout.

Table 4 (Element 5a) Worle Station

Factor	Better	Neutral	Worse
Surveillance	X		
Pedestrian/cycle route security		X	
Public transport waiting facilities	X		
Crossing facilities		X	
Car park security	X		

The station improvements would include improved waiting facilities for bus and rail passengers, and CCTV cameras for the new Worle Station southern car park.

Table 5 (Element 5b) Queen's Way Bus Priority

Factor	Better	Neutral	Worse
Surveillance		X	
Pedestrian/cycle route security		X	
Public transport waiting facilities		X	
Crossing facilities		X	

Security of pedestrian and cycle routes and bus waiting facilities would be maintained at the current level.

Table 6 (Element 5c) Elmham Way Bus Priority

Factor	Better	Neutral	Worse
Surveillance		X	
Pedestrian/cycle route security		X	
Public transport waiting facilities		X	
Crossing facilities	X		

New crossing facilities would be provided at the junction of Elmham Way, Bransby Way and Rowan Place, which is on the route to Herons Moor Community Primary School, and would improve the security of school pupils' journeys.

Integration – Passenger Interchange Worksheet

Weston Package **Low Cost Option**

Passenger Interchange Indicator	Without Weston Package	With Weston Package
Waiting environment	Poor	Moderate – waiting facilities on the station would be improved as well as improved waiting facilities at the bus interchange
Level of facilities	No facilities	No facilities
Level of information	Poor ⁽¹⁾	Moderate – improvements would be made to passenger information on the station as well as the provision of RTI at the bus interchange on both the north and south side of the station
Visible staff presence	Poor	Poor – although additional CCTV coverage would be provided at the bus interchange
Physical linkage for next stage of journey	Poor	High – bus interchange would be provided on both sides of the station as well as additional car, cycle and motorcycle parking on the southern side
Reliability of connection	Poor	Moderate – due to closer interchange and higher frequency buses. The council is keen to work with bus operators to better co-ordinate timetables

⁽¹⁾ Currently poor but due to be upgraded to moderate by First Great Western

Assessment Score: **Moderate Beneficial**

Qualitative comments: Provision of a bus interchange and improvements to Worle station will enhance the passenger waiting environment and improve connectivity between transport modes

Integration – Land Use Policy Worksheet

Weston Package Low Cost Option

Level	Land use Policies or Proposals
Local	Beneficial integration with policies relating to sustainable development, improved accessibility, developing a prosperous economy, better health and well-being, tackling congestion, safer travel, climate change, improved air quality and better quality of life. Adverse integration with policies relating to the environment (landscape and ecology) the extent of which would depend on the mitigation measures proposed.
Regional	Beneficial integration with policies relating to improving transport networks, enhancing the economy, managing growth, creating sustainable communities, reducing congestion, climate change, social inclusion and the development of SSCTs. Adverse integration with policies relating to the environment (landscape and ecology) the extent of which would depend on the mitigation measures proposed.
National	Beneficial integration with policies relating to climate change, improving competitiveness and productivity, raising equality of opportunity providing gains in health and safety and improvements to the overall quality of life. Adverse integration with policies relating to the environment (landscape and ecology) the extent of which would depend on the mitigation measures proposed.

Reference Source(s): Planning Policy Statement 1, Planning Policy guidance 2 and 13, The South West Regional Economic Strategy (2006), Draft Regional Spatial Strategy for the South West (2008), North Somerset Local Plan,

Assessment score: **Beneficial**

Qualitative comments: Integration with land use policies is mainly beneficial with a slight adverse impact on environmental policies relating to landscape and ecology

Integration – Other Government Policy Worksheet
Weston Package Low Cost Option

Government Department	Policies Helped	Policies Hindered
Transport	Reducing congestion Reducing pollution Reducing carbon emission Increasing accessibility Improving quality of life Reducing social exclusion	No direct impact
Communities and Local Government (C and LG)	Positive impacts on protection and enhancement of the environment (in terms of noise, air quality and climate change) and sustainable economic development	Possible adverse impact on protection of the environment (with respect to landscape and biodiversity)
Environment, food and Rural Affairs (DEFRA)	Positive impact on policies relating to protection and enhancement of the environment (with respect to noise, air quality and climate change) and putting sustainable development into practice	Possible adverse impact on protection of the environment (with respect to landscape and biodiversity)
Health	Positive impact on policies relating to reduction in accidents. Potential for contribution to policies relating to increased physical activity through improved walking and cycling facilities	No direct impact
Business, Enterprise and Regulatory Reform (BERR)	Positive impact on policies relating to creation and growth of business and sustainable growth	No direct impact
Children, Schools and Families (DCSF)	Positive impact on policies relating to well-being through increased activity and improving access to services and leisure facilities	No direct impact

Reference source(s): C and LG website, DEFRA website, Department of Health website, BERR website and DCSF website

Assessment score: Beneficial

Qualitative comments: Integration with other government policies is mainly beneficial with a slight adverse impact on environmental policies relating to landscape and ecology

Local Government Affordability and Financial Sustainability

Costs £m outturn

TOTAL
(undiscounted)

Breakdown by organisation/budget

Investment Costs

	TOTAL (undiscounted)		Council capital	Land bank	Section 106
Year 2009/10	0.46		0.46		
Year 2010/11	0.71		0.71		
Year 2011/12	2.11		0.73	1.38	
Year 2012/13	0.55				0.55
Year 2013/14	0.55				0.55

TOTAL	4.38	(1)	1.91	1.38	1.10
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Developer and Other Contributions	1.10	(2)			1.10
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Reimbursement from Central Government of Preparation Costs	0.76	(3)			
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Grant to Private Sector	0	(4)			
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Cost to Local Government net of contributions	2.52	(5)=(1)+(4)-(2)-(3)			
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Public Sector Operations

Breakdown by organisation/budget

Year 1

			Council revenue		
Change in operator costs	0.07	(6)	0.07		
Change in operator revenue	0	(7)	0		
NET IMPACT	0.07	(8)=(7)-(6)	0.07		

Year 5

Change in operator costs	0.08	(9)	0.08		
Change in operator revenue	0	(10)	0		
NET IMPACT	0.08	(11)=(10)-(9)	0.08		

Year 10

Change in operator costs	0.09	(12)	0.09		
Change in operator revenue	0	(13)	0		
NET IMPACT	0.09	(14)=(13)-(12)	0.09		

Central Government Affordability and Financial Sustainability

Costs £m outturn

TOTAL (undiscounted)

Breakdown by organisation/budget

Investment Costs

			HA	SRA	Other	Other
Year 2009/10	0.00					
Year 2010/11	0.47					
Year 2011/12	1.33					
Year 2012/13	5.17					
Year 2013/14	2.86					
Year 2014/15	2.54					
TOTAL	12.37	(15)				
Developer and Other Contributions	0	(16)				
Grant to Local Government	0.00	(17)				
Grant to Private Sector	0.00	(18)				
Indirect Tax Revenues	3.02	(19)				
Cost to Central Government net of contributions	9.35	(20)=(15)+(17)+(18)- (16)-(19)				

Operations

Breakdown by organisation/budget

			HA	SRA	Other 1	Other
Year 1						
Change in operator costs		(21)				
Change in operator revenue		(22)				
NET IMPACT		(23)=(21)-(20)				
Year 5						
Change in operator costs		(24)				
Change in operator revenue		(25)				
NET IMPACT		(26)=(24)-(23)				
Year 10						
Change in operator costs		(27)				
Change in operator revenue		(28)				
NET IMPACT		(29)=(28)-(27)				

Private Sector Affordability and Financial Sustainability

Private Sector Investment Costs and Grants

**TOTAL
(undiscounted)**

Investment Costs

Year I	
Year ii	
Year iii	
Year iv	
Year v	

TOTAL (30)

Grants from Central and Local Government (31)

Breakdown by organisation

Rail route 1	Rail route 2	Bus corridor 1	Bus corridor 2	Rail freight	Other

Private Sector Operators

**TOTAL
(undiscounted)**

Year 1

Change in operator costs	(32)
Change in operator revenue	(33)
NET IMPACT	(34)=(33)-(32)
Subsidy	(35)

Year 5

Change in operator costs	(36)
Change in operator revenue	(37)
NET IMPACT	(38)=(37)-(36)
Subsidy	(39)

Year 10

Change in operator costs	(40)
Change in operator revenue	(41)
NET IMPACT	(42)=(41)-(40)
Subsidy	(43)

Breakdown by organisation

Rail route 1	Rail route 2	Bus corridor 1	Bus corridor 2	Rail freight	Other

Private Sector NET IMPACT

Investment net of capital grant =(30)-(31)

Operations net of subsidy

Year 1 =(34)-(35)

Year 5 =(38)-(39)

Year 10 =(42)-(43)
