

Report to: West Yorkshire Combined Authority

Date: 22 July 2022

Subject: **Carbon Impact Assessment**

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Is this a key decision?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is the decision eligible for call-in by Scrutiny?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does the report contain confidential or exempt information or appendices?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If relevant, state paragraph number of Schedule 12A, Local Government Act 1972, Part 1:	
Are there implications for equality and diversity?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

1. Purpose of this Report

1.1 To update members of the Combined Authority about progress on the carbon impact assessment project.

2. Information

2.1 The aims of the carbon impact assessment project were to:

- Develop methodologies for assessing the carbon impact of proposals at the different stages of the assurance process
- Incorporate these methodologies onto the assurance process so that decision makers are informed about the carbon impact of proposals.
- Use these methodologies to carry out an assessment of the carbon impact of a selection of existing projects which are currently going through the assurance process

Development of carbon impact assessment methodologies

2.2 The methodologies for assessing the carbon impact of proposals at different stages of the assurance process have been developed by the consultants engaged to work on the project. These are in the form of technical notes about the assessment of carbon impact at Stage 1 (Strategic Assessment and

Strategic Outline Case) and Stage 2 (Outline Business Case and Full Business Case).

- 2.3 The Stage 1 methodology focuses on the qualitative assessment of carbon impact at this relatively early stage in the development of a scheme. At Activity 1 (Strategic Assessment) this involves conducting an initial screening of the potential greenhouse gas (GHG) impact of a proposal so that its compatibility with the achievement of climate goals can be assessed. Activity 2 (Strategic Outline Case) involves carrying out a high-level qualitative assessment of the impacts of a scheme with a spreadsheet tool which assesses the proposal against wider plans and policies including the West Yorkshire Climate and Environment Plan.
- 2.4 The Stage 2 methodology describes various procedures for quantifying the carbon impact of the proposal in terms of its capital (construction) and operational (use) emissions of carbon. The assessment of operational carbon from transport schemes involves building on the modelling and analysis work already carried out by promoters in preparing the economic assessment of a scheme.
- 2.5 The guidance documents will act as detailed technical guidance for promoters to assist them in carrying out carbon impact assessments of their schemes. These documents were discussed in a paper to the Climate, Energy and Environment Committee meeting on 22 March 2022 and published as appendices to the paper – this paper can be found via the link in background documents section on page 7 of this cover paper.
- 2.6 Additional documentation has been prepared to make the Stage 2 guidance more accessible for promoters and to ensure they provide comprehensive and clear information about the quantitative carbon impact process in a consistent manner. This is more focused and prescriptive and is in the form of a 'Stage 2 Reporting Requirements' note. This includes a one-page proforma for promoters to complete which will provide information on the scheme along with details of the carbon impact assessment carried out. This will cover the assumptions used and any features of the modelling which might have important implications for the quantitative carbon impact assessment. This context is important in interpreting any reported quantitative carbon results given. This 'Stage 2 Reporting Requirements' note is attached as Appendix 1.
- 2.7 In addition a 'low carbon' scenario has been developed to test how transport schemes might perform under a set of assumptions which are consistent with the Combined Authority's 'net zero by 2038' target. This scenario has been derived from the Carbon Emissions Reduction Pathways (CERP) work which included detailed breakdowns of the traffic growth and fleet mix changes necessary. It will be used in addition to the 'core' assumptions required by the DfT and provides a very different forecast of what the (transport) future might look like. This scenario will also be used as a sensitivity test in the economic assessment to provide valuable information about how the VfM of a proposal might change with different assumptions about traffic growth/reduction.

- 2.8 A workshop with members of the Climate, Energy and Environment and Transport Committees was held on 23 June. During this online event, the project manager for the carbon impact assessment project went through the technical guidance and explained the importance of the reporting requirements to understanding the context of the results reported.
- 2.9 The development of the carbon impact assessment methodologies and the reporting requirements was carried out at the same time as the assessments of existing schemes were undertaken. The understanding gained from carrying out the assessments was invaluable in developing the assessment methodologies.

Incorporation of carbon impact assessment methodologies into the assurance process

- 2.10 Incorporation of carbon impact assessment into the Combined Authority assurance processes is being carried out at the same time as the wider revision of the guidance and templates being carried out by the Portfolio Management and Appraisal (PMA) team who are responsible for the assurance process. The new Carbon impact assessment requirements will be formally adopted into the assurance process once the updating Assurance Framework guidance and templates are fully implemented.
- 2.11 In addition, a programme of training in carbon impact assessment for promoters, representatives (consultants) and other interested officers has been carried out. Sessions on Stage 1 (16 May) and Stage 2 (14 June) carbon impact assessment have been held. These sessions have been recorded with both the recordings and the slides made available. Ongoing support for carbon impact assessment will be provided through the PMA. There will also be a requirement to scrutinise and, where necessary, challenge the carbon impact assessments that have been carried out. This will be incorporated into the audit functions of PMA.
- 2.12 The incorporation of carbon impact assessment into the Combined Authority assurance process represents a significant step forward in making sure that carbon impact can be considered by decision makers when deciding on the progress of a proposal. The changes that will be introduced will also mean that carbon impact will be presented more clearly to decision makers and should significantly improve the transparency of carbon impacts when investment decisions are made. The work on developing carbon impact assessment methodologies and incorporating carbon impact into the Combined Authority assurance process is at the forefront of developing best practice in this area.

Assessments of existing schemes

- 2.13 The third aim of the carbon impact assessment project was to assess the carbon impact of a selection of schemes currently being developed. These assessments were carried out both to understand the carbon impact of these schemes, but also to help in the development of the methodologies described above. This exercise has taken longer than expected but a substantial amount

has been learnt about the practical challenges of assessing the carbon impact of schemes and this learning has been fed into the guidance described above.

- 2.14 The report on the assessments of existing schemes is attached as a background document via the link in the background documents section on page 7 of this paper. This includes a general discussion of the assessments in the main text of the report, together with summary results and detailed results in the form of proformas covering every scheme assessed. Note that the report and the work to prepare the assessments included in the report were independently prepared by the consultants engaged for the carbon impact assessment project (Mott MacDonald and Ricardos).
- 2.15 Additionally the publication of the project assessments is accompanied by a series of local context narratives which have been prepared by our local authority delivery partners and give important context to the carbon impact results presented in the main report. These summaries are contained in the Appendix 2 attachment.

General comments

- 2.16 The assessments were based upon existing information in submissions made by scheme promoters, usually in the form of business cases. These were submitted to the Combined Authority in connection with the various decision points in the assurance process. It is important to note that these business cases were not developed with a focus on the carbon impact of the scheme and carbon impact assessment was not a requirement at the time they were submitted or scrutinised by PMA. There were therefore inevitable gaps and omissions in the data and supporting information provided which was relevant to carbon impact assessment. Information had to be simply extracted and interpreted because it was not possible to commission extra analyses or model runs. In most cases it was possible to carry out assessments of the likely capital carbon emissions, but these often had to be crude estimates based on scheme cost because of a lack of more detailed data. It was not possible to assess how transport schemes might perform under the 'low carbon' scenario.
- 2.17 Given the uncertainty in the assessments and the fact they only cover carbon impact, it would not be appropriate to see these as giving any indication of the benefits of the scheme in general. It was never the intention for these assessments to be used in decision making on any scheme. Even when carbon impact assessment is fully incorporated into the assurance process, carbon impact will only be one factor that will be taken into account in such decisions.
- 2.18 In many cases the consultants felt they had 'low' confidence in the carbon impact assessment results. The reasons for this are varied and are spelt out in the detailed proformas in the report. They included concerns about the availability of underlying data, the appropriateness of modelling for carbon impact assessment and the inevitable omissions and approximations of carbon impact that had to be made in the assessments. **It is important to**

note that the confidence ratings given for each assessed project are based on the availability of relevant information needed to complete the new Assurance Framework Carbon Toolkit guidance, they should not be interpreted or used to give a ranking on the veracity of the carbon credentials of each project.

General comments about transport schemes

- 2.19 Thirty of the forty-one assessments are of transport schemes. For these types of schemes, those which have a direct impact on general traffic have the greatest carbon impact (positive or negative). This is because most of the carbon emissions come from general traffic. If the efficiency of the network is improved for general traffic (for instance by increases in link or junction capacity) and an assumption is made that the scheme will not cause an increase in traffic, then this results in carbon benefits. If general traffic is forced to reroute or becomes more congested, then this results in carbon disbenefits. In the transport schemes assessed, 'induced' or extra traffic caused by reductions in journey times (and traffic reductions caused by increases in travel times) was largely ignored. It follows that many traditional road schemes appear to provide a carbon benefit whereas the picture for schemes which involve roadspace reallocation is more mixed. While a crude method of calculating the 'induced' effects was available, the consultants only felt able to use this for a small minority of schemes, so this is omitted from most assessments.
- 2.20 In order to have a beneficial carbon impact, a public transport or active mode scheme needs both uplift in use and also substitution of car trips. This means that such a scheme, on its own, is less likely to have a significant impact in carbon terms and it is more difficult to assess what this impact might be.
- 2.21 Background assumptions about future traffic growth and the pace of the electrification of the vehicle fleet can make a significant difference to the assessed carbon impact. If traffic is forecast to grow, impacts on general traffic will be magnified into the future. Conversely, if it is assumed that the vehicle fleet will electrify more quickly, future carbon impacts will be less. The 'low carbon' scenario should help in understanding the effect of such assumptions on future schemes.

How these assessments have informed the development of the methodology

- 2.21 The assessments of existing schemes have resulted in an extra focus on the importance of explaining how the assessment has been carried and what assumptions have been made. This should allow carbon impact to be reported in a more coherent, comprehensive and structured way and it has shaped the development of the reporting requirements and the proforma. These specify what aspects of the assessment need to be spelled out by the promoter of the scheme alongside the detailed carbon figures. These include:
- Clarity over the 'with scheme' and 'without scheme' cases, given that the net carbon impact of an intervention is the difference between the two. This is

especially true for a proposal such as a flood prevention scheme where the 'without scheme' case may involve an increased risk of flooding (with carbon consequences)

- Clarity over the background assumptions used and a requirement to test how the scheme performs under the 'low carbon' scenario (a very different set of background assumptions) in addition to the 'core' assessment.
- Clarity over any modelling assumptions used, in particular, whether any 'induced' effects have been taken account of.
- Clarity over the detailed carbon calculation methodology, which will inevitably involve a degree of averaging or estimation.

2.22 This information is important in helping decision makers understand and interpret the carbon impact assessment so that it can be given an appropriate weight in decision making.

3. Tackling the Climate Emergency Implications

3.1 The carbon impact assessment project should help decision makers to understand the implications of their decisions for carbon emissions and the climate emergency. The assessments of the carbon impacts of existing projects were carried out to inform the Combined Authority about the carbon impact of a selection of current projects.

4. Inclusive Growth Implications

4.1 The carbon impact assessment project should help decision makers consider carbon impact when making decisions about proposals which will have inclusive growth implications. Carbon impact is one aspect of inclusive growth which needs to be taken into account alongside other factors.

4.2 As for equality and diversity implications, the methodology for assessing the potential carbon impact of schemes at the early stages of project development (Stage 1 in the assurance process) should ensure these are considered in project design alongside inclusive growth implications.

5. Equality and Diversity Implications

5.1 The carbon impact assessment project does not have any direct impacts on equality and diversity. However, the methodology developed for assessing the carbon impact of schemes should help decision makers take this into account in decisions which might affect equality and diversity. Any measures necessary for addressing the climate emergency will need to be considered in terms of their impacts on equality and diversity and the work on carbon impact assessment described in this report should help decision makers to do this.

5.2 The methodology for assessing the potential carbon impact of schemes at the early stages of project development (Stage 1 in the assurance process) should help to guide the development of schemes and ensure project design incorporates carbon mitigation alongside equality and diversity implications.

6. Financial Implications

6.1 There are no financial implications directly arising from this report.

7. Legal Implications

7.1 There are no legal implications directly arising from this report.

8. Staffing Implications

8.1 There are no staffing implications directly arising from this report.

9. External Consultees

9.1 No external consultations have been undertaken.

10. Recommendations

10.1 That the members of the Combined Authority note the contents of this report.

11. Background Documents

West Yorkshire Combined Authority Carbon Impact Assessment – Summary Findings - <https://www.westyorks-ca.gov.uk/media/8668/4b-carbon-impact-assessment-summary-findings-260122.pdf> **See Page 40 for summary table.**

Committee paper to the March 22nd meeting of the Climate, Energy and Environment Committee at which the Carbon Impact Assessment Toolkit was published:
<https://westyorkshire.moderngov.co.uk/ieListDocuments.aspx?CIId=222&MIId=1137&Ver=4>

12. Appendices

Appendix 1 – Carbon Impact Assessment Reporting Requirements for Stage 2
Appendix 2 – Supplementary partner context narratives