CPCA area wide model suite

One-Page Summary

<table>
<tr><td>Brief project description:</td><td colspan="5">Procurement, commissioning, development, handover, and operation of a Transport Analysis Guidance (TAG) compliant transport and land use model to replace the existing CSRM2 (Cambridge Sub-Region Model 2), including the collection of traffic and transport data, and extension of coverage to all of Cambridgeshire and Peterborough. Cambridgeshire and Peterborough currently operate two different models and this scheme will ensure that the resultant modelling system will work successfully, both for each location, and the CPCA area with the necessary component parts.
The new modelling system for Cambridgeshire and Peterborough will allow for:
• The production of transport evidence bases to support Local Plan development.
• The assessment and production of business cases for transport schemes that are compliant with Department for Transport (DfT) and Treasury (HMT) guidance and with combined authority and local council assurance protocols.
• The production of transport and related metrics and data that cover the whole CPCA area the constituent local authority areas, and more localised data as required, including data to inform environmental, carbon, air quality and health assessments.</td></tr>
<tr><td>Project stage (highlight as appropriate):</td><td>Pre-SOBC</td><td>SOBC</td><td>OBC</td><td>FBC</td><td>Implementation</td></tr>
<tr><td>Project outputs:</td><td colspan="5">A TAG compliant strategic model covering the whole of the CPCA area together with a suite of more detailed models covering key settlements within the CPCA enabling clearer assessment of scheme impacts at both the strategic and local levels. Which will facilitate the identification of benefits and help maximise the impact of transport interventions.</td></tr>
<tr><td>Project outcomes:</td><td colspan="5">The completion of this project will result in a suite of models covering the whole CPCA area that can be used to test potential schemes to the standard required to secure funding from DfT and other Government funding sources.</td></tr>
<tr><td>Strategic fit:</td><td colspan="5">The provision of a TAG compliant model will enable the full impact of the various CPCA projects to be assessed and will provide a sound basis for funding bids to DfT and other Government funding streams.</td></tr>
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Financials:

	Financial Year	2022-23	2023-24	2024-25	2025-26
Project Costs (000s)	**Revenue**	0	0	0	0
	Capital	1,876*	585	215	215
	Total	1,876	585	215	215

*Includes £740k rolled forward from previously approved budget for 2021/22

SRO	David Allatt, Assistant Director: Transport Strategy and Network Management, Cambridgeshire County Council
Project Manager(s):	Lou Mason-Walsh, Transport Modelling Manager, Cambridgeshire County Council
CPCA Director:	Steve Cox
CPCA Lead Contact	Michael Soper, Analysis and Evaluation Manager, Cambridgeshire and Peterborough Combined Authority

1 OVERVIEW

1.1 Project background

Procurement, commissioning, development, handover and operation of a Transport Analysis Guidance (TAG) compliant transport and land use model to replace the existing CSRM2 (Cambridge Sub-Region Model 2), including the collection of traffic and transport data, and extension of coverage to all of Cambridgeshire and Peterborough.

Cambridgeshire and Peterborough currently operate two different models and this scheme will ensure that the resultants modelling system will work successfully, both for each location, and the CPCA area with the necessary component parts. Both models have been identified as being at the end of their operational life (software / operation routines) with the additional requirement for a brand-new data collection exercise to reflect transport and travel, post covid.

The new modelling system for the CPCA, Cambridgeshire and Peterborough will allow for:

- The production of transport evidence bases to support Local Plan development.
- The assessment and production of business cases for transport schemes that are compliant with Department for Transport and Treasury guidance and with Combined Authority and local council assurance protocols.
- The production of transport and related metrics and data that cover the whole CPCA area the constituent local authority areas, and more localised data as required, including data to inform environmental, carbon, air quality and health assessments.

1.2 Project scope

The revised model will cover the whole CPCA area and the wider region to enable the impact of transport impacts to be assessed. The strategic model will be supported by a range of more detailed models covering smaller areas of concern which will take the outputs from the larger strategic model to ensure consistency of the data used in the different levels of modelling undertaken within the CPCA area.

2 STRATEGIC CASE

2.1 STRATEGIC PRIORITY

The proposed new model of the whole CPCA area will enable the testing of multiple schemes for a wide range of end users, including (but not limited to):

- Cambridgeshire and Peterborough Combined Authority (CPCA)
    - Scheme development and Local Transport and Connectivity Plan preparation
- Cambridgeshire County Council (CCC)
- Greater Cambridge Partnership (GCP)
- District councils, local plan assessment, and
- Developers (assessment of major developments)

The specific future schemes that might benefit from the provision of the proposed model are as follows.

CPCA Schemes as set out in the emerging LCTP

- A1260 Nene Parkway Junction 15
- A1260 Nene Parkway Junction 32-3
- A16 Norwood Dualling
- A47 Dualling
- Cambridge South Station
- Ely Area Capacity Enhancements
- Fengate Access Study - Eastern Industries Access - Phase 1
- Fengate Access Study - Eastern Industries Access - Phase 2 (University Access)
- Regeneration of Fenland Railway Stations
- A141 SOBC
- A10 OBC
- Peterborough Station Quarter
- A142 Chatteris to Snailwell
- Development of Key Route Network
- Harston Capacity Study
- Segregated Cycling Holme to Sawtry
- Fenland Stations
- Buses Reform - Enhanced Partnership, franchising or BAU
- Active Travel Strategy and Schemes
- EV Charging Schemes and Outcomes from AFVS
- Snailwell Loop
- Demand Responsive Transport
- Market Towns Programme
- 20 is plenty
- First and last mile (including freight)
- Heavy Vehicle Commercial Strategy
- A14 Junction 37
- A14 Junction 38
- Queensgate Bus Interchange
- City Centre Transport Vision - Peterborough
- Second rail station at St Neots
- Alternative bus station (HDC)
- Ramsey improvements
- Thorpe Wood cycleway
- Junction 21 of the A15 Paston Parkway
- A605 – Junction 68

GCP Schemes

- Making Connections
- CSET
- Cambourne to Cambridge Bus Improvements
- Cambridge Eastern Access
- Waterbeach to Northeast Cambridge

Other Schemes

- A428 trunk road between the Black Cat roundabout on the A1
- East / West Rail

Developers

Large strategic scale developments might benefit from information from the model, the current range of developers looking to use CCC's current suit of models includes.

- Alconbury Weald,
- North-East Cambridge,
- Northstowe,
- Waterbeach, and
- Cambridge Airport.

The advantage of building a single model covering the whole of the CPCA area instead of a range of smaller scheme specific models is that the larger model will be more efficient to build and use and will ensure consistency of results across all schemes that would not be possible if the current model system continued.

In addition, the use of a single large model will enable the true level of benefits from a package of schemes to be assessed and will also enable an accurate assessment of where the benefits sit.

It is important to note that without a fully TAG compliant model it will be harder for identified CPCA transport interventions to prove their impact and benefits.

During the assessment of recent studies, the DfT have suggested that the use of the existing suite of model will not be suitable going forward for use in scheme business cases due to the age of the data and the area of coverage. The issue of data age has been addressed by the recent creation of a 2019 Present Year Validation which indicates that the model validates well within the core area of the model, but this does not address the issues with the coverage of the modelled area.

The proposed model will facilitate the testing of the impact of a wide range of modes of Transport and will also facilitate the testing of the interchange between modes.

2.2 CASE FOR CHANGE

The drivers for change include;

- The requirement to refresh the data on which the existing model suites operated by CCC and PCC to ensure that the data is less than five years old in line with DfT guidance.
- Replacement of obsolete software currently used within the existing model suite that limits the number of runs that can be undertaken at any one time.
- The need to increase the area included within the model to ensure that the whole of the CPCA area is included within the detailed model area.

These changes will ensure that there is a TAG compliant model suitable to assess transport interventions across the whole of the CPCA area which will increase the possible uses of the model and will make it more efficient to run as the removal of obsolete software will increase the number of runs that can be undertaken.

The provision of the new model **is on the critical path fo**r many of the projects listed above especially those in the wider area as the existing model suit owned by CCC and PCC doesn't cover the whole of the CPCA area.

In the process of upgrading the model to increase the model coverage the software packages used will be evaluated to ensure that the best options are chosen not just to create a model that is adequate for the current regulations but also with a view to future options that it would be good to include as time goes on to minimise the need for a full model rebuild in the next 10-15 years.

2.3 CLIMATE CONSIDERATIONS

The creation of the model does not have any adverse impacts on the climate. Separate consideration will be given for climate considerations within the procurement of the survey data collection (in line with procurement guidelines for CCC).

The proposed model will facilitate the modelling of all modes not just cars so this will help inform the climate impacts of a wide range of schemes.

It is intended that the new model suite will enable the climate impacts of transport interventions to be modelled and measured to ensure that scheme option assessment gives the best possible view of climate change considerations prior to preferred option selection.

2.4 SMART OBJECTIVES

The main objectives for this project are, as follows:

1. The collection of transport data covering the whole of the CPCA area for all modes of travel ideally this data will be collected late 2022/early 2023. However as stated above this will be reliant on the travel patterns by all modes to be settled enough to enable accurate future year forecasting.
2. The provision of a TAG compliant model covering the whole of the CPCA area. Ideally this should be in place by the end of 2024, but this is reliant on the collection of reliable transport data.

2.5 Specific deliverables/outputs

The key deliverable from this project will include.

- A fully TAG compliant suite of models covering the whole of the CPCA area that will allow testing of a wide range of schemes for the CPCA, GCP, CCC, PCC as well as providing developers of large sites with a tool to use in understanding the impacts of their proposed developments. The proposed new model will also allow testing of the impacts of new land use scenarios for local plans in all the district and boroughs in the area as well as for PCC and Cambridge City.
- The revalidation of the model will require the collection of a wide range of travel data covering the whole CPCA area which will be of use for a wide range of purposes and will add to the knowledge of travel patterns in the area which will represent a valuable resource for schemes within the area.

2.6 Project outcomes/impacts

The new model will provide a consistent evidence base for use in a variety of scheme as set out above. the use of a single model will enable a consistent approach on which to base decisions about the impact of investment priorities for transport interventions proposed by the CPCA and other local authority organisations.

This consistent approach to scheme assessment and will save time and money as individual projects would need to spend on modelling if this new model were not built.

3 ECONOMIC CASE

3.1 Initial value for money assessment

The main value for money that will come from the provision of a proposed new model for the whole CPCA area is that it will enable the testing of multiple schemes using a common assessment tool and data which will minimise the possibility of contradictory results which means that it will be possible to test the impacts of transport interventions across the whole sub region.

As shown above there is a long list of projects in the pipeline that would benefit from the provision of a model covering the whole of the CPCA area. Without the provision of the new model envisaged by this project there would be a need for each scheme or group of schemes to develop their own models which would incur significant costs and time delays as well as introducing the possibility for contradictory results due to the use of different model methodologies.

In addition, there is a range of leveraged activity and value that is supported by the model being in existence including the development of transport schemes, plans and large-scale planning developments all of which have a significant financial value and contribute to the growth of the local economy.

4 COMMERCIAL CASE

4.1 Procurement options

The local authority partners do not have the inhouse skills to develop a model of this scale therefore the model build will need to be undertaken by external consultants.

At present the knowledge and skills within the CPCA itself related to transport modelled is limited whereas the County Council has built up considerable skill and expertise through managing and operation of the current CRSM2 model.

Therefore, it is proposed that the CPCA fund the County Council to commission the model and to host it once it has been developed (in line with the operation of the current CRSM2)

It is envisaged that the County Council will be able to commission the model build via their Joint Procurement Framework that is already in place. The consultants on the framework are market leaders in transport modelling and therefore have the necessary expertise, in addition the use of the framework will speed up the procurement process as the pre checks have already been completed.

The experience of the teams already employed by the parties of the framework are best placed to provide the strategic model in the first instance with the smaller more detailed models following on utilising the same data used in the strategic model. However, the local Peterborough City Council element of the model will be implemented by Milestone, PCCs current highways service provider.

4.2 Who would deliver the project?

The project will be delivered by CCC and PCC with the CPCA as project sponsor and principal funder. There will also need to be a consultant team supporting the delivery of the model along with any sub consultants such as data collection.

4.3 Stakeholder management and communications strategy

Stakeholders in the model will be CCC, PCC, CPCA, GCP and the DfT.

Stakeholder management will include communications with City and District Councils who will be using the model in the development of their future local plans as well as consultants who may want to use the model as part of their Transport Assessment.

Project board with Mike Soper from CPCA and representatives from the other key partner authorities.

The CPCA commissioned a piece of work to discover the uses that Stakeholders might want. As part of the scoping exercise this list of requirements will be collated and evaluated to determine what elements can be accommodated. The results of this exercise will be shared with stakeholders. This exercise included the Department for Transport (DfT). At the commissioning stage the model build will be checked independently against the DfT requirements for transport modelling and a compliance statement produced.

5 FINANCIAL CASE

5.1 Project costing table

	Financial Year	2022-23	2023-24	2024-25	2025-26
Project Costs	**Revenue**	0	0	0	0
	Capital	1,876	585	215	215
	Total	1,876	585	215	215

	Financial Year	2022-23	2023-24	2024-25	2025-26
Funding Stream	*Gainshare – Carried forward from 2021/22*	740	-	-	-
	Gainshare - MTFP	1,136	585	215	
	Charge income / partner contributions				215
Medium Term Financial Plan	*Approved to spend*				
	Subject to approval	1,876	585	215	-

These costs are initial costs for the first phase of the project that provides a new model TAG compliant model including a full set of counts looking at all modes. These costs are based on past costs associated with building and maintaining the existing model suites within CCC and PCC. As part of the scoping of the new model we will be seeking efficiencies and other measures to keep the build and data collection costs as low as possible.

Year one includes costs for building the new model networks and full data collection, years 2-4 include ongoing maintenance and project management as well as an element of data collection so that there is always a pool of data available that is less than 3 years old for use in model updates.

To be TAG compliant models must be based on data that is less than 5 years old. Therefore, an additional commitment will be sought to refresh the model data again in 2026/27.

6 MANAGEMENT CASE

6.1 Project timeline

CCC and PCC have the capability to procure the development of the model through the County Council's framework contract and to undertake the project management of the scheme to ensure the delivery of the project in a timely fashion.

Work will be directed through an officer management board.

The major milestones will be the commissioning of the new data in September 2022 (if DfT approves from a methodology point of view) and the new model, in approx. October 2022. Delivery of the full model will be within 2023/24.

A full project plan will be laid out as part of the FBC.

6.2 Exit strategy

To maintain a TAG compliant model, the data should be less than 5 years old, within the fourth year of the program (2025/26) there will need to be consideration of continuation of the model and the commissioning of a new data set with continuation expenditure in 2026/27. This model of continuation is consistent with the previous experience of managing CRSM2.

It is planned that there will be charges for people using the model to help fund the ongoing maintenance to ensure that the model is updated to the latest requirements in between major refreshes.

Whilst the Cambridgeshire County Council will host the model and operate it (under agreement from all partners), legal clarity will be sought on ownership of the final model and therefore who will be responsible for unforeseen costs related to maintenance and management of the model. Similarly the agreement between the CPCA and partners will need to specify responsibilities of either pro-longing the life of the model or for close down.

6.3 Change management

Change management will be managed through the framework contract with any changes discussed and agreed ahead of any expenditure through the officer management board.

6.4 Project management

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6.5 RACI matrix

The RACI matrix maps out who is **R**esponsible - Who is responsible for completing it; is **A**ccountable – person or role responsible for ensuring that the item is completed and answerable for accuracy; must be **C**onsulted with – Who will be communicated with regarding decisions and activities; and shall stay **I**nformed – Who will be updated on decisions and actions during the project.

R = Responsible **A = Accountable** **C = Consulted** **I = Informed** **Decisions/Activities**	**Organisational Role**	**Director (Senior Responsible Officer)**	**Project Manager**	**Consultant Team**	**Project Board**
Project initiation		R	A	A	I
Delivery of the project		R	A	A	I
Changes to cost and programme		R	A	A	I
Compliance and assurance of operational data		I	R	A	I
Technical assurance of the content and quality of data throughout the life of the project		I	R	A	I
Content and quality of information data on a day to day basis		I	R	A	I
Project closure		R	A	I	I

Click here for: RACI chart

6.6 Project risks and opportunities

The main risk to the development of a new model will be the collection of suitable data. It is desirable that it will be possible to collect the required transport data in autumn 2022 or early 2023 but this relies on travel patterns settling into a new steady state post COVID. It is also possible that the ongoing cost of living crisis may delay the achievement of a steady state. The DfT will need to be consulted for a view on the timing of the data collection.

It is important that the data used in the model is not just representative of the base year but will also enable reliable forecasting so that there can be confidence in not just the base year assessments but also the future year.

This risk is being monitored through regular review of the current transport data available. Once it is felt that transport patterns have settled permission will be sought to commission the required transport data.

The Risk register and Opportunity register must be developed and maintained throughout the project lifecycle.

7 MONITORING AND EVALUATION

7.1 How will the project be evaluated?

The final model will be assessed against industry standards and also assessed for quality prior to being signed off as complete.

The evaluation of the model will be conducted in year four as part of the decision making on continuation. The main assessment will be to test the use case, proving that the model has been used to progress a significant number of projects and assess a range of local plans.

7.2 Who will conduct the evaluation?

To be discussed

7.3 What will be measured in the evaluation?

There will be measurement of use and a cost / benefit analysis.

8 APPROVAL/SIGN-OFFS

Project/Programme Manager must attain PMO and Finance sign-off, and approval by Directors prior to developing a board paper to begin next stage of the project.

Directorate	Name	Role	DD/MM/YY	Issue	Sign off (Y/N)
		PMO			
		Finance			
		Relevant Director			
		All Directors			