From: Dave Smith [redacted]
Sent: Wednesday, 13 September 2023 8:49 am
To: Patrick Hanaray
Cc: Suzanne Rushmere; Jared White
Subject: RE: Upper Hutt Future Model Development

Follow Up Flag: Follow up
Flag Status: Completed

Hi Patrick

A friendly follow up on the below revised scope for the future model option assessment. Are you happy for us to proceed on this basis, and if yes which option at the bottom would you like us to progress this (that is run all options at 2033/43/53 or just the base at 2033/43/53 and other options at 2053)?

It would also be great to get an update on your required timeframes.

Happy to discuss.

Regards

Dave

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From: Dave Smith
Sent: Friday, September 1, 2023 11:45 AM
To: Patrick Hanaray <patrick.hanaray@uhcc.govt.nz>
Cc: Suzanne Rushmere <suzanne.rushmere@uhcc.govt.nz>; Jared White [redacted]
Subject: Upper Hutt Future Model Development

Hi Patrick

Firstly, a very quick note to say that our Messines Ave survey yesterday morning and afternoon was successful and the modelling is progressing well.

Thanks again for your support with the Upper Hutt modelling. Below is a quick summary of the scope of our existing commission (in italics):

Stages

- *Update base year model to 2022 - we recommend a base year of 2022 as opposed 2023 as part of the base model update will require validation against traffic counts and travel time data to ensure it replicates on-the-ground traffic behaviour in the base year. This would typically be representative of activity levels in March. As there are likely to be few if any traffic counts available in March 2023 we recommend the base year reflect March 2022. Specific subtasks include:*
    a. *Update transport network to 2022 including all new roading projects and new subdivision activity since 2009 base model*

    b. *Prepare 2022 land use file based on 2018 census data and consent data from 2018-2022. We will also source education rolls from Ministry of Education and liaise with GWRC regarding boundary conditions and through traffic which can be sourced from the WTSM model.*
    c. *Update model file structure to 2022 base year and test to run on latest Tracks software*
    d. *Collect traffic count data from Council and Waka Kotahi (we have direct access to WK TMS system already)*
    e. *Extract travel time data from Tomtom analytics for key corridors*
    f. *Validate 2022 morning peak, interpeak and evening peak traffic models to meet Waka Kotahi's Transport Model Development Guidelines validation criteria*
    g. *Converge models to meet Waka Kotahi's Transport Model Development Guidelines model convergence criteria*
    h. *We will also factor together an all day traffic model from the three period models using local daily traffic profiles*
    i. *Prepare a technical note summarising the model update process, inputs, validation and convergence performance*
- *Benchmark new base model against previous set of models – this will involve the preparation of a short technical note which presents traffic volumes (at key locations), network travel totals and network deficiencies in the road network from the previous model (2006 and 2026 years) compared to the same from the newly updated 2022 model. They will be presented in the form of tables and link and intersection Level of Service and provide a clear picture of how network performance has changed over this period.*
- *Build 2033, 2043 and 2053 future models – three future morning peak, interpeak and evening peak models (that is nine in total) will be prepared. Specific subtasks for all three future year sets of models include:*
    a. *Update transport networks to 2033/43/53 including all planned and committed roading projects and new subdivision activity since 2022 base model*
    b. *Prepare 2033/43/53 land use files based on urban growth forecasts and other resources/directives from Council. We will liaise with GWRC regarding boundary conditions and through traffic which can be sourced from the WTSM model.*
    c. *Update model file structure to 2033/43/53 and test to run on latest Tracks software*
    d. *Converge models to meet Waka Kotahi's Transport Model Development Guidelines model convergence criteria*
    e. *We will also factor together an all day traffic model from the three period models using local daily traffic profiles*
    f. *Prepare a technical note summarising the future model development process, inputs and convergence performance*
- *Future model deficiency analysis – we will run all models to produce traffic volumes (at key locations), network travel totals, and link and intersection Level of Service outputs in the same manner as the previous study. These would be prepared for each year and each period (morning peak, interpeak and evening peak). The output will be a fourth technical note which presents deficiencies (in terms of Level of Service) as well as travel totals on the road network for each year and include commentary as to how network performance changes over this period.*

<u>Fee estimate</u>
The total fees excluding GST for each stage are as follows:

1. *$36,000 (which includes budget for [purchasing Tomtom data for travel time validation)*
2. *$5,000*
3. *$25,000*
4. *$10,000*

The total fees are estimated to be $76,000 + gst.

We note that Stages 1 and 2 are 100% complete and to date two variations have been approved as follows:

- Variation 1 - Additional Modelling Task 1 - Trentham Mixed Use Development – total fees $8,500 and is 100% complete
- Variation 2 - Additional Modelling Task 2 - Messines Ave Paramics Model Build and Test – total fees are $20,250 and work is ongoing

With respect to next steps and acknowledging the scope of works received on 26th July 2023 from Suanne Rushmere and subsequent traffic modelling phasing and numbers received on 31st August (which supercedes much of the earlier email), the following tasks (and fees) are recommended:

Stage 3 as above from original scope aligning with Scenario 1 for all three years = $25,000 (note $1,500 of this $25,000 has been invoiced to date)

A new stage 3a is then proposed to address the scenario assessments as follows:

a) Re-run 2053 models to reflect Scenario 2 and Scenario 3 alternative land use scenarios
b) Undertake a sensitivity test on one 2053 scenario to consider the impact of a higher level of mode share
c) (only if required) run 2033 and 2043 models to reflect Scenario 2 and Scenario 3 alternative land use scenarios

Total fees for Stage 3a if only the 2053 models and sensitivity test tasks (that is a) and b) above) are completed is $6,000 + gst or if 2033 and 2043 models are also run for scenarios (that is a), b) and c) prepared) is $14,000 + gst.

Stage 4 is then more extensive to capture the reporting for all scenarios to include Scenario 2 and Scenario 3 outputs. Total fees to capture all reporting for Stage 3 as per original offer of service is $10,000 + gst. This is no superceded by total fees to include reporting for Stage 3 and Stage 3a (2053 only) is $14,000 + gst or Stage 3 and Stage 3a reporting (if 2033, 2043 and 2053 all run) is $20,000 + gst.

Summary of fees going forwards (noting that $1,500 + gst of this has already been invoiced under Stage 3) is then:
Stage 3, 3a and 4 fees is Scenarios 2 and 3 run at 2053 only: $45,000 + gst (corresponding to a $10,000 extension to existing Stage 3 and 4 fees); or
Stage 3, 3a and 4 fees is Scenarios 2 and 3 run at 2033, 2043 and 2053: $59,000 + gst (corresponding to a $24,000 extension to existing Stage 3 and 4 fees).

Feel free to contact me if you require any more detail, points of clarification, or a more formal offer of service.

Regards

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