Redmond 2050 Travel Demand Modeling Scope of Work

Task 1 – Project Management

The Consultant will work closely with Redmond staff to manage this project and coordinate with the other related Redmond 2050 projects. As part of the project management task, we propose the following major actions:

- 90-minute kick-off meeting in late April held on Teams (Consultant to draft an agenda, to be reviewed by City Project Manager one week before the meeting)
- 30-minute bi-weekly check-in meetings with the Consultant and City Project Manager
- 3 Redmond 2050 large team coordination meetings, assumed to last 2 hours each with 2 Consultant staff present; could be in-person if desired by City and allowed by local health departments (Consultant to draft an agenda, to be reviewed by City Project Managers one week before the meeting)

Required City Actions:

- Attendance of City Project Manager at meetings
- City Project Manager to coordinate attendance of other City staff at kickoff and coordination meetings

Consultant Deliverables:

- Monthly invoices and progress reports

Consultant Total Hours – 86

Task 2 – Travel Demand Modeling

The Consultant would take the City's calibrated base year version of the BKR 4-step travel demand model and update the land use and transportation networks to reflect four distinct scenarios:

1. Current Comprehensive Plan and Transportation Facilities Plan (i.e. "no action" alternative)
2. Land Use and Transportation Scenario 1
3. Land Use and Transportation Scenario 2
4. Preferred Land Use and Transportation Scenario

Task 2.1 – Land Use Forecasts

Key tasks for this phase include:

- The Consultant will develop spreadsheets for the 2050 land use inputs for the four scenarios outlines above
- The Consultant will provide a spreadsheet template outlining the model's land use categories to City staff
- The Consultant will provide a shapefile of the Transportation Analysis Zones from the travel model, which is the unit of analysis the model requires to run
- The Consultant will work with City staff to discuss how to collapse or expand land use categories from the Vision 2050 data to fit the travel model land use categories
- The Consultant will review any inconsistencies (negative growth, major growth in areas expected to be stable) with City staff to flag potential errors in the land use forecasting process

Required City Actions:

- The City/Vision 2050 team will provide the Consultant with 2050 land use forecasts for each of the four scenarios by TAZ in the travel model land use categories; this may require the City to extrapolate 2044 data from the Vision 2050 team's forecast
- The City will provide direction to address any land use inconsistencies identified by the Consultant

Consultant Deliverables:

- 2050 land use tables

Consultant Total Hours – 20

Task 2.2 – No Action Network Development

Key tasks for this phase include:

- The Consultant will request the 2050 transportation network data from the City of Bellevue and review changes from the base year network, and summarize changes in a map and list for review and concurrence by Redmond staff

Required City Actions:

- Redmond staff will provide GIS data on the currently adopted TMP and TFP

- The City will review the list of proposed network changes as summarized by the Consultant and comment/provide final guidance on what should be included in the No Action network

Consultant Deliverables:

- 2050 no action transportation network in EMME format

Consultant Total Hours – 16

Task 2.3 – TrendLab+ Workshop
Key tasks for this phase include:

- Consultant to draft an agenda, to be reviewed by City Project Manager one week before the workshop
- Consultant will host a 2 hour TrendLab+ workshop with the entire Redmond 2050 team to discuss and gain consensus about what demographic, economic, and travel behavior trends should be assumed in the 2050 modeling; the Consultant will work with the City Project Manager to determine if this will be done in person or remotely
- The Consultant will prepare a brief draft memo, to be reviewed by City Project Manager within one week following the workshop summarizing the findings/consensus trends of the TrendLab+ workshop that will be reflected in the 2050 BKR model

Required City Actions:

- Redmond staff to review and provide comments/edits on draft agendas/memos for finalization

Consultant Deliverables:

- Draft and final workshop agenda
- Draft and final workshop results memo

Consultant Total Hours – 32

Task 2.4 – BKR Model Adjustments for TrendLab+ and Future Urban Form Factors
Key tasks for this phase include:

- Consultant will prepare a list, for City Project Manager review, of proposed changes to the trip generation or mode split results of the BKR model resulting from the TrendLab+ workshop and an analysis of probable trip generation shifts resulting from a denser,

more transit-oriented urban form in Redmond's urban and activity centers (Overlake, Downtown, Marymoor)

- Consultant will develop trip generation rate refinements and trip table adjustments to execute the changes above in the BKR model
- Consultant will perform a test run of the 2050 No Action BKR model to ensure reasonable results; Consultant will QC results and make changes in model input files to address errors or unexpected/unreasonable outputs

Required City Actions:

- Redmond staff review and provide comments/edits on proposed trip generation and mode split changes for finalization

Consultant Deliverables:

- Draft and final list of trip generation and mode split adjustments
- Updates to the 2050 BKR model to implement changes
- Initial run of model to ensure reasonable results

Consultant Total Hours – 42

Task 2.5 – Land Use and Transportation Networks for Scenarios 1 and 2
Key tasks for this phase include:

- The Consultant will update the 2050 No Action BKR model land use files to reflect the Scenario 1 and 2 growth forecasts
- The Consultant and the City Project Manager (and other relevant City staff) will workshop transportation network changes associated with Scenario 1 and 2. As part of this workshop, the Consultant and City staff will identify projects from the No Action Scenario to be removed or modified and new projects to be added and reflected in the travel model. It is assumed that this workshop will be up to 2 hours in length or be held as two one-hour workshops.
- The Consultant will summarize a draft list of transportation network updates, for review by the City Project Manager
- The Consultant will update the EMME transportation network files with the final approved list of transportation network updates for Scenarios 1 and 2
- The Consultant will perform an initial run of Scenarios 1 and 2 and QC results to ensure reasonable outputs

Required City Actions:

- Redmond staff to provide 2050 land use data for Scenarios 1 and 2 by TAZ and in the model's land use categories
- Redmond staff to review and provide comments/edits on Scenario 1 and 2 transportation networks for finalization

Consultant Deliverables:

- Scenario 1 and 2 land use and transportation network updates to BKR model
- Initial run of models to ensure reasonable results

Consultant Total Hours - 64

Task 2.6 – Land Use and Transportation Network for Scenario 3
The key Consultant actions, required City actions, and Consultant deliverables for this task are similar to those identified for Task 2.5.

Consultant Total Hours – 32

Task 3 – Transportation Impact Fee Update

Using the updated travel model from Task 2 and the preferred scenario run, the Consultant will update the City's transportation impact fee program. The Consultant will undertake the following major tasks:

- The Consultant will update the City's transportation impact fee spreadsheet with the new land use forecasts from the City's preferred scenario
- The trip length inputs and adjustment factors in the impact fee spreadsheet will also be updated based on the BKR model and household survey
- The Consultant will work with the City Project Manager to develop a draft list of impact fee eligible projects/programs that will be shared with other City staff for review and comment
- The Consultant will run a select link analysis on typical projects to identify the share of in-city versus regional growth; the Consultant will also calculate any existing deficiencies, as appropriate
- The Consultant will advise the City about potential impact fee exemptions allowed by State law and whether there are any required reimbursements to offset these exemptions

- The Consultant will calculate a new transportation impact fee rate per PMT based on the updated inputs and project list

Required City Actions:

- City staff will provide planning-level cost estimates for all projects and programs to be included in the transportation impact fee program
- City staff will review and provide comments/edits on the transportation impact fee project/program list for finalization
- City staff will review and provide comments/edits on the transportation impact fee land use exemptions for finalization in the rate study

Consultant Deliverables:

- Updated transportation impact fee spreadsheet
- Updated transportation impact fee rate study, including any approved exemptions

Consultant Total Hours – 124

Task 4 – Coordination with SEPA Consultant Team

The Consultant will work with City staff and the SEPA consulting team to identify the specific travel model output needed for the SEPA documentation. This includes the Citywide programmatic EIS requirements as well as the more detailed analysis required for the Overlake Planned Action Ordinance and EIS. Major Consultant tasks include calculation and evaluation of the following:

- Mode shares, VMT, and greenhouse gas emissions citywide and for the urban centers and major neighborhoods
- Arterial travel speeds/delay, traffic volumes, and V/C ratios from the model for up to 20 roadway segments
- Transit boardings citywide and for the urban centers
- System completeness based on full implementation of the TMP
- PM peak hour intersection turning movement forecasts and Synchro delay/LOS results for up to 15 intersections
- It is important to note that no new data collection (traffic counts) are assumed in the Consultant budget

Required City Actions:

- City staff will review and approve the final list of roadway segments and intersections for the SEPA analysis
- City staff will provide the most recent citywide Synchro network and any traffic counts collected at the 15 study intersections over the past five years
- Connectivity analyses (previously calculated using a route directness index) will be performed by the City if a quantitative analysis method is pursued as part of the EIS

Consultant Deliverables:

- A methods and assumptions memorandum related to travel demand forecasting and transportation impact analysis that can be incorporated into the SEPA documentation
- Outputs and results in tabular or spreadsheet format to facilitate SEPA documentation

Consultant Total Hours – 272

Task 5 - Documentation

The Consultant will prepare the following major deliverables as part of this project. The hours in the previous tasks are exclusive of the document production hours listed here.

Required City Actions:

- City staff will review and provide comments/edits on the above documents

Consultant Deliverables:

- Model update memorandum
- Transportation impact fee rate study
- Methods and assumptions memorandum for SEPA analysis

Consultant Total Hours – 96