SHRP2 C10: Metropolitan Transportation Commission

Quarterly Report for October 2016 – December 2016 (prepared 29-Dec-2016)

SUMMARY

The three-agency group implementing Fast-Trips has continued advancing work on network development, demand preparation, route choice estimation, and software development. Past quarter technical highlights include: release of version 0.3 of the GTFS-Plus network standard and updated sets of network inputs; continued refinement and calibration of the overall implementation; extensive use of Tableau dashboards during testing and debugging of intermediate results; and development of a plan for managing convergence within Fast-Trips.

We have recently solicited proposals for an on-call bench of travel demand researchers who are interested in assisting us with the parallel track of work on research problem statement development; we expect to finalize the selection in early January and begin the contracting process shortly thereafter. Lastly, we have initiated the process of amending the funding agreements for the agencies and contractors involved in the project in order to align their authorized budget and schedule with current expectations for completing the scope of work.

IMPLEMENTATION

Work accomplished for the period:

Task	Activities
Task 1 - Project Mgmt / Tech Oversight	● Continued to meet on a bi-weekly basis on management-level updates and issues ● Solicited proposals for assistance with development of research problem statements ● Initiated amendments to all agency and contractor funding agreements in order to update authorized budgets and schedules
Task 2 - Network Supply	● Published version 0.3 of GTFS-Plus network standard and updated draft documentation to reflect latest changes. ● Prepared updated network inputs for both SF Bay Area and Puget Sound regions and performed basic debugging
Task 3 - Transit Demand	● Continued efforts to develop validation data sets from available observed data (OBS and CHTS) ● Revised demand inputs for Puget Sound region to reflect updated Soundcast base year

Task 4 - Transit Rider Behavior	● Continued test runs of Fast-Trips for calibration against OBS & CHTS data ● Refined interactive Tableau calibration dashboard tool
Task 5 - Transit System Performance	●
Task 6 - Software Implementation	● Conducted more full-scale Fast-Trips runs and examined results to identify and fix code and input issues ● Implemented Tableau dashboard to display path-finding results for use in debugging ● Developed preliminary plan for implementation of multiple loop approach to convergence
Task 7 - Test Case Development	
Task 8 - Agency Implementation & Testing	
Task 9 - Communications and Outreach	● Updated project website with latest datasets and inputs ● Prepared presentation materials for papers accepted at the TRB Annual Meeting

Schedule status:

The team continues to make good progress on implementation and calibration of the SF Bay Area version of Fast-Trips, and the PSRC version is nearly ready for a full-scale test using the latest network standard. Now that several key staff have returned from being out on leave, we are again making a push to complete two major deliverables. We are also wrapping up the involvement of several team members who are not expected to be involved in the project in 2017.

Expenditures and budget status:

MTC has contributed an additional $100,000 to the project from our agency's budget and has encumbered these funds with Resource Systems Group, Inc.

Resource	FHWA/ In-kind	Encumbered / Committed	Invoiced to Date / Expended
SFCTA	FHWA	$336,800	$117,400
SFCTA	In-kind	$80,000	$49,600
PSRC	FHWA	$65,000	$37,400
PSRC	In-kind	$65,000	$41,900
MTC	FHWA	$83,000	$30,700
MTC	In-kind, outside	$198,000	$108,600
Univ. of Texas, Austin	FHWA	$38,500	$2,600
Mark Hickman (Univ. of Queensland)	In-kind	$10,500	$0
Hood Consulting	FHWA	$60,000	$11,400
UrbanLabs, LLC	FHWA	$100,000	$14,500
To be determined	FHWA	$16,700	$0
Total	*FHWA*	*$700,000*	*$214,000*
Total	*In-kind*	*$353,500*	*$191,400*
Total	*All*	*$1,053,500*	*$397,200*

Invoices for a sizeable amount of work activities are expected to be received and processed sometime in early 2017.

The funds identified above as "To be determined" are expected to be used to compensate the on-call consultants who participate in the development of research problem statements. The table above will be updated next year, once contracts are executed with individual participants.

Summary of the quarter ahead:

In the next quarter, we will continue to move ahead on the technical tasks. We expect to complete our review of several deliverables that had been lagging earlier this year due to staffing challenges. We will continue refining, calibrating, and validating our initial implementation, including our asserted route choice estimation parameters. For software development, we plan to implement and test our proposed approach to convergence. The networks team and demand team will be monitoring developments on the rest of the project and will update their

contributions and documentation as necessary. We look forward to discussing and presenting our work at the TRB Annual Meeting and we will also be developing content for our contributions for the 2017 Planning Applications Conference. We will also enter into contracting arrangements with the consultants who will be assisting with the research problem definition, so that we can kick off that work early in the new year.

Risks/Challenges/Obstacles:

The main risk at this point is schedule adherence. Several team members will no longer be participating in this project as of the end of 2016, either because they are being assigned to handle other priorities at their agency or because they are leaving the agency altogether. Our current execution plan can accommodate these changes without disruption, but there will be fewer people familiar with the effort who are available to step in if we hit additional delays in the year ahead. We have identified at least two additional staff members who are currently being brought up to speed on SHRP2 activities, and we will monitor overall workload commitments of existing team members to keep our progress on its current pace.

MEASURES

Our performance measures tracking tool shows current values for all metrics, including the developments in the past quarter specifically noted below.

Implementation and Deployment:

There was no quarterly C10 coordination call this period.

Capacity and Partnership:

A total of 23 people are currently using our collaboration tools: the Asana project management system, our code repositories on GitHub, and cloud storage on Google Drive and Box. In addition, team members have been making extensive use of Tableau workbooks for visualization of model outputs; we have found it useful for debugging unexpected model results, supporting calibration and validation of model parameters, and communicating overall progress to the wider team.

Dissemination:

We received a specific request for information about the project from staff at Denver RTD. The remainder of our activities related to dissemination over the past quarter have involved preparing for upcoming conferences. Team members prepared their presentation materials for the TRB Annual Meeting, and we submitted our suggestions for the 2017 Planning Applications

Conference. These efforts will be reflected in our performance metrics when our work is formally presented at each event.

CATEGORY	DEFINITIONS			TOTAL	Jan-Mar 2015	Apr-Jun 2015	Jul-Sep 2015	Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Jul-Sep 2016	Oct-Dec 2016	Jan-Mar 2017	Apr-Jun 2017	Jul-Sep 2017	Oct-Dec 2017
Tool Implementation and Deployment	**OUTPUT MEASURE**	**METRIC 1**	**TARGET 1**													
	Agency and project partners participate in all required calls/meetings.	Number of calls/meetings attended	Minimum: Participation in group kick-off, project kick-off, and 2 additional scheduled calls per year	9	2	1	1	1	1	2	1	0				
	Project deliverables are submitted to Volpe/FHWA on time and on schedule.	Quarterly progress reports submitted by specified due date	Quarterly progress reports submitted by specified due date.	8	1	1	1	1	1	1	1	1				
		Final deliverables submitted by due date	Final deliverables submitted by due date.	3	1	0	2	0	0	0	0	0				
	Agency identifies desireable refinements (i.e., suggestions for future research) for tools created from the C10 project.	Documentation of desireable refinements within existing project deliverables	Information about desireable refinements included within final report.	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a				
	Agency supplies lessons learned from participating as a C10 grantee.	Documentation of lessons learned	Information about grantee experience included within final report.	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a				
	OUTCOME MEASURE	**METRIC 2**	**TARGET 2**													
	Travel demand model contains new sensititivities suitable for policy analysis.	Number of progress reports that document new variables / modeling options available	At least one	0	0	0	0	0	0	0	0	0				
	Methodologies, work processes, key decisions, problems encountered, & lessons learned are sufficiently well documented that peers can follow the work and repeat the results.	Number of issues and lessons documented in on-line tools	At least one	0	0	0	0	0	0	0	0	0				
Capacity Building and Partnerships	**OUTPUT MEASURE**	**METRIC 1**	**TARGET 1**													
	Agency practitioners (staff, contractors, consultants) and assigned partner staff are engaged with project and familiar with results.	Number of users of online collaboration tools	Staff from each partner agency makes contributions to archive of project knowledge.	23	15	17	18	18	22	23	23	23				
	OUTCOME MEASURE	**METRIC 2**	**TARGET 2**													
	Agency and partner staff acquire additional skills and expertise.	Number of progress reports that document new skills / expertise acquired	At least one	1	0	0	0	0	0	1	0	0				
	Improved work processes, data, analysis tools, and decision information are in use by our agencies.	Number of progress reports that document uptake of new processes, data, tools, methods	At least one	2	0	0	0	0	0	1	0	1				
Technology Transfer / Research Dissemination	**OUTPUT MEASURE**	**METRIC 1**	**TARGET 1**													
	Project data and information is shared with the academic and practitioner communities.	Number of presentations delivered (conferences, technical meetings, TRB)	1 TRB paper or poster, or participation in a panel/workshop that recounts the information	3	0	1	0	0	1	1	0	0				
		Number of papers/memos/articles written about the project experience	1 Presentation prior to project closeout to FHWA or other interested communities	6	0	0	0	0	0	6	0	0				
	OUTCOME MEASURE	**METRIC 2**	**TARGET 2**													
	Peer agencies in the state/region expresss interest in or begin to deploy C10 tools.	Number of agencies that contact C10 team about the project and/or express plans to pursue implementation	At least one	3	0	1	0	0	0	1	0	1				