SHRP2 C10: Metropolitan Transportation Commission
Quarterly Report for January 2018 – March 2018 (prepared 19-Mar-2018)

SUMMARY

The three-agency group implementing Fast-Trips has continued advancing our work on multiple fronts. Past quarter technical activities involved wrapping up the research track and making significant progress on software development. We incorporated the Partridge library to speed up software performance, and we implemented fixes to various issues that had been identified in 2017 including: refinement of the approach for addressing preferred departure and arrival times; implementation of outer loop convergence using a learning variable; and resolving errors in pathweight costs and utility calculations. More recently, we have explored several methodology challenges that were carried over from the original FAST-TrIPS project, and we have identified an approach for moving ahead within the time and budget constraints of this project. Our main dissemination and communications activities in the past quarter were several presentations at the TRB Annual meeting regarding our teaching materials packet and three new research needs statements. Within the next few weeks, we expect to complete all remaining contract amendments to finalize the task budgets for the rest of the project timeline.

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 ● Prepared and processed contract paperwork to extend project to end of June 2018 for active partners and to finalize task budgets for all remaining activities
Task 2 - Network Supply	
Task 3 - Transit Demand	● Additional refinements to technical memo
Task 4 - Transit Rider Behavior	● Identified a proposed approach to address newly discovered issues with trip-based hyperpath methodology inherited from original FAST-TrIPS project
Task 5 - Transit System Performance	
Task 6 - Software Implementation	● Incorporated the Partridge library for GTFS ● Implemented refinements to key features: separation of

	PDT/PAT, convergence, cost and utility calculations
Task	**Activities**
Task 7 - Test Case Development	
Task 8 - Agency Implementation and Testing	
Task 9 - Communications and Outreach	● Presented final draft of teaching materials packet and three new research needs statements at the TRB Annual Meeting

Schedule status:

The software development, validation, and calibration efforts are proceeding rapidly now. We hope to reach a stable implementation in the next month and will turn our attention to documentation and wrap-up activities before our June-2018 end date.

Expenditures and budget status:

Reimbursements completed to date are detailed in the table below. Due to pending signatures on multiple contract amendments, we have not yet processed invoices for the latter half of 2017 from several project partners.

Resource	FHWA/ In-kind	Encumbered / Committed	Invoiced to Date / Expended
SFCTA	FHWA	$337,800	$195,500
SFCTA	In-kind	$80,000	$98,300
PSRC	FHWA	$63,900	$45,700
PSRC	In-kind	$63,900	$45,700
MTC	FHWA	$5,000	$4,800
MTC	In-kind	$98,000	$145,000
Univ. of Texas, Austin	FHWA	$38,500	$38,500
Mark Hickman (Univ. of Queensland)	In-kind	$10,500	$0
Hood Consulting	FHWA	$16,500	$16,500
UrbanLabs, LLC	FHWA	$100,000	$76,400
RSG	FHWA	$110,000	$55,800

Shlomo Bekhor	FHWA	$6,600	$0
Hani Mahmassani	FHWA	$6,500	$0
AJH Associates	FHWA	$4,950	$4,950
Unallocated	FHWA	$10,250	$0
Total	*FHWA*	*$700,000*	*$438,200*
Total	*In-kind*	*$252,400*	*$289,000*
Total	*All*	*$953,500*	*$727,200*

Summary of the quarter ahead:

With three months left to go in our schedule, we are now turning our attention to making a final push on validation and calibration efforts and documenting the overall results of this C10 project. In particular, project staff have spent time documenting methodology issues encountered with the trip-based hyperpath approach on GitHub, and we will be implementing an approach to address the concerns to allow us to continue with the remainder of the calibration as quickly as possible.

Risks/Challenges/Obstacles:

There is only one quarter left in our project, so we are not flagging any new issues at this time. We are working to close out contracts with partners who have completed their work, and we are documenting as much as we can about the status of the project in order to create an appropriate stopping point for our work efforts.

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:

Over the past quarter, our activity in this category included preparing this quarterly progress report and working through the issues that were identified with the trip-based hyperpath methodology.

Capacity and Partnership:

A total of 27 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. Multiple

team members have expanded their knowledge of the strengths and weaknesses of the trip-based hyperpath approach to transit assignment.

Dissemination:

Our team finalized the collaborative literature review from our research track efforts, and we presented the teaching materials packet and three research needs statements that were developed in late 2017 at the Annual Meeting of the Transportation Research Board.

CATEGORY	DEFINITIONS			TOTAL	Jan-Mar 2017	Apr-Jun 2017	Jul-Sep 2017	Oct-Dec 2017	Jan-Mar 2018	Apr-Jun 2018
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	**11**	0	1	0	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.	**12**	1	1	0	1	1	
		Final deliverables submitted by due date	Final deliverables submitted by due date.	**3**	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	
	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	
	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	
	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	**5**	0	3	1	0	1	
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.	**27**	24	24	27	27	27	
	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	**3**	0	1	0	0	1	
	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	**3**	0	1	0	0	0	
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	**12**	3	3	0	0	3	
		Number of papers/memos/articles written about the project experience	1 Presentation prior to project closeout to FHWA or other interested communities	**10**	2	1	0	0	1	
	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	**4**	0	0	1	0	0	