

Meeting Minutes: TPF-5 (334) Veta Enhancements & Technology Exchange (Meeting No. 9)

Date: November 20, 2018
 Minutes prepared by: Rebecca Embacher
 Location: Skype

Attendance

Pooled Fund State Contacts:

Participated	State	State Contact
<input checked="" type="checkbox"/>	Alaska	Richard Giessel
<input type="checkbox"/>	Alaska	Dan Gettman
<input checked="" type="checkbox"/>	California	Ragu Thangavelautham
<input type="checkbox"/>	California	Chuck Suszko
<input type="checkbox"/>	California	Blair Anderson
<input checked="" type="checkbox"/>	Connecticut	Dave Howley
<input type="checkbox"/>	Connecticut	John Henault
<input type="checkbox"/>	Georgia	John Martin
<input checked="" type="checkbox"/>	Illinois	Brian Hill
<input type="checkbox"/>	Maine	Ulrich Amoussou-Guenou
<input checked="" type="checkbox"/>	Maine	Dale Peabody
<input type="checkbox"/>	Maine	Casey Nash
<input checked="" type="checkbox"/>	Minnesota	Rebecca Embacher
<input checked="" type="checkbox"/>	Minnesota	Curt Turgeon
<input type="checkbox"/>	Mississippi	Alex Middleton
<input type="checkbox"/>	Missouri	Bill Stone
<input type="checkbox"/>	Missouri	Dan Oesch
<input checked="" type="checkbox"/>	New York	Zoeb Zavery
<input checked="" type="checkbox"/>	New York	Michael Heim
<input checked="" type="checkbox"/>	North Dakota	Amy Beise
<input checked="" type="checkbox"/>	North Dakota	Curt Dunn
<input checked="" type="checkbox"/>	Ohio	Craig Landefeld
<input type="checkbox"/>	Ohio	Adam Au
<input type="checkbox"/>	Oregon	Larry Illg
<input checked="" type="checkbox"/>	Oregon	Mike Stennett
<input type="checkbox"/>	Pennsylvania	Dan Clark
<input checked="" type="checkbox"/>	Pennsylvania	Sheri Little
<input type="checkbox"/>	Tennessee	Matt Chandler
<input type="checkbox"/>	Tennessee	Brian Egan

Additional State Attendees: James Gunter, Chris Duman

FHWA:

Participated	Contact
<input checked="" type="checkbox"/>	Michael Arasteh
<input checked="" type="checkbox"/>	Steven Cooper
<input checked="" type="checkbox"/>	Matt Corrigan
<input checked="" type="checkbox"/>	Richard Duval
<input checked="" type="checkbox"/>	Kevin Kliethermes
<input type="checkbox"/>	Antonio Nieves

The Transtec Group:

Participated	Contact
<input checked="" type="checkbox"/>	George Chang
<input checked="" type="checkbox"/>	Jason Dick

Decisions Made

- Scope of work for amendment number two was finalized.

Action items

- Transtec and MnDOT | Work on completing contract paperwork for amendment number 2.
- Pooled Fund Participants | Continue to brainstorm how to complete independent verification on IC and PMTP measurements.

Agenda

- Pooled Fund Participants and Budget
- Amendment Number 2 Scope of Work
- Code of Federal Regulations – Action Items

Next Meeting

Date: February 2019

Time: TBD

Location: Skype

Agenda items: Further discussion on Code of Federal Regulations

Meeting Notes

Pooled und Participants and Budget

See attached slides for further details.

North Dakota and Tennessee have joined pooled fund. Currently, have 15 states participating.

MnDOT has currently received \$746,500 from participating states to date. \$467,213.54 have been encumbered.

Currently have \$229,286.46 available for inclusion in the amendment number 2. The FHWA has contributed \$50,000 of SHRP2 funding. Kevin Kliethermes has gone through the proposed 'wish list' items for Veta Enhancements to determine which items the federal funding would be appropriate to allocate FHWA funds towards.

Matt Corrigan is the current FHWA technical liaison for this pooled fund.

Amendment Number 2 Scope of Work

The current contract for Veta 6.0 expires March 31, 2019. The goal of discussions is to finalize the prioritized list of enhancements to determine which ones to move forward.

This listing was established by summarizing the ranking of top priorities of each state and sharing that information during this meeting (see the Table 1 below). Attendees then discussed which one of these top priorities to move forward based upon the available budget.

The federal funding is being used for following items:

- A-07 | Allow adding alignments before data exists.
- E-21 | CFR: Batch analysis of filter groups (select all filter groups in folder at folder level, or by individually selecting filter groups); with batch analyses - provide *csv export of user selected tables (e.g., coverage, TSI per subplot, etc.).
- B-15 | CFR: Zoom to Exclusion Filter - Used when Agency verifying exclusion boundaries.
- F-06 | CFR: Provide in filter group setting report on subplot start/end points that have been moved more than 100ft from the calculated, automated location established by Veta both IC and PMTP.

The following lists the items that the pooled fund participants decided to move forward for funding under task C of amendment number 2.

C. Pooled Fund Third Phase of Enhancements

- C.1 - Allow adding alignments before data exists
- C.2 - Add ability to securely export vendor data stored in Veta and add the ability to import that data. (Critical with new direct download feature - where export files no longer stored/exist) - ability to export when Veta project won't open)
- C.3 - When downloading data, add ability to select which dates from the range should be used.
- C.4 - Export, Import, Revert Default Legend.
- C.5 - CFR: Zoom to Exclusion Filter - Used when Agency verifying exclusion boundaries.
- C.6 - CFR: Autogenerate start/stop locations for sublots with IC data (similar to PMTP) - (tie to start and end limits of location filter or data if location filter not used)
- C.7 - Calculate percent changes in ICMVs between passes and in IC data.
- C.8 - Calculate changes in temperatures between passes in IC data.
- C.9 - Use density and temperature gun data from spot tests after each roller pass to produce compaction curves (density growth, temperature drops, and ICMV) and their correlation at given spot locations. (MO, CA, ...)
- C.10 - IC Provide coverage stats for each subplot - includes coverage values
- C.11 - Allow different targets for different passes. (per roller position)
- C.12 - CFR: Batch analysis of filter groups (select all filter groups in folder at folder level, or by individually selecting filter groups); with batch analyses - provide *csv export of user selected tables (e.g., coverage, TSI per subplot, etc.).
- C.13 - Per Data Lot & Data Sublot: Graph of Avg. Temp vs. Pass count
- C.14 - CFR: Report whether subplot start/end points have been moved more than 100ft from the automated location established by Veta for both IC and PMTP in the filter setting report.
- C.15 - Update Standard user's guide. Ensure readme / definitions are included in the user guide (e.g., definitions of lot, subplot, filter group, operation filter, override filter, semi-variogram, CoV, editor, etc.)
- C.16 - Veta Bug Fixes
- C.17 - Undedicated Work Task
- C.18 - Support Importing, Viewing and Analysis of Dielectric Constant Data into Veta

23 Code of Federal Regulations Part 637

See slides for further details.

Elaborated on the three areas of concern: verification of field measurements, avoiding tampering of data and accuracy of submittals for the IC and PMTP technologies. These concerns are only for states that are using measurements from these devices for acceptance (e.g., monetary price adjustments in the form of incentives).

Future discussions regarding the draft roadmap will be addressed during the next scheduled pooled fund meeting. Pooled fund participants are asked to brainstorm ideas of possible independent verification procedures.

Table 1. Veta enhancement 'wish list' sorted by state top priorities.

Category	Code	Task	Countif Top 5	Countif Top 10	Sub-Total	Cost Sub-Total
		Undedicated Work Task Funds				\$1,771.66
Mapping	B-11	Include option to show direction on map for non-overlapping data in a data lot (e.g. thermal profiling).- (would playback address this? Also, would this be confusing when looking at entire lift?)	4	5	104	\$17,726.52
Data Management	A-01	Support for import of ground penetrating radar (GPR) data (Dielectric Profile Pooled Fund, SHRP2 funding or NRRRA)	3	3	278	\$45,377.42
Data Management	A-07	Allow adding alignments before data exists	3	3	69	\$11,095.77
Misc	G-07	Update Standard user's guide. Ensure readme / definitions are included in the user guide (e.g., definitions of lot, subplot, filter group, operation filter, override filter, semi-variogram, CoV, editor, etc.)	3	3	44	\$5,777.41
Data Management	A-02	Phase II: Support for import, viewing, and analysis of ProVAL localized roughness results	2	4	261	\$43,109.93
Analyses	E-12	IC Provide coverage stats for each subplot - CA, MO (same as E-20)	2	4	46	\$7,308.82
	G-06A	Technical & Field Support to Pooled Fund States				
Misc	G-06B	Veta fixes	2	4	1700	\$263,271.00
Data Management	A-17	Add ability to securely export vendor data stored in Veta and add the ability to import that data. (Critical with new direct download feature - where export files no longer stored/exist) - ability to export when Veta project won't open) (same as A-22)	2	3	68	\$10,906.32
Filtering	C-08	CFR: Autogenerate start/stop locations for sublots with IC data (similar to PMTP) - CA, MO, IL (tie to start and end limits of location filter or data if location filter not used)	2	3	49	\$7,877.17

Category	Code	Task	Countif Top 5	Countif Top 10	Sub-Total	Cost Sub-Total
Misc	G-08	Field Guide: Create "how to" guide	2	3	168	\$26,511.64
Data Management	A-20	Allow multiple vendor "projects" to be downloaded into one Veta project. (Should be covered in Veta 6.0, but will not know for sure until later.)	1	4	0	\$
Filtering	C-01	Add ability to view location filter and exclusions at the same time. Allow overlapping exclusions. (Exclusion no longer tied to location filter; when would overlapping exclusions occur?)	1	3	126	-\$20,327.20
Data Management	A-14	CFR: Ability to lock or create read-only files to prevent accidental changes that affect analysis.	1	2	109	\$17,532.97
Data Management	A-18	When downloading data, add ability to select which dates from the range should be used.	1	2	68	\$10,906.32
Filtering	C-05	Allow multiple time filters. Add time exclusion filter for thermal projects. (resolved through higher accuracy GNSS & reduction in human error) (Same as C-07)	1	2	135	\$21,675.06
Spot Tests	D-03	Allow multiple rows to be selected for removing. (why gone?) (feature lost in transition to different 3rd party code. Restored in 6.0)	1	2	0	\$
Analyses	E-02	Correlate spot tests to all data types of in IC and thermal profile data. Correlate a data to one another types within IC and thermal profile data. Report spot test values with respect to all correlated data types in one table.	1	2	380	\$64,592.40
Analyses	E-17	Phase III: Allow for correlations between different types of data (e.g., paver stops vs. ALR, pass count vs. roller speed) (part of E-02 & A-02)	1	2	185	-\$29,752.20

Category	Code	Task	Countif Top 5	Countif Top 10	Sub-Total	Cost Sub-Total
Data Management	A-22	Ability to re-import the raw data that has been exported from Veta. Could be used in cases where Veta project became corrupt, significant software changes preventing project from re-opening, re-creating a project, when user no longer has access to original data in vendor's server, etc. (Critical with new direct download feature where export files no longer stored/exist) ability to export when Veta project won't open? (Same as A-17)	1	1	0	\$
Filtering	C-09	Ability to rename filter group using filter group manager; operation filter would also be updated accordingly (Completed. Modification of data lot number only allowed with autogenerated filter names.)	1	1	0	\$
Filtering	C-10	Allow user to create more than one 'standard' filter group manager per route (this would allow more ease in having multiple routes, with the same projection, in one Veta project; often times routes will have a different number of lifts, material types and offsets making it difficult to use only one set of project information.)	1	1	140	\$22,437.90
Analyses	E-16	Thermal Sublot Lengths with Exclusion Areas length based on data and not subplot lengths (corrected in current contract - Jason working on task)	1	1	14	\$2,234.56
Analyses	E-19	Caltrans: Allow different targets for different passes. (per roller position)	1	1	118	\$18,972.94
Analyses	E-21	CFR: Batch analysis of filter groups (select all filter groups in folder at folder level, or by individually selecting filter groups); with batch analyses - provide *csv export of user selected tables (e.g., coverage, TSI per subplot, etc.).	1	1	191	\$30,561.43
Analyses	E-22	Per Data Lot & Data Sublot: Graph of Avg. Temp vs. Pass count; Table containing the pass count and the following temp. values: mean, std. dev., CoV, Variance, Min, Max, sample size (Quote is for graph only. Rest should be covered in Veta 6.0.)	1	1	49	\$7,877.17
Reporting	F-04	Provide "dash board type" of summary report (e.g., IC, PMTP, GPR, Ride, etc.)	1	1	163	\$27,263.94

Category	Code	Task	Countif Top 5	Countif Top 10	Sub-Total	Cost Sub-Total
Misc	G-04	Develop a feature to facilitate onsite GPS verification tests (conversion of coordinate system if needed) according to the FHWA/AASHTO procedure	1	1	136	\$22,098.76
Misc	G-05	Update software screens to provide simplification, support high resolution monitors, and update to more recent programming language.	1	1	740	\$118,903.60
Analyses	E-05	Calculate changes in temperatures between passes in IC data. (CA, IL part of current task?)	0	4	100	\$15,848.96
Mapping	B-14 G-01A	Export, Import, Revert Default Legend. Ability to import default legends that have been previously created by Agency. Also, ability to toggle between multiple legends. (split into 2 tasks, G-01A & G-01B)	0	2	48	\$7,687.72
	G-01B	Toggle Between Multiple Legends			154	\$24,917.42
Analyses	E-07	Use density and temperature gun data from spot tests after each roller pass to produce compaction curves (density growth, temperature drops, and ICMV) and their correlation at given spot locations. (MO, CA, ...)	0	2	184	\$29,769.12
Analyses	E-11	Provide statistics on the underlying data for spot tests. (data drill down)	0	2	0	\$
Data Management	A-19	Allow changing of the coordinate system (if entered incorrectly).	0	1	95	\$15,053.45
Mapping	B-03	Add support for historical, current, and forecasted weather maps such as radar and air temperatures.	0	1	108	\$17,201.38
Mapping	B-04	Add the ability to change displayed coordinate system zone (county, state, etc)	0	1	28	\$4,326.98
Mapping	B-06	Advanced map data tool (map clicks can show additional data such as event markers, charts, etc.)	0	1	85	\$13,618.04
Mapping	B-15	CFR: Zoom to Exclusion Filter - Used when Agency verifying exclusion boundaries.	0	1	16	\$2,480.92

Category	Code	Task	Countif Top 5	Countif Top 10	Sub-Total	Cost Sub-Total
Analyses	E-01	Specification: Import and export analysis specification; Calculate differential, ranges, and % of data within ranges for all data; % Coverage and actual area of failed area (spec targets).	0	1	156	\$24,748.80
Analyses	E-04	Calculate percent changes in ICMVs between passes and in IC data.	0	1	100	\$15,848.96
Analyses	E-15	Adjustment to calculations of coverage for overlapping data / operation filters.	0	1	0	\$
Reporting	F-01	Reporting: Print maps; print maps at a defined zoom/distance scale; Print map for each subplot analysis; Identify subplot table cells that passed/failed; sign PDF reports with Veta certificates.	0	1	220	\$35,160.56
Reporting	F-02	Thermal profiles: Improve paver stop display (handle overlapping stops, ensure stops align with data to improve readability)	0	1	39	\$6,257.81
Reporting	F-03	Thermal profile: Display synced mouse tracker across the 3 thermal profile charts; Optimize thermal profile drawing to adapt better (short profiles, wide screens); Report thermal profile length minus any black areas (i.e., missing data, no GPS coordinates, etc.)	0	1	164	\$26,100.30
Data Management	A-03	Support import of data files in delimited text file format	0	0	92	\$14,617.64
Data Management	A-05	Enhance import to: better detect duplicate files; detect associated coordinate zones; save recent settings; apply local adjustment factors (multipliers and offsets) for coordinates.	0	0	110	\$17,580.28
Data Management	A-09	Determine route for data. Required for distance-based features of IC data and other tasks.	0	0	31	\$4,894.87
Data Management	A-10	Add ability to import files that use coordinate systems other than the existing ones.	0	0	92	\$14,617.64

Category	Code	Task	Countif Top 5	Countif Top 10	Sub-Total	Cost Sub-Total
Data Management	A-15	Drafting, editing, publication, marketing (?) of standard file format (is this to support the AASHTO standard?) (YES)	0	0	295	\$52,395.20
Data Management	A-21	Adding loader and mapping capabilities to import eTicket information into Veta and the ability to view this information with respect to other data (i.e., PMTP, IC, GPR, Ride, spot test).	0	0	0	
Data Management	A-23	Direct Download: Ability to download data from multiple projects into one Veta project when contractor assigns data to incorrect project.	0	0	0	\$
Mapping	B-02	Show mouse pointer position in multiple coordinate systems. Zoom to alignment.	0	0	48	\$7,687.72
Mapping	B-05	Add a capability to play back roller data on maps	0	0	134	\$21,556.68
Mapping	B-08	Allow user to zoom to data meeting certain requirements; allow user to select next to zoom to next location. Areas of interest may be where there is missing data, breakdown roller compaction mode is static, severe thermal segregation sublots, etc.)	0	0	110	\$17,580.28
Mapping	B-10	Add options to zoom in when moving to the first or last points.	0	0	0	\$
Mapping	B-13	Allow choice between filtered and unfiltered data in the map search tool.	0	0	0	\$
Filtering	C-07	Allow multiple time filters in an operation filter (same as C-05)	0	0	0	\$
Spot Tests	D-01	Spot tests manager (add/remove/change test types, define units, include specification requirements, and define legend for spot test values, import/export test types)	0	0	156	\$25,031.24
Spot Tests	D-01 / D-02	Add legend (points on map colored respectively), allow for import of data with no time stamps, create an import wizard	0	0	330	\$53,271.00

Category	Code	Task	Countif Top 5	Countif Top 10	Sub-Total	Cost Sub-Total
Analyses	E-03	Add smart detection of data abnormalities to improve data correlation (Spot test correlation. Show original and autocorrected chart lines, list excluded points); Allow user to swap chart axes; Allow selection of regression equations (linear, power, and polynomial) and changing of the fit parameters; Smart filtering of spot tests (exclude test points that don't match the location filters and tests locations that don't have sufficient data).	0	0	330	\$53,357.00
Analyses	E-06	Add IC spatial analyses results (coefficient of variation, semivariogram parameters) as indicators of Pass/Fail in specifications	0	0	344	\$60,081.12
Analyses	E-08	Differentials Enhancements: Plot differential versus distance with horizontal lines signifying the values for the moderate and severe categories. Include a pie chart for the overall, temperature and differential page illustrating low, moderate and high thermal segregation.	0	0	10	\$1,529.37
Analyses	E-10	Add ability to cancel and minimize analysis.	0	0	7	\$1,079.53
Analyses	E-13	Save analysis results and select different analyses/results in the software.	0	0	0	\$
Analyses	E-20	Calculate percent coverage per subplot (same as for task E-12)	0	0	0	\$
Reporting	F-05	Add line chart of coverage vs. operation filter.	0	0	7	\$1,079.53
Reporting	F-06	CFR: Provide in filter group setting report on subplot start/end points that have been moved more than 100ft from the calculated, automated location established by Veta both IC and PMTP.	0	0	26	\$ 4,090.22
Misc	G-01	Data manager - mixed unit systems, histogram and chart limits, legend definition, multiple legends for a measurement, decimal precision. Legend improvements (option for smooth coloring, machine-specific, foreground color auto contrast with background color, add color for "less than last value", ability to revert to defaults.) Support import/export of data manager settings.	0	0	248	\$39,894.76
Misc	G-02	Implement Undo system (undelete sublots, filters)	0	0	126	\$20,183.22
Misc	G-03	Add coordinate conversion calculator tool.	0	0	138	\$22,030.20

Category	Code	Task	Countif Top 5	Countif Top 10	Sub-Total	Cost Sub-Total
Misc	G-09	Create a notes menu on the top tool bar to allow for project notes to be added (if possible could snapshots be added also?). This would be more extensive than that feature currently in properties. (same as G-13)	0	0	85	\$13,618.04
Misc	G-10	Develop small installation patches that don't require elevated privileges.	0	0	12	\$1,912.70
Misc	G-11	Alert the user when a software update is available.	0	0	13	\$2,045.11
Misc	G-12	Preserve the software state (views, selected items, sizes, etc)	0	0	0	\$
Misc	G-13	Add a journal feature that allows for notes, images, attachments, etc. (same as G-09)	0	0	0	\$
Vendor Specific	H-02	Support for MDP and CMV+MDP dual measurements	0	0	68	\$10,906.32
Vendor Specific	H-03	Support for downloading Volvo gridded data	0	0	164	\$25,980.12



TPF-5 (334) On-Line Meeting #10

Rebecca Embacher | Advanced Materials and Technology Engineer

November 20, 2018

Meeting Agenda

- Pooled Fund Participants and Budget
- Amendment No. 2 Scope of Work
- Code of Federal Regulations – Action Items





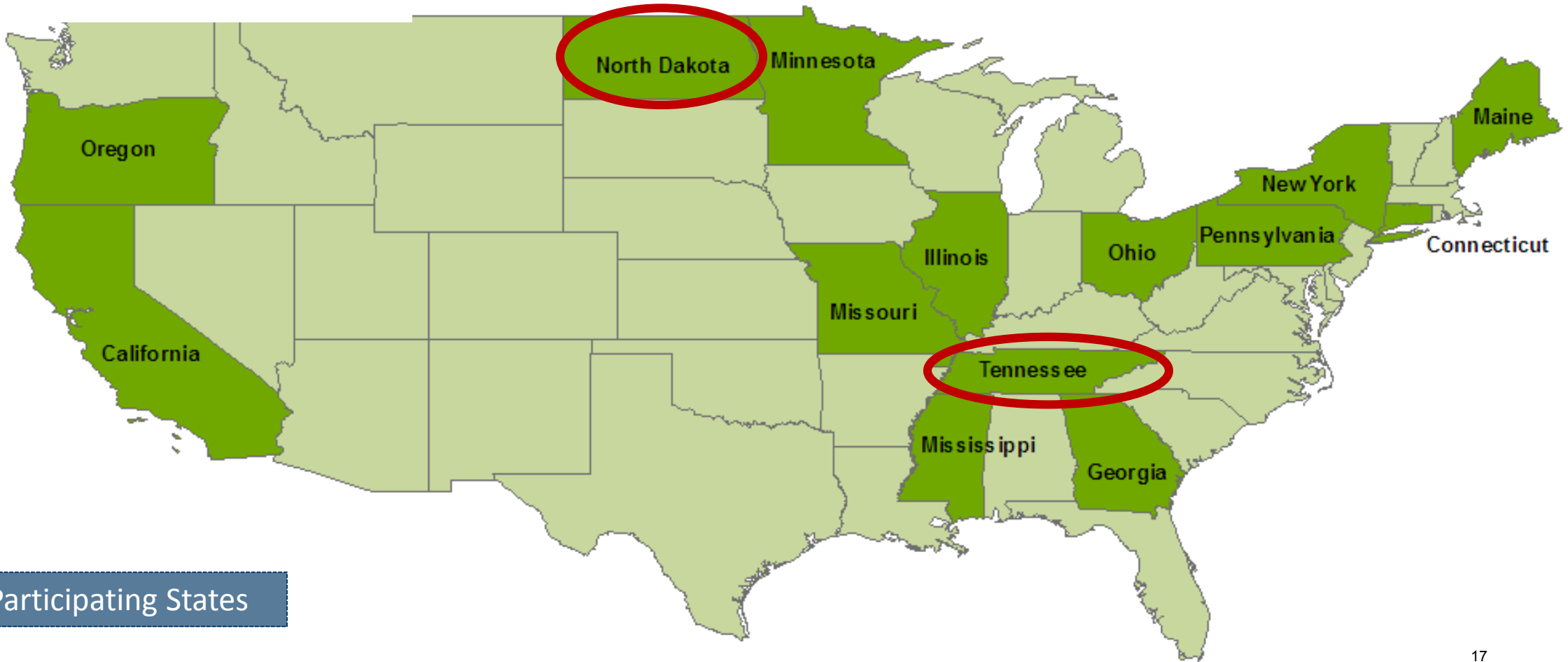
Pooled Fund Participants and Budget

Rebecca Embacher

Current Pooled Fund Participants



TRANSPORTATION POOLED FUND PROGRAM



15 Participating States

Budget Available

Total Committed	\$789,000.00
Total Received	\$746,500.00
Total Encumbrances	\$467,213.54

Total Available: **\$279,286.46**

minus (\$50,000) FHWA SHRP2 Funding

Total Available: **\$229,286.46**

FHWA Technical Liaison

Matt Corrigan

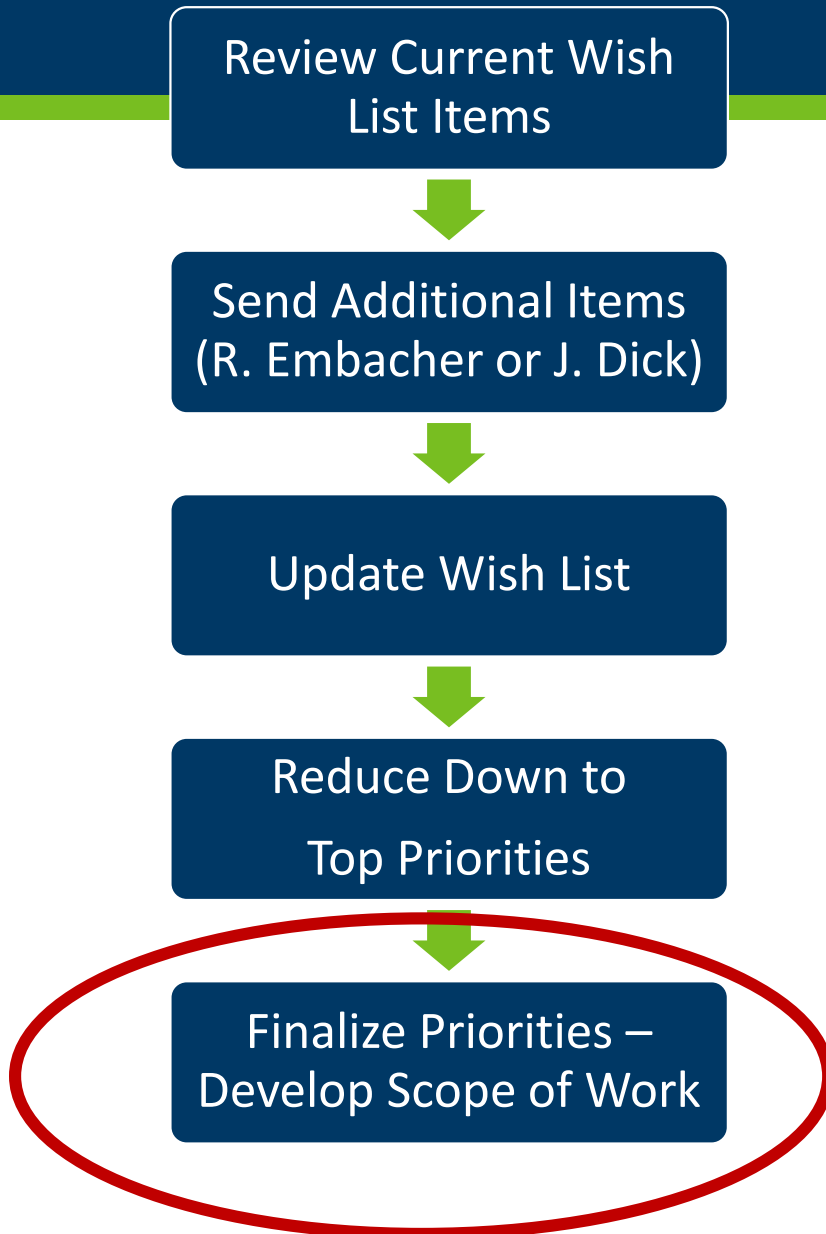
Phone: 202-493-3365

E-Mail: matthew.corrigan@dot.gov

Amendment No. 2

Scope of Work

Action Item



Current contract expires March 31, 2019



Code of Federal Regulations

23 CFR Part 637

ICT Areas to Ensure Compliance

- Verification of Field Measurements
- Avoiding Tampering of Data
- Accuracy of Submittals

What Next?

- Embacher – send out draft of work plan for review
 - Industry
 - FHWA
 - TPF-5 (334) Participants
- All – Finalize Work Plan
- TPF-5 (334) – Determine tasks to be:
 - completed in house and by which states
 - consulted out
 - Funding Source? NRRRA?

Thank you again!



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