2016 Texas Research Peer Exchange

Summary Report

Prepared by: Tim Osbaldeston, OzTech Services

December 2016

Table of Contents

Introduction

The Texas Department of Transportation (TXDOT) hosted a peer exchange in Austin, Texas on December 7-8, 2016 to discuss best practices for research program performance measures, evaluating university performance, and the project selection process.

The Requirements for a Peer Exchange

Under Title 23, Subpart B of the United States Code of Federal Regulations (23 CFR) §420.209 (a)(7), as a condition for approval of Federal Highway Administration (FHWA) planning and research funds for research activities, each state's department of transportation (DOT) is required to periodically conduct a peer exchange. FHWA defines "periodic" as at least once every 5 years. The use of peer exchanges was established to provide State DOT Research Development and Technology (RD&T) programs with the opportunity to examine and evaluate their own programs through a collaborative team of peers, experts, and persons involved in the process, where the exchange of vision, ideas, and best practices could be fostered to benefit both their program and the program of the peer team participants.

The basic approach is to invite an outside panel of managers from State DOT research divisions, FHWA, other public agencies, and the private sector to meet with the host agency to discuss and review a specific focus area(s). During the peer exchange, the group analyzes the agency's policies and practices, shares case studies and experiences, and develops recommendations for improvements. The information gathered from the exchange is presented to TXDOT and FHWA management, and is documented in a written report.

Attendees

The TXDOT Research and Technology Implementation Division (RTI) hosted the Peer Exchange on December 7-8, 2016. Attendees included invited participants from other State DOTs, FHWA, RTI staff, technical writer and an observer from the Texas Local Technical Assistance Program (LTAP).

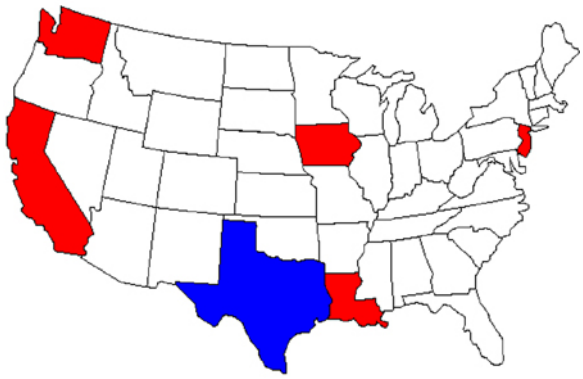
<u>Peer Exchange Team Leader</u>

- **Texas - Chris Glancy**, Research Project Manager, TXDOT Research & Technology Implementation Division

<u>Peer Exchange Team</u>

- **FHWA - Kirk Fauver,** Urban Transportation Planning & Research Engineer, FHWA TXDOT Division
- **California - Jim Appleton**, Division Chief, Caltrans Division of Research, Innovation and Systems Information

- **Texas – Rocio Perez**, Interim Director, TXDOT Research & Technology Implementation Division
- **New Jersey - Amanda Gendek,** Project Manager/Section Chief, NJDOT Bureau of Research
- **Louisiana - Tyson Rupnow, Ph.D., P.E.,** Associate Director, Research, LaDOTD Research Center
- **Washington – Rhonda Brooks,** Director, WSDOT Research and Library Services
- **Iowa - Brian Worrel, P.E.,** SPR Research Engineer, IowaDOT Office of Research & Analytics



Peer Exchange Participants from the TXDOT Research & Technology Implementation Division

- **Sonya Badgley**
- **Kevin Pete**
- **Crystal Stark-Nelson**
- **Patti Dathe**
- **Annette Trevino**

Peer Exchange Observers

- **Julia F. Hager**, Program Manager, University of Texas Arlington, Division for Enterprise Development
- **Tim Osbaldeston**, Technical Writer, President, OzTech Services

Participants

TXDOT Research Presentations

In addition to the three selected topics for group collaboration, TXDOT arranged for the following presentations to showcase ongoing TXDOT sponsored research:

Texas Technology Taskforce
Center for Transportation Research
Andrea Gold, Kristie Chin

Anticipating a World of Shared Autonomous Vehicles: Cost, Energy, and Urban System Implications
Center for Transportation Research
Dr. Kara Kockelman

Full Depth Reclamation in Maintenance Operations using Emerging Technologies
Texas A&M Transportation Institute
Tom Scullion

Development of TXDOT UAS Flight Operations Manual, Policy Recommendations, and Initial Application Evaluations
University of Texas - Arlington
Ujwalkumar (Ujwal) Patil

Process

The TXDOT Research & Technology Implementation (RTI) Division identified three topics for discussion:

- Research Program Performance Measures
- Evaluating University Performance
- Project Selection Process

Each participating State DOT was asked to prepare a 15-minute presentation, participate in a round table discussion, and provide two key takeaways on each topic.

The peer exchange began with introductions and an overview of the agenda, but quickly moved to the first topic. Each participant gave their presentation, which was followed by a round table discussion on the topic. The afternoon of the first day, the group was able to complete the presentations and roundtable discussion on Topic #2. The second day began with presentations and discussion of the Topic #3, followed by the TXDOT University Research Presentations, and concluded with a Close-out Meeting, where the panel consensus approach was used to highlight the key findings of the peer exchange.

In accordance with the FHWA State Planning and Research ***Guide for Peer Exchanges*** (June 2010), this report satisfies the necessary requirements to provide the following:

1. A brief **introduction** that identifies all of the participants on the panel and describes the purpose and intent of the activity.
2. The **body** of the report should briefly discuss those aspects of the research program that the panel explored.
3. The **conclusion** section of the report should reflect the highlights of the open discussions and should be written as a panel.

Topic #1 – Research Program Performance Measures

Overview

For the first topic, the participants were given, the processes by which to measure **Research Program Performance**, with the following specific questions to guide the participant's presentations and subsequent discussion:

- What performance measures are being used within the Research Program?
- What financial performance measures are being used with research?

- Discuss stakeholder participation

Topic #1 Presentations

California – Jim Appleton

Jim shared the Caltrans strategies and performance measures with key emphasis on implementable solutions and how the projects may be selected based on how well it satisfies the stated Caltrans Strategic Goals:

- Health and Safety
- Organizational Excellence
- Sustainability, Liveability & Economy
- Stewardship and Efficiency
- System Performance

Jim also shared with the panel a little about the Research Program Management Database (RPMD) and some of the valuable data and reporting tools available.

Texas – Chris Glancy/Sonya Badgley

Sonya introduced a TXDOT dashboard that provides a snapshot of "Performance Metrics" with a summary of key elements and the ability to give visibility to any irregularities to the budget or deliverables on each specific project. TXDOT employs a deliverables based system of measuring projects. Good value has been seen from universities that have invested in their staff completing the Project Management Professional (PMP) training.

Chris continued the presentation to share a recently developed Value of Research (VOR) tool that is completed for each project. This VOR tool takes into account both the qualitative and economic value and projects it out 10 years to provide a total projected savings based on the successful implementation of the research results. The VOR reports are highly valuable tools when responding to requests for information and progress from the State Legislature.

New Jersey – Amanda Gendek

Amanda shared the NJ performance measures and how the measures clearly reflect the regulations, per 2 CFR, §200. Half day workshops were provided for the research stakeholders to discuss 2 CFR, §200 and the reporting that would be required going forward. For example, NJDOT requires a Risk Assessment survey prior and a Risk Monitoring during the project. Amanda provided handouts of these forms for the panel.

Louisiana – Tyson Rupnow, Ph.D., P.E.

Tyson shared a detailed set of objectives for each of the goals listed below, and shared with the panel how, if achieved, the staff of the Research Center will be awarded a financial bonus.

Louisiana Transportation Research Center (LTRC) Goals:

- Continuously improve the performance of the Office of Engineering
- Deliver cost effective products, projects, and services in a timely manner
- Effectively develop and manage human capital management
- Effectively manage the financial resources
- Implementation

Washington – Rhonda Brooks

Rhonda brought her 25 years of experience to the peer exchange and shared a brief overview of the WSDOT research program and their focus on outcomes that will make a difference. Below is a list of WSDOT Strategic Objectives which drives the selection and management of each research project.

- Safety
- Environment
- Asset Management/M&O
- Stewardship
- Mobility
- Economic Vitality/Freight

In addition, Rhonda presented a graphic which showed the implementation status of the research projects. Rhonda and the WSDOT program place a high value on the partnerships with their research Universities and cautions against the trend to monitor research projects with the same measures that are used to track traditional consulting or construction projects.

Iowa – Brian Worrel, P.E.

Brian shared the overview of IowaDOT and how the research unit has been able to develop independently with limited guidance from the agency. The research mission is: ***"Driving a quality research program that delivers targeted solutions for Iowa's transportation future."*** IowaDOT Research also developed the following focus areas for their research agenda:

- Safety
- Mobility
- Sustainability
- Technology

Key Takeaways:

The TXDOT presentation on the **Value of Research** (VOR) was of particular interest to many on the panel. Chris sent the VOR excel template to each participant via e-mail.

The discussion topic of **Risk Assessment** and the 2 CFR, §200.205 and §200.331 (b) regulations were of note to several on the panel, and the hand-outs from NJDOT provided a clear example of the type of information required for compliance.

In addition to the topic of risk, other elements required by **2 CFR §200** that participants may have opportunities for improving procedures and/or reporting, to ensure compliance were discussed. The FHWA representative, Kirk Fauver, offered to provide a re-training for TXDOT on 2 CFR §200 and he made his PowerPoint presentation available to the group.

Other key takeaways identified by the group included, **Deliverable Based Agreements** and the key metrics, staff and policy required.

A topic for discussion that continued throughout the peer exchange was the process and timeframe which agreements (and even amendments) take for each organization to complete. For example, while an amendment in California may take up to 3 months to process, Texas has a turnaround time of about 6 weeks, and Louisiana is able to process amendments the same day.

Another discussion topic that was carried through the peer exchange was the value and importance of the **Internal Champions.** Whether it was in the process of selection, management or implementation, having an internal champion was not just important, but a requirement for most organizations to have on each project.

Discussion included the status of Web Based Project Management systems, the varied products and status of implementation that each state has for this element. The Caltrans RPMD system has been adapted and is currently in use in WA.

Topic #2 – Evaluating University Performance

Overview

For the second topic, the participants were given, **Evaluating University Performance** with the following specific guidance for discussion:

- What are the measures for:
  - Contracting
  - Deliverables
  - Invoices
  - Other
- How are the performance measures:
  - Analysed
  - Used
  - Outcomes and Actions needed followed up on

— Presented to, internal and/or external

Topic #2 Presentations

California – Jim Appleton

Jim shared the Caltrans contract approval process with the panel, where the goal, scope, budget, and timeline are all clearly defined. Milestones/deliverables, if delayed can hold back payment. The quarterly progress reports are entered into RPMD, shared with the Subject Matter Experts (SMEs) and the contract measures are reviewed. The length of time for a processing a contract can be upwards of 120 days.

Texas – Sonya Badgley

Sonya presented on the University Scorecard that RTI has been phasing into their program for the past two years. While the scorecard is being shared with the Universities on a biannual basis, the scores are not yet incorporated into the greater RTI research program. The scorecard measures product quality and on-time delivery by tracking key information on contracts, deliverables and invoices. TXDOT made their scorecard template available to the participants following the peer review.

New Jersey – Amanda Gendek

Amanda took the group through the basic elements of the NJDOT contracting process including task orders and basic agreements. NJDOT employs a quarterly progress report that provides an overview of deliverables, expenditures and overall completion for each project. Researchers are required to attend quarterly meetings.

Louisiana – Tyson Rupnow, Ph.D., P.E.

Tyson discussed several LTRC practices with the panel, including the following:

- In-state research projects are completed via task order, as MOU is on file.
- University indirect costs require a 50% waiver.
- Tuition remission is not allowed.
- LTRC's ability to push research dollars into the future to satisfy a project.
- At 90% payment, the final report is required to be submitted.
- At 90 days prior to the end date, the final report and all deliverables are required to be submitted.
- LTRC provides a budget with each Request for Proposal (RFP).

Following the peer review Tyson emailed a copy of the Master Agreement used by LaDOTD/LTRC to members on the panel.

Washington – Rhonda Brooks

Rhonda shared the process by which WSDOT uses renewable Master Agreements and subsequent task orders in order to contract with the two major research Universities in WA.

Outcomes are categorized from - no usable result, additional research needed, next steps, and process changed. Rhonda also utilizes surveys on a regular basis and has approximately a 90% response rate; best practice on surveys is to keep the questions brief and fewer than ten.

Iowa – Brian Worrel, P.E.

Brian shared the high-level overview of the contracting process with Iowa Universities. Each has a Master Agreement with reduced overhead rates, and contracts may be consummated by a one page addendum.

Key Takeaways:

Identifying ways to leverage Universities into **Maintaining Compliance** was a frequent topic for discussion with the following best practices mentioned:

University Scorecards
Withhold Payments
Final Report due at 90% funding expended, (10% retainage)
Final Report due 90 days prior to end date

Contract Processing Time varied greatly from state to state, and only half of the participating DOT's use **Master Contracts**/Task Orders as their primary method for initiating new projects.

Outreach to Universities is another key element of a successful program as identified by the panel and highlighted by the NJDOT 2 CFR, §200 training on the regulations as well as TXDOT's solicitation for buy-in on the scorecards.

The panel discussed the necessary resources, as well as the benefits/drawbacks of including estimated costs in the RFP.

Topic #3 – Project Selection Process

Overview

For the third topic, the participants were given, the process of **Project Selection,** and specifically guided to discuss:

- The process to submit and select topics for RFP
- The process of selecting and awarding a project

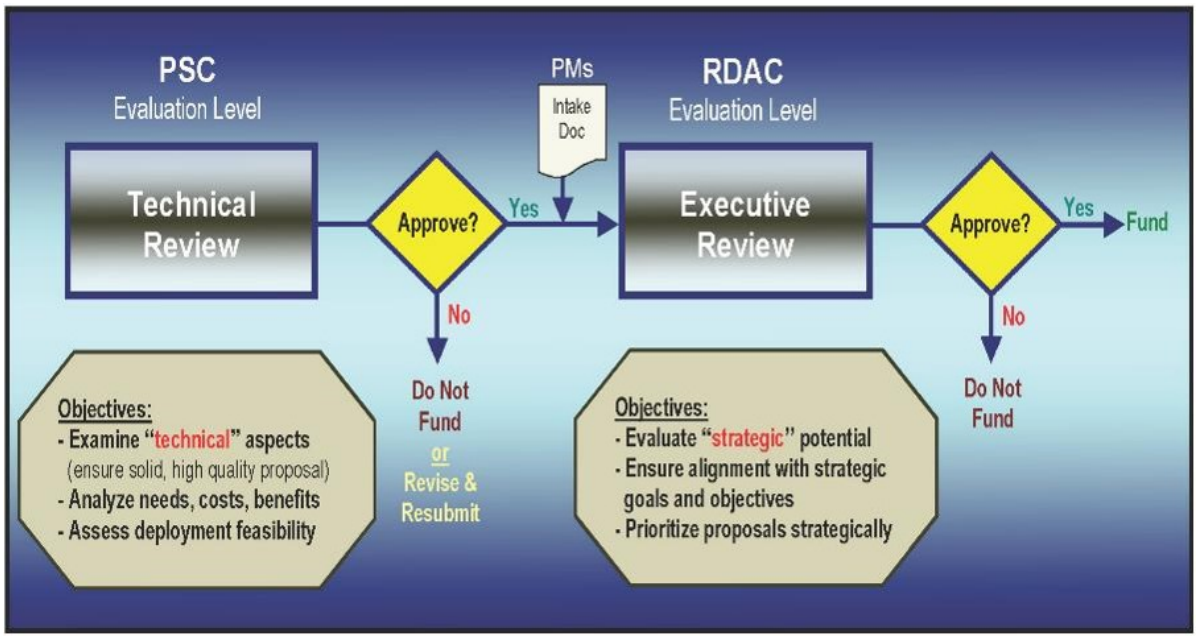
Topic #3 Presentations

California – Jim Appleton

Jim described the members of the below committees and their functions as related to Caltrans Research Governance:

- Executive Board
- Research and Deployment Advisory Committee (RDAC)
- Program Steering Committee
- Technical Advisory Panel

This presentation slide shows the objectives of the technical and strategic evaluations.

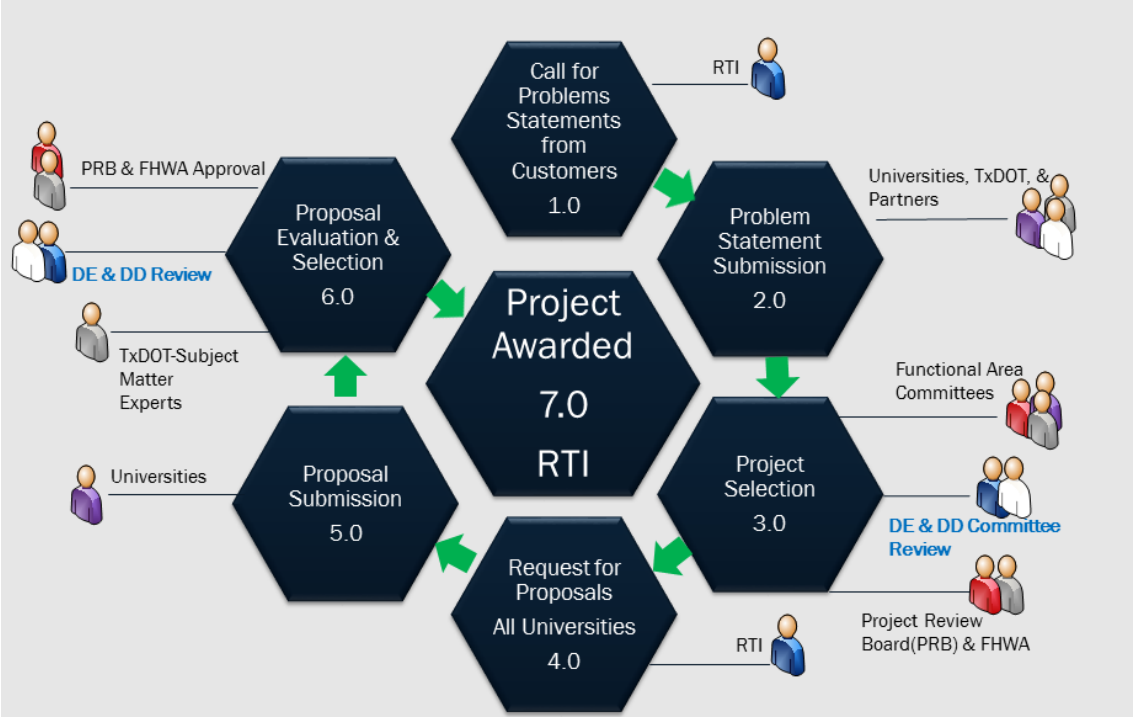


Caltrans Process

In addition, each RFP will be prioritized considering the Caltrans Strategic Goals (see Topic #1) and more specifically by these 12 Fundamental Objectives:

1. Reduces injuries and fatalities
2. Promotes active transportation
3. Reduces the lifecycle costs for our projects, products, or services
4. Decreases the time to deliver our projects, products, or services
5. Improves the environment
6. Improves access to multimodal transportation systems
7. Creates an economic benefit
8. Reduces inconvenience to the highway system users
9. Improves the availability, flexibility, or quality of travel
10. Improves integration of the transportation system
11. Improves Caltrans' business processes
12. Advances Caltrans leadership in national transportation research

Texas – Kevin Pete (Research Portfolio Manager)
Kevin, walked the panel though the below infographic of the Project Selection process.



TXDOT Process

At the beginning of each fiscal year, TXDOT offers one formal call of problem statements, the most recent cycle generated 278 problem statements. On average, 20 projects are awarded from each cycle.

If another division submits a contract that may be considered "Research," TXDOT contract services will flag it and it will go to RTI for review. If awarded, RTI will manage this contract as they would any other research project.

New Jersey – Amanda Gendek
Amanda shared the NJDOT process for individuals and organizations to submit their problem statements, including collaborative workshops where NJDOT and Universities come together to identify problem statements. The Research Oversight Committee (ROC) will vote on each problem statement and if selected a Research Project Manager (PM) is assigned. Like the other State DOT's each RFP is required to have a sponsor/internal champion. Once submitted the PM, sponsor and a minimum of three SMEs will review, score and comment on each proposal. After all proposals are scored the winning proposals budget is opened and reviewed, and the project is awarded once the contract is signed.

Louisiana – Tyson Rupnow, Ph.D., P.E.
Tyson shared a high-level overview the research project life cycle and accompanying flow chart from the LRTC Research Manual, page 15, *(link to manual is in Appendix C).* Submission of problem statements can come from any of the following: FHWA, LaDOTD, other State DOTs, Universities, prime contractors, and suppliers. The Research Problem Identification Committee (RPIC) will categorize and rank the problem statements eventually forwarding the top four in each category to the Research Advisory Committee (RAC).

Washington – Rhonda Brooks
Rhonda presented the biennial process of soliciting and awarding projects. WSDOT's focus on partnering with Universities, was again highlighted by the collaborative workshops to submit a problem statement. WSDOT requires a summary of a Literature Review be submitted as part of the problem statement. During the selection process, the researchers are invited to present a 2 minute and 2 slide presentation on their proposal.

Iowa – Brian Worrel, P.E.
Brian shared with the panel a web-based, adaptive, submission which is used to submit the problem statements. *A link is provided in Appendix C.* IowaDOT receives multiple requests to manage various pool funded research projects. The decision process utilizes a blind review to grade each request on quality and rank each request on priority.

Key Takeaways:

Online **Problem Statement Submittal**, namely the adaptive, web-based form used by IowaDOT was of particular interest to several of the members of the panel. Funding for the subscription is not permitted using SP&R funds.

The use of a **Blind Reviews** in the selection process was split between the attending State DOTs and a frequent topic for discussion.

TXDOT requires a **Non-Disclosure Agreement (NDA)** to accompany each submitted proposal, and value was seen in incorporating this into other State DOT procedures. Chris emailed TXDOT's NDA to the group for review.

The use of each State DOT's **Strategic Objectives** is a key factor to influencing decisions on which projects to fund.

The **Literature Review** adds great value to the project selection process. Jim estimated that Caltrans amends 20% of their proposals, by incorporating existing research that is identified by their literature reviews.

Reduction of Excessive Approval Processes was recently changed at several organizations.

The TXDOT **Scorecard** and its future role in the selection process was of interest to several on the panel.

Great value was delivered by seeing the **Project Selection Life Cycle** of each organization.

Inclusion of a research **Budget as part of the RFP** is being utilized by most of the State DOT's on the panel.

The WSDOT process of hosting the researchers and offering them a **2 minute/2 slide "Sales Pitch"** was noted for its effectiveness in the decision making process.

Conclusion

The Close-out meeting provided the following comments regarding the success of the Peer Exchange in General:

- Each participant mentioned the sharing of knowledge as a key takeaway.
- Highest value is for those states who are in-process on making refinements to their programs, as they could discuss their path forward, gather key resources, and discuss potential issues.
- There is great value in having each State DOT's Research Director participating.

Darran Anderson, TXDOT Director of Strategy & Innovation was able to join the group for this session and shared his enthusiasm for the Peer Exchanges and thanked everyone for their attendance.

Appendix A. Peer Exchange Agenda

Research Peer Exchange

December 7-8, 2016
Austin, Texas

Participating State DOTs: Caltrans, Iowa DOT, Louisiana DOT, New Jersey DOT, Washington DOT

Tuesday, December 06, 2016	
All Day	Travel Day to Austin, TX Omni Hotel at Southpark, 4140 Governors Row, Austin TX 78744

Wednesday, December 07, 2016	
7:30 am	Van pick up at hotel. Transport to TxDOT Riverside Campus.
8:00 am	Catered Breakfast & Meet and Greet
8:30 am	**Welcome & Introductions** Rocio Perez, Interim Director, TxDOT Research & Technology Implementation Kirk Fauver, Urban Transportation Planning & Research Engineer, FHWA Tx Division Introduction of DOT Representatives (Name, Role/Duties, Size of DOT's research program, Number of active projects)
8:50 am	**Round Table Presentations & Discussion 1:** Research Program Performance Measures • What performance measures are being used within the Research Program? • What financial performance measures are being used with research? • Discuss stakeholder participation Presentation order: Iowa DOT, LADOTD, NJDOT, TxDOT, WSDOT, Caltrans
10:20 am	Break
10:30 am	**Continued - Round Table Presentations & Discussion 1**
11:50 am	Break
11:55 am	**Group Wrap-up Round Table 1:** Each DOT shares top two take-away ideas from research program performance measures presentations and discussions.
12:15 pm	Catered Lunch

1:15 pm	**Round Table Presentations & Discussion 2:**
	Evaluating University Performance, Contracting, Deliverables, & Invoicing
	• What are the measures for:
	  ○ Contracting,
	  ○ Deliverables,
	  ○ Invoices,
	  ○ Other.
	• How are the performance measures:
	  ○ Analyzed,
	  ○ Used,
	  ○ Outcomes and Actions needed followed up on,

1 | Page

Agenda 1

	○ Presented to, internal and/or external. Presentation order: LADOTD, NJDOT, Caltrans, TxDOT, WSDOT, Iowa DOT
2:45 pm	Break
2:50 pm	**Continued - Round Table Presentations & Discussion 2**
3:45 pm	**Group Wrap-up Round Table 2**: Each agency shares top two take-away ideas from the evaluating University performance, contracting, deliverables and invoicing presentations and discussions.
4:00 pm	**Adjourn** Van transport back to hotel

Thursday, December 08, 2016

7:30 am	Van pick at hotel. Transport to TxDOT Riverside Campus.
8:00 am	Catered Breakfast
8:30 am	**Round Table Presentations & Discussion 3**: Project Selection Process • Discuss the process to submit and select topics for RFP. • Discuss the process of selecting and awarding a project. Presentation order: Caltrans, NJDOT, TxDOT, WSDOT, Iowa DOT, LADOTD
10:00 am	Break
10:10 am	**Continued – Round Table Presentations & Discussion 3**
11:30 am	Break
11:35 am	**Group Wrap-up Round Table 3:** Each agency shares top two take-away ideas from project selection process presentations and discussions.
12:00 pm	Catered Lunch
1:00 pm	**TxDOT Research Presentations:** Universities will present ongoing TxDOT sponsored research. • Texas Technology Taskforce; CTR • Autonomous Vehicles: Cost, Energy, and Urban System Implications; CTR • Full Depth Road Reclamation; TTI • Unmanned Ariel Systems; TTI, UTA
3:00 pm	Break
3:15 pm	**Close-out meeting**
4:00 pm	**Adjourn** Van transport back to hotel

During each of the Round Table Presentations & Discussion periods, each DOT representative is asked to provide a 15 minute presentation on the discussion topic. After the presentation, a 10-15 minute discussion period will follow. You are encouraged to provide a visual component to accompany your comments.

If you have questions about the Round Table Presentation & Discussion topics, please contact Chris Glancy at either 512-416-4747 or chris.glancy@txdot.gov

Agenda 2

Appendix B. Participants Contact Information

Jim Appleton Division Chief Caltrans Division of Research, Innovation and Systems Information (DRISI) 1227 O Street, 5th Floor MS 83 P.O. Box 942873 Sacramento, CA 95814 Phone: 916-654-8877 jm.appleton@dot.ca.gov www.dot.ca.gov	**Amanda Gendek** Project Manager Section Chief NJDOT Bureau of Research 1035 Parkway Ave. Trenton, NJ 08625 Phone: 609-530-2780 Amanda.Gendek@dot.nj.gov www.state.nj.us/transportation
Tyson Runpow, PH.D., P.E. Associate Director Louisiana Transportation Research Center 4101 Gourrier Avenue Baton Rouge, LA 70808 Phone: 225-767-9124 Tyson.Rupnow@la.gov http://wwwsp.dotd.la.gov/	**Rhonda Brooks** Director WSDOT Research and Library Services 310 Maple Park Avenue SE Olympia, WA 98504 Phone: 360-705-7945 BrooksRh@wsdot.wa.gov www.wsdot.wa.gov
Brian Worrel, P.E. SPR Research Engineer IowaDOT Office of Research & Analytics 800 Lincoln Way Ames, IA 50010 Phone: 515-239-1471 Brian.Worrel@dot.iowa.gov www.dot.iowa.gov	**Kirk Fauver** Urban Transportation Planning and Research Engineer FHWA TXDOT Division 300 East 8th Street. Suite 826 Austin, TX 78701 Phone: 512-536-5952 Kirk.Fauver@dot.gov www.fhwa.dot.gov

Rocio Perez Interim Director TXDOT Research & Technology Implementation 111 E. Riverside Drive, 1st Floor Austin, TX 78704 Phone: 512-416-4726 Rocio.Perez@TXDOT.gov www.TXDOT.gov	Chris Gancy Project Manager TXDOT Research & Technology Implementation 111 E. Riverside Drive, 1st Floor Austin, TX 78704 Phone: 512-416-4747 Chris.Gancy@TXDOT.gov www.TXDOT.gov
Kevin Pete Research Portfolio Manager TXDOT Research & Technology Implementation 111 E. Riverside Drive, 1st Floor Austin, TX 78704 Phone: 512-416-4738 Kevin.Pete@TXDOT.gov www.TXDOT.gov	Sonya Bagdley Project Manager TXDOT Research & Technology Implementation 111 E. Riverside Drive, 1st Floor Austin, TX 78704 Phone: 512-298-8168 Sonya.Badgley@TXDOT.gov www.TXDOT.gov
Julia F. Hager Program Manager UTA, Division for Enterprise Development 1555 Avenue S, Suite 106 Grand Prairie, TX 75050 214-412-2621 Juliah@uta.edu www.uta.edu	Tim Osbaldeston President OzTech Services 2316 W. Bond St. Denison, TX 75020 214-382-0329 Tim@oztech.co www.oztech.co

Appendix C. Resources

Resources

At the Peer Exchange, participants distributed or referred to the following resources:

FHWA Guidelines for Peer Exchange:
http://www.fhwa.dot.gov/publications/research/spr/10048/index.cfm

Published Research Peer Reports:
http://research.transportation.org/Pages/RACPeerExchangeReports.aspx

IowaDOT Research topic & Funding Requests: (Online, adaptive form)
https://www.cognitoforms.com/IowaDOTResearch/ResearchTopicFundingRequests
https://www.cognitoforms.com

Louisiana Transportation Research Center (LTRC) Manual of Research Procedures:
http://www.ltrc.lsu.edu/pdf/2016/LTRC_RESEARCH_MANUAL_FINAL.pdf

Table of Acronyms

Abbreviation	Explanation
CTR	Center for Transportation Research
IHE	Institutions of Higher Education
LTAP	Local Technical Assistance Program
NCHRP	National Cooperative Highway Research Program
NPO	National Program Officer
OMB	Office of Management and Budget
PI	Principal Investigator
PMP	Project Management Professional
RD&T	Research, Development & Technology
RDAC	Research and Deployment Advisory Committee
ROC	Research Oversight Committee
RPMD	Research Program Management Database
RTI	Research & Technology Implementation
SHARP	Strategic Highway Research Program
SHARP 2	Strategic Highway Research Program 2
SPR	State Planning and Research
STIC	State Transportation Innovation Council
TRB	Transportation Research Board
TTI	Texas A&M Transportation Institute
UTA	University of Texas - Arlington
UTC	University Transportation Center (UTC) Program
VOR	Value of Research

Appendix D. TXDOT Presentations

TEXAS DEPARTMENT OF TRANSPORTATION

RESEARCH PEER EXCHANGE

December 7-8, 2016
Austin, Texas

Welcome & Introductions

- Rocio Perez, Interim Director, TxDOT Research & Technology Implementation
- Kirk Fauver, Urban Transportation Planning & Research Engineer, FHWA Tx Division
- Introduction of DOT Representatives
  - Name
  - Role Duties
  - Size of DOT's research program
  - Number of active projects

Footer Text Date

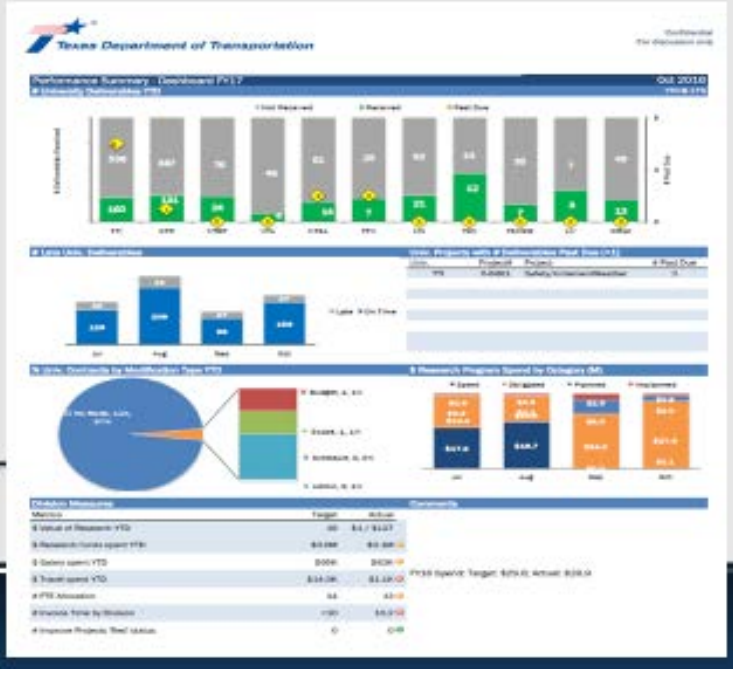
TEXAS DEPARTMENT OF TRANSPORTATION

RESEARCH PROGRAM PERFORMANCE MEASURES

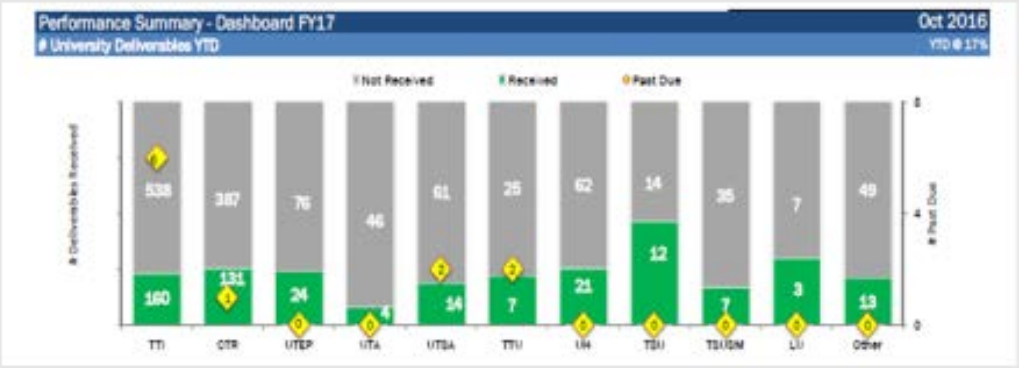
Sonya Badgley, Chris Glancy,
Research Project Managers

TEXAS DEPARTMENT OF TRANSPORTATION

Performance Metrics

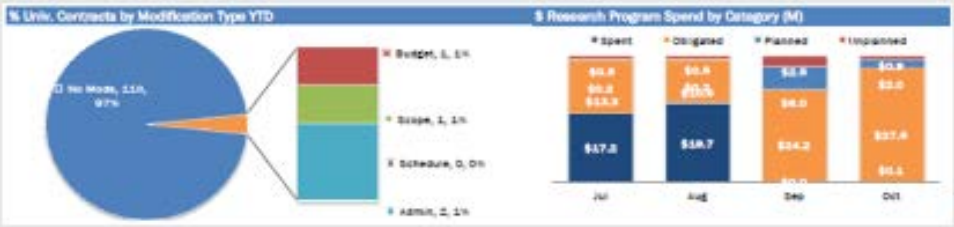


Performance Metrics



Performance Metrics

Performance Metrics



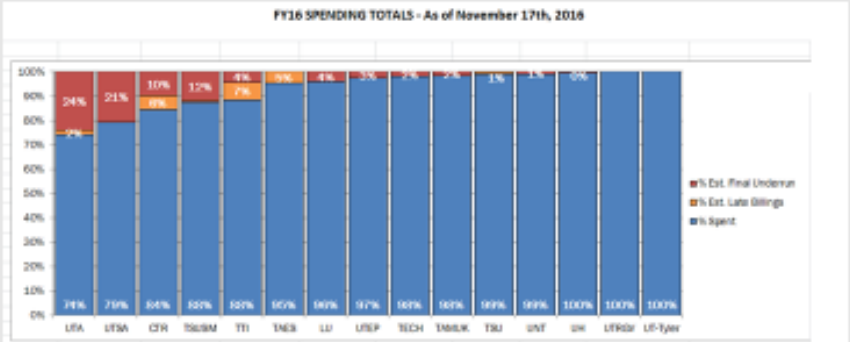
Performance Metrics

Division Measures			Comments
Metrics	Target	Actual	
$ Value of Research YTD	19	$1 / $12T	
$ Research funds spent YTD	$0.0M	$0.1M	
$ Salary spent YTD	$95K	$83K	
$ Travel spent YTD	$14.0K	$1.1K	FY16 Spend: Target: $29.0; Actual: $26.9
# FTE Allocation	14	13	
# Invoice Time by Division	<10	10.2	
# Improve Projects 'Red' status	0	0	

Financial Performance: Project Budgets

- Research project budgets were previously estimated by year and tracked through invoices.
- Deliverables Base agreements were piloted and now are the norm.
  - This agreement type not only budgets by year but also breaks down the budget into estimated monthly spending
  - Budget to Actual.
  - YTD Spent
  - FY Balance
  - Project to Date
- Value of Research

Current Monthly Tracking



UNIV	Budgeted	Spent	Balance	Est. Late Billings	Est. Final Underrun	% Spent	% Balance	% Est. Late Billings	% Est. Final Underrun
UTA	1,491,610.27	1,104,750.42	386,859.85	27,608.36	359,251.49	74%	26%	2%	24%
UTSA	799,254.00	634,528.69	164,725.31		164,725.31	79%	21%	0%	21%
CTR	9,575,750.09	8,088,306.45	1,487,443.64	531,159.27	956,284.37	84%	16%	6%	10%
TSU/SM	157,871.00	138,195.02	19,675.98	711.02	18,964.96	88%	12%	0%	12%
TTI	15,048,478.96	13,314,735.80	1,733,743.16	1,087,382.90	646,360.26	88%	12%	7%	4%
TAES	33,005.00	31,447.43	1,557.57	1,557.57	-	95%	5%	5%	0%
LU	51,511.00	49,423.43	2,087.57		2,087.57	96%	4%	0%	4%
UTEP	1,028,510.00	1,000,509.44	28,000.56		28,000.56	97%	3%	0%	3%
TECH	1,353,581.00	1,325,049.42	28,531.58		28,531.58	98%	2%	0%	2%
TAMUK	500,000.00	491,528.05	8,471.95		8,471.95	98%	2%	0%	2%
TSU	322,330.00	318,446.78	3,883.22	3,190.00	693.22	99%	1%	1%	0%
UNT	152,266.00	150,609.25	1,656.75		1,656.75	99%	1%	0%	1%
UH	611,088.42	608,562.39	2,526.03		2,526.03	100%	0%	0%	0%
UTRGV	19,888.00	19,888.00	-		-	100%	0%	0%	0%
UT-Tyler	5,720.00	5,720.00	-		-	100%	0%	0%	0%
TOTALS	31,150,863.74	27,281,700.57	3,869,163.17	1,651,609.12	2,217,554.05	88%	12%	5%	7%

Project Budget

Direct Costs

Salaries & Fringe

Role	Fringe Rate	FY17	FY18	FY19	Total Costs
Research Supervisor		32,000.00	30,000.00		62,000.00
Professional		20,000.00	20,000.00		40,000.00
Sub-professional/Technical					-
Other Personnel					-
Student		8,000.00	5,000.00		[illegible]
Total Salaries and Wages		[illegible]	[illegible]	-	[illegible]

Subcontractors (provide details at the University's option)

Sub #	Description of Duties	FY17	FY18	FY19	Total
1	Field Testing		20,000.00		20,000.00
2	Geo/chemical Testing	[illegible]			[illegible]
	Total Subcontracts	[illegible]	20,000.00	-	[illegible]

Equipment (items over $5,000, list each item separately)

Equip #	Description of Equipment	Expected Purchase Date	FY17	FY18	FY19	Total
1	Field Test Lab	Fall FY18		[illegible]		[illegible]
2	Field Storage	Sum FY17	[illegible]			[illegible]
3	Lab Mixers	Fall FY18		[illegible]		[illegible]
		Total Equipment	[illegible]	[illegible]	-	[illegible]

Travel

City, State	Purpose	FY17	FY18	FY19	Total
Las Vegas, NV	[illegible]	[illegible]			[illegible]
Amarillo, TX	Field Work	[illegible]	[illegible]		[illegible]
Sunset, TX	Field Work	[illegible]	4,000.00		[illegible]
					-
	In-State & Out-of-State Travel Total	[illegible]	[illegible]	-	[illegible]

Operating, Supplies and Other Expenses (provide details at the University's option)

Type	Description	FY17	FY18	FY19	Total
Supplies	Research	[illegible]	[illegible]		[illegible]
Operating		[illegible]	[illegible]		[illegible]
[illegible]	Tuition	[illegible]	[illegible]		[illegible]
	Total Expendable Operating and Other Expenses	[illegible]	[illegible]	-	[illegible]

Total Direct Costs	FY17	FY18	FY19	Total
	[illegible]	[illegible]	-	[illegible]

Indirect Costs

			FY17	FY18	FY19	Total
	x MTDC	[illegible]	[illegible]	[illegible]	-	[illegible]
Less University's Contribution	x MTDC	[illegible]	[illegible]	[illegible]	-	[illegible]
		Indirect Cost Total	[illegible]	[illegible]	-	[illegible]

Total Project Costs by Fiscal Year	FY	FY17	FY18	FY19	Total
	Total Project Cost	[illegible]	[illegible]	-	$ [illegible]

Comments:

Project Deliverables Table

Task.Subtask	Agency #	Deliverables*	Due Date (Budgeted Month End Date)	Monthly Budget Forecast **,***	Comments	FY 2017 Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
1.1	1	MPPR Task Activities	9/30/2016	3,621.00		X												
1.2	1	VoPI	10/31/2016	5,420.00			X											
			Total	9,041.00														
2.1	1	MPPR Task Activities	10/31/2016	4,620.00			X											
2.2	1	MPPR Task Activities	11/30/2016	6,680.00				X										
2.3	1	MPPR Task Activities	12/31/2016	4,580.00					X									
2.4	1	TM1	1/31/2017	6,585.00						X								
			Total	22,555.00														
3.1	1	MPPR Task Activities	1/31/2017	6,480.00						X								
3.2	1	MPPR Task Activities	2/28/2017	8,680.00							X							
3.3	1	MPPR Task Activities	3/31/2017	7,280.00								X						
3.4	1	MPPR Task Activities	4/30/2017	9,680.00									X					
3.5	1	ITM2	5/31/2017	8,880.00										X				
3.6	1	MPPR Task Activities	5/31/2017	3,880.00										X				
3.7	1	MPPR Task Activities	6/30/2017	19,080.00											X			
3.8	1	MPPR Task Activities	7/31/2017	9,680.00												X		
3.9	1	MPPR Task Activities	8/31/2017	4,680.00													X	
3.10	1	TM2	9/30/2017	4,520.00														X
			Total	82,388.00														
4.1	1	MPPR Task Activities	6/30/2017	4,280.00											X			
4.2	1	MPPR Task Activities	7/31/2017	3,680.00												X		
4.3	1	TM3	8/31/2017	3,880.00													X	
			Total	11,880.00														
5.1	1	MPPR Task Activities	8/31/2017	2,290.00													X	
5.2	1	P1	9/30/2017	7,400.00														X
			Total	9,690.00														
6.1	1	MPPR Task Activities	8/31/2017	3,080.00													X	
6.2	1	P2	9/30/2017	2,080.00														X
			Total	5,000.00														
7.1	1	MPPR Task Activities	8/31/2017	4,480.00													X	
7.2	1	MPPR Task Activities	9/30/2017	6,280.00														X
7.3	1	MPPR Task Activities	10/31/2017	4,280.00														

Value of Research

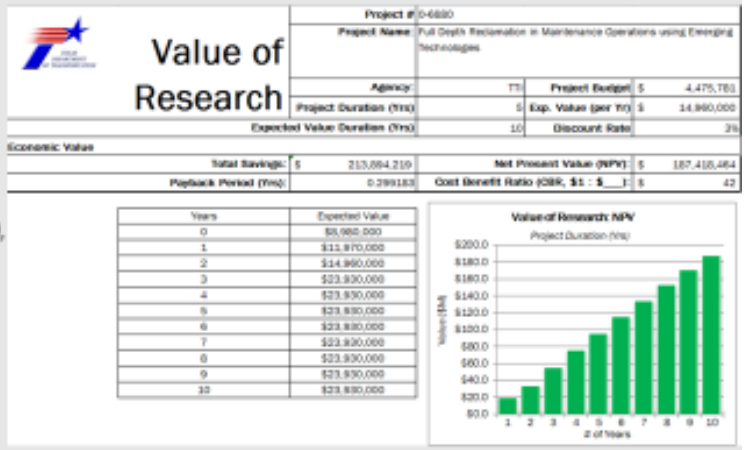
- Determining value forces practitioners to investigate benefits that might not have seemed obvious at project inception.

Benefit Area	QUAL	ECON	Both	TxDOT	State	Both
Level of Knowledge	X			X		
Management and Policy	X			X		
Quality of Life	X			X		
Customer Satisfaction	X			X		
Environmental Sustainability	X				X	
System Reliability		X		X		
Increased Service Life		X		X		
Improved Productivity and Work Efficiency		X		X		
Expedited Project Delivery		X		X		
Reduced Administrative Costs		X		X		
Traffic and Congestion Reduction		X			X	
Reduced User Cost		X			X	
Reduced Construction, Operations, and Maintenance Cost		X			X	
Materials and Pavements		X			X	
Infrastructure Condition		X				X
Freight movement and Economic Vitality		X				X
Intelligent Transportation Systems		X				X
Engineering Design Improvement			X			X
Safety			X			X

73

Value of Research

- Qualitative value – subjective benefits; *Influencing Decisions & Intangible Benefits, Intangible Assets*
- Economic value
  - *Net Present Value*
  - Cost – Benefit Analysis:
    - *Cost – Benefit Ratio,*
    - *Total Savings (Benefits),*
    - *Payback Period*



74

Stakeholder Participation

- Functional Area Committees
- Monthly Progress Reports
- Progress Meetings
- Workshops

Questions

TEXAS DEPARTMENT OF TRANSPORTATION

UNIVERSITY SCORECARD

Sonya Badgley, Research Project Manager

Background

- Dashboard
- I'm good, how are YOU?

Background

Timeline: Change Management

Timeline

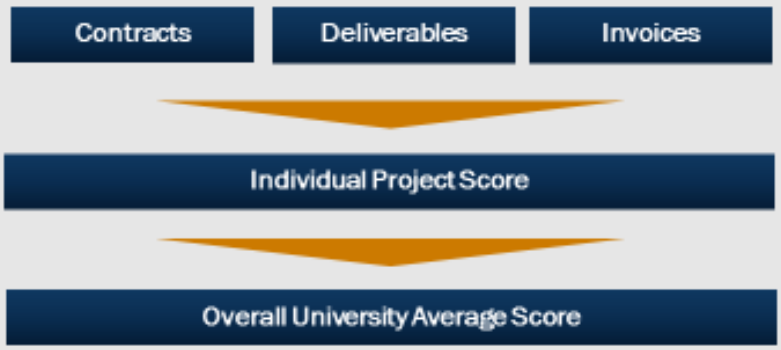
- November 2014:Initiation
- February 2015: Sponsor acquired
- June 2015: Data Entry begins
- August 2015: Initial scorecard results
- February 2015-December 2015: Stakeholder outreach
  - Internal: Building the criteria
  - University liaison involvement
  - Sponsor approval
  - June 2015: Research meeting
- Approach
  - Phase I: Inform (buy in)
  - Phase II: Release, monitor (create database, how to, feedback)
    - Dec 2015 Database built
    - Feb 2016 release scores – feedback
    - Jul 2016 release scores - feedback → twice per fiscal year
    - Feb 2017 release scores (aligns with annual program)
  - Phase III: Incorporate into Program, SOP

Timeline

Purpose/Administrative

- Presentation Purpose: Review criteria, Best Practices, and Frequently Asked Questions
- Score Card Purpose: University's Performance report to measure product quality and on-time delivery.

Overview



Contracts: Best Practices

- Use most recent forms: TxDOT Website
- Pre-Proposal Meetings review requirements for each RFP
- University Handbook
- Submit to RTIMain@txdot.gov
- Active Voice
- Contract Language
- "What" work will be completed (remove Background)
- Respond to each comment/concern
- Web Conference for ease of contract facilitation (PM, CS, PS, Liaison)
- University Liaison inclusion

Contracts: Factors

Factor	Required Number/SLA/Goal	Actual Number/SLA/Goal	Points
Accuracy of Project Agreement (Working Documents)	7	*Number of factors correct for project*	5.00

Remarks

1. Cover Page is complete: Budget, each Fiscal Year is included, each University
2. Budget Page categories are identified and budget adds up correctly: incudes all Ex A categories
3. Budget Page total matches cover page
4. Budget amounts on schedule matches total project budget
5. Deliverables Table accuracy: aligns to deliverables stated at the end of each task on the schedule, due dates, and listed as required by the RFP Project Stmt if applicable, all deliverables are listed, aligns with the work plan (Ex B)
6. Schedule matches the duration of the project
7. Work plan: what work will be completed(not how), active voice, and acronyms are spelled out

Contracts: Factors

Factor	Required Number/SLA/Goal	Points	Remarks
Versions not addressing RTI comments/ revisions	2	5.00	
Number Days Contract at University	15 *(university)*	5.00	Days = More than 24 hours from date/time of RTI request
Total Points for Contract Section		15.00	

Deliverables: Best Practices

- Monthly Progress Reports to report issues/concerns
- Complete, comprehensive, highlights work completed per the project agreement
- Turn in Deliverables (including MPRs) by close of business on the date due to RTIMAIN@txdot.gov

Deliverables: Factors

Factor	Total Due by Quarter	Points	Remarks
4. Deliverables on time	*Number of Deliverables due during this period per contract Deliverables table*	15.00	
5. MPR on time	*Number of MPRs due during this period per contract*	15.00	
Total Points for Project Section		30.00	

Invoices: Best Practices

- Turn in invoices to RTI_Invoices@txdot.gov
- Complete invoices
- Timely invoicing
- Research Budget

Invoices: Factors

Factor	Number Received (by Univ)	Number Affected (by Univ)	Points
6. Invoice Complete and Correct	*Number of invoices received in this time period*	*Out of invoices received, how many were incorrect*	15.00
7. Charges on an invoice received within 120 days after costs are incurred.	*Number of invoices received in this time period*	*Out of invoices received, how many contained costs not billed within 120 days*	15.00
		Total Points for Invoice Section	30.00

FAQs

- What are the scores for?
  - Scorecard is a performance measurement tool, strengthens performance, on time delivery, quality deliverables
- Will we be able to see individual Scorecards so we know where to improve?
  - Following this meeting you may set up a one on one with RTI to discuss a high level score breakdown.
- How frequent will these measures be taken? Monthly? Quarterly? Yearly?
  - We plan to continue to evaluate and release scores quarterly.
- Will there be penalties assessed if measures fall below a certain score? What type of action will be taken against the institution?
  - We plan to continue to monitor performance of universities and we will evaluate the need of a minimum threshold, however, universities will be notified of changes prior to implementation.

FAQs

- With deliverable based projects in place is this going to add to that reporting or simply be used as a tool for timeliness and efficiencies?
  - Universities do not need to change activities, this tool is promoting best practices.
- Are any Administrative requirements added?
  - No action is required. Again, we want ensure all parties understand TxDOT Research evaluation criteria for each project agreement and all universities.

Summary

- Purpose
- Timeline
- Criteria
- FAQ
- Flexibility

Questions

TEXAS DEPARTMENT OF TRANSPORTATION

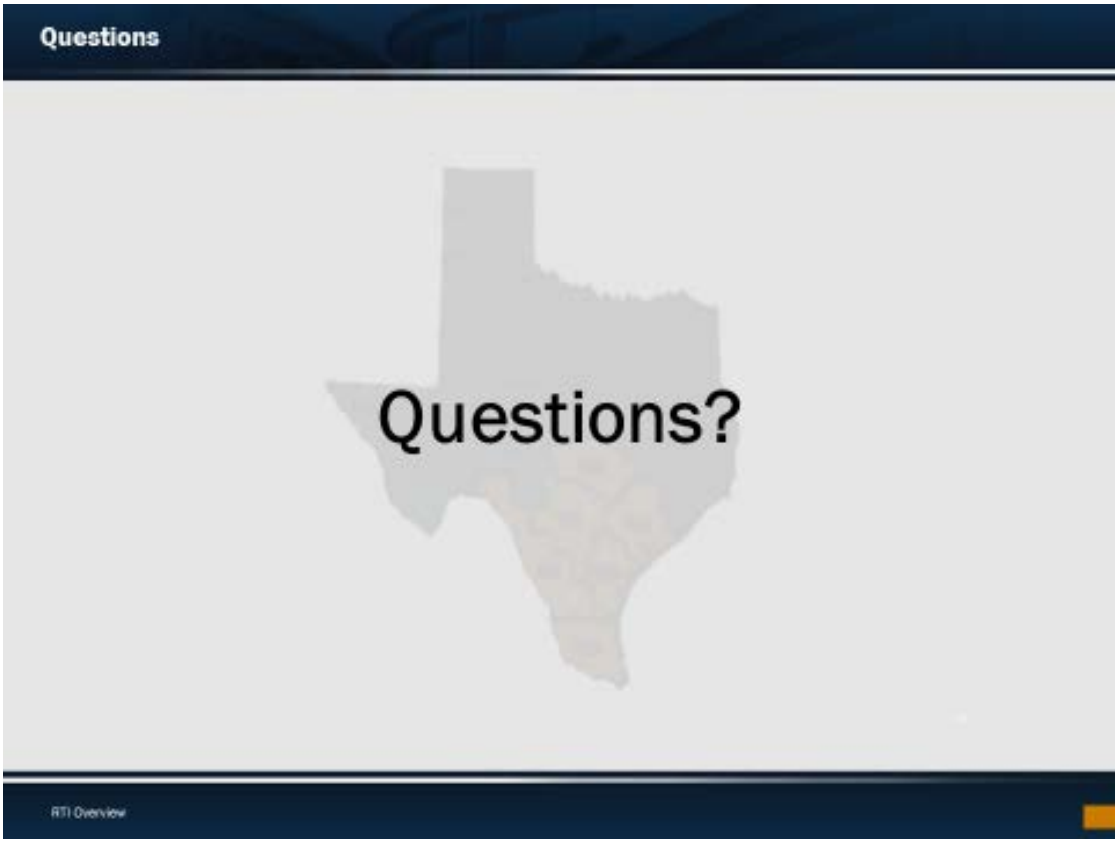
TXDOT RESEARCH & TECHNOLOGY IMPLEMENTATION

Kevin Pete, Research Program Portfolio Manager

Project Awarding: The Research Competitive Bid Process

Research Competitive Bid Process Steps

Steps	Description
Call For Problem Statements	• A solicitation for new projects/ problems/ideas/ important issues needing to be researched that impacts surface transportation is issued by RTI to its research partners
Problem Statement Submission	• Problem Statements are received by RTI from TxDOT Districts and Divisions, Universities, and others such as MPOs and FHWA
Project Selection	• Functional Area Committees are key in the project selection process and are made up of TxDOT subject matter experts (voting members) and research partners (non-voting members) • Problem Statements are vetted by the committees and rated on importance • RTI will compile the ranked problem statements for recommendation as projects • Research Oversight Committee (ROC) is comprised of DE/DD that review, advises and approves the highest ranked projects to move forward to the Project Review Board (PRB) • Recommended projects are submitted to the PRB and FHWA for approval to proceed with the recommendation in a request-for-proposals (RFP)
Request for Proposal	• RTI works with TxDOT SME to prepares project statements and submits in an RFP to state universities for proposing research solutions
Proposal Submission	• Universities submit proposals to RTI • RTI screens proposals for compliance and prepares evaluation packages
Evaluation and Selection	• TxDOT SMEs review and rate each proposal based on evaluation criteria • RTI compiles proposal ratings and scores. The proposals with the highest scores are identified along with ROC Committees of recommended projects for awarding • RTI submits the recommended awarding list of proposals to the PRB and FHWA for approval
Project Awarding	• Once approved, RTI notifies the university of project awarding • Project teams are developed and negotiations begin to develop an approved contract for execution


Questions
Questions?
RTI Overview


TEXAS DEPARTMENT OF TRANSPORTATION
BE SAFE.
DRIVE SMART.
CLOSE-OUT SESSION
TxDOT Research Peer Exchange

Topic 1 – Performance Measures

- Compliance with 2CFR200?
- Deliverable Based Agreements
- Value of Research
- Risk Assessment
- Partnerships IHE vs consultant based accountability
- Internal champions for Research (KEY)

RTI Overview

Topic 2 – Contracting, Invoicing and Deliverables

- Leverage to maintain compliance
  - Scorecards
  - Withhold payment
  - Report due at 85-90% funding expended
  - Reports due 90 days prior to end of project
- Use of Master Contracts
- Contract Processing Time
- University training on the regulations
- TxDOT training on 2CFR200
- Including estimated costs in the RFP

RTI Overview

Topic 3 – Project Selection

- The Blind Review
- Department's Strategic Objectives are key to influencing decisions
- NDA Agreement tied to RFP
- Online Problem Statement Submittal
- Value of Literature Review
- Reduction of excessive approval processes
- Scorecard
- Project selection life cycle
- Estimate project total
- 2 min sales pitch by potential researchers

Peer Exchange

Peer Exchange

Lessons Learned