



Florida Department of Transportation TSM&O Workforce Analysis

Research Showcases to Identify Gaps/Solutions

- 2018 Research Showcase
 - The State Traffic Engineering and Operations Office (STEOO) conducted its **first Research Showcase** in the FDOT Central Office August 15-16, 2018.
 - Brought Florida's research universities together and **highlighted the ongoing research**, mainly on **Transportation Systems Management & Operations (TSM&O), Intelligent Transportation Systems (ITS), and Traffic Operations.**
- 2019 Research Showcase
 - The next Showcase is planned for April 11-12, 2019, at the FDOT Gainesville Materials Office.
 - The focus will be on **Emerging Technologies, Connected and Automated (CAV) Vehicles, TSM&O, ITS, and Traffic Operations.**
 - Planned discussion topics: **workforce development, preparing students for careers in TSM&O, ITS, and CAV; interdisciplinary research; and partnering and outreach.**

Workforce Gap Analysis and Current Needs

- **Gaps exist** with regard to project implementation and deployments.
- Institutions could **re-evaluate the course curriculum**.
- **In addition to Academics, Fieldwork and hands-on experience** should be emphasized in the following areas:
 - Traffic signal systems and traffic signal controller functions
 - ITS equipment design, construction, operations, and maintenance
 - Construction engineering and inspection
 - Project and contract management, work program, and financial management
- Entry-level engineers **need both technical and managerial inputs**.
- Training should emphasize **practical applications**.
- **Transportation is interdisciplinary**; requiring soft skills, as well as specialized functions, such as in a Traffic Management Center (TMC) with networking/soft skills.

Opportunities to Bridge the Gaps

- Create a platform to **share knowledge** – FDOT conducts Research Showcases and explains to the institutes/faculty about the current FDOT and ITS and industry workforce development opportunities
- Capture knowledge and experience **through webinars, workshops**, etc.
- Develop **sustainable training program initiatives** – the Florida Department of Transportation (FDOT) created a TSM&O training program (STEP).
- FDOT participates in and **contributes to Peer Exchanges, Pooled Fund Studies**, etc.

Focus Areas For Professional Capacity Building

TSM&O
Mainstreaming

Freeway
Management

Arterial
Management

Connected
Vehicles

Express Lanes

Systems
Engineering

- Workforce development may **focus on these areas**.
- FDOT **Central Office (CO) works closely with the districts** to provide training and other opportunities.
- **Institutes and faculty are informed** about these focus areas.
- Research projects emphasize **implementation of the results**.
- Lessons learned from deployments help with **on-the-job training**.

University Engagement and Partnerships

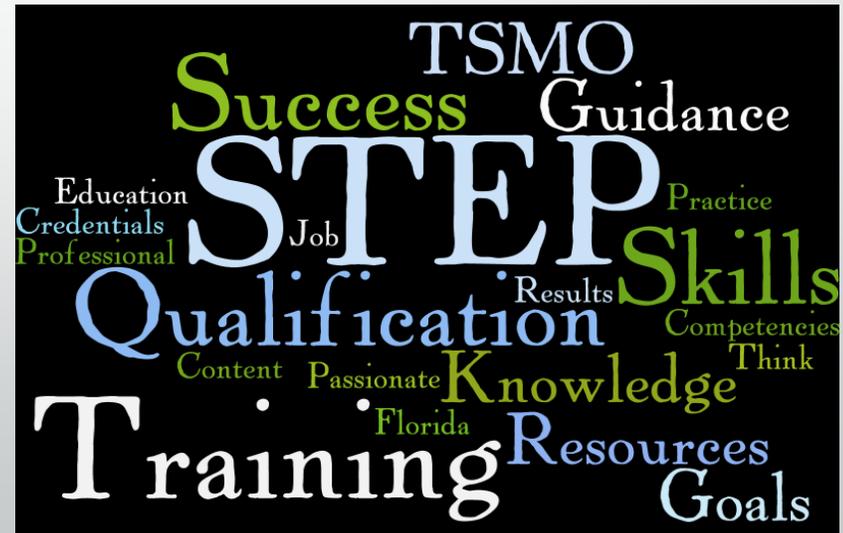
- Universities are encouraged to **participate in the implementation and evaluation of projects while working with the districts and the CO.**
- Research **results should have statewide usage:**
 - The Central Office promotes inter-university collaboration.
 - Aids in knowledge sharing among districts through research.
- Emerging **CAV technology projects should consider industry interactions.**
- Attendees made several **recommendations covering a range of topics:**
 - Project selection and management.
 - Avoid project duplication and exchange information.
 - Collaboration on various research scopes.

TSM&O Strategic Plan, CAV Business Plan

- FDOT's **CAV Business Plan** emphasizes:
 - Education and Outreach – regarding emerging technologies
 - Industry Outreach – technology readiness and partnerships
- The CAV Business Plan **recognizes the need for partnerships with the industry to leverage Research & Development for successful deployments.**
- The FDOT's **TSM&O Strategic Plan** recognizes the need for workforce **development** both internal and external to FDOT.
- These plans **leverage district participation to engage with local stakeholders** including Metropolitan Planning Organizations (MPOs).

Statewide TSM&O Excellence Program (STEP)

- Statewide TSM&O Excellence Program (STEP)
 - Goal is to build technical capabilities in TSM&O.
 - Florida specific courses available for the FDOT, Local Agencies, Consultants, Contractors, etc.
 - Describes plan for sustainable training delivery and management through the University of Florida.



STEP Training Updates

Course Topic	Development	District Review	Script Review	Approval	CBT
MFES	✓	✓	✓	✓	O
CCTV	✓	✓	✓	✓	✓
MVDS	✓	✓	✓	✓	⊙
DMS	✓	✓	✓	✓	⊙
RWIS	✓	✓	✓	✓	O
Traffic Signals	✓	✓	✓	✓	✓
Fiber Design	✓	N/A	✓	✓	✓
Systems Engineering 101	⊙	O	O	O	O
ITS FM Viewer	✓	✓	✓	✓	✓
ITS FM Maintainer	✓	✓	✓	✓	✓

Table Key: O = Activity Planned; ⊙ = Activity in progress; ✓ = Activity complete; N/A = Not Applicable

STEP Training Access

Learning Curve

- ITSFM Viewer
- ITSFM Maintainer
- Traffic Signal Training
- Fiber Design for ITS and Signalization Projects
- ITS CEI: Closed Circuit Television Cameras Module

TEO Website

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