

# Data Governance and TSMO Peer Exchange

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April 16, 2021

# Roundtable

1. Please share any recent positions descriptions that are data related (Especially positions that include data management, machine learning and artificial intelligence knowledge, skills and abilities (KSA))
2. Please share any initiatives at a department or organization level focusing on workforce development (training, HR engagement, recruiting, retention, etc.) that are ongoing at your organization to address future workforce needs in data, machine learning and artificial intelligence KSAs that are needed
3. What areas of TSMO can potentially hiring more people due to increased demand?

# Tennessee DOT

# Data-related Position Descriptions

Please share any recent positions descriptions that are data related (Especially positions that include data management, machine learning and artificial intelligence knowledge, skills and abilities (KSA)):

Education and Experience: Graduation from an accredited college or university with a bachelor's degree in community planning, transportation planning, public administration, civil engineering, landscape architecture, or other related bachelor's degree and experience equivalent to one year of full-time professional planning work.

Prepares various multimodal planning documents such as planning work programs, long range plans, corridor studies, transportation planning models, and other planning documents. Conducts studies through compilation, analyses, projections and other data to develop local, regional and state planning projects and programs. Translates or converts project descriptions into data characteristics that can be utilized in planning tools. Analyzing Data or Information: Analyzes current conditions, such as socio-economic trends, land use, traffic data, and economic development plans, in rural or metropolitan areas to determine impacts to the transportation system. Analyzes traffic volumes, crash rates, and other data to identify safety and multimodal transportation system deficiencies. Determines impact of various legislative proposals upon planning processes and configures financial structure and availability of funds for various and local transportation systems. Estimating the Quantifiable Characteristics of Products, Events, or Information: Estimates the scope of services and specifications, including cost, resources, time, and quantities, during the contract development process and the purchase of technical tools/equipment.

# Data-related Workforce Development Initiatives

Please share any initiatives at a department or organization level focusing on workforce development (training, HR engagement, recruiting, retention, etc.) that are ongoing at your organization to address future workforce needs in data, machine learning and artificial intelligence KSAs that are needed

1. The TDOT ITS has been investing millions of dollar on the data-driven researches such as the advance crash prediction using machine learning algorithm leading by Vanderbilt University. I am helping them as a TDOT representative by sharing RDS data, traffic and accident data using E-trims, and any other information on demand. After completion of the research, TDOT ITS team will implement the outcome in the Tennessee road network to determine probable location of the HELP truck so that the emergency responders can help the people within a short time.
2. The University Tennessee at Knoxville (UTK) has a research with the Traffic Operation Division, TDOT. They are retaining the RDS data and send us the consolidated report. The report shows the traffic speed, traffic volume, traffic flow parameters, occupancy, categories of vehicles, and etc. I have shared some of the RDS report with the Chattanooga Hamilton County department that can help to make a fruitful decision.
3. I did some courses on machine learning and Artificial Intelligence in my master's program. Recently, we had a training on the introduction to machine learning by Google Team.
4. To manage the data efficiently, we developed a Smartway Central Software System (SWCS) that helps us to visualize, storing, and preparing report. From the SWCS, researcher can pole data in real time.

# TSMO Workforce Needs

What areas of TSMO can potentially hiring more people due to increased demand?

TMC Mangement

# Florida DOT

# Data-related Position Descriptions

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These are outsourced positions and thus we do not have position descriptions



# Data-related Workforce Development Initiatives

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With this work being private we have taken on projects where we have improved our knowledge by doing. The contracts have been task work order based so we can have many intermediate deliverables

# TSMO Workforce Needs

What areas of TSMO can potentially hiring more people due to increased demand?

All private contractors

Traffic Signal Maintenance (Data input, including CV devices)

IT Services (local hosted solution)

# Metroplan Orlando

# Data-related Position Descriptions

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N/A

# Data-related Workforce Development Initiatives

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Through our TSMO Committee, we established a Work Force Task Force to develop training and educational materials to expose high schools, community colleges and work force organizations to occupations in transportation. A focus is on technicians since we have observed a shortage in this area.

# TSMO Workforce Needs

What areas of TSMO can potentially hiring more people due to increased demand?

Field technicians

MARC

# Data-related Position Descriptions

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## Responsibilities (selected)

- Uses data management and statistical techniques to create or direct staff and contractors to create models to measure and/or forecast characteristics of current and future transportation systems. Develops requirements and specifications for code to automate some procedures.
- Conducts research and policy analyses using multiple methods of inquiry and research techniques. Monitors, collects, enters, prepares, compiles, analyzes and presents data on various aspects of transportation planning using a variety of computer software including databases, spreadsheets, geographic information systems, graphics and statistical software.

## Knowledge and Skills (selected)

- Thorough knowledge of the principles of research, standard statistical procedures, sources of planning information, and techniques used in the preparation of materials for presentation.
- Analytical abilities required to collect, integrate and interpret data from various sources, to produce information and reports, and to develop, evaluate, and present planning information and analysis.
- Effective writing skills to accurately and succinctly summarize highly technical data into an organized and easy-to-read format.
- Skill in operating computer programs and applications using spreadsheet, database, word processing, geographic information systems, project management and other relevant programs.
- Skill in interpreting complex graphic and/or computer output related to the urban planning process.
- Working knowledge of coding and application development languages.



# Data-related Workforce Development Initiatives

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- Training for subject-matter experts to better interface with data professionals
  - “Be a good customer”

# TSMO Workforce Needs

What areas of TSMO can potentially hiring more people due to increased demand?

- Introducing TSMO expertise at the city and county level
  - Direct hires by larger jurisdictions
  - Cross-jurisdiction cooperation among smaller jurisdictions

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