

# *“I want weather data!”.... Performance-based Contracting for Road Weather Information Systems*

*Current initiatives and discussion of performance-based contracting issues*

Kevin M. Barron  
Director of Business Development  
Digital Traffic Systems, Inc.



# Overview

- ❑ Weather responsive traffic management strategies rely on **high quality RWIS data**
- ❑ The quality of RWIS data is directly related to how well these devices are **procured, deployed and maintained**
- ❑ RWIS data is now available from **fixed, mobile, and vehicular sources** – providing a wider range of data points
- ❑ **New software tools** are becoming available to analyze, interpret, forecast and make operational decisions based on quality RWIS data
- ❑ Performance-based contracting methods can **improve the quality of RWIS data** being used for operations and maintenance activities

# Rural ITS Maintenance Challenges



*RWIS Systems*

# Rural ITS Maintenance Challenges



*Challenging Geography*

# Rural ITS Maintenance Challenges



*Vast Distances Between Devices*

# Rural ITS Maintenance Challenges



*Limited Availability of A/C Power*



# Rural ITS Maintenance Challenges



*Limited Communications Options*

# Rural ITS Maintenance Challenges



*Unique Safety Challenges*



# Overview of RWIS Systems

- Fixed RWIS Sites
- Mobile ESS Platforms

# Fixed RWIS Sites



# Fixed RWIS Sites

- ❑ The backbone of a statewide road weather information network
  - Permanent sites with pavement, atmospheric, CCTV and traffic sensor components
  - Preventative maintenance – twice per year
  - Responsive maintenance – when required
  
- ❑ State of the Practice: *Low bid* maintenance contracts

# Fixed RWIS Sites

- ❑ Best Practice: *Michigan DOT*
  - Used “Best Value” RFP
  - Combined pavement/weather forecasting with RWIS maintenance services in single contract
  - Required in-state presence for full-time technician
  - Required specific response time: in season/out of season
  - Required *NTCIP-compliance*

# Mobile ESS Platforms



# Mobile ESS Platforms

- ❑ Used to provide site-specific weather data for specific events or periods of time
  - Can include other devices such as CCTV and traffic sensors in support of weather data (work zone / special event)
  - If so, one typically accesses each vendors' data through their own independent website or interface
  - NTCIP compliance can ensure easier integration into ATMS software
  
- ❑ State of the Practice: *Low bid* equipment purchase



# Mobile ESS Platforms

- ❑ Best Practice: *Virginia DOT*
  - *Managed Service*: Pay for use, contractor moves platforms within specified time period (24-hour), maintains devices, delivers the data to the DOT
  - Fixed annual fee
  - Contractor must move/ set-up platform within agreed upon timeframe
  - VDOT is essentially *purchasing data, not equipment*

*“So, where is this all headed?”*

*- Rural ITS Engineer*

# Data Purchase Model

- Contractor responsible for *all aspects* of RWIS field operation and maintenance; must deliver high quality data to DOT
- DOT can *focus on operations* and not contractor management
- Budget-sensitive fixed costs
  - Fixed fee with *disincentive-based payment schedule* incentivizes private sector partner to meet / exceed DOT performance goals as efficiently as possible and maximize overall system health
- Defined risk to DOT
- Path to address Technology Obsolescence
- Task order capability for device replacements / upgrades
- Higher system availability
- Improved operational capabilities

# Data Purchase Model

## □ Performance Goals:

- DOT will pay **100% of the daily bid amount for an “optimally functioning system” during each 24 hour period.** The amount paid will be pro-rated and reductions will be made for each 24 hour period where data from less than 95% of all devices are received.
- **Partner Disincentive:** For each 24 hour period that a device has failed or is degraded, the daily, pro-rated payment for that device **will be reduced** by ten percent (10%), to a maximum of one hundred percent (100%) of the daily bid amount for that device.
- Must define **“failing/failed/degraded performance”** for each device type within contract document.
  - Example: “Weather sensor produces no data or data is of poor quality”
- **Partner Incentive:** Partner may receive 1% **“bonuses”** for each 24 hour period when more than 95% of devices are fully operational, in 1% increments for each 1% above 95%.

# Summary

- ❑ DOTs need **“hooks”** in their contracts to ensure contractor / equipment performance
- ❑ The appropriate hooks (**performance metrics**) can ensure better contractor performance = higher system availability and improved operational capabilities
- ❑ Disincentive-based contract mechanisms **incentivize contractors** to meet DOT performance goals as efficiently as possible and maximize overall system health
- ❑ Ultimately, **you want DATA** – regardless of the system type or procurement method. Focus on the quality of the data and let your maintenance partner take care of the details.



Kevin M. Barron  
Director of Business Development

[Kevin.Barron@dtsits.com](mailto:Kevin.Barron@dtsits.com)

703.231.0207