Speed Data Workshop
A Contractor's Perspective

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Speed Workshop Take-Aways

- Initiative is build on a solid foundation
- Serves Compelling Needs
  - Greater Accountability
  - Performance Measurement
  - Benefit Cost Analysis
- Compelling Usage possibilities
  - System Performance
    - Travel-Time
    - Congestion
  - Safety
  - Environmental

Real Challenges

- Budget - scarce resources!
- Aging Infrastructure & Maintenance
- Staffing
  - Institutional knowledge & Skill sets
  - Head-count
- Technology trends
  - More choices, more capabilities
  - No magic bullets
- Ensuring data quality
  - Definition and methods

Real Opportunities

- Technical Issues well understood
  - Sensor performance characteristics
  - No magic bullets, but not rocket science
  - Best practices, lessons learned available
- Refocus from technology to
  - Standardized performance metrics
  - Manage and Optimize the system
- Integrated Approach is needed
  - Large existing installed asset base
  - Refocus on data needs of potential users
  - From one to many => more resources

Make your Investments Count

There are Compelling Demands for more Data!

Statewide Infrastructure Strategy:
An Institutional Challenge & Opportunity

- How can we do more…with less?
- Installation & Maintenance Challenges
  - Wide coverage area – mobilization costs, time to respond
  - Many available technologies
- Need to maintain investments
    - for peak operational performance
    - maximize service life
- Establish key metrics for optimal system performance
  - Specifications, procedures: Installation and Maintenance
  - ensure that in-house staff have the right skill sets
  - If one decides to outsource:
    - creates an opportunity for “performance” based contracting
    - performance all based upon this “baseline” set of standards
- Deliver maximum utility from investments made

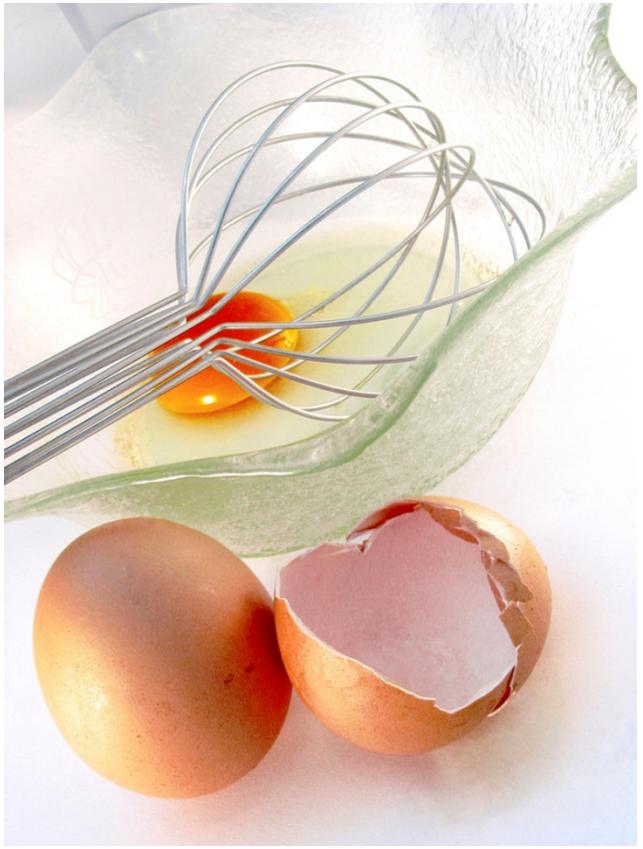
Climbing the Ladder, starts with the first rung!

Building a robust program

Build IT right before IT Breaks

Design, Install & Maintain

- The “ilities”
  - Suitability
  - Dependability
  - Usability
  - Availability
  - Reliability
  - Portability
  - Accessibility
  - Maintainability



Field Devices

- In-Road sensors
  - Loops
  - Axle sensors
- Non-Intrusive devices
- Communication Systems
- Power Systems

Developing Your Plans

- Analyze Requirements
  - Traditional Uses
  - Emerging Uses
- Prioritize Needs
- Document Activities
  - Specifications and Procedures
  - Implementation roadmap
- Analyze Staffing/Procurement Requirements
- Develop Installation Program
- Develop Maintenance Plan

Procurement Approaches

- Keep In-house
  - DOT staff
    - Should they manage or….
    - Should they be out in the field…..
    - Or both?
- Out sourcing approaches
  - Low Bid or Request for Proposal?
  - Time and Materials
  - Performance based Contracting

In all cases, uniform performance standards must be established and maintained.

Create A Virtuous Circle

- Maximize Utilization of existing resources
  - Assess and use relevant product feature sets
  - Make Incremental improvements
  - Implement Improved Maintenance practices
  - Seek out new data users – broader audience
  - Serve Planning **and** Operations applications
- Select Appropriate technologies for new sites
  - One size doesn't fit all
  - Horses for courses
  - Use best practice installation techniques
  - Reinvest in your infrastructure
  - Be the "go to" source – Doing More Gets You More

Principles In Action: Virginia

- 2000 - Only Planning Data
  - 337 CCS counters
  - 78% **Site Data Availability (55% @100%)**
- 2010 - Mix of Planning and Operations Data
  - 78% Increase in devices
    - Approx. 400 In-Road CCS
    - Approx. 200 Non-Intrusive CCS
  - **>90% Site Data Availability (>80% @100%)**

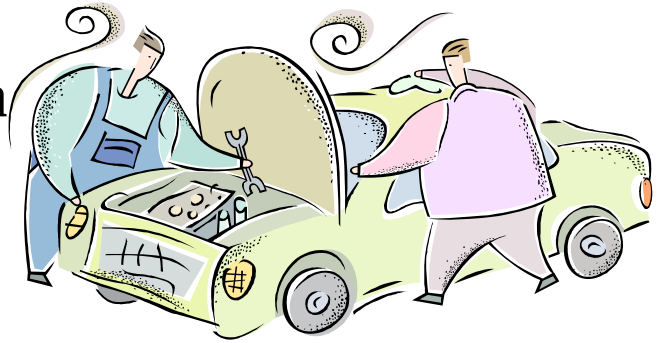
Lessons Learned/Recommendations

- Design
  - For Multiple Apps.
  - Sensor Selection
  - Installation methods
  - Calibration standards
  - Communications options
  - Robust Power Design
  - Surge Suppression
  - Remote access/diagnostics
  - Remote quality monitoring
    - Sensor Health
    - Data quality
  - Think outside the box
  - Embrace change
  - Continuous Improvement
- Operating
  - Establish performance metrics
  - Close coordination with data users and contractor
  - Build in robust performance
    - Installation practices
    - Commissioning procedures
    - Document “as-built”
  - Staff equipment qualified (training/certifications)
  - Develop needs based timely service strategy
    - Remote monitoring
    - periodic maintenance
  - Spares provisioning - stores and on vehicles
  - Leverage use of technology
  - Staged equipment and staff

Summary

Quality Data For Informed Decisions

Wins New Advocates for your Data



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