

Maintenance & Operations Decision Support System (MODSS)

Program Overview

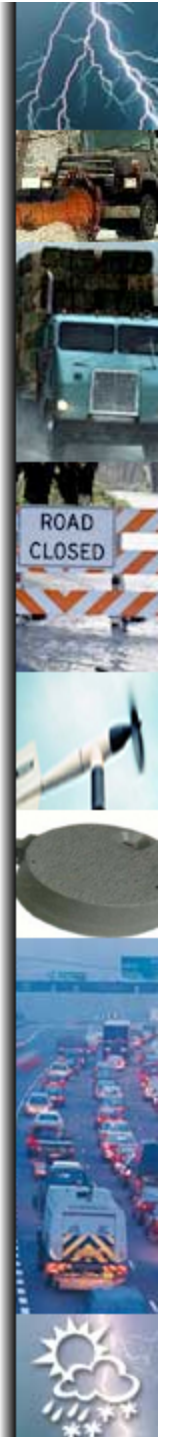
2007 MDSS Annual Meeting
Session 7

Pat Kennedy
Transportation Specialist
FHWA Road Weather Management



Introducing MODSS

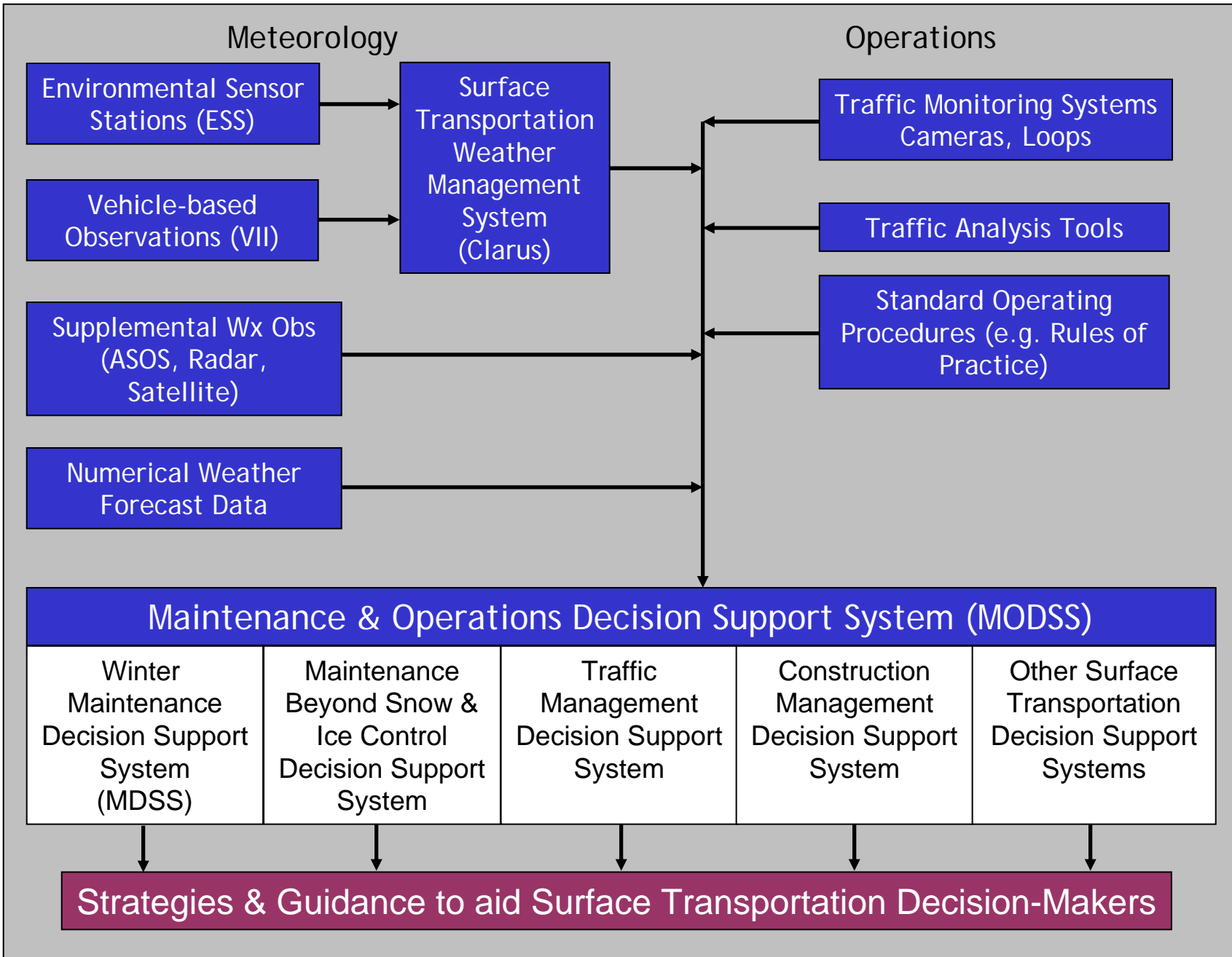
- MODSS = Maintenance & Operations Decision Support System
- Leverages lessons learned & software developed for MDSS
- Expands DSS functionality beyond snow & ice control to other areas of transportation maintenance & operations



MODSS Vision

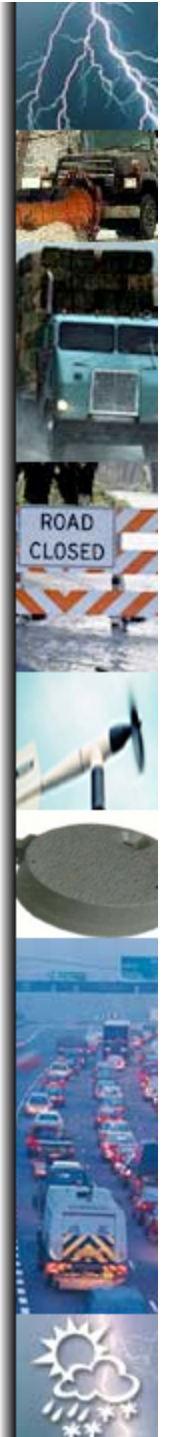
- MODSS will become the parent program for customized decision support modules such as MDSS
- Customized forecasts, rules of practice, and recommendations will flow from the parent to the individual modules
- Changes made at the parent level to the weather forecast modules will benefit every DSS



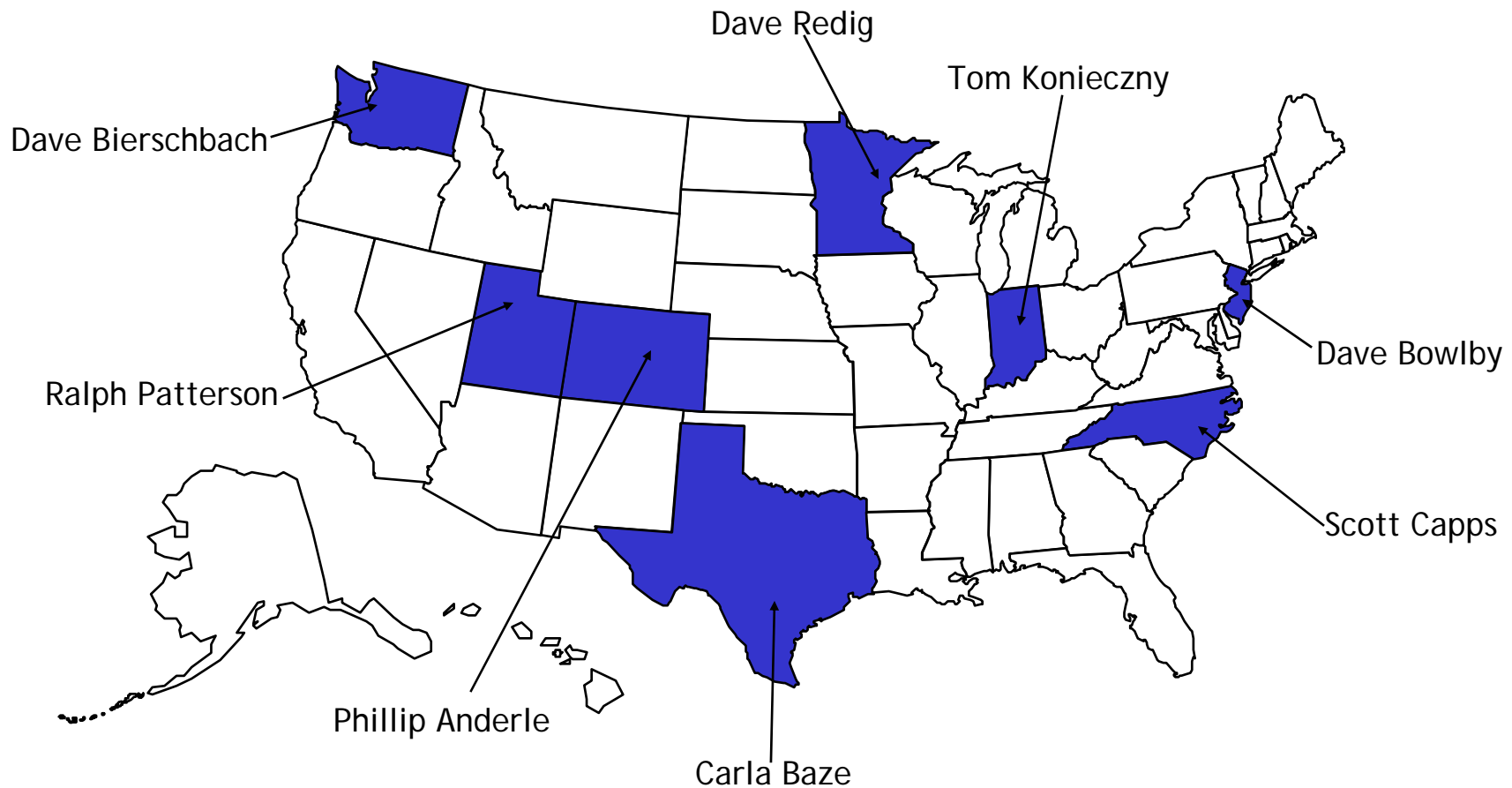


Successful Formula

- Premise: No one knows more about the work they do than the folks who are actually doing it
- State DOT representatives were invited to participate in stakeholder meetings last winter to gather requirements for:
 - Maintenance beyond snow & ice control
 - Traffic Management
- Concept of Operations document was developed Summer 2007



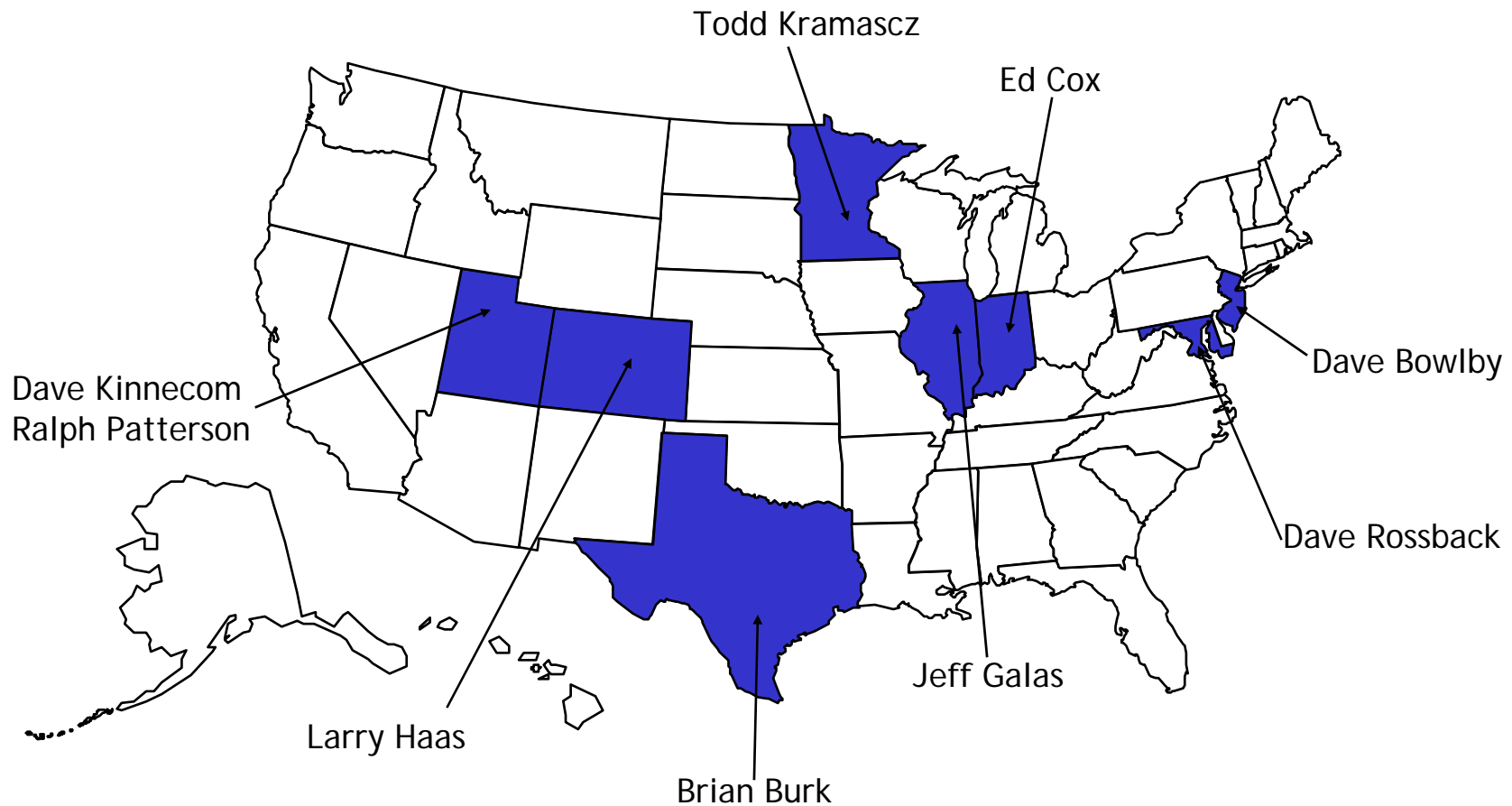
MODSS User Workshop Stakeholders Maintenance Beyond Snow & Ice Control



Feb 2007, Boulder, CO



MODSS User Workshop Stakeholders Traffic Management



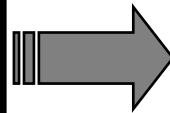
March 2007, Boulder, CO



MODSS: Maintenance Activities

Weather Observations & Forecasts

- Air Temperature
- Pavement Temperature
- Wind Speed/Gusts
- Wind Direction
- Rain Chances
- Rain Amount
- Lightning Location
- Relative Humidity



Maintenance Applications

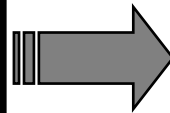
- Chip Sealing
- Patching
- Striping
- Seal Coating
- Pesticide Application & Spraying
- Mowing
- Sweeping/Cleaning



MODSS: Maintenance Activities

Weather Observations & Forecasts

- Air Temperature
- Pavement Temperature
- Wind Speed/Gusts
- Wind Direction
- Rain Chances
- Rain Amount
- Lightning Location
- Relative Humidity



Maintenance Applications

- Ditch/Culvert Maintenance
- Bridge & Deck Repairs
- Setting Signs
- Tree Trimming
- Small Wedge/Level Paving
- Special Events



MODSS: Traffic Mgmt Today

Outcomes from the initial stakeholder meetings:

- Weather is typically not integrated with traffic operations
- Many rely on watching maintenance personnel actions/reactions to weather changes
- Use loop detectors/cameras to monitor traffic volumes and weather conditions
- Most do not have plans for or the capability to modify signal timing in response to weather
- Many are only *reactive* to weather (e.g. only using DMS for cautionary phrases)



MODSS: Traffic Mgmt Future

- Integrate weather, pavement, traffic & road condition data with decision support
- Weather-responsive traffic signal timing
- Variable speed limits based upon prevailing road weather conditions
- Enhanced road weather information for travelers
- More Proactive traffic management with respect to weather

