SHRP2

STRATEGIC HIGHWAY RESEARCH PROGRAM

Accelerating solutions for highway safety, renewal, reliability, and capacity

Regional Operations Forum
How to Organize for Operations

TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

"Organization"

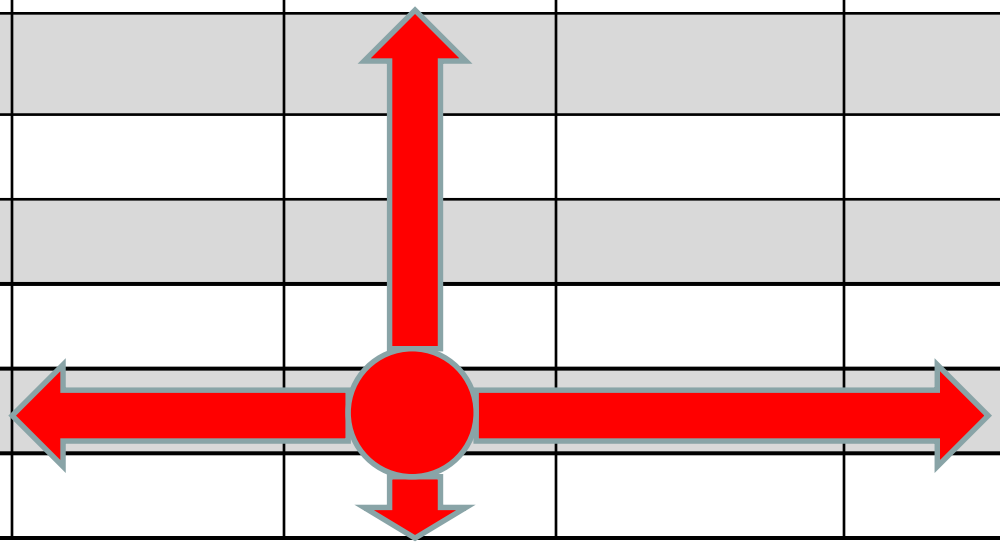
What are we talking about?

- Organize ***Internally*** for effective conduct of TSMO mission
  - ✓ Functions, roles and reporting
  - ✓ responsibilities, authority and accountability
  - ✓ "dotted line" relationships

- ***External*** relationships formalized for effective collaboration

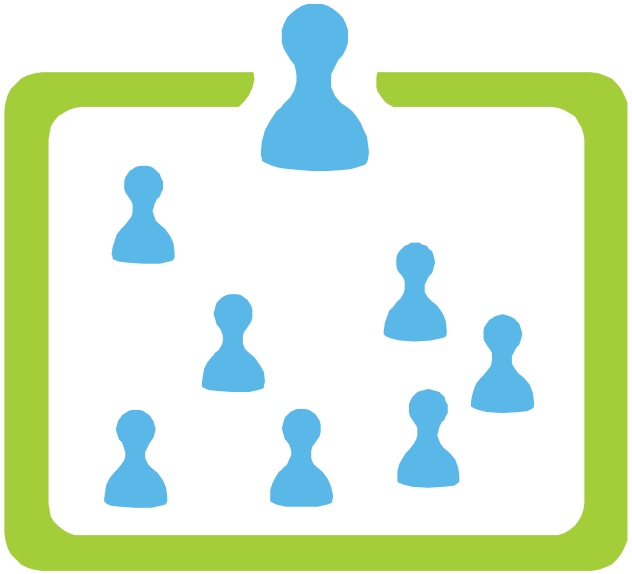
Organization as integral to all agency key capabilities

CAPABILITY LEVELS FOR IMPROVING TSMO EFFECTIVENESS				
DIMENSIONS	**Level 1 Performed**	**Level 2 Managed**	**Level 3 Integrated**	**Level 4 Optimizing**
Business Processes				
Systems & Technology				
Performance				
Culture				
Organization/Staffing				
Collaboration				

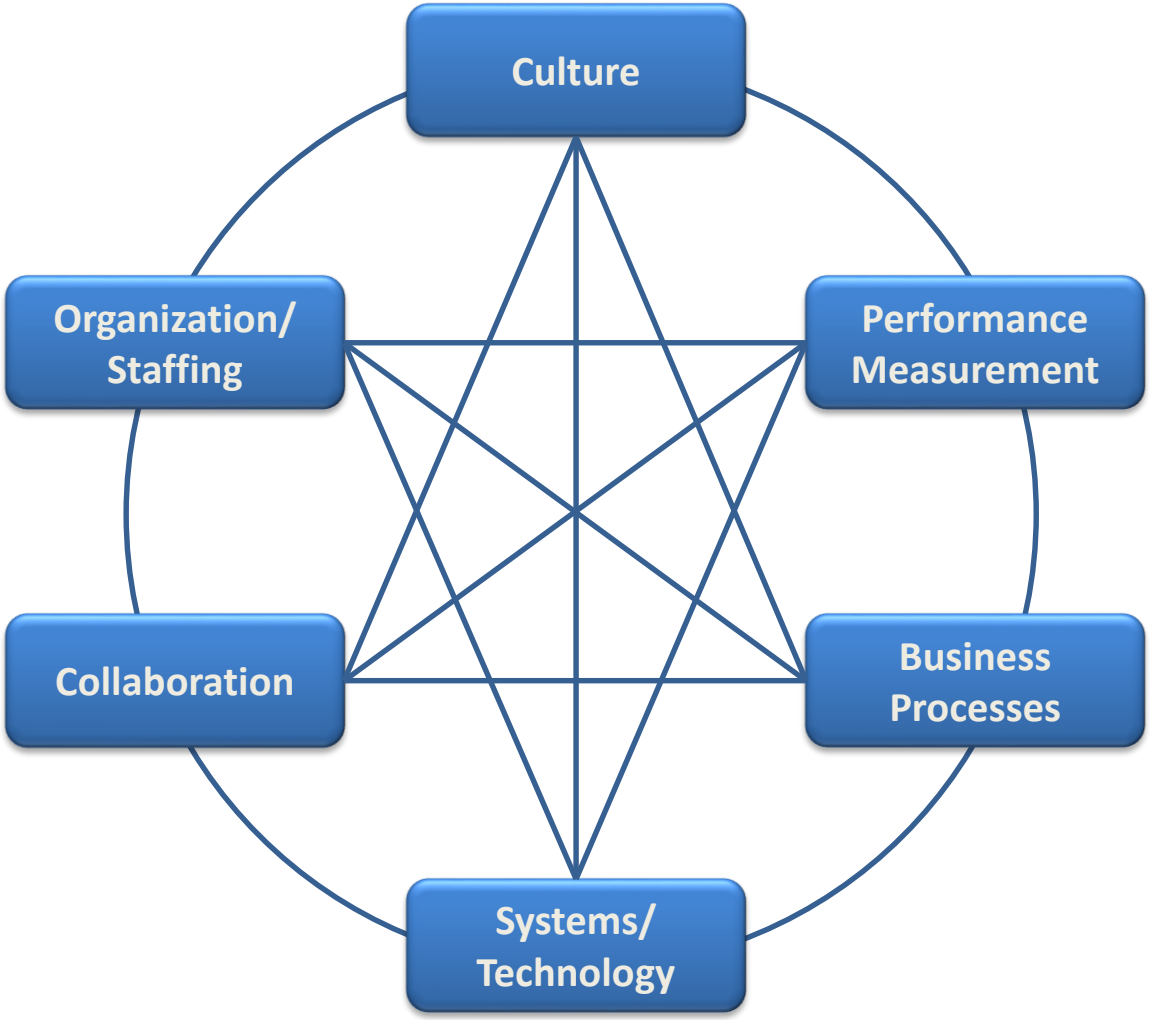


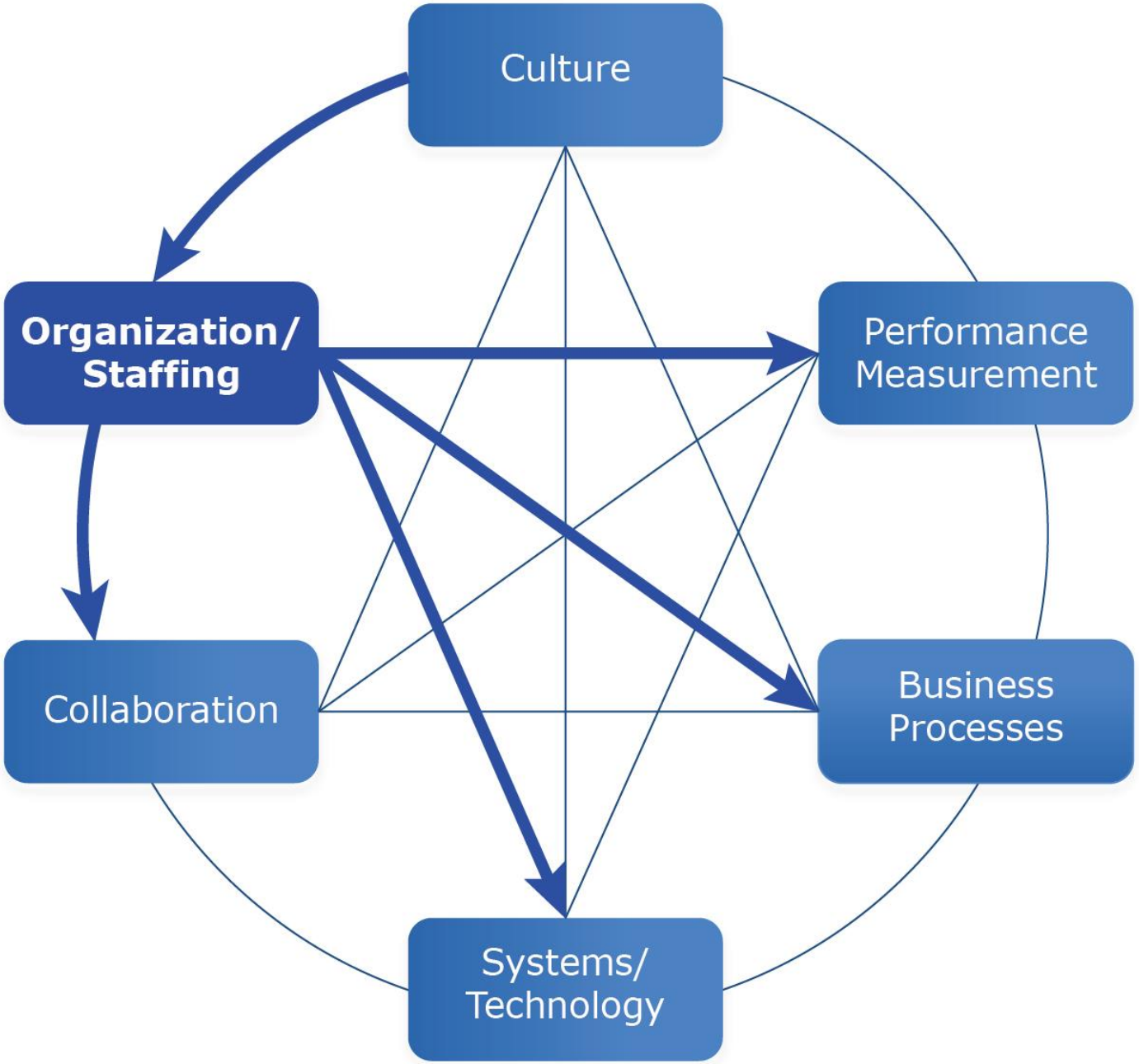
Question: how do the other five dimensions affect (or are affected by) organization?

- Business Processes
- Systems & Technology
- Performance
- Culture
- Collaboration



Synergism among Dimensions




Culture
Organization/
Staffing
Performance
Measurement
Collaboration
Business
Processes
Systems/
Technology

What Needs to be "Organized?"

Vertical :

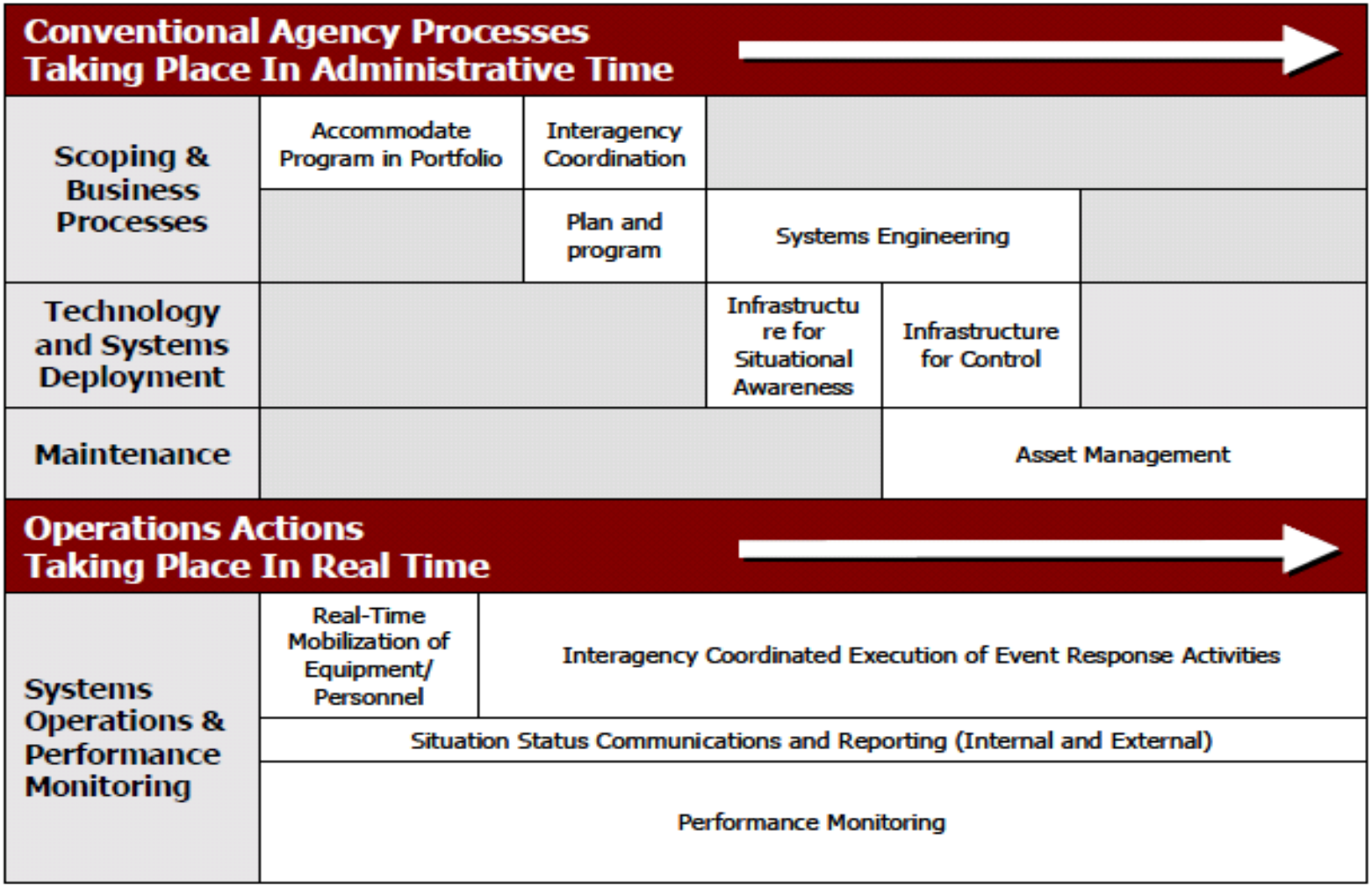
- Span of control = align responsibility with authority
- Hierarchy – manager in position to make trade-offs regarding performance
  - Too low = no control of technical functions
  - Too high = no knowledge of technical functions
- Decentralization: HQ vs. districts roles -- need for "matrix reporting"
- Is TSMO truly a "program": how high up in agency hierarchy is top level staff person with **full time** TSMO responsibility (compared to other agency programs)

What Needs to be “Organized?”

Horizontal:

- Relating engineering to field operations
- Relationship/leverage over support functions (planning, maintenance)
- Ways to coordinate key business process functions
- Real-time procedures and protocols
- Authority for external coordination

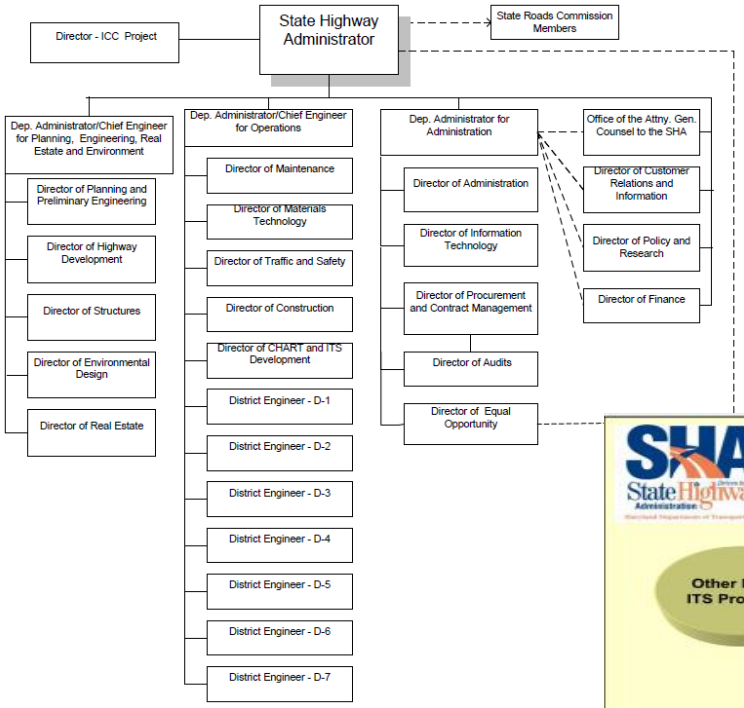
TSMO Organization must respond to both “office” and “real-time” functions

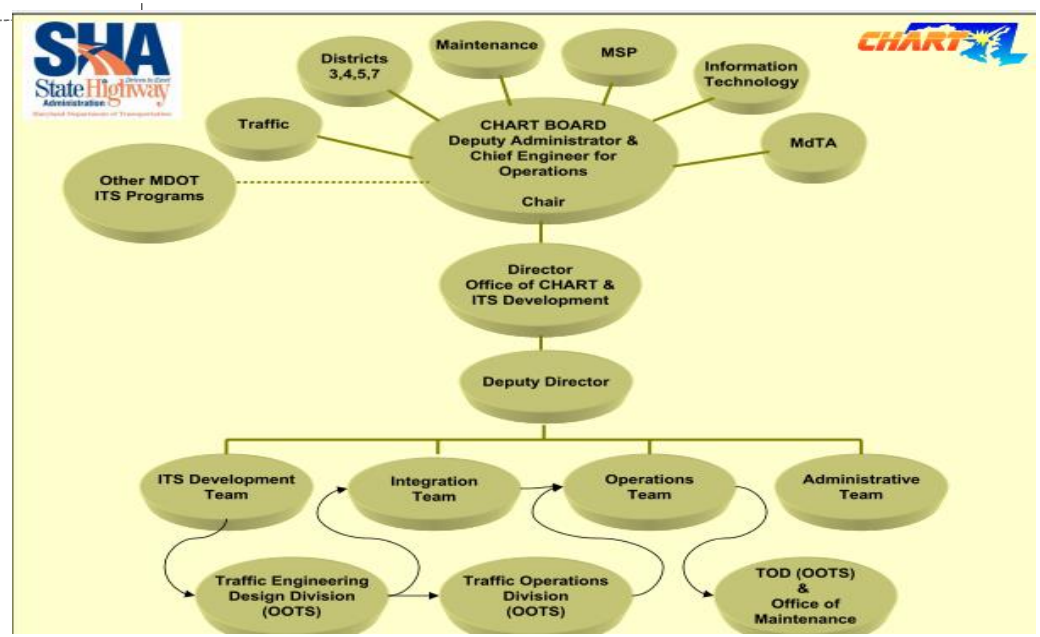


The challenge—working within legacy context

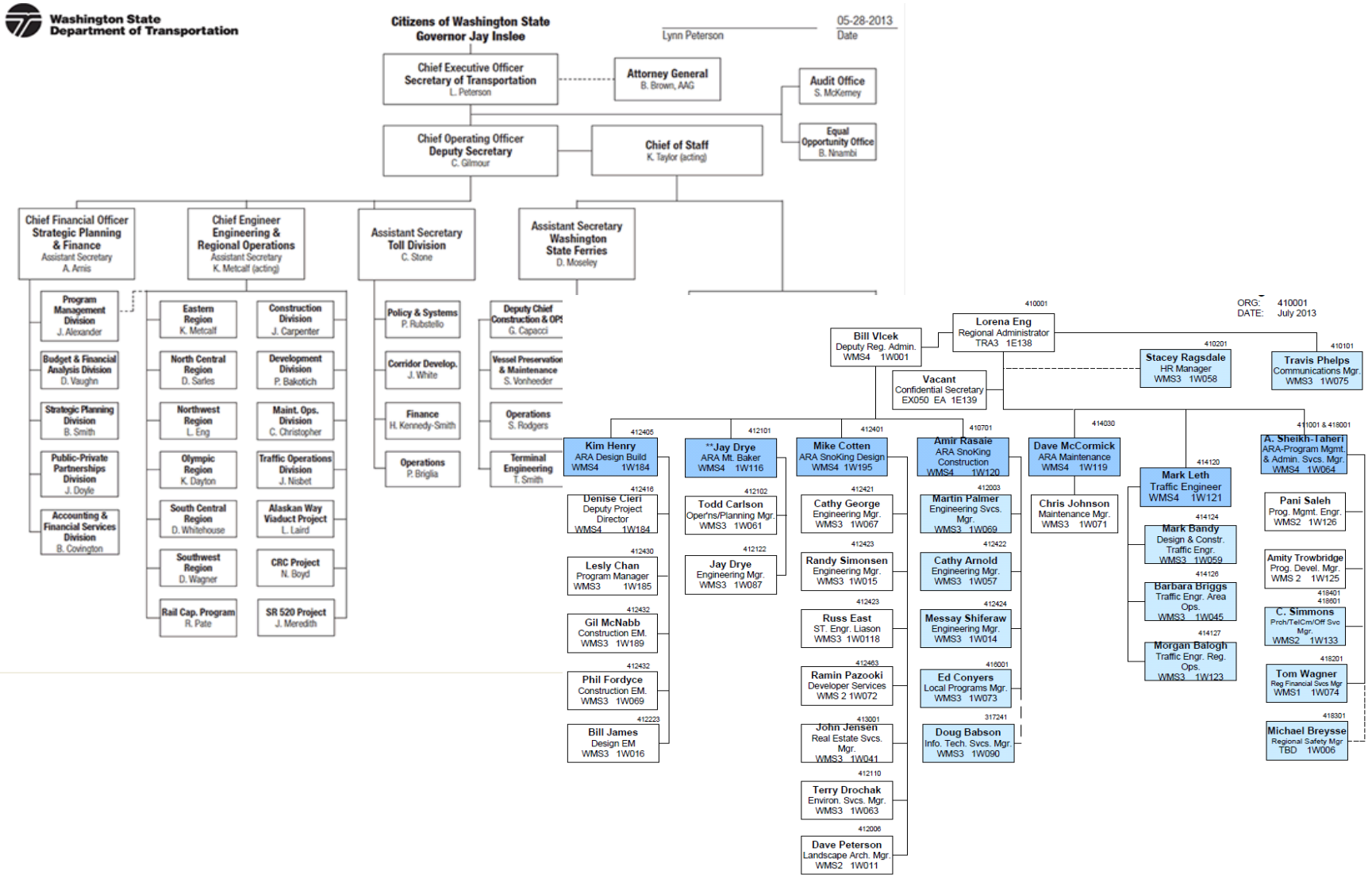
Feature	Legacy organization	TSMO
Mission alignment	Conventional CE culture/missions	New, competes with legacy
Performance Accountably	On time, budget, standards	System performance in customer terms
Focus	Project schedule in months	Real-time response (24 X7)
Core competencies	Defined via tradition, training,	Not well- defined, limited schooling
Unit Organization	By stages in project	By requirements of ConOps
Responsibility/ authority	Clear	Often forced into legacy - silo champion -dependent
Partnerships	Contracted -- based on State standards	Collaboration among independent entities

Two extremely different org charts (first)





Two extremely different org charts (second)



Staffing Issues

- Does TSMO have unique staffing requirements -- professional/non-professional/field
- What are the needed core capabilities, i.e., the KSAs – management and technical?
- How can they be acquired?




Staffing Considerations

- Position specifications (KSAs) and grade levels for key technical capabilities

- Acquiring the needed capabilities (engineering vs. operations:
  - On the job training (who does it?)
  - Outsourcing (if staff slots limited)
  - Stealing (from other DOTs, consultants?)

- Recruitment and Retention (external competition)
  - Grade Levels – are they attractive?
  - Conditions of employment? ($$ & career opportunities)
  - Training and co-training provided by ……?

Career Development

Table 3. Human resources: generic activity group I.

Monitors, classifies, assesses, and archives data and other inputs regarding traffic accidents, road surfaces, traffic density, weather, traffic signal operation/malfunctions, construction projects, major disasters, and special events to maintain constant awareness of traffic system operation.

	Entry Level	Full Performance	Advanced
Knowledge	• TMC metro area road system. • Use of common language/terms used to describe traffic conditions.	• Road locations that are critical to traffic safety and/or traffic flow. (C; D) • TMOT's manual, including policies and procedures. (D) • Traffic system terminology. (B; D) • Principles of technical traffic engineering (e.g. queuing, capacity). (D; G)	• Traffic signal timing selection plans. (D; F2; H3) • HAZMAT policies, procedures and codes. (H2) • Overheight vehicle control regulations and response plans. (D; H7) • Rail crossing traffic signal controls and response plans. (D; F2; H3)
Skills/Abilities	• Skill in visualizing map locations (i.e., map reading skill). • Skill in reading and listening to detailed or technical information. • Ability to communicate orally and in writing to provide information clearly and succinctly. • Ability to learn a body of material consisting of regulations, and/or procedures. • Demonstrated success in dealing with pressure situations.	• Ability to analyze multiple source data from equipment and people under time pressure. (D; G) • Ability to communicate effectively with transportation system audiences (e.g., police, highway helpers, public). (C, D)	• Ability to interpret conflicting or ambiguous traffic incident/congestion information. (C; G; H4) • Ability to make a disciplined and timely assessment of information on potential for major disasters and emergencies. (C; G; H4)

Outsourcing: Threat or Opportunity?

What functions could be outsourced?

- Engineering & planning (ConOps, architecture, ITS systems design)
- TMC staffing
- Traffic data and analysis/modeling
- ITS device/communications/systems maintenance
- Safety Service Patrol
- Construction inspection

- How can you best manage performance?
- What core capacities ***must*** be in-house?
- What are you doing and why?

Main points – Take Away

TSMO has unique organizational requirements (vs. legacy)

- Includes functions not easily accommodated in legacy organizations.
- No one "best" organization given differences in size/number of regions in state; scale of program
- Commitment to real time customer service from leadership and other units
- Management recognition of special staffing needs – technical, managerial and collaborative

Criteria for effective organizations

- Link between responsibility and authority for key functions
- All units in agency need to understand/support real time functions
- Reporting with accountability to monitor effectiveness