

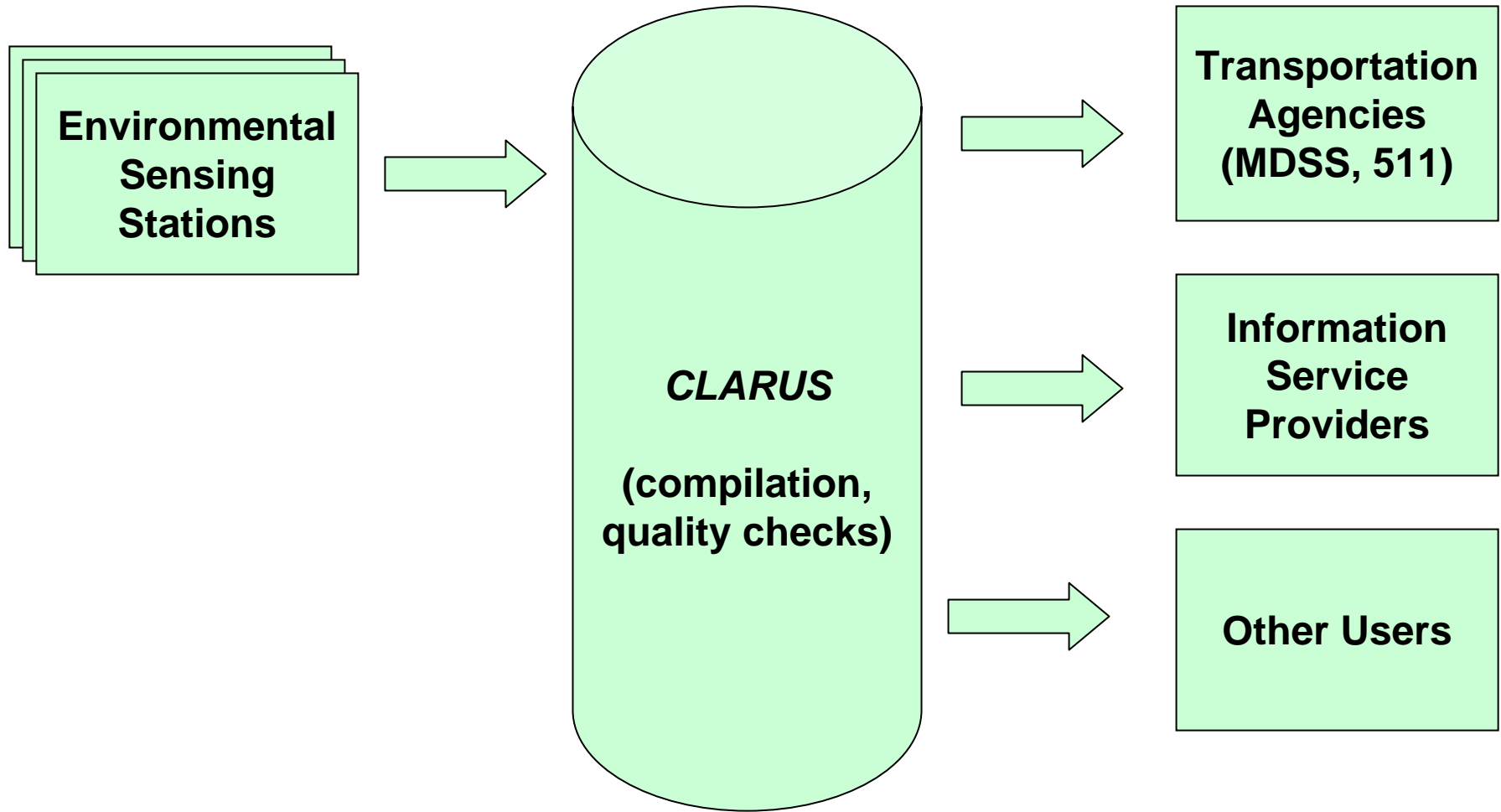
# North/West Passage *Clarus* Regional Demonstration Concept of Operations Project Overview

David L. Huft, SD Department of Transportation  
Leon F. Osborne, Meridian Environmental Technology

# The FHWA Clarus Concept

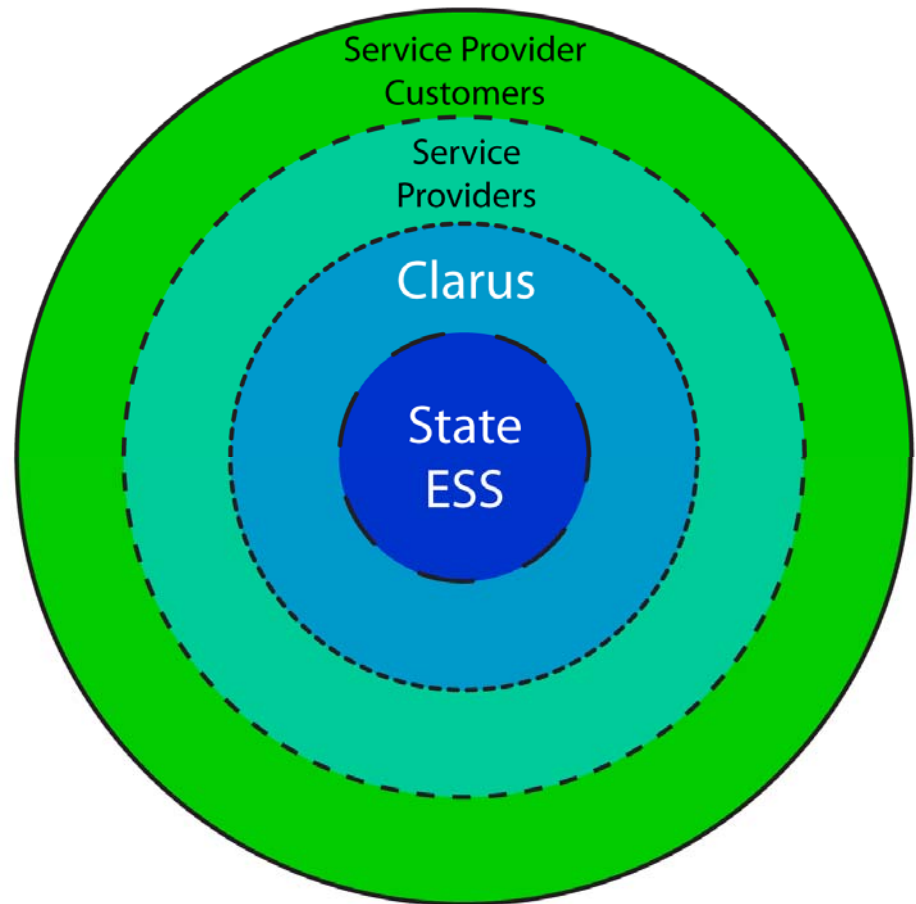
- Clarus is an initiative to develop and demonstrate an **integrated surface transportation weather observing, forecasting and data management system**, and to establish a partnership to create a Nationwide Surface Transportation Weather Observing and Forecasting System.
- The objective of Clarus is to **provide information to all transportation managers and users to alleviate the effects of adverse weather** (e.g., fatalities, injuries and delays).

# CLARUS System Concept



# Identifying the Primary Clarus Users

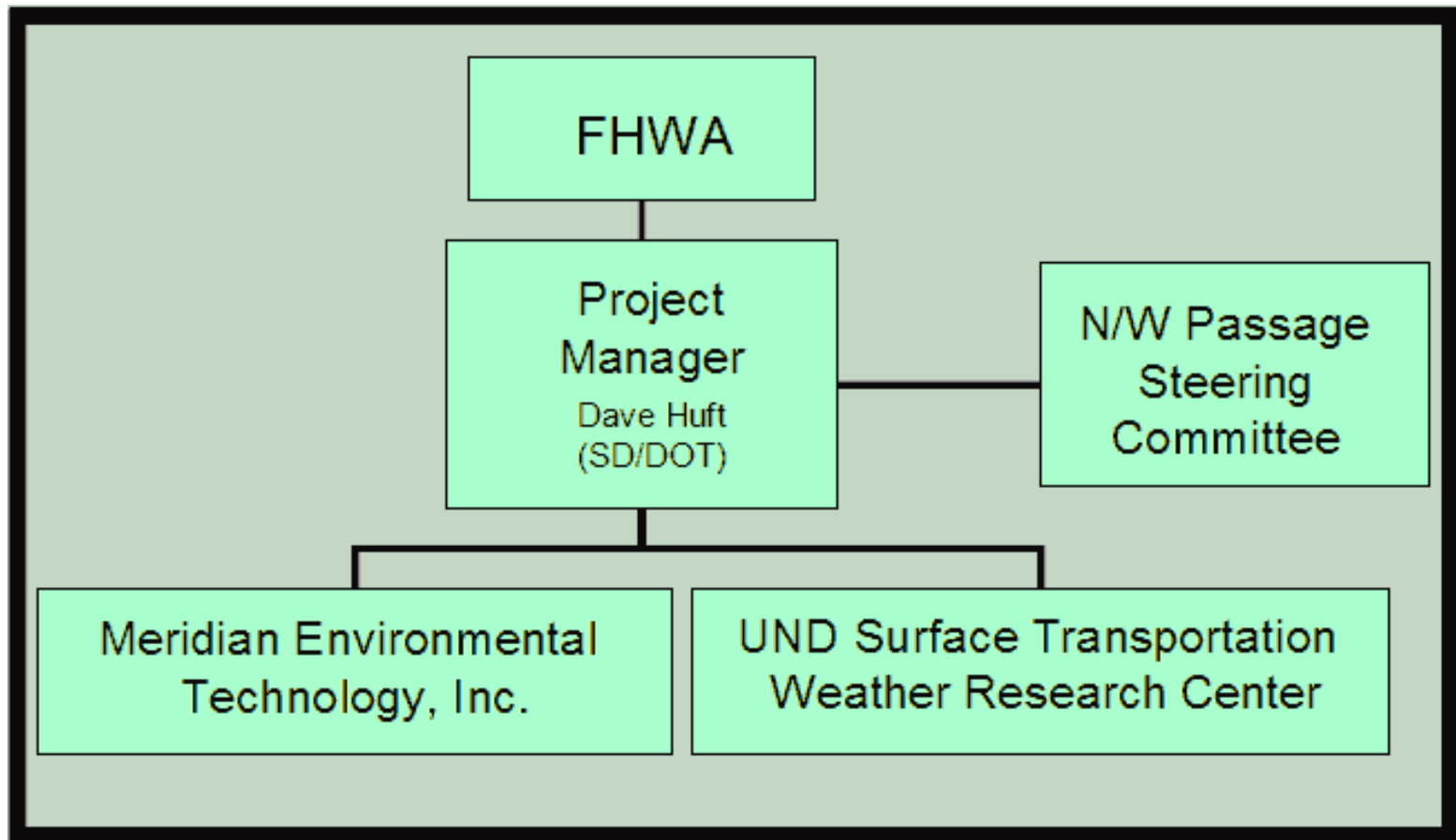
- The premise from the original Clarus ConOps is that the primary users of the Clarus System are:
  - ESS Owner / Operators
  - Weather and Road Weather Service Providers



# Project Team

- Idaho
  - Robert Koeberlein
- Minnesota
  - Curt Pape
  - Ginny Crowson
- Montana
  - Theresa Bousliman
- North Dakota
  - Ed Ryen
- South Dakota (lead)
  - David Huft
- Washington
  - Matthew Neeley
- Wisconsin
  - Michael Adams
- Wyoming
  - Vince Garcia

# Project Organization & Management



# Objectives of North/West Passage *Clarus* ConOps

- Understand stakeholder needs through open discussions
- Recognize operational characteristics needed to support users
- Identify personnel and skills needed to use, operate, and maintain Clarus-related solutions

# Determining User Needs


- Review of North/West Passage state and regional ITS architectures
  - Provided an overview of existing visions
- Assessment of state ITS deployment statistics



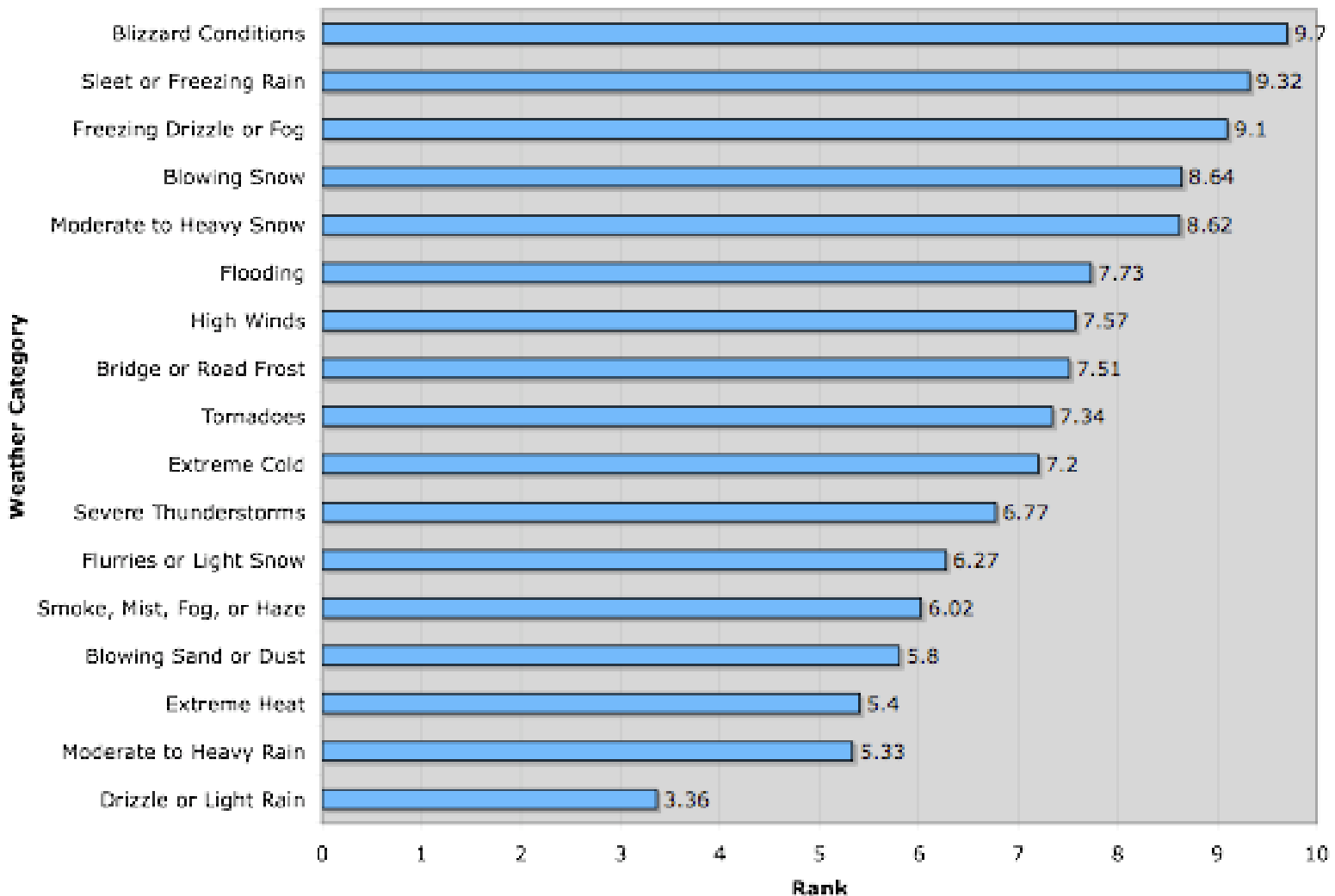
# Determining User Needs

- State stakeholder interviews / workshops
  - Each North/West Passage member state and their invited participants
- Stakeholder group surveys
  - Web-based survey instruments customized to target stakeholder groups
    - > 4,000 respondents to web survey
    - Collected information from a broad community of users and providers of surface transportation

# Stakeholder Groups

- User-driven goal demanding stakeholder involvement
  - ***Clarus will only be successful if the needs of the stakeholders are met!***
- Clarus North/Passage  Stakeholders
  - State Transportation Decision-Makers
  - Weather Service Providers
  - Travelers
  - Commercial Vehicle Operators
  - Non-Transportation State Decision Makers
  - Non-Surface Transportation Weather Interests
  - Research Community

# User Priorities: Winter Weather



# Some Specific User Needs

- Consistent / timely information of advisory and control actions in adjacent states
- More frequent and more accurate/spatially-specific road condition information & forecasts
- Improved resources for pre-travel planning & enroute information support including:
  - Road condition / road status
  - Weather & road weather observations & forecasts

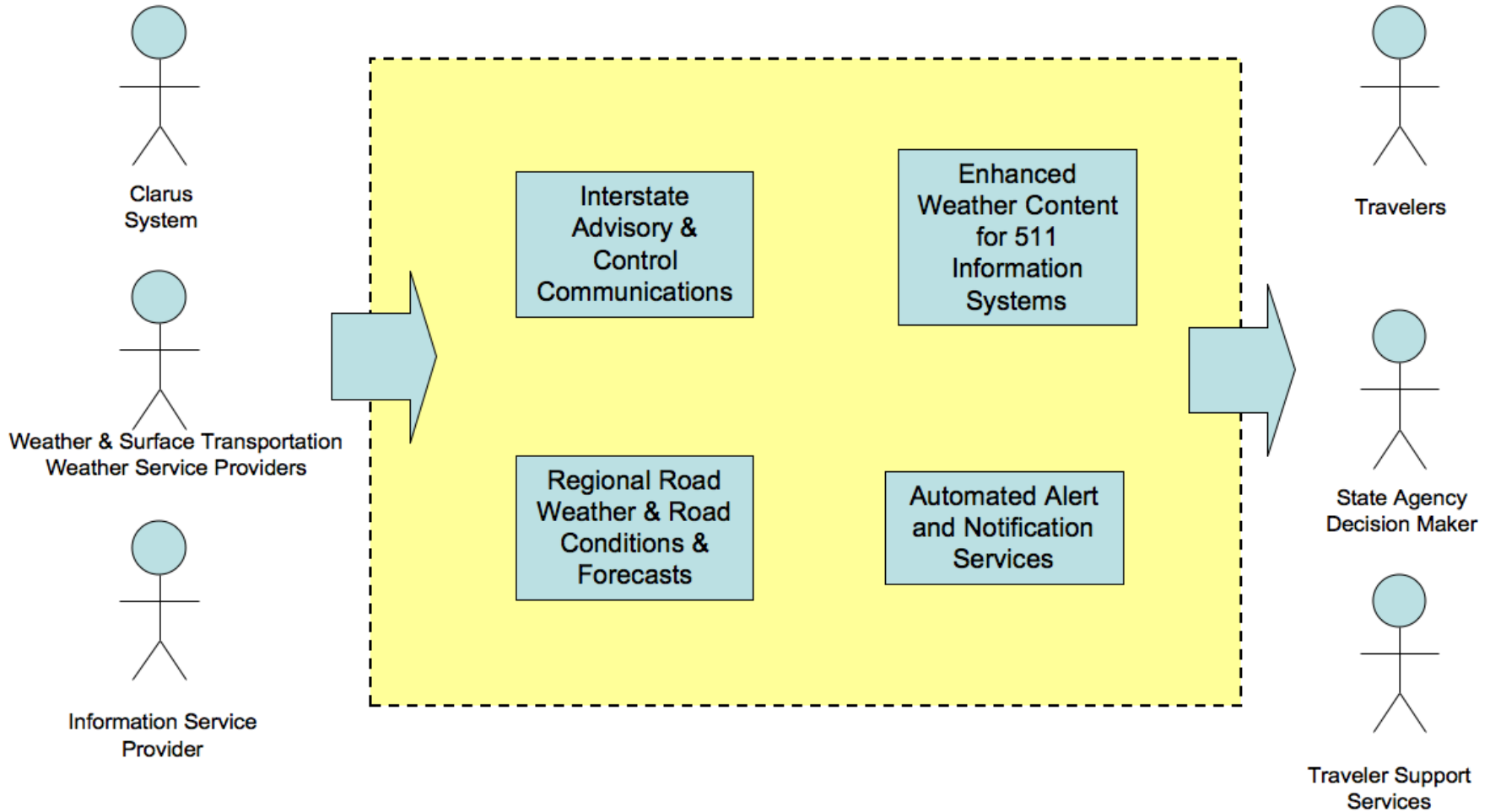
# ESS-Specific Findings

- More frequent ESS data collection needed for more timely updates to road/weather conditions
- Need better use/understanding of road weather management strategies using ESS data within transportation agencies

# Use Case Scenarios

- Interstate Advisory / Control Strategy Coordination
- Enhanced Road Weather 511 Information Systems
- Regional Road Condition / Road Weather Reporting and Forecasting System
- Automated Alert and Notification System

# Providers and Users



# Project Outcomes

- Concept of Operation
- 4 Use Case Scenarios
- 8 states connected to *Clarus*
  - 7 states operational
  - SD completely refurbishing ESS
- Interest in *Clarus* Phase III

# For More Information

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