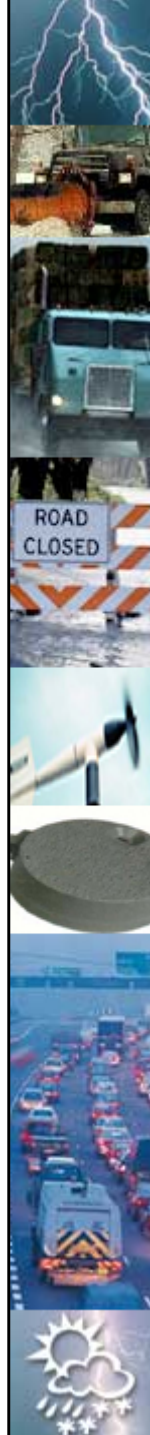
ESS Siting Guidelines Document Update

Andy Stern, Consulting Meteorologist
Road Weather Management Team
Noblis, Inc.
Falls Church, VA

August 4, 2008 – Reno, NV

6th *Clarus* ICC Meeting

Contact: astern@noblis.org, 703-610-1754



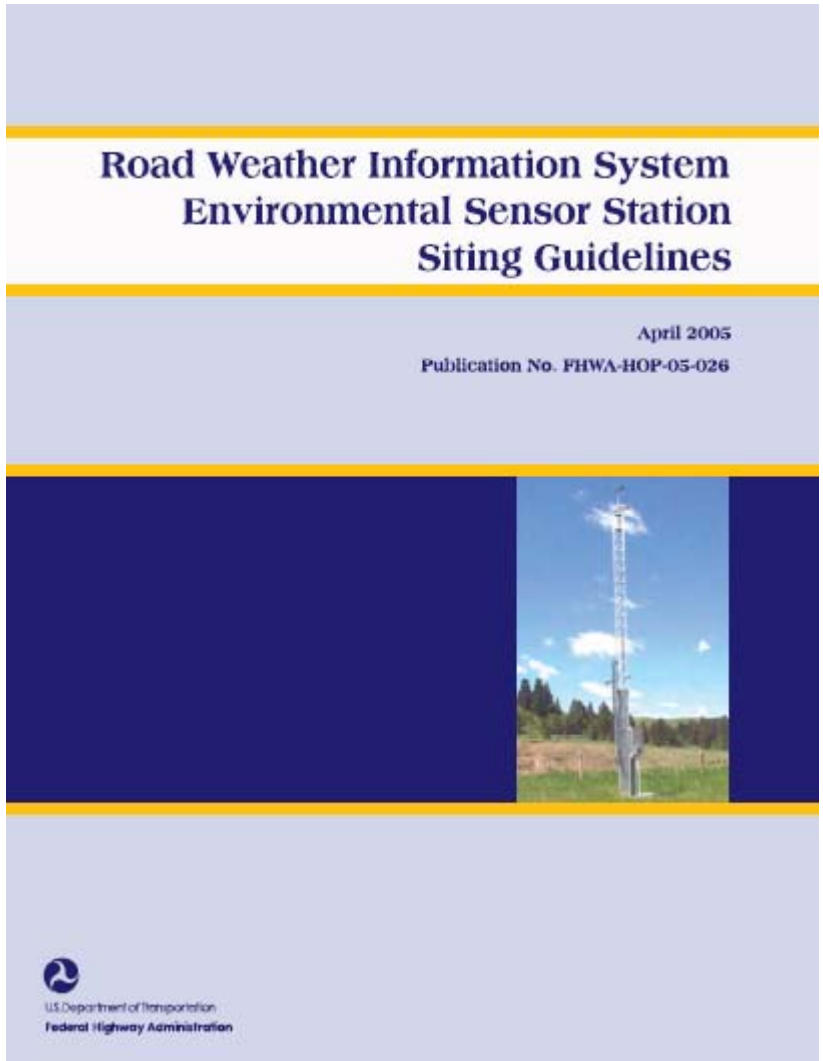
Siting Guidelines: 1st Edition

- Initial effort was a joint sponsorship that included
  - FHWA, Road Weather Management Program
  - AASHTO Snow & Ice Cooperative Program (SICOP)
  - Aurora Pooled-Fund Program
- Contractor Team
  - SAIC
  - Meridian Environmental Technology
  - T & S Diversified, Inc.

Siting Guidelines: 1st Edition

- Original task kickoff: Dec 2003
- Final document delivered: Jan 2005
- Printed by GPO: Apr 2005
- Available electronically at ops.fhwa.dot.gov/publications/ess05/
  - Pub#: FHWA-HOP-05-025
  - EDL#: 14109

Siting Guidelines: 1st Edition



Siting Guidelines Objectives

- Encourage uniform siting criteria
- Maximize investment in ESS
- Provide instructions for how to select sensors for an ESS
- Provide insight for the selection of appropriate locations for sensor placement
- Improve integration of road weather data with other meteorological data sets
- Encourage compiling & maintaining metadata

Siting Guidelines: 2nd Edition

- Evaluate the use & effectiveness of the 1st edition
- Update with new technology & metadata information
- Contractor Team: Mixon/Hill, Inc. & Cambridge Systematics, Inc.
  - Task Kickoff: Aug 2006
  - Deliverable Document: July 2008
  - Publication Release: Fall 2008

2nd Edition Interviews

- Three State DOTs were interviewed for their evaluation of the Guidelines document
- The DOTs used the document as part of recent or new ESS deployments
- DOT participants
  - Michigan DOT
  - Idaho Transportation Department
  - New Hampshire DOT

Michigan DOT

- Conclusions & recommendations
  - Consulted at key milestones during ESS deployment; found it very helpful
  - Wanted information about deploying message signs
  - Guide needed to be updated on sensor placement to reflect advances in sensor design

Idaho Transportation Department

- Conclusions & recommendations
  - Add the following guidelines to the document
    - selection of cameras & sensors for particular applications
    - creating RFPs for ESS deployment
    - information on archaeological impacts on siting
    - information on soil evaluations
    - guidance on roadway clear zones

New Hampshire DOT

- Conclusions & recommendations
  - Helpful in addressing site-specific concerns (especially the tradeoff between logistics and meteorological concerns)
  - Guidance on the selection of sensors measuring the same weather parameters
  - Examples of tradeoffs between site selection constraints & weather conditions

Updates in 2nd Edition

- Discussion of bridge anti-icing systems
- Add a section on "How to use this guide"
- Description of how the guide fits the systems engineering of ESS deployments and the National ITS Architecture
- Updated information on ESS maintenance
- Information about the *Clarus* Initiative

Updates in 2nd Edition

- Include a discussion of ESS deployment in conjunction with other ITS (e.g. DMS)
- Include new sensor designs
- Include a discussion on archaeological constraints, soil conditions & clear zones
- Include a reference to the NPDES Stormwater Guide for storm water management ESS sites
- Include examples of tradeoffs or limitations caused by compromised siting