



# US Army Corps of Engineers

Institute for Water Resources

BUILDING STRONG®

## Navigation System Simulation Model (2010)

**Status:**            **Project Manager:**

In Progress        [Mark Lisney](#)

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**Purpose:**            This effort will develop an entirely new system simulation model that builds upon the capabilities of the Corps Waterways Analysis Model and addresses the shortcomings associated with WAM.

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**Objective:**        NaSS is intended to be the most advanced navigation system simulation tool available to the Corps and general public.

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**Benefits:**         The work effort will lead to better decisions regarding navigation system improvements and management through the use of a model that better simulates real world operations and traffic management actions.

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**Progress:**         To date the team has accomplished the following:

A procedure to extract, transform, and load Lock Performance Monitoring System warehouse data has been developed and implemented. This results in a NaSS LPMS schema which serves as the primary data source to the NaSS.

The BasinSym model is complete. This model serves as the fundamental simulation kernel upon which all simulated systems can be built.

Two tiers of lock processing have been completed and the third tier, the most detailed level of lock processing, will be completed and integrated into the BasinSym by June 2009.

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**Products:**

- [Instructions for Viewing Lock and River Mile Locations Using ESRI ArcExplorer](#) (pdf, 1.2 MB) (interim)
- [ARL random number generator for .NET platform now available](#) (pdf, 15 KB) (interim)
- [NaSS Design Document Peer Reviewer Comments and Responses](#) (pdf, 261 KB) (interim)
- [Navigation System Stimulation \(NaSS\) Design Document](#) (pdf, 457 KB) (interim)
- [Technical Review of Draft Report Navigation System Simulation \(NaSS\) Design Document](#) (pdf, 236 KB) (interim)
- [LPMS-OMNI and WCSC Data Quality](#) (pdf, 43 KB) (interim)

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- [NaSS: Data Analyzer-Preprocessor](#)(ppt, 463 KB) (interim)
  - [NaSS Team Meeting Presentations and MFR](#)(zip, 8.0 MB) (interim)
  - [Navigation System Simulation \(NaSS\) Design Document](#)(pdf, 787 KB)
  - [FY06 Phase 1 GA enhancements](#)(pdf, 494 KB) (interim)
  - [Genetic Algorithms for Selecting and Scheduling Waterway Projects](#)(pdf, 596 KB)
  - [Genetic Algorithm Optimization Phase 3 Report](#)(pdf, 677 KB) (interim)
  - [NaSS Locks](#)(zip, 12 KB) (interim)
  - [NaSS Locks and Rivers](#)(zip, 265 KB) (interim)
  - [Navigation System Simulation Model Summary Report](#)(pdf, 51 KB) (interim)
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**Related  
Links:**

- [Navigation Economic Technologies](#) (project web site)
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**Partners:**