

Pontis 4.3 - Bridge Management System (Bridge Management and Inspection Technologies)

Problem:

Bridge preservation, improvement and replacement needs exceed authorized budgets.

Background:

There are over 590,000 highway bridges throughout the Nation and over 160,000 of those bridges are considered deficient, either structurally deficient or functionally obsolete. The deck area carried on these deficient bridges is approximately 88 million square meters. With an average bridge replacement cost of 1,110 \$/sq. m, it would take \$98 billion to replace these deficient bridges. Approximately \$3.35 billion in Federal-aid Highway Bridge Replacement and Rehabilitation funds were authorized in FFY 2003. In addition to a 20% state match, this would provide for \$4.19 billion, a far cry from \$98 billion.

This disparity in needs and authorized funding makes for challenging decisions when faced with difficult questions such as:

What are the needs of the bridge network now and in the future?

What types of work should be performed and when?

Which bridges first?

What is the impact on a bridge or a network of bridges if work is deferred?

The *Pontis* Bridge Management System can aid an agency in answering these difficult questions.

Solution:

Fully implement the inspection, modeling, project planning and programming capabilities of *Pontis*.

What is Pontis?

Pontis is a bridge management system software available through AASHTO that can aid managers in the development of bridge preservation (maintenance, repair and rehabilitation), improvement and replacement projects and programs that result in maximum benefits to users and the overall condition of a bridge population at given budgets, utilizing quantitative bridge element level condition data, deterioration and cost models, and agency policies.

Bridge and bridge network level results of preservation and improvement actions can be measured and captured in reports for multi-year planning horizons up to 99 years.

Why use Pontis?

For support of:

- Asset management principles
- Agency business practices
- Bridge inspection programs
- Goal development
- Alternatives analysis
- Resource allocation
- Project selection
- GASB 34 reporting

Where are the successes?

There are 36 states that are licensed users of *Pontis*. Many have only implemented *Pontis* as a bridge condition and inventory system and have not fully utilized the modeling, project planning and programming capabilities. However, many other states are moving forward at the encouragement of senior leaders and state legislatures. Leading states include: California, Florida, Kansas, Montana, South Dakota, and South Carolina.

What are the expected benefits?

- Maximize agency and user benefits given constrained budgets.
- Identify cost-effective preservation activities to keep good bridges good.
- Extend the useful service life of bridges.
- Minimize adverse impacts to the traveling public.
- Predict future bridge performance measures for a bridge or a network of bridges.
- Identify preservation, improvement and replacement needs over a given planning horizon.

Additional Resources

To learn more, visit

<http://www.fhwa.dot.gov/resourcecenter/index.htm>

For more information, contact:

Larry O'Donnell, FHWA Resource Center

Phone: (708) 283-3502

E-mail: larry.o'donnell@fhwa.dot.gov