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| Sponsor | Nominations must be submitted by an AASHTO member DOT willing to help promote the technology | 1. Sponsoring DOT (State): Idaho
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| 1. Name and Title: Reed Hollinshead
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| Organization: Idaho Transportation Department |
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| 3. Is the sponsoring State DOT willing to promote this technology to other states by participating on a Lead States Team supported by the AASHTO Innovation Initiative? Yes or No: Yes |
| **Technology Description (10 points)** | The term “technology” may include processes, products, techniques, procedures, and practices. | 4. Name of Technology:A-JACKS for fast-moving water |
| 1. Please describe the technology.

A-JACKS is an articulated riprap technology that provides armoring protection for bridge foundations and piers. This technology was adapted to a fast-moving water scenario on a recent scour mitigation project for a 1,200-foot bridge spanning the Clearwater River in ITD’s District 2 area.  |
| 6. If appropriate, please attach photographs, diagrams, or other images illustrating the appearance or functionality of the technology. (If electronic, please provide a separate file.) Please list your attachments here.An image is included with this submission detailing in picture form some of the challenges and innovative thinking required to complete this project successfully. The project was finished about two weeks ahead of time, and was completed under budget.  |
| **State of Development** **(30 points)** | Technologies must be successfully deployed in at least one State DOT. The AII selection process will favor technologies that have advanced beyond the research stage, at least to the pilot deployment stage, and preferably into routine use. | 1. Briefly describe the history of its development.

Because the bridge project involved a fast-moving body of water, many traditional methods had to be modified from the usual delivery method. Because divers could not be used in the rapid water, go-pro video, time-lapse photos, and aerial monitoring from a helicopter were used to ensure a successful project. A-JACKS mats, weighing about 2,700 lbs. each, provided a shield against further erosion and provided improved fish habitat through the use of “voids” in the mats.  |
| 1. For how long and in approximately how many applications has your State DOT used this technology?

The Idaho Transportation Department is the first DOT to use this technology in a fast-moving water situation.  |
| 1. What additional development is necessary to enable routine deployment of the technology?

A hydrologist will need to meet with the contracting team to develop an application strategy. |
| 1. Have other organizations used this technology? Yes or No: N If so, please list organization names and contacts.
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| Organization | Name | Phone | E-mail |
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| **Potential Payoff****(30 points)** | Payoff is defined as the combination of broad applicability and significant benefit or advantage over other currently available technologies. | 1. How does the technology meet customer or stakeholder needs in your State DOT or other organizations that have used it?

The project was completed ahead of time and under budget, which positively impacted the taxpayers. The environmental benefits achieved through the A-JACKS mats will benefit marine life in the area for years to come. The heavy mats were left on the riverbed after work was done to protect against erosion, and provide better habitat conditions for endangered species such as bull trout, steelhead, and Snake River fall Chinook salmon. Research indicates that voids in the mats provide a support system for the river gravels which helps promote fish habitat.   |
| 12. What type and scale of benefits has your DOT realized from using this technology? Include cost savings, safety improvements, transportation efficiency or effectiveness, environmental benefits, or any other advantages over other existing technologies.  This project was absolutely necessary, as the bridge was rated among the top 10 most scour-critical bridges in the state. The A-JACKS technology helped ITD complete the project 14 days ahead of schedule and 4% under budget. Had this project not been done, the bridge could have failed, resulting in injury and loss of life. This technology provided substantial environmental benefits to the marine life as documented above, and to the Nez Perce Native American Indian Tribe who rely on the fish for sustenance.  |
| 1. Please describe the potential extent of implementation in terms of geography, organization type (including other branches of government and private industry) and size, or other relevant factors. How broadly might the technology be deployed?

This technology could be used in any fast-moving body of water. On this project ITD coordinated with the Nez Perce Tribe’s employment rights office, the department of Fish & Game and obtained permits from the EPA (particularly the 401 permit).  |
| **Market Readiness (30 points)** | The AII selection process will favor technologies that can be adopted with a reasonable amount of effort and cost, commensurate with the payoff potential. | 1. What actions would another organization need to take to adopt this technology?

They would need to coordinate with key stakeholders, but the technology itself would not be difficult to adapt by other agencies.  |
| 1. What is the estimated cost, effort, and length of time required to deploy the technology in another organization?

The cost depends on the extent of required monitoring during implementation. The effort and time required to deploy the technology is minimal, depending upon each state’s regulations. |
| 1. What resources—such as technical specifications, training materials, and user guides—are already available to assist deployment?

Because the supplier indicted that ITD is the first agency to use A-JACKS in a “fast” water environment, the project team came up with unique innovations to maximize the technological benefits. Many of the methods used could be modified or adapted to a particular situation in another state. ITD’s project team will gladly provide assistance.  |
| 1. What organizations currently supply and provide technical support for the technology?

A-JACKS is an established product, but the adaptation of it for a deep, fast-water environment is new. West Company was the prime contractor on this project. |
| 1. Please describe any legal, environmental, social, intellectual property, or other barriers that might affect ease of implementation.

Anyone using the A-JACKS technology would need to go through the proper commercial channels. There are no other barriers. |
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| ***Submit Completed form to*** | [***http://web.transportation.org/tig\_solicitation/Submit.aspx***](http://transportation1.org/tig_solicitation/Submit.aspx) |