



AIM Innovation Showcase Application

Sponsor

Nominations must be submitted by an AASHTO member DOT willing to help promote the innovation. If selected, the sponsoring DOT will be asked to present the innovation at the Innovation Showcase during the AASHTO Spring Meeting.

1. Sponsoring DOT (State): California Department of Transportation (Caltrans)

2. Name and Title: Sharid Amiri, Senior Transportation Engineer

Organization: Caltrans District 12 (Orange County)

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Innovation Description (30 points)

The term “innovation” may include processes, products, techniques, procedures, and practices.

3. Name of the innovation:

Innovations in Cone Penetration Tests (CPT) for Design of Bridge Pile Foundations

4. Please describe the innovation.

CPT technology was used where the CPT electronic data of the subsurface soil conditions was directly used to design the bridge pile foundations in real time.

5. What is the existing baseline practice that the innovation intends to replace/improve?

The current practice is to use exploratory boring data for design of bridge pile foundations.

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6. What problems associated with the baseline practice does the innovation propose to solve?

Eliminates soil sampling, laboratory testing, enhances safety, reduces time, and saves money.

7. Briefly describe the history of its development.

CPT's first direct use for design of bridge pile foundations for a mega highway project here in California

8. What resources—such as technical specifications, training materials, and user guides—have you developed to assist with the deployment effort? If appropriate, please attach or provide weblinks to reports, videos, photographs, diagrams, or other images illustrating the appearance or functionality of the innovation below (if electronic, please provide a separate file). Please list your attachments or weblinks here.



Project Foundation Reports contain all the relevant information. They can be made available upon request.



State of Development (10 points)

Innovations must be successfully deployed in at least one State DOT. The AIM selection process will favor innovations that have advanced beyond the research stage, at least to the pilot deployment stage, and preferably into routine use.

9. How ready is this innovation for implementation in an operational environment? Please select from the following options. Please describe.

- Innovation is fully functional and yet to be piloted.
- Innovation has been piloted successfully in an operational environment.
- Innovation has been deployed multiple times in an operational environment.
- Innovation is ready for full-scale implementation.

This innovation can be used for projects here in California.

10. What additional development is necessary to enable implementation of the innovation for routine use?

None

11. Do you have knowledge of other organizations using, currently developing, or showing interest in this innovation? Yes No

If so, please list organization names and contacts.

Organization	Name	Phone	Email
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Potential Payoff (30 points)

Payoff is defined as the combination of broad applicability and significant benefit or advantage over baseline practice.

12. Identify the top three benefits your DOT has realized from using this innovation. Describe the type and scale of benefits of using this innovation over baseline practice. Provide additional information, if available, using quantitative metrics, to describe the benefits.

Benefit Types	Please describe:
Improved Safety	No need for workers be exposed to live traffic
Cost Savings	Massive savings (millions) for the project where it was used here in California
Shorter Schedule	The use of this innovation was 4 times faster than the conventional exploratory borings.

Provide any additional details below:

The use of this innovation saved around **7 million dollars** for the project here in California which is significant for a geotechnical design innovation.



Deployability (30 points)

The AIM selection process will favor innovations that can be adopted with a reasonable amount of effort and cost, commensurate with the payoff potential.

13. What challenges and/or lessons learned should other organizations be aware of before adopting this innovation?

None.

14. Please provide details of cost, effort, and length of time expended to deploy the innovation in your organization.

Cost: The cost of training classes which can be around 14000 dollars

Level of Effort: simply Train the staff to implement it in their projects

Time: [Click or tap here to enter text.](#)

15. To what extent might implementation of this innovation require the involvement of third parties, including vendors, contractors, and consultants? If so, please describe. List the type of expertise required for implementation.

No need.