



# **AASHTO Innovation Initiative**

[Proposed] Nomination of Innovation Ready for Implementation

### **Sponsor**

Nominations must be submitted by an AASHTO member DOT willing to help promote the innovation

1. Sponsoring DOT (State): Vermont Agency of Transportation

2. Name and Title: Molly Perrigo, e-Construction Manager

Organization: Vermont Agency of Transportation

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City: Berlin

State: Vermont

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Phone: (802)249-8035

Fax: Click or tap here to enter text.

3. Is the sponsoring State DOT willing to promote this innovation to other states by participating on a Lead States Team supported by the AASHTO Innovation Initiative?  $\boxtimes$  Yes  $\square$  No

### **Innovation Description (10 points)**

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

4. Name of the innovation:

E-Ticketing: Digitizing paper delivery tickets.





5. Please describe the innovation. Describe how this innovation transforms your existing "state of play."

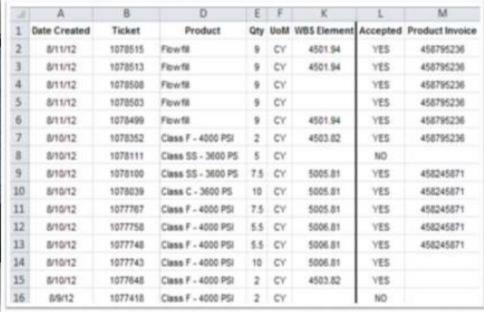
E-ticketing promotes increased safety for on site construction inspectors by eliminating the need for them weave in and out of traffic and equipment to receive slips from operators. Additionally, data is shared more quickly, essentially real-time, and more data can be made available. Lastly, e-ticketing eliminates lost or mangled slips.

6. If appropriate, please attach photographs, diagrams, or other images illustrating the appearance or functionality of the innovation (if electronic, please provide a separate file). Please list your attachments here. Attach photographs, diagrams, or other images here.









### 7. Briefly describe the history of its development.

A desire to eliminate maintaining mountains of slips in sometimes unreadable condition and increase inspector safety is the motivation for this technology.





# **State of Development (40 points)**

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

8. How ready is this innovation for implementation in an operational environment? Please check of the following options. Please describe.
$\square$ Prototype is fully functional and yet to be piloted
☐ Prototype demonstrated successfully in a pilot environment
oxtimes Technology has been deployed multiple times in an operational environment
☐ Technology is ready for full-scale adoption
Click or tap here to enter text.
9. What additional development is necessary to enable routine deployment of the innovation? What resources—such as technical specifications, training materials, and user guides—are already available to assist with the deployment effort?
VTrans needs to develop new contract specifications for inclusion of tracking devices to be installed on delivery vehicles and job site equipment. Additionally, VTrans needs to determine ways to address geographical areas without cell service.
10. Has any other organization used this innovation? $\ oxdot$ Yes $\ oxdot$ No
If so, please list organization names and contacts. Please identify the source of this information.
It is our understanding that this innovation was developed in lowa, and has also been used in other states

Organization	Name	Phone	Email
Alabama Department	Hunter Golson	Click or tap here to	golsonwi@dot.state.al.us
of Transportation		enter text.	
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such as Kentucky, Pennsylvania, and Florida, and perhaps others.





# **Potential Payoff (30 points)**

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

11. How does the innovation meet customer or stakeholder needs in your State DOT or other organizations that have used it?

Both the contractor and state inspectors are provided with real-time data of material location and travel times. This also allows everyone to receive the same information which limits confusion, disagreements. Most importantly, this innovation increases on the job safety for all parties.

12. What type and scale of benefits have your DOT realized from using this innovation? Include cost savings, safety improvements, transportation efficiency or effectiveness, environmental benefits, or any other advantages over other existing baseline practice. Please identify the following benefit types:

Check boxes that apply	Benefit Types	Select a rating from the drop- down menu
$\boxtimes$	Cost Savings	3-Moderate
	Shortened Project/Service Delivery Schedule	Choose an item.
$\boxtimes$	Improved Customer Service	4-Moderate to High
$\boxtimes$	Improved Quality	3-Moderate
$\boxtimes$	Environmental Benefits	4-Moderate to High
$\boxtimes$	Organizational Efficiency	5-High
$\boxtimes$	Improved Safety	7-Exceptional
	Improved Operation Performance	Choose an item.
	Improved Asset Performance	Choose an item.
	Other (please describe)	Choose an item.

#### Provide an additional description, if necessary:

VTrans is still in the early stages of implementation and to date has limited the use to HMA delivery.





13. 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?

In the future, VTrans hopes to extend use of this innovation to concrete delivery.

# **Market Readiness (20 points)**

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

14. What specific actions would another organization need to take along each of the following dimensions to adopt this innovation?

Check boxes that apply	Dimensions	Please describe:
$\boxtimes$	Gaining executive leadership support	Click or tap here to enter text.
	Measuring performance (e.g. benefits	Develop rubrics to track
	documentation)	increased safety such as the
	·	decreased number of in-road
		occurrences for employees.
		Track bid prices for e-ticketing
		items to evaluate cost.
$\boxtimes$	Improving technology understanding	Establish a champion to take the
		lead on implementation
	Overcoming financial constraints	Develop specifications that
$\boxtimes$		provide contractors with
		accurate information to bid on
	Addressing legal issues (if applicable)	Include agency legal to ensure
$\boxtimes$	(e.g., liability and intellectual property)	legal issues are addressed
		within the specifications as
		applicable
$\boxtimes$	Acquiring in-house expertise	Training is critical for Agency
		staff, and all stakeholders
	Resolving conflicts with existing	Click or tap here to enter text.
	regulations and standards	
	Other Challenges	Click or tap here to enter text.





15. What is the estimated cost, effort, and length of time required to deploy the innovation in another organization?

#### Please describe:

**Cost:** GPS rental units are approximately \$55 per month, per vehicle. This rental fee includes a website handled by the vender, which provides reports regarding daily total quantities. Mobile devices are provided for field inspectors. Contractors include the rental unit costs as part of their project bid and it is built into the overall contract amount.

Level of Effort: Minimal after contract specifications are developed.

Time: Minimal.

16. To what extent should the 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.

A vendor provides the GPS receivers and reports via their website. Per contract specification, the Contractors acquire the hardware required for a construction project.