

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. If selected, the sponsoring DOT will be asked to promote the innovation to other states by participating on a Lead States Team supported by the AASHTO Innovation Initiative.

1. **Sponsoring DOT (State):** Florida DOT
2. **Name and Title:** Steven Kelly, Maintenance Environmental Specialist

Organization: Florida Department of Transportation

Street Address: 801 North Broadway Ave.

City: Bartow

State: Florida

Zip Code: 33831

Email: steven.kelly@dot.state.fl.us

Phone: (863) 450-0819

Fax: N/A

Innovation Description (10 points)

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

3. **Name of the innovation:**

Conversion of an Herbicide Truck to an Attenuator Truck

4. **Please describe the innovation.**

The Heartland Operations Center was going through a transition with the merger of three offices. As part of the transition, the Department was transferring the application of herbicides from FDOT staff to a

contractor. The Operations Center was also asked to give-up their herbicide truck. The herbicide truck was in good condition with low miles. The Heartland OPS Center saw this as an opportunity to convert an existing herbicide truck into an attenuator truck that could be used to improve safety during roadside maintenance.

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

The innovation improves the transition and reuse of existing equipment. In addition, the attenuator truck has an ergonomic design to help improve safety and prevent injuries.

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

The converted herbicide truck is designed with ergonomics in mind. The pickup wells are as low as possible to avoid straining and to reduce fatigue when placing cones. The truck is also designed with plenty of grips, non-slip tape and swinging doors to help reduce the potential for slips and falls when moving traffic cones.

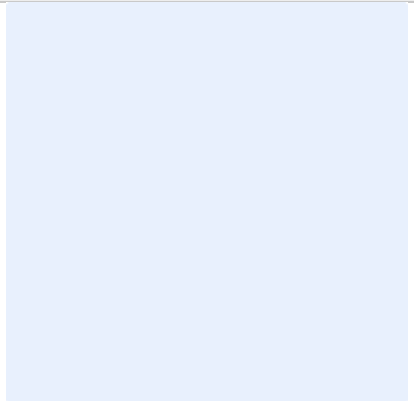
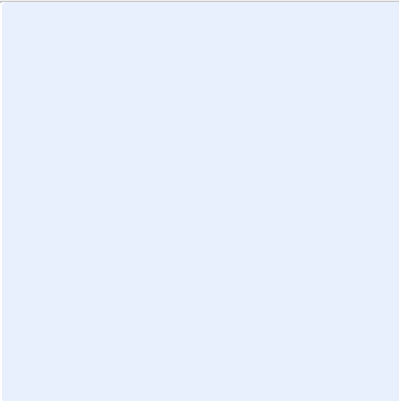
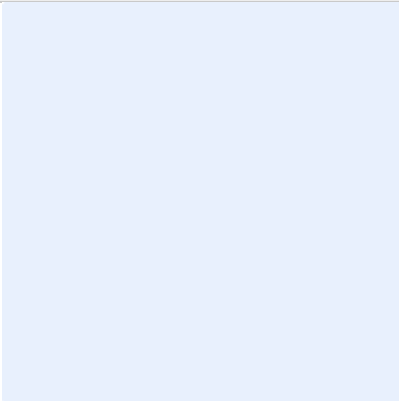
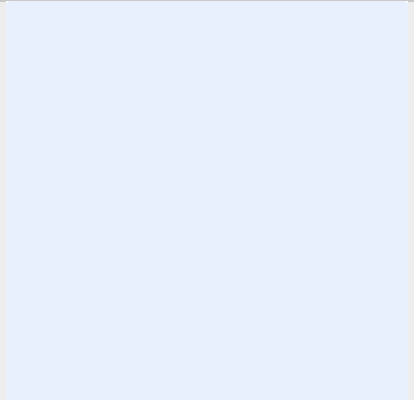
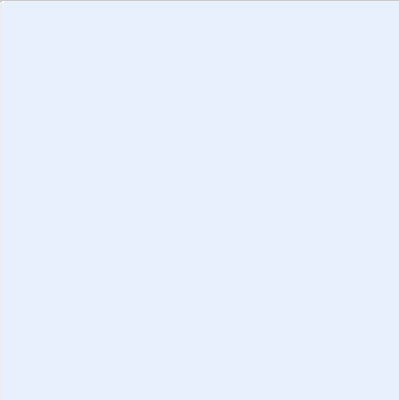
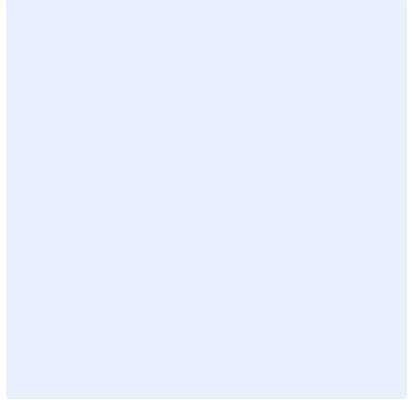
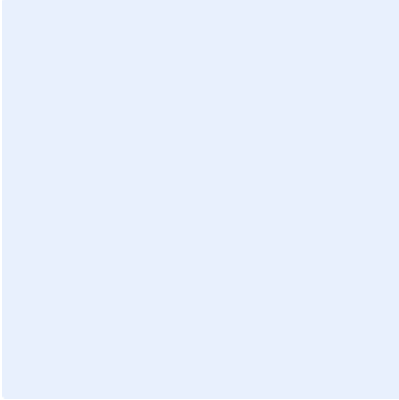
7. Briefly describe the history of its development.

Freddie Hankerson, FDOT Shop Supervisor, worked with the field crews to brainstorm ideas for the new truck. The idea was to make the attenuator truck safer, more practical, and easier to load and unload. The brainstorming session produced a hand-drawn sketch. They presented the sketch with the ideas to the Operations Center Engineer. Once he got approval to proceed, Freddie worked with the FDOT Sign Shop in Oviedo. This was the first time that the "Sign Shop" worked to fabricate a truck. They also coordinated with the Florida Highway Patrol (FHP) during construction. FHP brought in portable scales to weight the truck and made suggestions to keep the truck street legal.

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 (if electronic, please provide a separate file). Please list your attachments or weblinks here.

Please see the following photos of the Heartland OPS Center Herbicide to Attenuator Truck.

Attach photographs, diagrams, or other images here. If images are of larger resolution size, please provide as separate files.



State of Development (40 points)

Innovations must be successfully deployed in at least one State DOT. The All 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.

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

The fabricated water tank is constructed and has been in-use since 2019.

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

There is no additional development necessary.

11. Are other organizations using, currently developing, or have they shown interest in this innovation or of similar technology?? Yes No

If so, please list organization names and contacts. Please identify the source of this information.

Organization	Name	Phone	Email
N/A	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.

Potential Payoff (30 points)

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

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

The use of the fabricated water truck has improved the performance and survivability of the Fort Myers OPS Center wildflower program. The truck is a cost-effective tool that was developed in-house that allows staff to water vegetation in areas where water is not available.

13. Identify the top three benefit types of 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:
Cost Savings	A new attenuator truck costs about \$65,000 to \$68,000. The cost of the conversion was \$23,295.33 resulting in a savings of approximately \$41,704.67.
Improved Safety	The improved design of the truck with dropping bed sides and swinging gates. The truck was also designed with ergonomics in mind. It's equipped with pickup wells that are low as possible to avoid straining when lifting cones.
Choose an item.	Click or tap here to enter text.

Provide any additional description, if necessary:

N/A

14 How broadly might this innovation be deployed for other applications. in the transportation industry (including other disciplines of a DOT, other transportation modes, and private industry)?

This innovation could be deployed and used in the transportation industry including other DOT agencies and private industry.

Market Readiness (20 points)

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

15. 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:
<input type="checkbox"/>	Gaining executive leadership support	Click or tap here to enter text.
<input type="checkbox"/>	Communicating benefits	Click or tap here to enter text.
<input type="checkbox"/>	Overcoming funding constraints	Click or tap here to enter text.
<input checked="" type="checkbox"/>	Acquiring in-house capabilities	To develop this idea, we worked with our skilled fabricators in the Oviedo Sign Shop. Other organizations would need this expertise to implement this idea.
<input checked="" type="checkbox"/>	Addressing legal issues (if applicable) (e.g., liability and intellectual property)	Inmate labor was used in the development of this idea. Other DOT agencies may not allow the use of inmate labor for this type of activity. The cost of implementation would increase if the inmate labor was eliminated.
<input type="checkbox"/>	Resolving conflicts with existing national/state regulations and standards	Click or tap here to enter text.
<input checked="" type="checkbox"/>	Other challenges	Prior to modifying an FDOT vehicle, we work with the Florida Highway Patrol to ensure that the vehicle was designed and properly to operate on the road safely.

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

Cost: The costs associated with the herbicide to attenuator truck were as follows: (1). Message board \$12,695 (Added to improve visibility and safety). (2). LED Warning Lights \$224. (3). Replaced relief

springs \$1,710.40. (4). Oviedo fabrication shop materials & labor \$4,000. (5). Added 20 bags of concrete \$180 (for counterweight) (6). Safety chain \$35.93. (7). In house labor for Freddie Hankerson / Inmates \$4,450. The total cost of the conversion was \$23,295.33. A new attenuator truck costs approximately \$65,000 to \$68,000 resulting in a total cost savings of approximately \$41,000.

Level of Effort: The project required skilled fabrication work from the Oviedo sign shop.

Time: The herbicide to attenuator truck took about six months to build.

17. 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.

This innovation was a “home-grown” innovation and did not include third parties. FDOT staff developed and constructed the innovation. FDOT staff did work with the Florida Highway Patrol to make sure that the modified vehicle would meet weight and registration requirements.