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): Washington

2. Name and Title: South Central Region, Tri-Region Bridge Crew (Jason Goetz)

 Organization: WSDOT Maintenance and Operations

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State: Washington

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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? [x]  Yes [ ]  No

# Innovation Description (10 points)

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

4. Name of the innovation:

Safety Barrel Winch

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

The winch system is utilized on Maintenance and Operations (M&O) vehicles and allows for traffic drums/barrels to be picked up after completing roadway closure. Safety drums used for traffic control channelization are bulky and heavy. Prior to the winch, crews had to lift/throw/swing barrels from roadway to deck by hand, 3' differential. This activity required crews to walk along the Road Warrior or climb on and off the vehicle for each drum. Using the winch allows employees to remain on the vehicle and the winch does all the lifting. This innovation recently received the Director’s Safety Award.

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.

The [Safety Barrel Winch](http://hqolymweb148p.wsdot.loc/MOTECHDRONE/Innovations/Safety%20Barrel%20Winch%20-%204k.mp4) will show the equipment and explain the benefits.

7. Briefly describe the history of its development.

This process began with a simple rope system that was used to pick up the barrels and has transformed to the winch system presently used.

# 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.

[ ]  Prototype is fully functional and yet to be piloted

[ ]  Prototype demonstrated successfully in a pilot environment

[ ]  Technology has been deployed multiple times in an operational environment

[x]  Technology is ready for full-scale adoption

WSDOT personnel are beginning to utilize this equipment in the Region where it was first developed, however; other areas are slow to adopt the technology.

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?

The area of enhancement opportunity is in the speed of the winch. The areas slow to adopt the innovation state that the winch is too slow. This can easily be remedied by better refining the winch specification requirements.

10. Has any other organization used this innovation? [ ]  Yes [ ]  No ☒ Don’t Know

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

|  |  |  |  |
| --- | --- | --- | --- |
| **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 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?

Increased safety is the primary way that this innovation meets State needs. By eliminating the repetitive lifting of the drums, greatly reduces exposure to traveling motorists, and has increased efficiency of cleanup operations as a result.

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** |
| [ ]  | Cost Savings | Choose an item. |
| [x]  | Shortened Project/Service Delivery Schedule | 3-Moderate |
| [ ]  | Improved Customer Service | Choose an item. |
| [ ]  | Improved Quality | Choose an item. |
| [ ]  | Environmental Benefits | Choose an item. |
| [x]  | Organizational Efficiency | 4-Moderate to High |
| [x]  | Improved Safety | 6-High to Exceptional |
| [x]  | Improved Operation Performance | 5-High |
| [ ]  | Improved Asset Performance | Choose an item. |
| [ ]  | Other (please describe) | Choose an item. |

Provide an additional description, if necessary:

Click or tap here to enter text.

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?

The implementation of this technology started at the Regional level and has begun to expand to other WSDOT Maintenance and Operations areas. Since this tool is readily available and could be modified to fit various types of equipment, it could be widely deployed to any entity that works with traffic control.

# 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:** |
| [x]  | Gaining executive leadership support | The technology has full support of the M&O Director and was demonstrated to executive leadership.  |
| [ ]  | Measuring performance (e.g. benefits documentation) | Click or tap here to enter text. |
| [x]  | Improving technology understanding | A video has been made to demonstrate the technology, is housed on the M&O Innovation page, and was shown at a recent Statewide Maintenance Managers Meeting.  |
| [ ]  | Overcoming financial constraints | Click or tap here to enter text. |
| [ ]  | Addressing legal issues (if applicable) (e.g., liability and intellectual property) | Click or tap here to enter text. |
| [ ]  | Acquiring in-house expertise | Click or tap here to enter text. |
| [ ]  | Resolving conflicts with existing regulations and standards | Click or tap here to enter text. |
| [ ]  | 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**: $6,000 in material costs to purchase and equip the vehicle.

**Level of Effort**: Special fabrication was needed when initially installing the equipment, followed by minor modifications.

**Time**: There was a total of approximately 20 hours of labor

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.

 The tool consists of a winch and rope – both items readily available – custom-fitted on a pick-up truck. This is using basic off-the shelf items that can be put together to meet the current needs of the agency without need for vendor or contractor involvement.