Washington State Department of Transportation

# Innovations Challenge

1) **Describe your innovation.** *(Attach photos, videos, presentations, flowcharts and shop drawings.)*

I designed and built a compact lube skid that aids in the servicing of equipment outside of the shop. It is small enough to fit in the back of a small pickup truck and can contain motor oil, hydraulic oil, and waste oil. The frame has a center post lifting eye I turned on the lathe. It can be lifted into the back of a truck by means of forklift or overhead crane. I TIG welded together it's entire frame using aluminum. With 2 full barrels of new oil and pumps, a waste pump, and the 3 lube reels, it weighs approximately 500 pounds. It is ran off one regulated primary airline fitting to receive air from a truck or shop compressor. I recycled 3 empty 120 pound oil kegs and capped fill/vent holes I drilled in the top with stemco hub cap plugs. The waste pump uses 2 interchangeable hydraulic couplers to either pump in or pump out waste oil through a draw tube from drain pans or the 3rd 120 pound oil keg. This skid is very user friendly and because of it's size and portability, we've been able to perform preventative maintenance in the field we couldn't perform in the past.

2) **How does WSDOT benefit from your innovation?** *(Check all that apply. )*

☐ Saves money ☐ Saves time ☐ Other
☐ Simplifies work ☐ Improves safety

I designed and built a compact lube skid that aids in the servicing of equipment outside of the shop.
When I started with the state as Equipment Technician Lead in Bellingham, there was both a mechanic's field service truck and a shop lube truck. The lube truck (04A26647) was massively underutilized as it was not outfitted with all of the tools necessary to make repairs while servicing equipment in the field. The mechanic's field service truck (04A30309) did not have the necessary equipment to perform preventative maintenance in the field. Both of these trucks have gone away and I now have one open bed, shop field service truck. I recycled a lot of the old lube equipment and components to make this compact skid, which can be loaded into the back of any truck and brought out in the field or to outlying shops to perform preventative maintenance.
This idea has proven to be cost effective by completely eliminating the cost of having an entire Ford f550. The cost of fuel and labor to transport equipment to the shop is less.
This idea saves time by not having to arrange transport of equipment to the shop for simple preventative maintenance that can be done in the field.
Area 2 in Mt Vernon has decided to incorporate my idea and design with the next service truck they will get. I plan to help construct an identical lube skid for their equipment's preventative maintenance as well.

3) When was your innovation implemented?__September 12th, 2017_____

4) How much does your innovation cost? *(Please attach a complete materials list.)*

Total labor hours: 40 labor hours of engineering/devopment/fabricating/testing
Total material costs:$57.99 in aluminum + recycled lube equipment
Reoccurring costs *(if any)*: occasional maintenance (air lines/fittings)

5) Contact Name: Paul Belliveau

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Lifting eye

Waste oil draw tube

Flexible airline & regulator

Stemco Fill Plugs

Self contained skid can be transported to any outlying shed and used where there is an air compressor

The skid is compact enough to allow room in the rest of the bed for parts such as loader tires.

The flexible yellow air hose quick connects to the compressor