

May 2024 Peer Exchange

- No Boundaries held its first peer exchange of 2024 from May 7-9
 - In-person meeting in Baton Rouge, hosted by Louisiana DOTD
- Meeting information at maintainroads.org/may-2024-baton-rouge-la
 - Detailed documentation available for members with login



Louisiana DOTD Welcome and Overview



- Kevin Reed, Chief Maintenance Engineer, Louisiana DOTD
 - Overview of DOTD's organizational structure and asset maintenance responsibilities
 - DOTD combines department of public works with the department of highways
 - 4,300 employees
 - 18 of the longest bridges in the U.S.

Presentation: Encouraging a Culture of Innovation

Todd May, Director of Innovation, Indiana DOT

- Indiana DOT conducts an annual survey of its 4,000 employees.
- In 2018-2019, 70% of staff responded. Results showed dissatisfaction with communication between leadership and workforce and other issues.
- Agency decided to make a concerted effort to build trust, open communications, and listen to staff.
- ‘Innovation’ replaced ‘excellence’ as a core value.
- Developed an Innovation Program to reward staff innovations.
 - The program has received nearly 700 submissions in the last five years.
 - 55 ideas have been implemented statewide, and 0 have been turned down by leadership.
 - Winners receive \$500 and a \$500 tool/dept. allowance, a sign, oversized check, and hardhat sticker.
- Since making these changes, staff turnover at Indiana DOT is down 50%.



Round Table 1: Balancing Truck Idling with Battery Drain

- What guidance does your agency provide regarding turning off truck engines – rather than allowing them to idle
 - New York State Environmental Conservation Law limits trucks to idling of no more than 5 min. The only acceptable idling is in a work zone at 1100 RPM. NYSDOT trucks are programmed to shutdown after 5 min (w/brake set) 15 min (w/o brake set). (New York)
 - A truck should not idle more than 5 minutes unless conditions warrant an exception (function of vehicle, work zone operations) (Illinois)
- When and how does battery drain of a stopped truck become an issue? What kind of electric peripherals, truck types or duty cycles make batteries most susceptible to drain?
 - Not seeing battery drain issues related to stopped trucks. (Maine)
 - Battery drain becomes an issue when you are in emergency situations, working on the interstate, or in remote areas. (Utah)
 - IDOT's biggest issues with drain come from "lot rot" where trucks sit unused for a prolonged time and the complications that arise from jump starting trucks. (Illinois)
- How is battery drain to the point of vehicle inoperability prevented?
 - Vehicles can be equipped with "battery tender" technology that will shut off battery when it gets to a critical point where the continued operation won't allow the vehicle won't start up again. (Utah)
 - We have a few units that have auto start & stop system that will start the truck up, charge the being battery up to 12 volts and then shut down, unsure how often automatic systems are used, and we currently have no protocol to periodically start vehicles. (Maine)
 - IDOT has spec'd a lighting system that monitors voltage levels and controls voltage requirements based on photocell input, and a Hybrid Solar/AC Current Battery Management System to maintain peak battery maintenance. (Illinois)

Member Presentation: Connecticut

Selected Highlights

Bill Gombotz, Transportation Maintenance Manager

- Connecticut DOT has more than 4,500 vehicles with replacement value exceeding \$350 million.
- Historically, policy was ‘cradle to the grave’
 - Limited budget increased life cycle
 - Auctioned used equipment had little value
- Benefits of trading
 - Value to fleet budget ▶
 - Reduced lifecycle times and repair costs
 - Increased uptime
 - Control fleet number (stop fleet creep)

Equipment	Asset #	Vin	Est. Market Value	Trade value received	Notes
1997 John Deere 710 D	24-	834458	\$8,500.00	\$8,500.00	Hours and condition, Hydraulic issue
1997 John Deere 710 D	24-	792501	\$8,500.00	\$8,500.00	Condition rusty, high hours
2008 Volvo BL70	24-454	11462	\$24,000.00	\$24,000.00	High hours
2008 Volvo BL70	24-472	11550	\$22,000.00	\$20,000.00	Tires N/G , door glass broken

Member Presentation: Ohio

Selected Highlights

Chad Folmer, Equipment Procurement Officer/District 10

- Before Ohio DOT's equipment trade program was started in 2016, the agency ran equipment as long as possible
 - All equipment is now on the trade program
 - Heavy equipment is rotated on 3- and 4-year cycles
 - Developed specifications for multiple pieces of equipment to encourage vendor competition ▶
- Benefits - less down time, higher trade in value, cycle periods covered under warranty

WHEEL LOADER SPECIFICATIONS		
D10 Wheel Loader specs		
ENGINE	145 HP MINIMUM COLD WEATHER PACKAGE COOLING SYSTEM WITH REVERSABLE FAN	INSIDE CAB
TRANSMISSION	LOCKING OR LIMITED SLIP DIFFERENTIALS	3 SPOOL VALVE JOYSTICK CONTROL TILT STEERING WHEEL AIR RIDE SEAT WITH DUAL ARMREST LCD MONITOR WITH BACKUP CAMERA HEAT & AIR CONDITIONING AM/FM RADIO
BUCKET & BOOM	14,000 LB LIFT CAPACITY WITH SUITABLE COUNTERWEIGHT 3.0 TO 3.5 YD * BUCKET 13' MINIMUM REACH (HEIGHT FROM GROUND TO PIVOT - BOTTOM OF BUCKET) BOLT ON CUTTING EDGE JRB QUICK DETACH COUPLER 90" WIDTH CARRIAGE HEAVY DUTY PALLET FORKS WITH 60" LONG ARMS	MISCELLANEOUS
BODY	FENDERS FOOT-STEPS BOTH LEFT & RIGHT SIDES REAR VIEW CAMERA POWER ASSIST, HEATED LEFT & RIGHT EXTERNAL MIRRORS TOOL BOX (LARGE ENOUGH TO STORE LOG CHAINS)	REAR MOUNTED BACKUP CAMERA AUXILIARY LOCKING HYDRAULICS WITH QUICK DISCONNECT HOSES OMNI DIRECTIONAL HYDRAULIC FLOW TO FRONT QUICK COUPLER SLOW MOVING VEHICLE SIGN RIDE CONTROL RADIAL TIRES TELEMATICS PACKAGE WITH 3 YEAR UNLIMITED ACCESS FRONT SUNVISOR AUTO-LUBE GREASING SYSTEM ESTIMATED TRADE IN VALUE AT THE END OF 3 YEAR TERM 3 COMPLETE SERVICES AS PER THE MANUFACTURE'S STANDARD SERVICES (SERVICES ARE TO BE PERFORMED AT THE LOADERS CURRENT LOCATION) 3 YEAR/ 36 MONTH/ 1500 HOUR FULL MACHINE WARRANTY LESS INDUSTRY STANDARD WEAR ITEMS COMPLETE LIST OF 24-HOUR VENDOR CONTACT INFORMATION
LIGHTING & ALARMS	AMBER BEACON WITH 360° VISIBILITY WORK LIGHTS: 4 FRONT ADJUSTABLE, 2 REAR WITH LIGHT GUARDS BACKUP ALARM	

Member Presentation: Texas

Selected Highlights

Kent Clements, Regional Crew Section Director

- It can be challenging to get contractors to work on small projects in rural areas
- Texas DOT developed its own regional crews
 - 21 employees in west region, 17 in east region
 - Each crew has equipment for different types of jobs, including minor bridge repairs, striping, full-depth reclamation, seal coats, winter weather assistance ▶
 - Crews work M-Th, stay in hotels
 - Pay is higher than typical maintenance positions



Round Table 2. Innovations Show and Tell

Selected Highlights

- Power BI to analyze pothole data (Colorado) ▶
 - Can help to show where time and money is spent.
- Automated Zipper Merge Signage (Virginia)
 - If traffic backs up, signs adjust to help with merging.
- Foamstream (Connecticut) ▶
 - Uses 200-degree water to kill weeds.



Round Table 2. Innovations Show and Tell continued

Selected Highlights

- Loader mounted post pounder (New York) ▶
 - Serves as additional guide rail repair equipment for less cost compared with a truck-mounted pounder.
- Delineation on cone base (California) ▶
 - Provides reflection even when cones are knocked down.
- Keeping Utah Beautiful program (Utah)
 - Program replaces Adopt a Highway program, allows anyone to sign up for a litter cleanup shift.
- Traffic Control Trucks (Maryland)
 - Improves work zone safety by allowing workers to set out cones from the vehicle.



Round Table 2. Innovation Show and Tell continued

Selected Highlights

- Edge Drain Clean-Out Tool (Michigan) ▶
 - Tool slides in flat, opens to pull out debris.
- Blue Lights (South Carolina)
 - An app that allows off-duty law enforcement officers to sign up to be a presence in work zones.
- Trash Terminator (Missouri) ▶
 - A modified pull broom collects roadside litter while shaking out grass.



Technical Site Visits

- LSU Center for River Studies
 - A 10,000-ft model of the Mississippi River designed to study erosion and sediment transport.
- Bridge LA 964 at Riddle Creek
 - An in-progress bridge replacement project being conducted by maintenance crews.
- Pictures [available on Flickr](#)



Demonstration: Louisiana DOTD Maintenance Innovations

- Magnetic safety signs ▶
- Guardrail cleaner ▶
- Corrugated Culvert Straightener
- J & J Bed Saver
- Sign Post Stabilizer
- Universal Scaffold ▶



Round Table 3. Alternative Right of Way Configuration and Maintenance

Selected Highlights

- What success have you had with low- or no-maintenance solutions such as:
 - Weed beds to prevent grass from growing near barriers:
 - We try to specify new cable rail installations to include the “mow strip”. This is a narrow patch of concrete (picture a narrow sidewalk) centered under the cable runs to prevent grass and weeds from growing. (Ohio)
 - Maine is known as the Pine Tree State for a reason. We are the most heavily forested state in the country, at around 90% forested. If we leave an area alone, trees grow, and then we have additional problems. (Maine)
 - Low-height grass:
 - New standard spec/drawing in works from our Environmental group for low height grasses to be planted (erosion control prevention around cable barrier). (Utah)
 - A project involving a UC to propagate a veldt variety was done in southern SLO Co. The intent was to stabilize sandy soil and the intent was to not require mowing (maintenance was directed by mgmt. to mow it). (California)

Round Table 3. Alternative Right of Way Configuration and Maintenance continued

Selected Highlights

- Pollinator-friendly vegetation intended not to be mown:
 - We have a mowing policy that rotates yearly to maintain pollinator habitat along our interstates, primary routes and marked routes. (Illinois)
 - We have increased these areas each year and we have them on a limited mowing cycle. (Connecticut)
- What are the challenges and considerations: cost, upkeep, occasional mowing requirements, soil stabilization issues, impact on plowing in the winter?
 - Not mowing will eventually cost us more money with tree removal. Maine's forests reseed themselves naturally with an abundance of trees. (Maine)
 - UDOT buys ROW for expansion capacity. Additional ROW acts as great snow storage areas (Utah)

Round Table 3. Alternative Right of Way Configuration and Maintenance continued

Selected Highlights

- In what other ways does your agency use ROW, such as for solar or wind power? What are the maintenance considerations? How does your agency coordinate with state, local or nongovernment entities?
 - Pollinators and living snow fence. Considerations include available space, orientation, location, proximity to pavement. (New York)
 - We attempt to spray weeds either through contracts or maintenance yards to eliminate weeds and promote pollinator plants and prairie grass. (Illinois)

Business and Planning Meeting

- Commitments and transfers; budget and spending
- Scope of next phase of pooled fund
 - Draft solicitation language approved
- Possible new approaches to synthesis work
- Updated State Innovation Programs listing
- Other new activities for Year 4

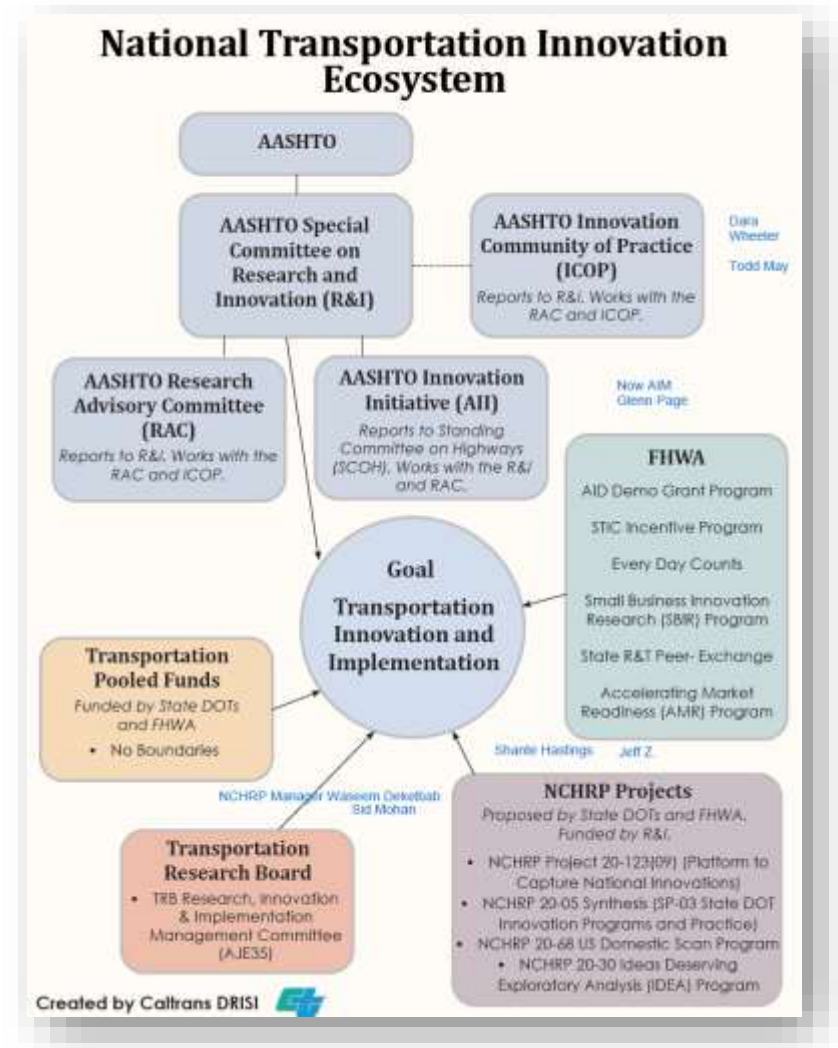
Presentation: National Activities

Todd May, No Boundaries Chair

- Review of No Boundaries' role in the national transportation innovation ecosystem ▶

Antonio Nieves, FHWA Liaison

- Opportunity for No Boundaries to serve as a Technical Feedback Group to identify Build a Better Mousetrap innovations for nationwide deployment



Member Presentation: Louisiana

Selected Highlights

Steven Sibley, Ferry System & Equipment Maintenance Engineer

- Organizational structure:
 - Louisiana DOTD has 9 districts, with each set up like a mini DOTD.
 - The agency has 4,300 employees and 6,000 pieces of equipment.
- Maintenance management:
 - Two-tiered approach
 - Has used Agile Assets for years, but has no ownership.
 - Has been piloting ATOM for about a year and expects to go live within the next 18 months.



Presentation: AI in Public Works

Diana Clonch, DW Clonch, LLC

- Overview of Artificial Intelligence:

- Benefits

- Automation
- Informed decision-making
- Optimization

- Challenges

- Biases
- Transparency
- Security and privacy

- Applications for public works departments

- Infrastructure maintenance
- Route optimization
- Efficiency in waste sorting and processing
- Traffic control



Takeaways

- “Aha moments,” big takeaways and great ideas to borrow or learn more about came from all portions of the meeting
 - Presentations
 - Roundtable discussions and innovations highlights
 - Demonstrations
 - Informal and offline networking

Name an innovation you saw that you'd like to 'steal' for your own agency...

State force Bridge replacement design	equipment trade in	hot water herbicide	Edge Drain Cleanout tool
equipment trade in	PI Lites	Internal bridge replacement/reconstruction	Bridge Management Program
Spreader gate stop	Brine maker agitator tubes	spreader gate	extra duty solutions - Uber for blue lights
The guardrail tool attachment for a loader.	Litter program from Utah	Guardrail tool attachment for a Bobcat	hot water herbicide, could be a game changer for eco friendly operations.

Next Meeting

- North Dakota - Fall 2024