

## ***A Message from the Commissioner***

Hello Team,

You know, I'm not sure six months ago I would have imagined we would still be dealing with the COVID-19 pandemic, but we are. And, while I think we're all getting a little tired of it — I know I am — I could not pass up this opportunity to tell you how enormously proud I am of each and every one of you.

I know it hasn't been easy during these times, but you have continued to be high performers, not only taking care of our roadways, but also supporting one another. I am so honored to be a part of our INDOT team.

I've mentioned before that this year I'm traveling the state visiting with many of you more than I ever have. As I've done that, I continue to be so impressed about how good our roads are. They have never looked better! Just last week I traveled up north to give a presentation to the Elkhart Chamber, and U.S. 31 was great!!

While I was in the Seymour District a few weeks ago, I experienced a soil-nailing procedure to stabilize a roadway slope, and that was kinda cool. And when I was in the Crawfordsville District, I watched a team use a new epoxy-filling process on a bridge. That was really neat to see, and it's gratifying to know that the bridge will now last a lot longer and provide a smoother surface.

These are just a couple of examples that show how dedicated our team is. You haven't stopped doing what is best for the state, and you have continued to get up every morning committed to do the right thing, even during these absolutely crazy times.

Our INDOT team is the best!

Thank you for all you do, and please continue to stay safe.

A handwritten signature in black ink, appearing to be the name "Joe".

## Executive Staff Celebrates Innovation Winners; New Ideas Still Welcomed

The Innovation and Process Improvements Division is celebrating the INDOT employees behind the winning ideas of the inaugural 2019-2020 campaign while reminding workers that it's not too late to enter the 2020-2021 call for ideas for improving INDOT's processes or projects.

In late August, INDOT Commissioner Joe McGuinness and other executive staff, along with Innovation and Process Improvements Director Todd May and his team, traveled to Linton in Greene County to honor Vincennes District Area Engineer Patrick Craig. He was the district's lone 2019-2020 winner, devising a concrete equipment blast cleaning cabinet.



Todd May and Clark Packer (second and third from left) present the award to Chris Jilg (from left), Mark Anderson, Pat Szewczak, and Adam Tyra at the Indianapolis Subdistrict in the Greenfield District.

In late September, the Greenfield District was similarly honored by district executives and others for their inventions. Several Greenfield Subdistrict employees last year devised an asphalt push paver, and former Indianapolis Subdistrict Highway Technician Miranda Orick invented a tow-plow guidance laser.

Accepting the award from May and Greenfield District Deputy

Commissioner Clark Packer at the Indianapolis Subdistrict were Greenfield District Highway Maintenance Director Pat Szewczak, Indianapolis Subdistrict Manager Mark Anderson, Highway Maintenance Engineer Chris Jilg, and Highway Engineer Adam Tyra (Jilg and Tyra are the district's Innovation team leaders). Accepting the Greenfield Subdistrict's award from May and Packer at the District administrative building were

Szewczak, Jilg, Tyra, Greenfield District Equipment Manager Andrew Shannon, and Greenfield Shop Foreman Robert Oldham.

Trips to the remaining four districts to honor those responsible for the other 11 winning ideas will take place this fall and winter.

"The COVID-19 crisis delayed the timeframe in which we wanted to honor [the 14 winning ideas from 2019-2020](#)," said May. "These ideas are being prepared for statewide implementation. Despite the delay, it was a delight for executive staff and my team to personally recognize the Vincennes and Greenfield winners and to see their innovations. We can't wait to visit Crawfordsville, Fort Wayne, LaPorte, and Seymour."

Craig said he was honored to be celebrated by McGuinness, executive staff, May, Vincennes District Deputy Commissioner Rusty Fowler, and others at the Indiana Department of Natural Resource's Goose Pond facility in Linton.



Vincennes District innovation winner Patrick Craig.

“I think that INDOT has made a great decision to place innovation as a top priority,” said Craig. “This has been a challenging year for everyone, so I’m glad that INDOT has stuck with the Innovation program. Our employees have great ideas, and the program gives them an avenue to share them.”

Craig continued: “The idea has sparked other ideas and processes where we can use alternative blast cleaning for cleansing other equipment and graffiti by using alternative materials such as dry ice. I would urge other INDOT employees to think outside the box and not be afraid to submit the simplest ideas. The Innovation program is still just beginning, and I am hopeful that it will continue to grow.”

In Greenfield, Packer was excited to help honor the winners.

“These ideas coming forward and being brought to fruition is really what the program is about,” said Packer. “I’m proud of the team being able to drive these items forward to produce a tangible product that makes us better. The partnership between the district and Central Office teams was awesome, and I am a firm believer that we all win during these times of collaboration.”

It’s not too late for INDOT employees to enter their innovative ideas for the 2020-2021 competition. Staffers have until Oct. 31 to complete a submission form. For more information, click [here](#).

The Innovation and Process Improvements Division was the focus of the August edition of On the DOT, INDOT’s monthly podcast. To listen to the podcast, click [here](#).



At the Vincennes District award ceremony are (from left) Vincennes District Deputy Commissioner Rusty Fowler, Commissioner Joe McGuinness, winner Patrick Craig, and Innovation’s Todd May.



At the Greenfield District administrative building are (from left) Andrew Shannon, Adam Tyra, Pat Szewczak, Clark Packer, Robert Oldham, Chris Jilg, and Todd May.



## Sometimes, INDOT Is Truly for the Birds

INDOT maintains interstates and highways, not Sesame Street, but our association with big birds carries on, regardless.

Falcons, hawks and owls — we have them all. Some are found by INDOT crews on our roadways, lying injured.

Those in the Seymour District point to Communications Director Annie Walker's falconry program for raising awareness that birds can be saved. Walker, who presents falconry programs at county fairs and other events, has also presented a program with her two hawks at the Seymour District employee picnic.

"My husband and I are big bird advocates," said Walker, referring to Zach, a conservation officer for the Indiana Department of Natural Resources (DNR). "I use a Harris hawk for falconry, and also his bird, which is a goshawk."

Falconry is the taking of wild quarry in its natural state and habitat by means of a trained raptor.

Walker's Harris hawk is named Gabby. Born in captivity, she now weighs 2 pounds. Harris hawks are not native to Indiana and are typically found in the Southwest.

This summer, the Walkers traveled to Wyoming for not only vacation, but to find another goshawk for their falconry program.

"We hiked 15 miles together looking for nest sites, and my husband walked 10 additional miles by himself," said Walker. "Unfortunately, the pine beetle has really hurt the habitat out west, so of the dozen nest sites that we found, all were abandoned."

The Walkers wanted to pull a young raptor still in the nest, not yet able to fly. About 70% of birds of prey die during their first year in the wild. Per U.S. Fish & Wildlife regulations, falconers with approved permits may take birds younger than age 1 to help them get past the more difficult timeframe for survival. Wild-caught raptors can later be released into the wild in their native areas of habitat. Their instincts stay intact and are never lost despite being in captivity. The drive to hunt is always there, and falconry is a tool to help them finetune their hunting skills.

On the way home from Wyoming, the Walkers had to settle by purchasing a goshawk from a breeder in St. Louis. They are in the process of training the new goshawk.

Last fall, Seymour District Bridges and Herbicide Crew Leader Billy Smith called Walker when he found an injured owl on the U.S. 50 Bypass in Jennings County. Smith remembered Walker's bird



*Annie Walker and her 2-pound Harris hawk, Gabby, who was born in captivity.*

showcase at the district picnic. Walker evaluated the owl and contacted a raptor center, where the owl was treated and rehabilitated before being released back into the wild.

## Milton-Madison Bridge Falcons

The Milton-Madison Bridge, which INDOT shares responsibility for with the Kentucky Transportation Cabinet, has been known as a peregrine falcon hangout for years. Since 2002, peregrine falcons have made the bridge their nesting spot. A nesting box set up by the Kentucky Department of Fish and Wildlife Resources ensures that the raptors will keep coming back.



*Peregrine falcons at the Milton-Madison Bridge.*

Every year, a male and female adult falcon arrive, eggs are hatched, and new chicks are born. There even is a Facebook page — Guardians of the Milton-Madison Bridge — that chronicles the falcons' movements.

Peregrine falcons are no longer on the endangered species list, but they are federally protected.

## Other Bird Sightings

- This spring, adult hawks took up residence in a nest on the camera tower where I-70 meets the Sam Jones Expressway on the west side of Marion County. They produced [two hatchlings](#) that finally flew the coop this summer but not before Indianapolis TV stations featured them.
- Fort Wayne Subdistrict Operations Manager Jason Caskey helped save an owl along I-69 in 2016. Last year, he was [reunited with the owl](#).
- Our Site Assessment Management team knows all about big birds. Members check for the presence or absence of birds on the state endangered species or special concerns lists when they conduct red-flag investigations for hazardous material.
- During planning and construction, INDOT must consider the bald eagle, which is protected under the Bald and Golden Eagle Protection Act. The DNR is the source of information regarding known nesting sites. INDOT can't engage in any activity within the protected zone around the nest during nesting season, from mid-January to the end of July. This limits when and where INDOT can remove trees, and the timing of the construction activity. For example, recently at a State Road 67 bridge replacement site in Greene County, INDOT completed an Incidental Take Analysis and determined that the construction would not impact the nest. It was located on the other side of a woodlot, outside of the required 660-foot buffer and would be shielded from the site. A second nest site was located closer than 660 feet. The State Road 67 work could not take place during the nesting season. INDOT also had a mitigation site for the current I-69 Finish Line project in Morgan County that required tree removal. To protect the bald eagle, we removed the trees outside of the nesting season and retained a buffer to safeguard the nest from the project.



*The Fort Wayne District's Jason Caskey (left photo) is reunited in 2019 with the owl he saved along I-69 in 2016. A mother hawk raises her chicks in an I-70 nest this spring (right photo).*



## Employees Show Off Their Masks

Many INDOT employees are used to wearing personal protective equipment on the job, so it's not surprising that most of us have easily transitioned to wearing face coverings since mid-March in order to combat the spread of COVID-19.

Agency workers responded to a callout in last month's *Inside INDOT* newsletter for photos of themselves in their favorite mask. It's clear from some of the photos below that many INDOT employees support their favorite collegiate and professional sports teams!

In mid-September, orders came in for the official INDOT masks (right photo). In all, 531 INDOT masks were ordered, double the anticipated amount. As a result, INDOT was able to get a discount of 64 cents per mask. Employees had the choice to receive a 64-cent refund or help INDOT donate the extra money, approximately \$340, to the Indiana State



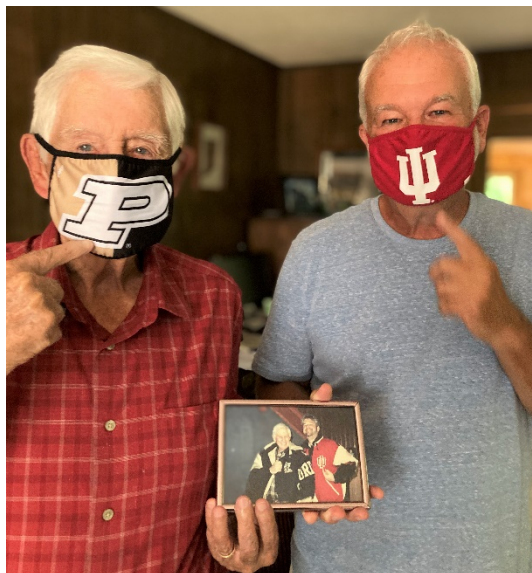
Transportation Workers Foundation (ISTWF), which financially assists the families of INDOT employees killed or disabled on the job. The ISTWF also has [hardship and scholarship programs](#).

Employees also sent us photos with their INDOT masks. To view all the submitted photos representing two dozen employees in both INDOT and non-INDOT masks, click [here](#).

### CENTRAL OFFICE

**Lin Sadler** and **Lyle Sadler** (Lin is retired from INDOT; Lyle is Emergency Response Field Liaison).

"I thought I'd pass along a picture that was recently taken at my dad's house for his 90th birthday," said Lyle. "He and I have always joked about the Indiana University and Purdue University 'feud' for many, many years. If you look closely at the photo, we can be seen holding another picture that was taken some 25 to 30 years ago as we 'compared' our new winter IU and Purdue jackets. We thought it would be fun to take a then-vs.-now photo. Dad retired from INDOT in 1995 after serving the agency for 42 years, including 11 years as the former Greenfield District Deputy Commissioner. I'm hopeful that I can work for INDOT as many years as he did; I'm currently in my 40th year with the agency. I still help him farm at our homestead in northeast Rush County, where I live. He just keeps going and going! He's not just my dad, he's my best friend."



*During a 2020 photo, Lin (from left) and Lyle Sadler support their favorite colleges via masks while holding a photo of the two from the 1990s.*





**Steve Slosarek (Communications Specialist).**

“I’m a lifelong Green Bay Packers fan and can even remember watching NFL games when Bart Starr quarterbacked the team,” said Slosarek. “During the pandemic, my son and I discovered “Star Wars: The Mandalorian” on Disney+, featuring the new character, Baby Yoda. At this time, I saw an advertisement for a Baby Yoda Green Bay Packers mask, so we ordered some for the entire family. From Bart *Starr* to *Star Wars*, we support the Packers. We also support wearing masks to help keep everyone safe!”

**CRAWFORDSVILLE DISTRICT**

**Karen Arnold and Kaitlyn McDaniel** (Arnold is Utility/Railroad Coordinator; McDaniel is a Project Manager).

“We’re on State Road 28 after a job, wearing our new INDOT masks,” said McDaniel.



**FORT WAYNE DISTRICT**

**Rebecca Higgins-Tucker** (Surveyor).

“Right after we received our INDOT masks in September, I went on a trip across several states. The thought occurred to me to try to get selfies with other state department of transportation signs, just for fun. So, this collage represents visits I made to state DOT buildings in Illinois, Kansas, and Missouri,” said Higgins-Tucker.

**Mitch Means and Josh Biller** (Means is a Bridge Maintenance Repair Highway Technician; Biller is Bridge Inspection Supervisor).

They are replacing deck drains on State Road 524 in the town of Lagro in Wabash County while wearing their new INDOT masks in late September. Means is on the left, and Biller is on the right in the right photo.



**SEYMOUR DISTRICT and CENTRAL OFFICE**



**Todd Daniels and Katie Daniels** (Todd is Seymour’s Amity Unit crew leader; Katie is the Economic Opportunity Division’s senior contract compliance specialist).

“I’m representing where I graduated from, Center Grove High School, and where our boys go to school,” said Katie. “Todd’s is wearing a Washington Nationals mask. That’s his favorite Major League Baseball team.”

## VINCENNES DISTRICT

**TJ Brink** and **Kristina Taylor** (Brink is Safety Director; Taylor is Administrative Assistant for Communications).

Oh, oh, a battle is brewing. Brink is a huge Houston Astros fan, and Taylor is a Chicago Cubs booster. If these teams ever meet in the World Series, watch out!





## Quirky District Pothole Campaign to Make Waves Again

Leonardo di Caprio, drowning? Pothole police officers, roaming around and trying to cancel birthday celebrations for potholes?

These inventive marketing strategies were used to promote the Fort Wayne District’s initial INDOT Spotters campaign. Staffers are set to top themselves when the campaign returns in a few months.



Marketing for the INDOT Spotters campaign included a “Titanic”-themed visual (top photo) and a theme for pothole police officers to deny potholes to hold birthday celebrations (bottom photo).



Originally coined Pothole Spotter but later changed to INDOT Spotters, the campaign called for Fort Wayne District employees to report potholes or other maintenance problems to the district’s Customer Service team. As part of Customer Service’s marketing for the program, emailed reminders to district staff included humorous embedded graphics, such as di Caprio’s Jack Dawson character from “Titanic” holding on for dear life in a pothole, with Kate Winslet’s Rose DeWitt trying to comfort him.

Participation in the program by district employees would accentuate that of the public, which already routinely contacts INDOT’s Transportation Services Call Center to report roadway potholes.

“Our reasoning for spotting potholes before the public does was simple,” said Fort Wayne District Communications and Customer Service Director Toni Mayo. “We wanted to spare our customers all the problems associated with potholes. We thought that with hundreds of district employees working together, on the lookout for potholes and other issues, we could make a difference. And, we did.”

From early February 2019 to early June 2019, 31 employees participated in the campaign, including 16 who reported potholes. In all, INDOT filled 31

potholes and fixed 42 other problems reported by district staff during those four months, including those involving trees, fences, signs, paint, signals, debris, and dead animals.

In the same time span, the public pointed out 266 potholes that we filled during one of the worst weather periods for producing potholes in Indiana in recent memory.

“Thirty-one potholes may not seem like much, but that number represented nearly 12% of the total that the public contacted us about in the entire district,” said Mayo. “We gave our employees a

chance to practice, 'If you see something, say something,' with the end goal to proactively spare motorists the grief caused by potholes."

The 2019 activity was planned for and carried out by Mayo, Resolution Specialist Megan Strickler, and Material Certification Administrator Emily Aurich, who at the time worked for INDOT Customer Service. The district had planned to repeat the program this year, but the suddenness of the COVID-19 pandemic caused that idea to be scrapped.

"In January, we will relaunch the campaign through March," said Mayo. "We will track the potholes, and the employee who spots the most will be given a prize, but mainly a lot of attention."

It will be difficult for Customer Service members in 2021 to top their 2019 cleverness, but they are up for the challenge.

Mayo kicked off the 2019 campaign with an email featuring an illustration of Uncle Sam and a "We want you" request, explaining the INDOT Spotters program.



Toni Mayo



Megan Strickler

Strickler came up with the "Titanic" spoof for the second email a few weeks later. The embedded image in the email accentuated the callout for spotters. At the bottom of the email, below the photo of Winslet and di Caprio, Strickler wrote a disclaimer that "this photo is not from our district, but we know how this movie ends."

"I really enjoyed the opportunity to communicate with the district in a way that serves the taxpayers," said Strickler. "We were able to have a lot of fun at the district while creating safer roadways for motorists. Creating the emails was a way for us to engage coworkers and be creative."

Aurich produced another follow-up email about the campaign, calling district personnel "pothole police officers." Aurich implored employees to deny potholes a birthday by reporting the potholes. She listed reasons why potholes shouldn't be allowed to celebrate birthdays or have cake:

- Nobody wants to drive over the SAME pothole for a YEAR.
- A pothole has done nothing to deserve a birthday celebration.
- Potholes can't eat cake, so you're going to eat it for them.

In explaining the third point, Aurich informed district employees that whoever reports the most roadway concerns at the end of the campaign will receive a celebratory cake.

Weeks later, Fort Wayne District Bridge Inspection Supervisor Josh Biller was, indeed, served cake, as well as presented a certificate for being the top spotter with six reports of roadway concerns.

"Our employees had the option to report the roadway concerns to us through email, phone call, or in person," said Mayo. "The Fort Wayne District wants to make a difference on our roadways, and one thing is for certain, we never want to give a pothole a birthday party! We can't wait to restart the campaign in January and look forward to even more participation."



Josh Biller receives cake from Emily Aurich after winning the inaugural INDOT Spotter campaign.

## Send Us Your Favorite Cat Photo

Now is the “purrfect” time to showcase your pet cat or kitten.

Not only is Oct. 29 National Cat Day, but it’s also the day after the October issue of *Inside INDOT* will be sent to INDOT employees. That issue will feature “The Cats of INDOT.” Yes, we want to make your feline famous.

All you need to do is send us the photo of your cat along with some brief information:

- Your name and job title
- Your cat’s name
- Your cat’s breed, if known
- *(Optional)* Why is your cat special? How has your cat’s companionship helped you through this COVID-19 crisis, including working from home?

Your email could include other information, such as if your cat has made cameo appearances in INDOT video conferences. The photo could include you and your cat.

The deadline to submit is Oct. 23. Email the photo and information to Communications Manager [Steve Slosarek](#).



## Fleet Uses ‘Classroom on Wheels’ to Help Educate INDOT Mechanics

A 4-by-8-foot simulator display board inside a “classroom on wheels” is giving hands-on training a whole new meaning.



INDOT’s Fleet Division has embarked on advanced diagnostic training for the electrical system of our dump trucks. As part of the training, Fleet has unveiled a 34-foot mobile training lab that features a custom-made, two-sided simulator display board shaped like a portable coat rack. Affixed to the 4-by-8-foot board is every electrical component that is in an INDOT dump truck chassis for a complete hands-on learning experience.

*Fleet conducts advanced diagnostic training outside the new mobile training lab (top photo) and inside the mobile lab, which features a two-sided simulator display board (right and bottom photos), with INDOT’s Justin Wiggs.*



“The mobile lab for our dump trucks, which also double as our snow-plow trucks, includes a fully functional dump-truck interface,” said Statewide Shops Operations Analyst Justin Wiggs. “We have taken all the major electrical components that are behind the wheel or under the



hood and put them on the display board. We consider the simulator to be an actual vehicle; it has its own vehicle information number. The simulator has its own engine control module, which controls most components in an engine through a series of plug-in sensors. It has its ‘own brain,’ if you would, and all the modules that you would find on an actual vehicle.”

Wiggs continued: “It’s a truck on a board. It can think for itself, show fault codes for itself, and operate headlights and the wiper motor. It can simulate itself driving down the road.”

Training began in late August at the LaPorte District's Winamac Unit. September training was conducted in the Crawfordsville district, with other districts to follow this fall. This first round of this advanced training is designed for select INDOT shop personnel, who Fleet calls INDOT Champions.

"Technology has evolved quickly in our dump trucks in the past 10 years, particularly as related to diesel engines," said Statewide Fleet Director Jason Kruse. "As a result of this advanced technology, trucks have become more prone to electrical problems. The presence of large quantities of salt in and around our trucks significantly increases the opportunity for failures. The educational, hands-on section helps each participant walk away with deeper knowledge of diagnostic skills."

As recently as five years ago, INDOT did little to fix equipment that had advanced electrical problems. We had no OEM Tools diagnostic software, and we shipped equipment to dealers for repair. Today, our equipment mechanics more easily comprehend diagnostic basics because we've procured OEM Tools diagnostic software and they've been trained in its use. This proficiency has resulted in less downtime for repaired vehicles and significantly reduced repair costs.

Proficiency is reaching the next level, thanks to Fleet's advanced training to INDOT Champions.

"Training in recent years involved a defined preventative maintenance program, which included a comprehensive inspection to reduce failures by identifying potential problems and correcting them in advance," said Kruse. "But prevention can't stop everything. Based on this reality, we have moved to the next step in training by procuring diagnostic equipment for dump trucks. This advanced training will enable our team to get trucks repaired more efficiently and back on the road faster."

At the Winamac Unit in late August, approximately a dozen LaPorte District shop employees received two days of high-level training. Stoops Freightliner Technical Sales Representative Austin Hill, who has interacted with INDOT for nine years, led the first-day session with assistance by Wiggs and Plymouth Subdistrict Shop Foreman Adam Szyal.

First-day training took place outside the mobile training lab. Hill used a large monitor to display the computer-based diagnostic software that INDOT mechanics use to repair Freightliner and Detroit powertrain vehicle systems. Hill first reviewed the basics but transitioned to more puzzling scenarios involving engine control-unit fault codes, instrumentation problems, and more.

While speaking, Hill referred to posters stationed behind him, affixed to the exterior of the mobile training lab. The posters began appearing in shops about a year ago to help mechanics solve electrical

issues with INDOT vehicles. One of the posters showed the intricacies of the bulkhead module, which is the primary module of the vehicle electrical system and controls the operation of the



*Stoops Freightliner Technical Sales Representative Austin Hill points to a large monitor (top photo) while diagnostic software loads to display information on the screen. Posters (left photo) diagram electrical system issues, and troubleshooting and repair processes.*



other “multiplex” modules in the system and a variety of other vehicle components either directly or indirectly. Multiplexing is the act of modules, which are connected to one another by a communication wire, “talking” to one another electronically.



*Gary Subdistrict Equipment Mechanic Gino Gordon (from left) participates in a discussion with instructor Austin Hill.*

“Both days of training were very helpful to me,” said Plymouth Subdistrict Equipment Mechanic Dan Reichenbach. “All the instructors explained things well, which turned on a lot of lights for me. Having hands-on training with every electrical component of the trucks we work on right in front of us on a training board, and then using the posters and practicing what we learned, made the posters I’ve seen the past year make more sense. It was simply outstanding.”

To watch a video of a portion of first-day training, click [here](#).

Second-day training took the INDOT employees inside the state-of-the-art “classroom on wheels” for even more revelations. There, the dump-truck simulator display board housed all the electrical components, providing a hands-on visual element to the in-classroom training.

“We bugged the two-sided panel with a variety of problems so that the mechanics could troubleshoot these issues first-hand, as if they were on the job,” said Wiggs. “This live bugging of the simulated board and an actual truck gives our mechanics real scenarios and practical experience that they can carry forth.”

Each team was tasked with troubleshooting problems on the board and trucks. The problems were real-life examples that will be encountered in our shops. Each team conducted tests on the truck and then referenced the diagram posters for guidance in troubleshooting. The teams were able to successfully diagnose the problems and repair them during the session.

“They all seemed very excited to have not only learned new information but were truly proud to have corrected the problems,” said Kruse.

Wiggs spent more than a year working behind the scenes to make the two-day training a reality.

“This customized training option caters to the specific needs of INDOT and was designed with fiscal responsibility, employee development, and equipment uptime in mind,” said Wiggs. “We have partnered with other departments and vendors to create and adaptable and nimble program that INDOT will control instead of relying solely on training vendors.”

After INDOT Champions are trained, they will help teach other employees at each of their locations.

The 34-foot mobile training lab — which is housed at the Greenfield District Albany Subdistrict when not in use — was designed to accommodate different modules, and these modules will be used in 2021 and beyond.



“When we put all of this together, what we wanted to be able to use various modules for different training opportunities,” said Wiggs. “In the future, we will have modules involving dead engines, disc brakes, drum brakes, exhaust after-treatment, and electrical, the latter of which is for all vehicles, not just trucks. As a result, we will continue to host training events geared toward the current needs within a specific subdistrict, district, or INDOT-wide basis.”

Besides Stoops Freightliner, Fleet will also partner with Cummins to provide in-person and virtual training opportunities regarding equipment used for summer and winter operations. To prepare for virtual training, Fleet is working with an e-learning company that specializes in vehicles and systems technologies.

“E-learning will provide a deeper knowledge on specific systems within all classes of equipment and vehicles,” said Wiggs. “The e-learning system even offers the option of categorizing and examining the distinct needs of a specific shop.”

But e-learning and other mobile-lab modules are down the road. Right now, the dump-truck electrical-system module is front and center.

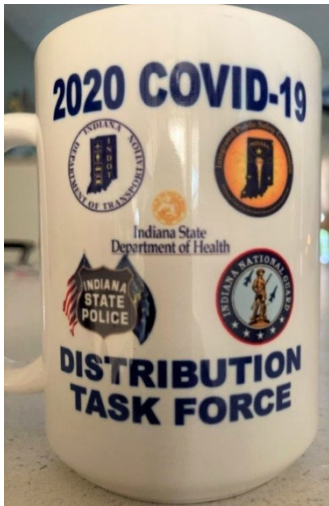
“This in-person training is the pinnacle for software operation and utilization, engine diagnostics, electrical troubleshooting, and more,” said Wiggs. “Many employees have been influential in the development of the program, including technicians, shop foremen, and fleet managers. This massive undertaking has been amazing and has created a sustainable, actionable, and relatable training program that will be used for years to come. This truly will thrust our employees to the next level.”

## INDOT Continues Stellar COVID-19 Response

INDOT has been working hard behind the scenes every day since March to combat COVID-19 — even if our ongoing efforts have garnered little public attention.

In late March and early April, INDOT received accolades for teaming with the Indiana State Police (ISP) to plan, map and distribute critical personal protective equipment (PPE) and medical supplies to those hospitals and county health departments with urgent needs throughout the state. INDOT's efforts were featured on local TV news segments from around the state and in this [ERIN story](#). At the time, we had helped deliver 372,000 surgical masks, 295,000 pairs of gloves, 113,000 surgical gowns, and 85,000 face shields.

Since that time, INDOT has worked daily to continue providing aid to battle COVID-19. The work has been immense but unheralded, as TV stations and newspapers have no longer reported on it.



*A coffee mug displays INDOT's role in distributing supplies during COVID-19.*

"INDOT executive staff members have committed our agency to be the primary transportation resource for PPE and medical supplies for this pandemic," said Emergency Response Field Liaison Lyle Sadler, who has had a daily presence in COVID-19 efforts since Day 1. "This is my 40<sup>th</sup> year as an INDOT employee and, other than representing INDOT at the 2012 Henryville tornado event, this has been my most gratifying experience as the agency's emergency response liaison and as a public servant for Indiana."

In the early spring, State Highway Maintenance Director J.D. Brooks organized the initial effort for INDOT to make mass deliveries across the state. The crucial supplies came from the National Strategic Stockpile. After the supplies were sorted at the Indiana National Guard's Stout Field in Indianapolis, and under the guidance of the Indiana State Department of Health (ISDH), we joined ISP and the Indiana National Guard to deliver the supplies to medical facilities around the state. Greenfield District Highway

Maintenance Director Pat Szewczak worked closely with his counterparts in the other five districts to provide transportation resources for deliveries of PPE and medical supplies to all 92 Indiana counties as they were requested through the ISDH.

The last delivery took place April 2 in accordance with the original plan. However, as additional positive cases of COVID-19 appeared around the state, it was quickly determined that INDOT deliveries would be needed long-term.

We have been involved every day since then. Sadler has been assigned daily to help organize needed INDOT resources based on shipment sizes and delivery locations. Deliveries have been made to long-term care facilities, hospitals, county health departments, COVID-19 drive-through testing sites for site set-up and resupplies along with test-kit delivery, and more.

Since the beginning of pandemic, INDOT has delivered approximately:

- 3 million pairs of gloves
- 2.9 million surgical masks
- 1.7 million N95 respirators
- 900,000 face shields
- 230,000 surgical gowns
- 169,000 gallons of hand sanitizer

Besides delivering National Strategic Stockpile items, INDOT has been involved in the Indiana Economic Development Corp.'s PPE Directory, which features Indiana companies that manufacture a variety of PPE items. INDOT forces, primarily from the Greenfield District because of its central location, have facilitated these pickups weekly with rented trucks parked at Stout Field. Upward of 200,000 masks have been picked up from one vendor alone. Other products have included gowns, face shields, goggles, and hand sanitizers. On average, INDOT has completed 10 of these types of pickups per week since April, distributing the goods to facilities in need.

Additionally, some shipments have been taken to Langham Logistics in Plainfield, where they have been assembled into packages for distribution to nonmedical entities when the economy started to open back up.

In order to support all pickup and delivery needs, INDOT began renting box trucks and cargo vans to be parked at Stout Field. The deliveries are large enough that assets are required outside of what INDOT has readily available. For INDOT to efficiently pick up and deliver PPE without using multiple vehicles per location, the need for box trucks and cargo vans was essential.

“At one point, the distributions grew to where the ISDH also requested additional box trucks,” said Sadler. “Thirty box trucks and 10 cargo vans were used to execute the response. INDOT provided drivers for each of these transport vehicles.”

Although there is no typical day at Stout Field, Sadler is provided with delivery location of supplies to various sites around the state daily. Sadler determines the size of each shipment and coordinates with Szewczak to obtain the necessary manpower and, possibly, INDOT vehicles to transport. From mid-August to mid-September, this has averaged to between 25 and 30 shipment locations around the state per week.



*To transport needed supplies to combat COVID-19, INDOT has used dump trucks (top photo), cargo vans (middle photo) and box trucks (bottom photo).*





“Depending on the size of each delivery, supplies from multiple locations can be loaded into one transport vehicle to help minimize the need of INDOT resources required,” said Sadler. “Each INDOT district is involved in providing resources to assist with these deliveries.”

The districts also have provided message boards, traffic cones, and sandbags (for signs) to multiple drive-through COVID-19 test-site locations that are set up around the state.

Also, from Sept. 28 to Oct. 2, INDOT is providing traffic cones, message boards, and a few drivers for a study occurring throughout the state. The study is a collaboration between the ISDH and Indiana University Richard M. Fairbanks School of Public Health at IUPUI. The scientific study measures the spread of COVID-19 throughout the state via random sample testing. The testing is conducted in four phases throughout the year. This is the third phase.

Sadler can't say enough about how INDOT has banded together regarding this initiative.



Lyle Sadler



Pat Szewczak

“I’m grateful to be part of such a great team,” said Sadler. “Deputy Commissioner of Operations Mike Smith and J.D. Brooks have provided superb guidance since the beginning of our operation at Stout Field. Pat Szewczak has organized our state resources with the other five INDOT districts to enable us to answer the call when deliveries need to be made. Greenfield District Heavy

Equipment & Emergency Response Foreman Lucas Duncan has stepped up to be a great teammate at Stout Field by maintaining and organizing our leased vehicle fleet.”

Sadler also praised Steve Harney, James Kinder, and Jamie Gallagher for serving as INDOT’s emergency support function-1 representatives to the State of Indiana Emergency Operations Center (EOC) the entire time that Sadler has been assigned to Stout Field.

“Without their expertise and commitments, I would not have had the opportunity to participate in the Stout Field operation as much as I have,” said Sadler. “Each of them continues to be our representative during the State EOC activation. Also, the Indiana Department of Homeland Security, ISP, ISDH, and the Indiana National Guard have been outstanding partners and true professionals during our time together in helping Hoosiers. I’ve made some very good friends in the process.”

Szewczak also marveled at the outstanding commitment to this cause.

“It is rewarding to be part of a team that is so dedicated to our citizens,” said Szewczak. “Being able to watch the team effort that is put forth week after week while continuing with our normal business operations gives me a huge sense of pride.”

Szewczak continued, “I am very proud of the Greenfield District team, the other INDOT district teams, and all our state-agency partners in what we have accomplished through this critical need.”



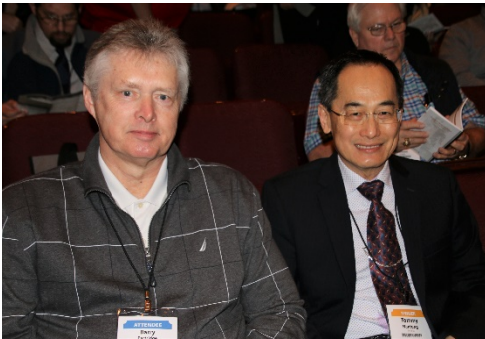
Boxed supplies inside a warehouse at Stout Field await delivery by INDOT.

## New Tool, Proposed to Help INDOT Inspectors, Wins Research Awards

An award-winning new construction inspection method is being reviewed by INDOT for potential implementation in the future. Developed with guidance by the agency's Research & Development (R&D) Division, the construction digital inspection program proposes to shift the onus of inspecting contracted work from solely the judgment of INDOT employees to a digital, risk-based system.

This summer, the American Association of State Highway Transportation Officials (AASHTO) named the project as one of the top 16 research projects (Sweet 16) in the country. Nearly 200 research projects from state DOTs were considered. Preceding the AASHTO honor, the project was bestowed a prestigious Transportation Research Board best paper award in January.

"I am proud of R&D's role, along with Construction Management and district Construction staff, in the creation of the proposed digital inspection program," said R&D Director Barry Partridge. "Collectively, we spent years developing it by partnering with INDOT groups and Purdue University. Its development will help fill a great need of the agency."



Research & Development's Barry Partridge (from left) and Tommy Nantung helped develop the digital inspection program.

That need is for a more efficient inspection system, especially because of the loss of institutional knowledge. Between 2011 and 2015, our construction inspection staff shrank 15%. With increasingly complex infrastructure construction taking place, there is a need to simplify the inspection process for remaining inspectors while ensuring that the most critical infrastructure elements are still inspected.

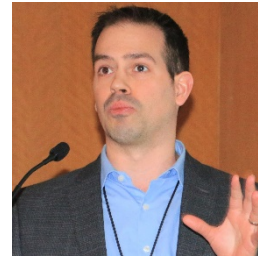
At an INDOT Pavement, Materials, Geotech, Construction focus group in late 2015, the group identified the need to arm remaining and future inspectors with an efficient digital program that allocates resources to the riskiest areas.

To develop the program, researchers compiled a comprehensive list of 333 INDOT testing and inspection activities in the important areas of soil subgrade, asphalt pavement, concrete pavement, and bridge decks. This list was narrowed down to a core set of 126 items based on survey responses and interviews with INDOT domain experts.

"The risk associated with each inspection activity was assessed with advanced data analytics by considering both the probability of failure and consequence severity of failure in four dimensions: cost, time, quality, and safety," said R&D Section Manager Tommy Nantung, who performed as project adviser for the research project. "A composite risk index was developed as a single measure for the overall risk. All inspection activities were prioritized based on the composite index, resulting in a total of 90 critical items that were identified as the riskiest areas needing priority inspection."

For implementation, a linking mechanism was developed to generate and link inspection activity, pay items, and check items. These items were extracted from INDOT standard specifications, Construction Management's general instructions to field employees, and quality assurance

documents. Construction Management Manager Andrew Pangallo was heavily involved in the process, as was Management Information Systems (MIS) Specialist Derek Fuller.



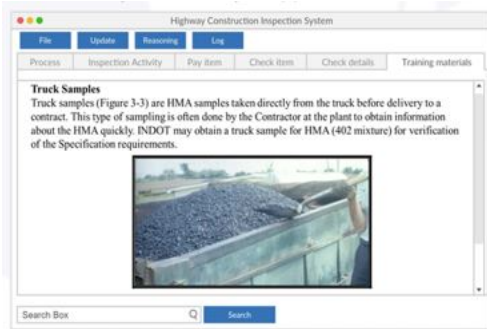
Andrew Pangallo



Derek Fuller

Converting and linking information from text documents to a checklist was completed using a computer function known as natural language processing.

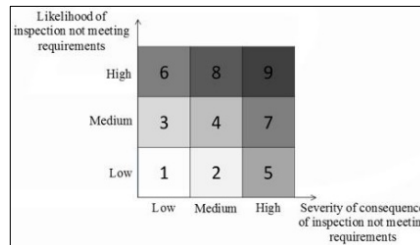
This linking aligns with the business process of construction inspection at INDOT: Starting with a pay item, field inspectors retrieve the associated check items and their inspection priority (based on risk), inspection frequency, and inspection criteria. Thus, the program provides real-time information about inspection priorities and requirements, inspection forms, and even access to training materials (see left photo). Field inspectors know not only what to inspect, but also when to do so.



“Field application took place in 2018 through a proof-of-concept study on a two-mile pavement replacement project on U.S. 27 in Richmond,” said Nantung. “The new program reduced inspection time up to 50%. Gathering requirements manually was no longer needed, and duplicate documentation efforts were eliminated.”

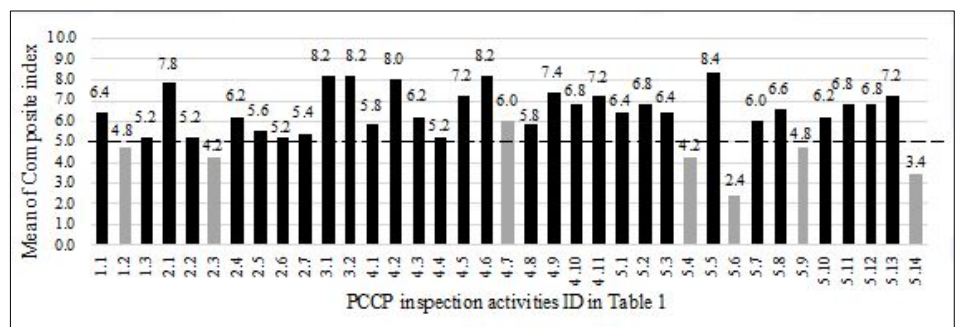
During the proof-of-concept study, inspection of three of nine soil subgrade activities was eliminated, and seven of 37 concrete activities were eliminated from needing inspection.

The proof-of-concept study involved Purdue University partners running the program to create the list of inspection items on Microsoft Access.



A composite risk index (left), developed as a single measure for the overall risk, is used to ascertain whether an activity gets inspected. During a proof-of-concept study, seven of 37 concrete activities (below) scored below the 5.0 threshold and thus were eliminated from needing inspection.

“The system is designed to be contract specific,” said Partridge. “For each contract, you identify the critical elements for that document based on the highest risk, and that’s what you include for inspection.”



After the positive experience on U.S. 27, INDOT is working to utilize the program on additional projects. Bentley Systems has integrated INDOT’s inspection checklists into its SYNCHRO Field mobile construction inspection application. SYNCHRO Field enables inspectors to use the checklists within a defined workflow and eliminates the need for the checklist information to be extracted into a standalone Microsoft Access system. SYNCHRO Field and the inspection checklists will be further tested on Contract 2 of the I-69 Finish Line project. Contract 2, which is divided into four subcontracts, involves transforming six miles of State Road 37 into I-69 in Martinsville.



For the I-69 project, Purdue will run the list of inspection items, the INDOT experts will assign risk factors, and the inspection lists for asphalt, concrete, soil subgrade and bridge decks will be fed into the Bentley application based on assets. During construction, when an inspector selects an asset for inspection, it will automate the inspection list. The inspector will have the ability to mark the checklist items pass or fail. The inspector can also fill in comments. Since the completed checklist information will be stored in a database, Operations and Maintenance can use it to manage each asset after construction.

Fuller and MIS are exploring the possibility of transferring Purdue's Microsoft Access database to MIS' Oracle database structure.

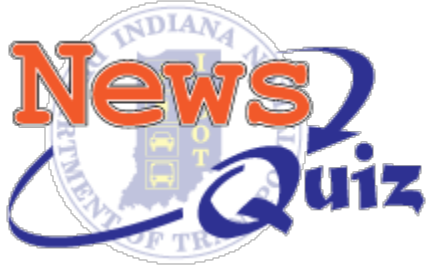
"This would automate the process so that Purdue wouldn't have to provide inspection items," said Nantung. "Bentley is currently deciding the future of its software features, so we will have to wait on them to see if this can be pursued."

Senior Director of Engineering & Research Jim Poturalski said: "The digital inspection program can save time by eliminating the manual and subjective process of interpreting the specifications to compile construction requirements. It can save cost because it results in more consistent and higher-quality infrastructure, lower maintenance and operation cost, and longer service life. Last, the system is a structured and evolving knowledge base used to record the complete history of infrastructure, learn from experience, train new employees, and determine best practices."

Collaboration between INDOT, Purdue University and our partners has thrived during this three-plus-year research project, which is transforming into a real-life model. Besides heavy involvement by Partridge, Nantung, Pangallo and Fuller, former INDOT employee John Leckie was involved as the original business owner. Purdue University Prof. Hubo Cai was the researcher and principal investigator, and Purdue Profs. Dulcy Abraham and Mark Bowman were co-principal investigators.



## Take the INDOT News Quiz



The *Inside INDOT* news quiz tests your ability to recall the major points of this month's articles. How well did you read the September newsletter? Play along to find out. [Take the quiz.](#)