

A Message from the Commissioner

Hello Team,

As we continue on our journey of continuous improvement, this month I'm highlighting our goal of Enhancing Internal Services, by talking about some of the things we're doing to optimize our internal customer service.

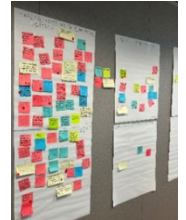
Design Thinking Sessions

I hope you have had a chance to participate in Chief Legal Counsel Kate Shelby's design thinking sessions as she's traveled around the state to collect your feedback on ways to improve how we currently do business. With two district locations left to visit, so far nearly 3,000 unique feedback items have been received during the thinking sessions. These items touch on every area of INDOT.

As you can see, the participation has been robust. Being able to meet and discuss your ideas in person has enhanced the meaningfulness of your feedback, and as Kate and her team continue to collect your ideas, they're hearing and seeing recurring themes. Once all information is gathered, they will begin to identify those ideas that we can develop further.



If you haven't had an opportunity to provide your feedback during one of the thinking sessions, you will have a chance to do so in a survey that is coming soon to employees. While I'm not going to tell you that each of your ideas will be implemented, I can assure you that we will look at and consider each and every one.



EXECUTIVE PRIORITY POINTS

A new initiative that I'm excited to tell you about, and coming to you next week, is *Priority Points*. Our executive leadership team meets biweekly, and those meetings generate information that all employees should be aware of. We know that information from those leadership meetings doesn't always filter through the organization, and *Priority Points* is a new opportunity for us to communicate with you better.

So, beginning March 7, you will start receiving email messages from the executive team that contains information from the executive staff meetings. If you have subscribed to receive INDOT text alerts, you will receive this information via text too.

I believe that all of you should have access to agency information in order to perform your jobs at the highest level. The intent of *Priority Points* is to create opportunities for meaningful conversations to occur between employees and their managers. Next week, if you receive the email, or text, and do not hear from your manager, seek them out and begin the conversation with them about the *Points* that are contained in the message. This new initiative is one that I trust will help all our team members be better informed of things happening at INDOT.

We are always better when we work together, and with Kate's sessions and our new *Priority Points*, I am confident we're going to begin improving our internal services.

Thank you for all you do!

Mike

Rare Reinstallation of Railroad Crossing Puts Businesses on the Right Track

For more than three years, INDOT’s Rail Programs Office and its partners were involved in a plot-twisting adventure worthy of a TV show. It should come as no surprise, then, that the result was the installation of a StarTrack Rail Solutions crossing.

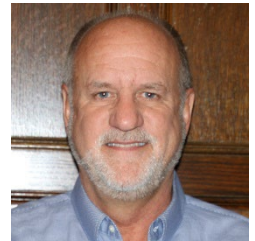
2023 AGENCY GOALS

Plan for the Future
Intentional Partnership

The experience included a surprise discovery that led to the extremely rare occurrence of INDOT reinstalling railroad tracks after previously taking them out of service. INDOT partnered with a county economic council, a short-line railroad, and a local business to install a new crossing that will put all parties on

the track to success.

On four-lane State Road 3 in Decatur County, just south of State Road 46 near Greensburg, a railroad crossing once again runs across the highway. The spur track extends for about a mile east and three-fourths of a mile west. At the western terminus is animal feed manufacturer Lowe’s Pellets & Grain, which in years past used the spur track for transportation purposes.



“The company had not used rail service for a number of years, and the crossing surface was in poor condition, creating a hazard for vehicles passing over the unused crossing,” said Senior Rail Project Manager Tom Rueschhoff (*photo, right*).

INDOT was planning to resurface SR 3. In 2019, Seymour District Utility and Railroad



Coordinator Tim Hartwell (*photo, left*) requested that the track be declared as out of service, enabling INDOT to remove the tracks and replace it with full-depth asphalt pavement. This request led to meetings with railroad officials, Decatur County representatives, Lowe’s Pellets & Grain, a nearby agribusiness, and INDOT officials, including Rueschhoff and Hartwell.

The tracks had been owned by Conrail, which was acquired by CSX Transportation in 1997. At that time, the 1¼-mile tracks were split up into two sections on each side of SR 3.

“Eventually, the tracks were deeded over to the short-line Central Railroad of Indiana (CIND),” said Rueschhoff. “From those 2019 meetings, it was discovered that the tracks were deeded but the crossing was not included in the deed, meaning that Conrail still owned the right-of-way across SR 3. Therefore, Lowe’s Pellets & Grain had to purchase the crossing limits from Conrail if they were interested in reopening the crossing to rail traffic.”

With the SR 3 resurfacing imminent, INDOT helped the situation by placing “Tracks Out of Service” signs at the location instead of deciding to abandon the crossing. This enabled the possibility of someday reinstalling the crossing.

Not long after the resurfacing project, INDOT’s business engagement director talked with the Decatur County Economic Development Corp. (DCEDC) and local agribusinesses. The director discovered that the DCEDC wanted to develop the land beyond the western terminus and that Lowe’s Pellets & Grain needed to use the crossing again for business. Also, Next Generation, a leader in agricultural liquid storage terminals based in Greensburg, indicated that it would need the tracks extended.

“This indication of economic investment meant that these customers would need to be served by CIND on this line in the future, bringing more businesses and jobs to Decatur County,” said Rueschhoff.

This led to the decision to reinstall the crossing.

“INDOT has used StarTrack Rail Solutions for roughly 20 years in certain situations,” said Rueschhoff. “They are full-depth concrete panel crossings that we have used on numerous state roads around the state with the purpose of having a structurally sound crossing surface that can provide a service life of 20-plus years. On state roads with high traffic volumes, including semitrailers, this type of crossing can last multiple cycles of different types of crossing surfaces. This reduces the need to detour traffic as often and provides satisfaction that we won’t have to replace the crossing for two decades.”

StarTrack, a precast concrete solution that uses pre-engineered track-support systems, was used a few years ago on SR 3, north of the Lowe’s Pellets & Grain location, with great success.



The pavement is removed from State Road 3 (clockwise from top-left photo), new precast concrete sections are delivered, installation of the new crossing begins, and the crossing is nearly complete.



INDOT closed southbound SR 3 in mid-December for seven days and northbound SR 3 in late December for nine days to install the new crossing.

To provide traveling public awareness of the crossing becoming active once again with trains crossing SR 3, the railroad has removed the “Tracks Out of Service” signs and has recently installed new “Train Traffic Resumed – Track in Service” signs. Also, INDOT’s Seymour District Maintenance crews will place message boards to warn drivers to be aware that the crossing has been reactivated and train traffic has resumed. The crossing and track work has now been completed; two trains per week are expected to use the tracks to service Next Generation and Lowe’s Pellets & Grain with more expected in the future.

“I am proud of how Central Office and the Seymour District worked closely with the railroad and the local economic development office to bring this previously out-of-service crossing back into service for new customers,” said Rail Programs Manager Venetta Keeffe.

Construction Conferences Rock!

Construction, construction, what's your function?

This silly take on the old "Schoolhouse Rock" song would be suitable at INDOT this time of year, as district construction conferences and the Statewide Construction Conference (also called the Area Engineers Construction Conference) have been taking place since late January. Construction staffers have heard updates and details to help them plan for upcoming dirt-digging and related activities.

2023 AGENCY GOAL SPOTLIGHT
Plan for the Future

The Fort Wayne District kicked off the statewide activities unusually; the Jan. 24-26 event was disrupted by a winter storm, so the final two days were postponed a week. Still, there was "snow chance" that the conference wouldn't be a success; informative INDOT speakers would ensure it.

More than 25 INDOT employees and a Federal Highway Administration (FHWA) representative presented in Fort Wayne on topics such as construction management, concrete, Geotech, materials, and safety.

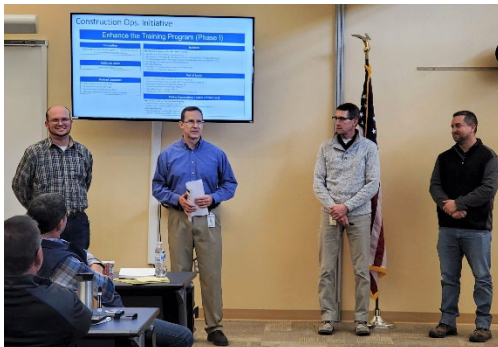
One focus was the ins and outs of mechanically stabilized earth (MSE) retaining walls, which are composite structures consisting of alternating layers of compacted backfill and soil reinforcement elements that are fixed to a wall face. They are economical alternatives to other wall types. But State Construction Engineer Joe Novak, Area Engineer Don Thornton, and FHWA Engineer (and former INDOT staffer) Ting Nahrwold noted that MSE walls are sensitive to installation; if constructed incorrectly, they are difficult to troubleshoot and costly to repair. Staffers learned how to better succeed when dealing with MSE walls.



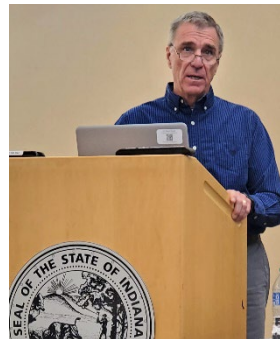
Fort Wayne District Construction Conference attendees gather during a break.

The Crawfordsville, LaPorte, and Statewide conferences followed suit in February; the Greenfield and Seymour conferences are slated for early and late March, respectively.

The Statewide Construction Conference covered hot topics in the construction program such as selling contracts at lettings, construction-related research, the use of liquidated damages provisions in contracts, constructability reviews, and proposed changes to the district Construction organizational model.



At the Statewide Construction Conference, Fort Wayne's Jason Spreen (from left in left photo), Central Office's Joe Novak and Kurt Pelz, and Vincennes' Andy Pinkstaff; Central Office's Greg Pankow (right photo).



Speakers included Commissioner Mike Smith, Deputy Commissioner of Construction Roland Fegan, and Chief Engineer of Construction Greg Pankow.

At all these INDOT conferences, it was abundantly clear that any agency staffer involved in Construction carries many important responsibilities.

“You’re all asked to perform a large variety of tasks,” said Novak at the Fort Wayne conference. “The variety makes it interesting but also makes it hard. You’re asked to know, or learn to do, all these tasks with success. Getting all this done is challenging but striving to do your best is appreciated.

“Technology and the world continue to get more sophisticated. Sophistication enables us to do different things, but we can’t be an expert in everything,” he said. “Here in INDOT’s Construction Division, Central Office and districts work together to help each other, so never be afraid to reach out.”

INDOT Employees Achieve Important Milestones

Every month, INDOT employees achieve certifications, licenses, and academic degrees through the INDOT tuition and license reimbursement program, which reimburses workers up to \$5,250 per calendar year for these expenses.

INDOT's tuition and license reimbursement program directly supports an agency goal to take INDOT to the next level by developing INDOT's 21st century workforce. All tuition and license reimbursements require preapproval by Talent Management. For more details, click [here](#).

These employees worked hard to achieve their career milestones, which were realized in January 2023. Be sure to congratulate them!

Name: Gary Fox

Location/Position: Crawfordsville District, Construction Area Engineer

Milestone: Master's degree in civil engineering

In His Own Words: I earned my master's degree in civil engineering through Ohio University's Russ College of Engineering and Technology online program. The seed for pursuing the degree was planted in 2016, when I started at INDOT as an area pavement engineer for the Greenfield and Vincennes districts and interacted with colleagues who inspired me to consider furthering my education. I took pavement training courses at INDOT's



Research & Development Division, where I learned so much from our Ph.D.-level research engineers that I wanted to learn more. While attending a national concrete conference, a fellow attendee was working on her Ph.D. and encouraged me to earn my master's. I found Ohio University's online program, applied, and was accepted. INDOT's tuition reimbursement program was also very appealing and made this possible.



I almost dropped out of my first course because it was so challenging and time consuming. After applying myself, I realized that I still had the knack for academics, kept working hard, and found that I had not lost my mojo! I was doing high-level math problems like years ago in my undergrad days and thought, "I can still do this!" I wrote research papers for most of the courses.

The program consists of 11 courses with 32 credit hours for ideal graduation in two years. I set myself up on a five-year schedule, taking only one course at a time, due to my busy work schedule. It would have been difficult to double up on courses because they each took me an average of 20 to 25 hours per week. Courses are on a traditional 14-week college spring and fall semester format with summer courses available. Since I took the courses over five years, each course had an immediate impact on enhancing knowledge that I quickly applied on my job. I have shared this knowledge with others on the job.

I made connections with fellow students and professors through all the courses and really enjoyed working with them. After five years, I attended the graduation ceremony in December 2022 and saw the beautiful city of Athens Ohio, and the campus for the first time. I met with my professor from my last course the night before graduation for some drinks, and he gave me a tour of the campus and engineering building. Going through the graduation ceremony that day was a proud moment that I'll never forget, and my INDOT boss, Crawfordsville District Construction Director David Holtz, even attended to cheer me on!

My perseverance and patience were aided by a very forgiving and understanding family. I can't lie, though: I'm going to miss telling my kids, "I have my homework done; did you finish yours?" Or, "Get off the video games and study for that test; I'm studying for mine."

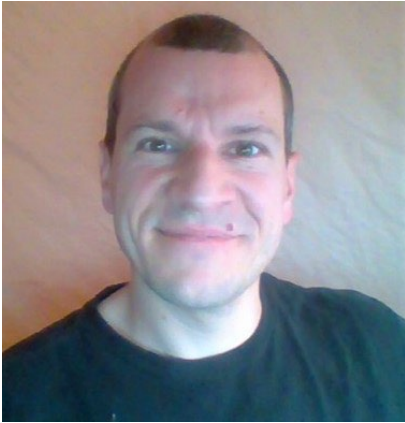
Congratulate Gary: Send Gary your best wishes for this achievement by clicking [here](#).

Name: Lucas Karr

Location/Position: Central Office, Finance Budget Analyst

Milestone: Financial Modeling and Valuation Analyst (FMVA) certification

In His Own Words: I have been working in the realm of finance since graduating from Indiana Wesleyan University at the end of 2006. During that time, I worked in banking, personal finance, and finally found my passion in the public sector, working with locals in Illinois, and with the state of Indiana since 2014. In 2010, I also received my Master of Business Administration degree through Liberty University. My journey has always included a desire to pursue growth. I have looked into various certifications, programs, or coursework that would make me a more well-rounded individual, especially in regard to current or future employment.



As many of us know, working in the public sector looks very different than working for a private business. Many of the financial certifications available today are focused on how to help run a Fortune 500 company but leave much to be desired for other sectors. I wanted something that would provide a wide array of topics related to the world of finance, and I found that in the FMVA certification provided by the Corporate Finance Institute. The FMVA certification includes a minimum of 15 mandatory courses, with a final exam for each course, followed by an exam covering all 12 of the "core" courses of the program. The coursework is all online, and each course provides great video lectures, hands-on practice, and challenging questions. The coursework relied heavily on Microsoft Excel, which is also something I was excited about.

This program took me 15 months, with 400 to 500 hours of videos, coursework, studying, and exams. It focused on various forms of financial modeling including working with a three-statement financial model, using monthly cash flow forecasting, operational modeling, discounted cash flow valuation, and comparable valuation analysis. The program had several courses on Excel functions, formulas, and presentation tools; coursework on presentations and pitchbooks; power pivot fundamentals; and general data visualization tools to help present information. My hope is that each of these courses has provided me with new knowledge, techniques, or resources to help me be a better financial analyst and continue to grow in my career.

I am thankful for INDOT's tuition and license reimbursement program, which covered the registration fee upon completion of the program. I enjoy working for an employer that sees the value in helping me become a better and more well-rounded employee.

Congratulate Lucas: Send Lucas your best wishes for this achievement by clicking [here](#).

Tuition and License Reimbursement Requests

Tuition Reimbursement: INDOT's [ITAP](#) application enables eligible employees to submit their tuition reimbursement requests, upload required documentation, and track reimbursement progress, entirely online! Employees may launch the application by logging into their ITAP account and scrolling to the Human Resources section. Full-time employees with at least 12 months of continuous employment with the state of Indiana may be eligible for tuition reimbursement up to \$5,250 per calendar year. For questions about submitting your reimbursement application or the tuition reimbursement policy, visit the [Tuition Reimbursement SharePoint page](#).

License Reimbursement: A new and improved license reimbursement experience was launched in January 2023, also using the ITAP system! ITAP replaces the paper application; required documentation will now be submitted entirely online. Full- and part-time employees with at least six months of employment with the state of Indiana are eligible for the license reimbursement program, up to \$1,000 per calendar year. Information on submitting a license reimbursement request or viewing the guidelines are available on the [License Reimbursement SharePoint page](#).

Social Media Campaign Focuses on Innovation

Mondays just got better.

INDOT's Communications team began an "INDOT Innovates" campaign Jan. 23 to educate the public about various agency innovations. Every Monday, information about INDOT innovations will appear on our Facebook, Twitter, and Instagram pages, complete with photos and videos.

2023 AGENCY GOAL SPOTLIGHT

Excellence in Core Service Delivery

"We are highlighting INDOT's innovations in traffic engineering, safety, equipment, and much more," said External Communications Program Manager Jennifer Clark. "Besides educating the public and spotlighting the agency, we will debunk myths about some of our innovative practices."

The Jan. 23 post centered on roundabouts, which have proved to reduce the severity of crashes and save lives.

"That initial post of the 'INDOT Innovates' campaign received a tremendous reaction," said Clark. "On Facebook, it quickly piled up 353 likes, 308 comments, and 99 shares on our main (non-district) page. That was easily the most popular post on that page in years. The same on main Twitter account, where it received 4,594 views."

On Jan. 30, diverging diamond interchanges (DDIs) were the focus. That post surpassed the roundabouts post, generating 355 Facebook likes, 343 comments, and 218 shares. Also, it had 3,697 Twitter views.

Facebook comments on the DDI post included: "As a trucker, I can vouch that these are much smoother to negotiate than standard interstate exchanges and keep traffic rolling better. Kudos to the state," as well as "(They have) been working perfectly on I-69 at DuPont Road in Fort Wayne for several years. So much safer than traditional ramps."

February posts included cable barrier systems, charging pavement, tow and wing plows, and automated brine tankers. The campaign will be ongoing.

"This has been an incredible educational opportunity for our agency," said Clark. "From just the first three weeks, we reached more than 469,000 people and had more than 34,000 interactions between clicks, reactions, comments, and shares. The purpose of our social media accounts is to inform, educate, and show Hoosiers how we truly have their safety in mind while being good stewards of their tax dollars."

E-Communications Specialist Liza Stacy assists Clark with the campaign. The videos, created by Employee Communications Program Manager Kevin Cole, are also being shown on district kiosks and the Central Office monitors.

If you have an idea of an innovation to be highlighted in the "INDOT Innovates" campaign, contact [Jennifer Clark](#).



Competition Proves that INDOT Is ‘Cantastic’

INDOT’s can-do attitude has paid off, big time.

Three districts participated in the State of Indiana CANstruction Competition, in which teams from state agencies built structures out of canned goods. The food was later donated to Hoosier community food pantries.

Fifty-four teams participated. None of the INDOT creations was judged as the best structure, but what mattered was that our staffers bonded while helping those in need. OK, there was some bickering, especially over the types of structures to be built and team names. TrafficANtrollers? Team Cantastrophe? Creative, yes, but maybe just a little out of control!

LaPorte District

Team Cantastrophe had a few catastrophes along the way but still ended up with a cool-looking construction barrel made from 230 cans.

Design Manager Jenny Guard saw CANstruction as a chance to help her staff take breaks during a recent period of intense work. Guard and designers Richie Zakrzewski, Andrea Long, Tony Krycka, Edgar Zambrano, Jordan King, and Stephen Bajzatt started the team. In-House Service staffers — principally Steve Travis, Stew Michels, and Ali Hammoud — soon joined. They chose to build a construction barrel since the group creates maintenance-of-traffic designs.

Travis, a Utilities & Railroad engineer, came up with the team’s name but he caused the biggest catastrophe.



Andrea Long (from left), Jenny Guard, Tony Krycka, Richie Zakrzewski, and Steve Travis.

“Steve decided to fill in the center of the barrel with cans but used one with a dent as part of the base; he also put some of the cans upside down so they didn’t stack correctly,” said Guard. “These actions caused half the barrel to collapse.”

In true engineer fashion, the group used an INDOT Standard Drawing of a construction barrel as the basis for their build so it would be close to scale.

“Since the cans weren’t the correct sizes to make it full height, we had to modify it a bit,” said Guard. “We used cardboard between some of the upper layers to relevel them since they started leaning a bit. The leaning had to be because the floor isn’t level.”

An unlevel floor? Really? Yet, that wasn’t the only challenge; despite researching the topic, the group discovered that obtaining orange and white cans wasn’t easy. Plus, some members didn’t follow the directions and

bought cans that were labeled in other colors, so those were relegated to the middle of the structure.

Zakrzewski drew up the cans and barrel in MicroStation and estimated how many of each type of can was needed, to which Guard commented, “We finished within 5% of his estimate, so we were all pretty impressed.”

The group was worried that nobody would recognize what kind of structure it built.

“But District Deputy Commissioner Matt Deitchley, who didn’t have knowledge of the project, recognized it for what it was supposed to be when he first saw it, so we count that as a win,” said Guard. “We’re already planning our build for next year and hope to expand it to include a bigger structure and more cans.”

The group delivered the cans to Christian Community Food Pantry in the St. Joseph County town of Walkerton.

Fort Wayne District

The district used 257 cans to build a replica traffic signal but coming up with a team name was the most difficult part.

“TraffiCANtrollers? Or Traffic Cantrollers? Or TraffiCANtrols? It’s the little things,” said Traffic Investigations Engineer Aubrea Jones, who teamed with Technical Services Director Jason Kaiser, Traffic Engineer Dana Plattner, Signal Systems Field Engineer Matt Sagstetter, Highway Engineer Colton Amstutz, and Assistant Traffic Engineer Dirk Schmidt to build the traffic signal.

The team debated whether the signal should be a 3- or 4-section head with a flashing yellow arrow.

“The easiest way to lock in an engineer for a group activity is to ask for an opinion on how to build something,” said Jones. “After a heated discussion, we decided that an arrow would be difficult to create using cans and the standard 3-section head was sufficient.”

Typical for engineers, the team developed a diagram in Microsoft Excel to determine the number and cans in each row and column, and then the number of each color required to build the signal. After finding out the height of a standard-sized can, they realized that the project could be built to scale. Getting the right-colored labels of the donated cans proved to be challenging.

“Dana was passionate about the vibrancy and contrast of the color scheme,” said Jones. “The cans we selected for the red light were changed several times.”

Preventing the cans from toppling wasn’t easy. Rubber bands, fishing line, cardboard, and wood veneer were failed ideas. Adding tape around the entire traffic signal was considered before the group decided that the signal would appear too glossy.

“Colton mentioned that we could tape the tops of the cans every couple of rows to provide the necessary support,” said Jones. “We appreciate Colton’s unmeasured genius and humility.”

Sagstetter brought in a spare signal head from the signal shop for reference and photos.

Another discussion involved the rules of competition and what constituted “self-supporting” and “not providing load-bearing support.”

“We didn’t win the contest but contend that we had the best CANstruction that followed the rules!” said Jones.

The district gave the cans to Community Harvest Food Bank in Fort Wayne.



Dana Plattner (from left), Jason Kaiser, Colton Amstutz, Aubrea Jones, Dirk Schmidt, and Matt Stagstetter.

Greenfield District

This amazing effort resulted in 2,017 cans collected, the second-highest total among all 54 state agency teams. More than a dozen employees built a snowplow, which was suggested by LPA Program Director Lavonne Roberts after the entire district was solicited for ideas.

“District leadership emphasizes team-building and community-service projects, and the CANstruction contest was a perfect opportunity to do both,” said Finance Director Steve Vetrano.

Greenfield Subdistrict Operations Manager Ashley Everhart challenged her crew to bring in the most cans while offering to match the donation; this effort resulted in 1,500 cans as every employee within the Greenfield Subdistrict donated cans. Greenfield Unit 1 team members brought in the most cans (585) and were treated a week later by Everhart to a pizza lunch.

“A little friendly competition incentive never hurt,” said Everhart. “I am so proud of our team’s contributions.”

The build occurred in the Technical Services building adjacent to the district office. System Asset Manager Amy Groff, who led the project last year, provided advice. Those from Customer Service, Finance, Engineering, Technical Services, and Communication helped on different days.

“It truly was a team effort from across the board,” said Vetrano. “People had lots of suggestions on how the truck should look, and we took input as long as they had a can in their hand and were helping.”

Amazingly, the snowplow structure had no supports or balancing materials.

“We learned some things along the way,” said Vetrano. “I now know that a can of kidney beans or corn is 4½ inches tall and 9¾ inches in circumference. I’ll never forget it! And Dinty Moore Beef Stew is perfect to use as wheel hubs.”

The large number of cans collected meant that the district could help support two communities. The Technical Services team used economic data to select food pantries in Henry County and Fayette County. The donations were delivered by district employees who live in those areas.

“The 2,017 cans equal 4.6 cans per district employee, and that should win a prize itself,” said Vetrano. “This project was possible and successful because everyone in the district wanted to be part of it from top to bottom and left to right. Our district deputy commissioner, Clark Packer, and leadership at all levels made this a priority. We are very proud of how well the Greenfield District worked as a team to make this happen through the generosity of our own teammates.”

What about next year?

“Look out because we may just build a whole fleet of snowplows with real falling snow!” said Vetrano. “Does anyone have a snow machine that we can use?”

Greenfield Unit 1 employees who helped with the efforts are Timmy Morgan (front), and Mike Cecil (from left, back), Austin Rader, David Bowles, Angela Lipscomb, Cody Freeman, Darrein Bowman, Craig Brewer, and Jesse Poe.



Calling Rube Goldberg: Bridge Design Conference Likens Projects to Complicated Machines

For the hundreds attending the ninth annual INDOT Bridge Design Conference either in person or virtually, it was the ultimate “aha moment.” INDOT’s Director of Bridge Engineering Stephanie Wagner, the conference’s moderator, had just compared Indiana’s bridge projects to an overly complicated Rube Goldberg contraption.

Genius!

“Our process to deliver successful projects is kind of like a Rube Goldberg machine,” said Wagner. “We’re dependent on steps to be completed in the way that it was designed. If all the marbles don’t fall in the bucket, that bucket doesn’t drop. Small changes throughout the development of a project can make a big difference in the success of the project at the end.”

2023 AGENCY GOAL SPOTLIGHT

Plan for the Future

A Rube Goldberg machine, of course, is a complex device designed to complete a simple function, using a set of steps that work in succession and trigger one event after another until the final task is completed (see an example on Page 2). Some of the machines designed by cartoonist Rube Goldberg involve dozens of complicated steps to complete a simple task. Similarly, bridge designers meticulously account for many details of a project, but various problems inevitably emerge, causing a chain reaction of events.



Senior Pavement Design Engineer Tony Jones latched onto the complicated machine theme.

“As part of this Rube Goldberg machine, pavement design approval has several intricacies that impact you,” said Jones, who educated audience members about the ins and outs of Indiana Design Manual Memo 22-03 concerning pavement design for bridge and small structure projects.

And so, it continued throughout the Feb. 21 conference: Various speakers educated attendees on lessons learned, policy updates, research, and practical design concepts to help navigate the challenging world of bridge design.

Bridge Design Team Leader Jim Lesh, who organized the conference with Wagner, urged the audience to account for thermal movements — where heat expands and coldness contracts bridge elements. Example: Don’t design a terminal joint to hit a bridge rail because that’s concrete on concrete; provide room for the bridge to move.

“The topic of thermal movement is boring because it’s slow and methodical, taking years to happen,” said Lesh. “But beware; just like the tortoise always beat the hare, thermal movements always win. If we don’t allow room for our bridges to move, they will make room.”

Stephanie Wagner (from left, top photo) and Jim Lesh.



Donald Shaw (right photo).

Bridge Engineer Donald Shaw engaged attendees with details of a continuous bridge pour sequence (instead of a sequenced bridge pour sequence) for prestressed

beam superstructures. INDOT has created a Bridge Design Aid (BDA 404-01) for contractors and INDOT to better understand the process. It includes a spreadsheet that helps determine if such a bridge pour is possible under criteria that aims to minimize the likelihood of excessive early deck cracking. The BDA creates uniformity between the industry and INDOT's engineer of record for the project. It also reduces surprises and cost.

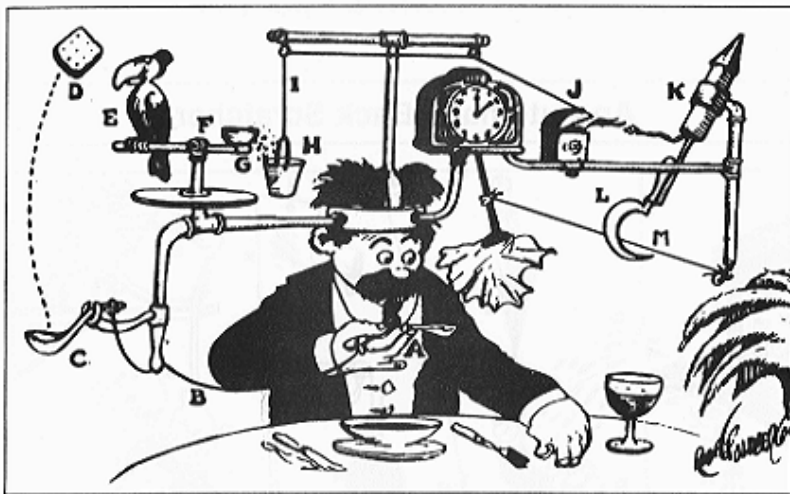
Geotechnical Consultant Design Group Manager Mir Zaheer outlined the advantages and disadvantages of using drilled shafts instead of driven piles on bridge projects. Derek Merida, a bridge operations vice president for a major contractor, pinpointed when a contractor might like to use drilled shafts — including on projects that eliminate the requirement of cofferdams and at close-quarter locations that require limited vibration (example: the U.S. 27 bridge project in downtown Richmond).

Other INDOT speakers were Managing Director of Project Delivery Jessica Miller, Standards & Policy Director Subhi Bazlamit, Pavement Design Manager Kumar Dave, Bridge Design Manager Pete White, Bridge Load Rating Engineer Jennifer Hart, Seymour District Highway Engineer Supervisor Terry Summers, Bridge Asset Manager Adam Post, Bridge Asset Engineer Erich Hart, and Greenfield District Bridge Engineer Darryl Wineinger.

The conference, which took place at the Indiana Government Center South building, is a joint venture between INDOT and the Indiana section of the American Society of Civil Engineers. It attracted 130 in-person attendees and 174 virtual participants.

“We are all one big Rube Goldberg machine,” said Wagner, “meaning we all have to work together to ensure success with our state’s bridge assets.”

Self-Operating Napkin



A terminal joint abuts a bridge rail, something that INDOT's Jim Lesh says to avoid in the design process.

“Professor Butts and the Self-Operating Napkin” (1931) is a classic Rube Goldberg cartoon. A soup spoon (A) is raised to mouth, pulling string (B) and thereby jerking ladle (C), which throws cracker (D) past toucan (E). Toucan jumps after cracker and perch (F) tilts, upsetting seeds (G) into pail (H). Extra weight in pail pulls cord (I), which opens and ignites lighter (J), setting off skyrocket (K), which causes sickle (L) to cut string (M), enabling pendulum with attached napkin to swing back and forth, thereby wiping chin.

Employees Can See Traffic Safety Stats to Help Reduce Traffic Deaths

INDOT’s Traffic Safety Office has created a visually appealing ERIN page that enables employees to see Indiana’s latest traffic safety trends and thereby positively impact motorists. Called the Traffic Safety Snapshot, the page empowers INDOT staffers to keep motorist safety in mind while they do their jobs, whether in the office or field.

The [Traffic Safety Snapshot](#) SharePoint page displays monthly and annual statistics in various categories for all statewide roadway crashes, including those on non-INDOT roads. Just as important, the report emphasizes that every number listed is a real person with a name and a family.

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Enhance Internal Services

Excellence in Core Service Delivery

“The colorful bar and pie charts are much easier to grasp and understand than a list of numbers or an Excel sheet, which we previously produced for executive staff,” said Traffic Safety Manager Mike Holowaty. “The visual display of the Snapshot really hammers home that crashes are a problem in Indiana and helps us keep safety in mind as we design and build our roads and bridges.”

Holowaty and then-Traffic Safety Engineer Taylor Ruble conceptualized the page in early 2022 with a year-end 2021 snapshot report, followed by cumulative monthly reports throughout the year. Now, Traffic Safety Engineer Lawrence Ozobu produces each monthly report. To ensure data accuracy, the reports are generated and posted five weeks after the previous month. The year-end 2022 snapshot report was posted in early February.



Mike Holowaty (from left), Taylor Ruble, and Lawrence Ozobu.

Ruble, currently an INDOT Traffic Mobility Engineer, designed the page to humanize the issue of crashes.

“The report uses the words ‘people killed’ instead of ‘fatalities,’” said Ruble. “It also includes ‘number of children killed, 15 and younger’ to further humanize the report. Starting with our next report in early March, we will list the first names of every person killed in a crash over the course of the year. It’s important to remember that these are people, not numbers.”

Said Holowaty, “Every crash victim has people who care about them if they’re badly injured or mourn them if they are killed.”

Categories include traffic deaths or injuries by crash, route, and vehicle types; by road ownership; of urban vs. rural; in work zones and work-zone backups; and involving pedestrian, bicyclists, and impaired driving.

Ozobu pulls statistics from the Automated Reporting Information Exchange System (ARIES).

“The only category that lags is rail-highway crossings data, which comes from the Federal Rail Administration,” said Holowaty. “Those updates are slower than ARIES, so rail statistics are two months behind all other data.”

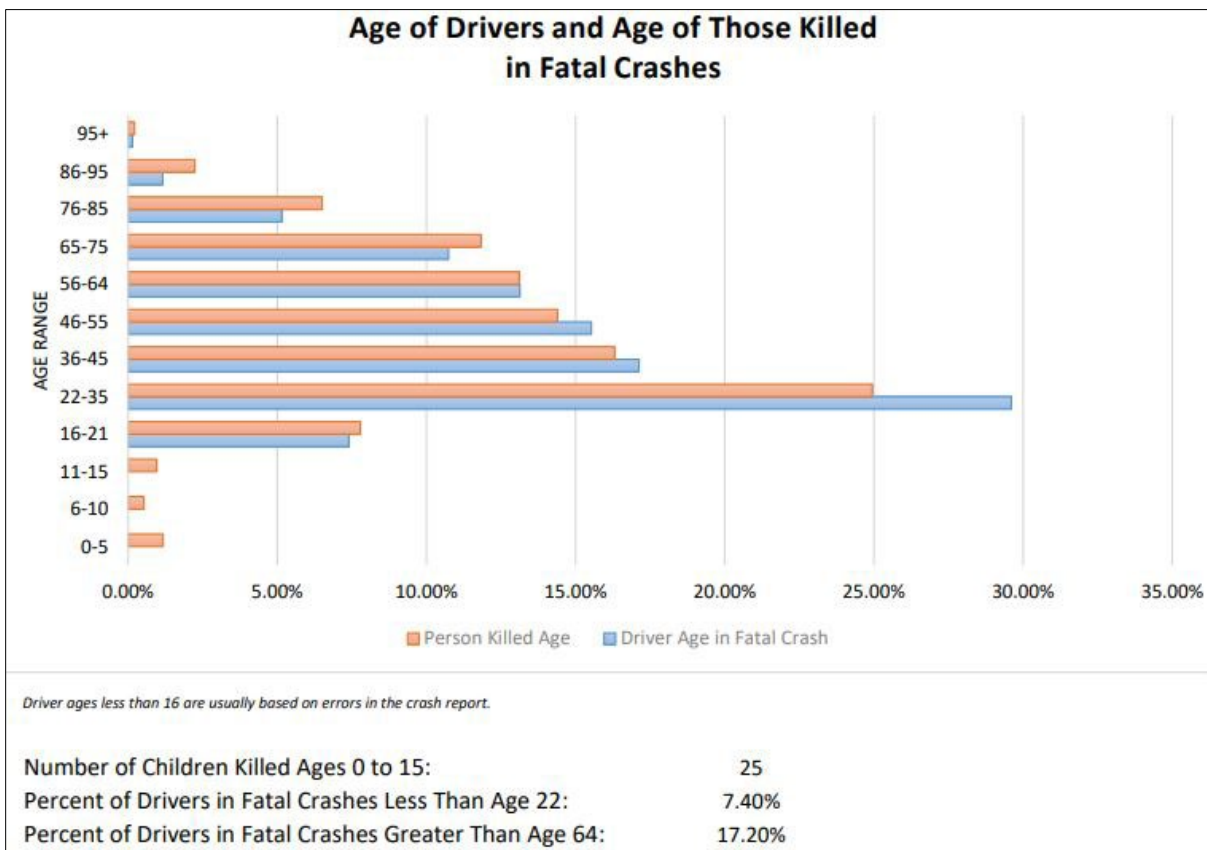
Just as they did years ago with the text-heavy report, INDOT’s executive staff reviews the Snapshot. To further promote motorist safety, the Traffic Safety Office also sends the Snapshot to all of Indiana’s 14 Metropolitan Planning Organizations, which distribute the report to Regional Planning Organizations.

“But now that INDOT has an internal SharePoint, we wanted to share it with all INDOT employees to bring even more awareness,” said Holowaty. “The Traffic Safety Office will continue to push crash-reducing and lifesaving initiatives. However, it’s important to remember that everyone and every asset class has a role to play in reducing fatalities among Indiana’s road users. Everyone using our roads deserves to reach their destination safely.”

Holowaty noted that since the pandemic, crash fatalities have risen well above previous years. Last year’s 940 traffic deaths in Indiana were a 20-year high.

“We want people to build a thought process: Is my work impacting public safety positively or negatively?” said Holowaty. “If it’s negatively, we want them to ask: What can I do to fix it before we put it out there? We want to build an institutional culture of safety.”

For a snapshot of year-end 2022 data, click [here](#).



Video Series Puts Employees in Touch with INDOT Leaders

In this month’s executive staff video, Deputy Commissioner of Operations J.D. Brooks talks about four cutting-edge Winter Operations technologies with INDOT employees.

While on-site at the Crawfordsville District Lebanon Unit salt building, Brooks chats with Greenfield District Highway Maintenance Director Pat Szewczak, Tipton Unit Highway Technician Jack Goodnight, and Crawfordsville District Heavy Equipment Operator Dave Radcliff about [wing plow](#) and [tow plow](#) trucks, and [automated brine tankers](#).

Then, Brooks and Quality Assurance Inspector Josh Stutesman discuss the new [Salt Monitoring and Reporting Technology \(SMART\) measuring tool](#).

Video of the equipment — along with the four employees’ explanations about how they work — helps other INDOT staffers better understand these four advancements.

Since November 2020, INDOT executive staff has been using video chats to better communicate to our workers statewide.

To watch Brooks’ video message, or the entire executive video series, click [here](#).



J.D. Brooks (left in all photos) with Dave Radcliff (clockwise from top-left photo), Josh Stutesman, Pat Szewczak, and Jack Goodnight.

