Arizona Highways magazine encourages readers to visit scenic sites throughout the state, which makes a big impact on the tourism economy.

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ARIZONA HIGHWAYS MAGAZINE is more than 90 years old — almost as old as Arizona itself! The magazine has always been under ADOT and in the early days, the content focused on road building and other engineering-related stories. In 1938, Raymond Carlson was named editor of the magazine and he had a simple, singular vision: use the magazine to help stimulate visitation to Arizona. Invite folks to visit the Sonoran Desert and see things that defy imagination. Mr. Carlson remained editor until 1974, so his vision had ample time to take root and lead to the worldwide reach and awareness Arizona Highways enjoys today.

I joined the magazine in 2000 as publisher. My background includes media, marketing and publishing positions in Chicago and here in Phoenix. My family moved to Arizona in 1980.

As publisher, I have the privilege of overseeing the magazine and related products, such as four different calendars, guide books, coffee table books, greeting cards, brand licensing and other products that all support our mission of encouraging travel to and through Arizona. We have subscribers in all 50 states and in 100 countries, so it’s obvious the magazine is a valued ambassador for the state. In fact, a few years ago, Arizona State University’s college of business conducted an economic impact study that revealed Arizona Highways readers and subscribers contribute over $60 million in annual economic impact to the state’s tourism economy.

My spouse Carolyn and I enjoy travel both within and outside Arizona but our favorite spot is our cabin in Munds Park, about 20 miles south of Flagstaff. There, we enjoy time with our three adult children and two grandchildren, and watch birds and squirrels along with an occasional elk or mule deer. It’s a wonderful place to recharge and get a fresh perspective on things.

The staff has embraced the state’s Continuous Improvement journey with two huddle boards and a Kaizen board with over 35 completed Kaizen forms. One of the interesting Kaizens summarized by a staff member dealt with Phoenix National Public Radio affiliate KJZZ. For several years, the magazine has had a content-sharing relationship with KJZZ. Each month, the station promotes the magazine by discussing a story on-air. To determine which story the station wanted to feature, several telephone or email exchanges were required. To simplify and speed this process, we started a complimentary digital subscription to the KJZZ producer. They review the entire magazine and select one or more stories to feature. The result is far easier for both KJZZ and the magazine, and a happy byproduct is KJZZ has more time to develop their stories about the magazine each month, leading to better-quality pieces for KJZZ listeners.

While it is still early in our walk down the Continuous Improvement path, the results so far have been very encouraging and beneficial.

Share your best cover shot
Do you snap shots that show off the scenic side of transportation in Arizona? Share them with us and we might put your photograph on the next cover of The Inside Lane.

It can be a great picture of an MVD office, a beautiful highway shot or even an artsy photo of construction materials. Whatever the subject, the photo should highlight some aspect of the work happening here at ADOT.

Submit your original, digital photographs to InsideLane@azdot.gov in JPEG format (no larger than 10MB). Along with the photo, please provide a brief description and your name/title.
Making a magazine

While still a part of ADOT, today Arizona Highways operates as a colorful, photo-filled consumer magazine that highlights the state’s culture, profiles people, reviews restaurants and features travel articles.

Roughly half of the stories are authored by freelance writers each month, while the rest is written by the Arizona Highways editorial staff, Stieve said.

Photos, which play an enormous role in the magazine’s success, are submitted by freelance photographers and Photography Editor Jeff Kida. The shots are all reviewed one by one when the staff meets for a monthly image review.

“We want to see what resonates with the staff,” said Stieve, adding that it’s a challenge to impress them because they’ve all seen some stellar photography through the years.

Once the content is set, the art department designs the layout and the magazine is ready to print.

Building the brand

Arizona Highways Production Director Michael Bianchi oversees the printing and distribution of the magazine and its many related products. His team ensures more than 100,000 issues get printed each month for subscribers and the newsstands.

The cost of postage and paper is always on the team’s radar, along with potential topics for books.

“The magazine alone does not pay to run this operation,” Bianchi said. “We have to supplement it with other revenue streams and we have quite an inventory of books that we have published.”

Looking toward the future

Kelly Mero, who serves as associate publisher and director of sales and marketing, works closely with major retailers to ensure Arizona Highways magazines and products are stocked in stores like Costco and Barnes & Noble. His team has also developed licensing deals (airport gift shops and a locally produced television show use the Arizona Highways name for a fee) and continues to seek out future partnerships.

The magazine’s digital efforts include a website and an online edition of the magazine.

“We’re also looking down the road at developing an app, but we’re trying to do that very strategically,” Mero said.

While the magazine business continues to change, Stieve says he believes Arizona Highways will last.

“Arizona Highways is a very unique thing,” Stieve said. “The magazine is a state treasure and something for all of us to be proud of.”

~Angela De Welles, Senior Communications Specialist
Research shows that cows are more intelligent than you might think, but unfortunately they’re just not smart enough to always make it safely across traffic... That’s why ADOT utilizes animal-control features, including fences and cattle guards. The devices are designed to keep cattle and livestock out of areas where they’re not supposed to go — like the highway. However, they’re not always 100-percent effective.

Seeking ideas on a new, potentially better method for keeping livestock out of the road, ADOT began a partnership with Arizona State University engineering students last fall. The collaboration, which was facilitated through the ASU Polytechnic School’s eProject program, challenged a team of four students to design a new cattle guard as part of their senior year capstone project.

“We were willing to put this problem out on the table and let the students use their young, vigorous imaginations to come up with a ‘better mousetrap’ because you never know where the best idea will come from,” said Southeast District Engineer Bill Harmon.

Harmon, who served on a technical advisory committee that provided guidance and feedback to the students throughout the two semesters that they worked on the project, said while what the students have proposed isn’t road-ready, it is an interesting start.

“They worked through problems and I was pleased with their thought process,” Harmon said. “They worked really hard at it.”

The students — Kevin Davidson, Hanqing Chen, Marissa Rubio and Zhemin Ni — developed their prototype and presented it late last month at the Polytechnic School’s annual Innovation Showcase.

What they came up with is a new type of mechanical cattle guard made up of four gates, which are elevated from the ground. An integrated weighted pulley system allows those gates to lower when a vehicle needs to drive through. At all other times, the gates are raised to prevent cattle and livestock from crossing.

The students also developed a noise and motion device meant to be placed near cattle guards. The device utilizes an ultrasonic sensor to detect approaching animals. Once an animal is nearby, the device will play a recording of a predator noise. A decoy animal also pops out of the structure to deter cattle from going into the road.

“It’s a pretty decent invention that may address low-volume driveways,” said Central District Maintenance Engineer Raul Amavisca, also a member of the project’s technical advisory committee. “During the process, the students learned how to work together to use their engineering skills and how to deliver on a project.”

ADOT benefitted from the partnership, too, says Kohinoor Kar of ADOT’s Research Center. He managed the project and oversaw the students’ progress.

“It was definitely a win-win for ADOT and the students, but it’s not a done deal,” said Kar, adding that the agency would need to complete further study and experimentation before the students’ ideas could ever be considered for implementation.

“They gave us some thought-provoking ideas,” he said. “This is just the beginning of thinking outside of what we already do.”

~Angela De Welles, Senior Communications Specialist

The ideas and prototypes developed by the students become the property of ADOT.
Cleaning out the workspace
5S method helps to spruce up, organize Happy Valley maintenance yard

The Workplace organization method known as 5S is in no way a conceptual or abstract sort of exercise — participants really have to roll up their sleeves and do the work in order to effect change. Several ADOT employees who call the Happy Valley Maintenance Yard their home base learned that lesson when they began 5S training earlier this month.

The instruction started in the classroom where Vincent LaBella and Marthajane Vincent, both ADOT Lean coaches from the Office of Continuous Improvement, gave a rundown on the basics, starting with the five steps outlined in 5S:

**Sort:** Determine the purpose of the area and sort out the necessary from unnecessary items.

**Set in order:** Work to remove all trash and plan new arrangement.

**Shine:** Clean the workplace regularly to maintain standards and identify defects.

**Standardize:** Create a place for everything to ensure easy access and identify nonconformance.

**Sustain:** Maintain the standard and continue to improve every day.

“The goal is that your workplace is organized in a way that totally supports what you do,” LaBella told the crews before they quickly began putting the process into practice and started working through the steps.

Members of the Happy Valley Maintenance Team tackled their guardrail repair truck and the North Valley Landscaping Team took on an irrigation component shed.

Happy Valley Maintenance Supervisor Ismael Regalado, Jr., explained the truck is used on an average of three times a week by his team when repairing guardrails and attenuators. It is loaded with tools and equipment, including a welder, generator, air compressor, jackhammer and lights.

“5S is something new,” Regalado said. “But this is a good way for us to see what we really need on this truck.”

The irrigation component shed, which houses a supply of pipes, connectors and other landscape watering system parts, was fairly well-organized to begin with, so the team took on the task of better utilizing the space as a way to help keep track of inventory.

After sorting their respective spaces, both groups met again in the classroom to discuss the progress with Vincent and LaBella.

“You can become complacent,” said Highway Operations Supervisor Kirt Cummings. “You don’t see it at first, but once you start looking at the space, you do see things you can get rid of.”

For more details about 5S and other Lean methods, visit the Office of Continuous Improvement webpage on ADOTNet.

—Angela De Welles, Senior Communications Specialist

“Workplace organization — called 5S — is a block in our Continuous Improvement foundation. We must have neat and organized workplaces in order to see what we have, what we need and how we can best meet the needs of our customers. Stockpiling supplies isn’t our goal and reducing inventories can actually save money, which can be directed into merit pay or needed equipment purchases. We should look for opportunities to de-clutter and reorganize when and where we can. We all feel better with an organized workspace.”

—John Halikowski, ADOT Director

The North Valley Maintenance Team works to organize the irrigation component shed.

From left, Troy Bice, Kirt Cummings and Juan Caballero listen during classroom training on 5S methods.

Vincent LaBella, left, works with Ismael Regalado and Larry Faidley, far right, to organize the team’s guardrail repair truck. Following the 5S process, the team will be able to load their tools faster and can ensure they have everything needed because it will become easier to see if anything is missing, LaBella explained.
PDCA teams take on ADOT issues

ADOT employees employing the Plan-Do-Check-Act (PDCA) method to tackle a series of problems throughout the agency gathered April 24 in Phoenix to reflect on the changes being made and to discuss lessons learned.

Director John Halikowski welcomed the problem-solving teams by commenting on how important the eight-step PDCA process is to the Continuous Improvement efforts the agency has undertaken.

“Real changes are beginning to happen. We’ve been left with many practices that have built up over the years. Now, we’re trying to get the Muda (waste) out,” Halikowski said. “There’s a mindset spreading through the agency that, yes, we do well, but we can continuously improve.”

The PDCA problem-solving method is used to improve processes and eliminate waste. Currently, it is being applied to 12 strategic areas throughout ADOT and is part of the agency’s overall Strategy Deployment — the Continuous Improvement technique for setting strategies and making a focused effort to implement them.

In the April issue of The Inside Lane, readers were introduced to three of the 12 problem-solving projects now underway. Here’s a closer look at an additional four…

Develop Services Evaluation Program

This team is working to develop a tool and a process that staff and leadership can use to compile information regarding all work done at ADOT. The goal is to answer essential questions about what we do and why we do it. This information will give leadership at all levels the information needed to assess and prioritize what the agency should be working toward given statutory requirements and the ADOT mission.

Currently, the team is working to gather information needed to assess the work being done by individual work units. Next, the team plans to work with the Creating Baseline Workforce Requirements team before piloting the process and tool.

“This project has the potential to provide a tremendous value to the department by giving leadership at all levels a clear window into the work that’s being done at ADOT, and that’ll ultimately help us to focus our resources more deliberately,” says the team’s process owner, Jay Chilton.

Create Baseline Workforce Requirements

By compiling and examining data about how work is performed, this team is working to develop a predictive model that will allow leadership to perform demand-based capacity scenario planning when it comes to determining workforce requirements. As part of its data gathering phase, the team has just completed a cross-agency functional assessment effort. In the weeks ahead, the team will use the PDCA problem-solving method to develop countermeasures, conduct a pilot program and check results.

Improve Project Development Delivery

The focus of this team is to improve project delivery. Essentially, projects are not always being delivered in the planned time frames. This team is tasked with determining the reasons why before developing countermeasures.

So far, the team has mapped the process and created a “Problem Attributes Matrix.” Next, the team will begin to analyze root causes.

“This team will develop standard work processes for Project Delivery and will impact all of ADOT from planning to construction by standardizing and streamlining the process,” says the team’s process owner Steve Beasley.

Improve Pavement Management System

ADOT does not currently have a long-range pavement management process — this team is working to create one.

Meeting once a week, members of the team have already developed a problem statement, reviewed a lot of data, mapped out the process and voted to rank some of the issues they’re facing. Next, the team will begin the root cause analysis on the top issues.

“Pavement is our most valuable infrastructure asset,” says team’s process owner Lonnie Hendrix. “Investing in its preservation is our largest operational budget item. It’s critical that we have a good process to manage that investment.”

~Angela De Welles, Senior Communications Specialist
OURS AGENCY works to plan, build and maintain the state’s transportation system — but we don’t just do it for motorists. We’re responsible for creating a system that accounts for the needs of bicyclists and pedestrians, too.

As drivers, we also need to remember that the roads aren’t always just for motorized vehicles. Likewise, when we’re bicycling or walking, it is critical for us to be attentive and careful of the vehicles we’re traveling near.

Sharing the road is an obligation we all have to each other.

If you’re looking to review the rules and improve your skills when it comes to sharing the road, ADOT has a great resource. It’s the ADOT Bicycle and Pedestrian Program website, azbikeped.org.

There, you’ll find plenty of helpful information, including guides focused on safety.

Even if you’ve been to the site previously, I encourage you to check it out again. Just recently, it has been updated and completely redesigned, allowing users to more easily find what they’re looking for.

In the coming weeks and months, an updated “Sharing the Road with Pedestrians” guide will be published on the site, along with a brand new, interactive Cycle Arizona bicycle user map.

Besides providing educational resources like the website, ADOT also studies how pedestrians and bicyclists use the state system. Improvements based on safety are often made, including the installation of countdown pedestrian signals and the increased use of pedestrian hybrid beacons — both examples of traffic control devices that better assist pedestrians in crossing a street or highway.

As always, I hope you’ll think about your own habits and take the opportunity to talk with your loved ones about this topic. Encourage them to make safe decisions.

-Dallas Hammit, Deputy Director for Transportation
Yuma Port of Entry makes it easier for customers to buy permits online

ADOT offers a plethora of services to the motoring public. From vehicle registration to inspections to road maintenance to emergency response services and everything in between, ADOT does a lot to keep Arizona’s people safe and transportation infrastructure strong. However, there are so many services that sometimes the lesser-known ones need a little boost to get the attention they need. The customer service representatives at the Yuma Port of Entry found a way to do just that with online permit purchases.

At the Yuma POE, there is a bulletin board where signs and advertisements are pinned for everyone to see. One of those advertisements told commercial customers they could purchase certain permits through ePro, ADOT’s portal for commercial permittees. Customer Service Representative Cathy Pfeiffer noticed that many customers asked about that information in particular and many CSRs answered the same questions over and again. In response, she designed a card with all the information customers needed to get themselves set up through ePro.

“The biggest benefit to the card,” Customer Service Representative Pam Villarreal said, “is that we’ve made our online services more accessible by advertising them. We tell one person and then they tell someone else and then they tell someone else.”

One challenge the card also addresses is getting information to the right person. Many of the drivers who pass through the Yuma POE either speak limited English or no English at all. By having a card to bring back to the companies they work for, however, there’s a greater chance that customers will learn they have online payment options that make acquiring permits faster and easier.

“The season is slow right now,” Villarreal said. “But our hope is to get the word out now to cut down on wait times when the busy season starts up again.”

But the CSRs at the Yuma POE aren’t leaving the effectiveness of the information card up to chance. They’re currently in the process of collecting survey responses on customer satisfaction and plan to tweak the card based on what they learn.

“We foresee an impactful result once the agricultural season commences, with less walk-in commercial permit purchases,” said Yuma POE Lieutenant Andrew Orozco. “With the fewer physical permit sales, officers and CSRs may focus more on weight enforcement and commercial inspections daily.”

Yuma POE officers and CSRs are taking advantage of the lull in the agricultural season to conduct local outreach, in both English and Spanish, to the commercial industry to advertise the online permit option through ePro. Their aim is to increase the percentage of online permits by 25 percent by the end of Fiscal Year 2017.

~Dani Weber, Senior Communications Specialist

Kaizen is a Japanese word that refers to any improvement responsible for eliminating waste or improving safety and quality. Changes made as the result of a kaizen, even the smallest ones, can often add up to big results. At ADOT, employees from around the state are implementing kaizens. Here’s a closer look at one of them...

Pamela Villarreal, Enforcement and Compliance Division

Sgt. Marco Veloz of the Yuma POE gives a customer information on how to purchase a permit online.
For as long as there have been roads in Arizona, there have been people who plan, build and maintain them. It’s those skilled women and men who have made this state’s transportation history a remarkable one. From 1912 when the Arizona Highway Department was first established, to right now, right here at ADOT, state employees have continuously done the work necessary to keep Arizona moving. Take a look back at some of their stories.

**TRYING TO FORCE** a cool nickname to stick can come off as a little desperate, so it’s a good thing ADOT never had to work too hard to make the “Stack” a regular part of anyone’s vocabulary.

At least, that’s the conclusion we’ve come to after reading through a pile of Newsbeats from the late 1980s. Back then, the agency’s employee newsletter was all over the “Stack” story, steadily featuring articles and photographs showcasing progress on the then-under-construction interchange.

Even from the very, very beginning — when work on the massive structure first got underway in 1986 — Newsbeat ALWAYS referred to it as the “Stack.” The repetition worked and the “Stack” stuck … most Phoenix-area drivers know it as that today.

We’re not sure what weatherman Jim Howl called the interchange. All we know is that he was there for the historic opening of the longest and highest ramp at the “Stack.” According to the September 1988 Newsbeat, the issue that originally featured these photos, traffic began utilizing the new ramp just minutes after Howl’s live broadcast.

“Workmen raced to remove barricades and uncover advance warning signs for the late night opening of the last of the ‘Stack’ ramps connecting the Papago and Black Canyon Freeways. The final ramp linking eastbound I-10 to northbound I-17 was opened to traffic shortly before 11 p.m. on August 11. The ramps that link the northbound and southbound lanes of I-17 to the westbound lanes of I-10 opened a week earlier. The opening of the first half of the multi-level traffic interchange allows a continuous flow of traffic on I-10 through Phoenix.”

If you’re a little confused and aren’t quite sure where the “Stack” sits, there’s an informative post on the [ADOT Blog](#) that gives the full rundown on all Valley freeway nicknames.

—Angela De Welles, Senior Communications Specialist
Interstate 11 and Intermountain West Corridor Study Update

The Interstate 11 and Intermountain West Corridor Study finished up a series of six public meetings on May 16. These meetings were a chance for the public to comment on the study and provide input on possible alternatives and options for the corridor. The commenting period will end on June 2, and then the I-11 study team will compile an Alternative Selection Report, which will then form the basis for the Draft Tier 1 Environmental Impact Statement. The Final Tier 1 Environmental Impact Statement and Record of Decision are expected by 2019.
If you've already liked ADOT's Facebook page, you might be familiar with "Where in AZ??" It is the photo-guessing game in which we ask our social media followers to identify the location where certain photographs were taken.

We typically get a terrific response on Facebook, so we're bringing the game here to The Inside Lane. If you think you know where this scene was snapped, send an email to InsideLane@azdot.gov with your best guess. There's a (small) prize for the first correct answer we receive, so act fast! We'll reveal the location in our next issue.

We received many creative entries in response to last month's caption contest, but there could only be one winner. Congratulations to Holli Grimaudo, manager of ADOT's commercial driver license and medical review program, who submitted the winning caption. For her efforts, she was awarded earlier this month with a copy of the Arizona Highways publication "Arizona: The beauty of it all."

The number of Kaizens submitted by ADOT employees so far this year is 2,774. For a complete breakdown by division, visit the Office of Continuous Improvement page on ADOTnet.
EVERY day, ADOT is making news around the state for its projects, initiatives and people. If you haven’t had time to read all the headlines, don’t worry, The Inside Lane has you covered. In Case You Missed It, here’s a look at some of the news stories written about ADOT this past month…

**Phippen, Perkins Drive roundabouts coming**  
*The Daily Courier, May 11, 2017*
Fans of traffic roundabouts will have reason to celebrate this spring. Opponents of the circular, signal-less intersections, however, might have a different reaction. By late spring/early summer, two separate widening projects on Highway 89 — each including a roundabout — are scheduled to go out for bid.


**A high-tech solution for the Valley's most dangerous intersections**  
*KTVK-TV, May 11, 2017*
Together with the Maricopa County Department of Transportation and ADOT, the University of Arizona Transportation Research Institute is testing connected-vehicle technology that allows cars to communicate with traffic signals and vice versa.


**ADOT using mechanically stabilized earth panels on South Mountain Freeway interchange**  
*Equipment World, May 11, 2017*
Mechanically stabilized earth walls are assembled like building blocks as large as 5-by-10 feet that incorporate the walls with reinforcing straps in building retaining walls under bridges. ADOT has used these walls in projects since the 1970s.


**ADOT facing detour over bridge with bats**  
*KVOA-TV 4, May 17, 2017*
As part of the 25-month Ina Road/I-10 project in Marana, ADOT crews will be replacing a bridge over the Santa Cruz River west of the interstate. Before work can begin on any such project, ADOT prepares an environmental assessment to determine if there are issues to address before or during the work.


**ADOT installing in-pavement sensors to monitor traffic flow**  
*KJZZ-FM, May 17, 2017*
The new sensors will help the Arizona Department of Transportation track freeway conditions and provide data that estimate travel times motorists see on freeway message boards.


For even more, check out the ADOT in the News section on ADOTNet, [https://adotnet.az.gov/adot-in-the-news](https://adotnet.az.gov/adot-in-the-news).