



## Chair's Corner

Darin R. (DRU) Underwood, Utah

NLPES Friends,

Thank you for the honor to serve as your Executive Committee Chair this year. I also want to thank our hosts from the [New Mexico Legislative Finance Committee](#) and those of you who attended our Fall PDS in Santa Fe. The level of commitment to, and excitement for, our profession was very evident there. The committee is looking forward to offering another year of virtual training opportunities, networking, and other resources. We are also planning for another in-person Fall PDS, so stay tuned!



This year I will take part in my 30th legislative general session as a staffer in the [Office of the Legislative Auditor General](#). I love legislative session and the entire process. It is like a *School House Rock* dream come true ("[I'm just a Bill!](#)" on the state level). I am so thankful for the joys and challenges of the legislative process and seeing the impact of legislative audits from our office as many of them become part of new legislation. Hopefully most of you have also experienced the genuine satisfaction of seeing the fruits of your independent performance auditing and program evaluation manifest in some form of legislative debate or even passed legislation.

For me, great satisfaction also comes with the connections made with legislators or others associated with our performance audit work. In addition, my hope is that we all make this a year where we not only seek to deepen the level of our auditing and evaluation, but that we seek to deepen our connections with people.

I think author David Brooks said it best:

"There is one skill that lies at the heart of any healthy person, family, school, community organization, or society: the ability to see someone else deeply and make them feel seen—to accurately know another person, to let them feel valued, heard, and understood" (*How To Know A Person: The Art of Seeing Others Deeply and Being Deeply Seen*, 2023).

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## In Memoriam: Greg Fugate

Shunti Taylor, Georgia

Greg Fugate, a dedicated public servant, colleague, and friend passed away on November 7, 2023 at the age of 50.

Greg was a staunch supporter of NCSL and NLPES, as evidenced by his 10 years of service on the NLPES Executive Committee, NCSL Legislative Staff Coordinating Committee, and NCSL Executive Committee. Here's Greg in his own words in 2016, as incoming NLPES Executive Committee Chair:

"I was asked recently about what some of the key factors are that have been critical to my career and professional growth. I can honestly say that it's organizations like NLPES and NCSL that have helped to make the difference for me.

I attended my first NCSL Legislative Summit in 2004 in Salt Lake City, only 3 years after having started my new job as a performance auditor. I was the only one from my office to attend, and I really didn't know what to expect. But looking back, this was a tipping point that allowed me to see that what I was doing was more than just a job—it was a career, a career in public service. This change in perspective helped me see the bigger picture, which was key to my job satisfaction, my retention, and ultimately appreciating the value of doing what I do."

During his membership on the NLPES Executive Committee, including his time as Chair, Greg went above and beyond in service to member states. He established [data access principles](#) in support of the work conducted by our offices on behalf of the legislative institution. He advocated for a more inclusive organization, recognizing that all audit shops (legislative and non-legislative) are of value to NLPES and its members. Because of his long-time service on the committee, and his willingness to remain involved even after this official service to the committee had ended, he was a reliable source of institutional knowledge and sage advice. He fostered a supportive environment for new committee members and was a trusted advisor for new committee chairs which made serving on the committee, and serving member states, a less daunting experience.



In addition to his role on the committee, Greg's "we're all in this together" perspective helped promote knowledge-sharing between member offices.

He could always be counted on to share the Colorado office's experiences during sessions at the fall PDS and, when contacted directly, Greg was always happy to share his insights, help brainstorm a problem, and provide resources. He was supportive and genuinely interested in our collective success.

Last August, the Georgia office hosted Greg and other members of the National State Auditors Association's peer review team. When we learned Greg would serve on the peer review team, we breathed a sigh of relief, not because we thought he'd go easy on us

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## To Yellow Book, or Not – That Is the Question

Jason Juffras, District of Columbia

The U.S. [Government Accountability Office](#) (GAO)'s [Government Auditing Standards](#), more commonly known as the "Yellow Book," are used by many NLPES member offices to guide their evaluation work. But adherence to the Yellow Book is not universal.



At our 2023 professional development conference, Gary VanLandingham, who directed the [Florida Office of Program Policy Analysis and Government Accountability](#) (OPPAGA), highlighted a 1970s "War of the Standards" within NLPES. The battle ended in 1975 when NLPES decided that members could choose their own professional standards.

In our 2019 "Who We Are and What We Do" survey, about half the respondents reported following the Yellow Book. Because of its prominence and influence in government auditing and evaluation, *The Working Paper* asked NLPES members for their views on the Yellow Book – pro and con.

Marcia Lindsay, deputy director of the [South Carolina Legislative Audit Council](#), notes that her office has always followed the Yellow Book. She adds that, "We consider the Yellow Book to be the gold standard – pun intended – and its use clearly differentiates our work from other entities conducting research or investigating an issue."

The [New Jersey State Auditor](#), David Kaschak, is required by state law to comply with the Yellow Book. Kaschak values the Yellow Book's emphasis on independence, noting that his office and its parent agency, the Office of Legislative Services, are non-partisan. Therefore, "Independence in reporting to the legislature is critical."

Similarly, [Montana Legislative Auditor](#) Angus Maciver regards the Yellow Book's emphasis on independence as essential, and rejects the idea that the standards are too prescriptive. For example, he points out that internal control analysis is important only when it is relevant to an audit's objectives. Maciver further cites the Yellow Book requirements for annual auditor training and triennial peer review as very valuable.

On the other side of the debate, Hal Greer, director of the [Virginia Joint Legislative Review and Audit Commission](#) (JLARC), believes that his office's long history of major reports covering entire agencies or major issues (such as "[Virginia's State Psychiatric Hospitals](#)") is aided by JLARC's non-Yellow Book status. He surmises that, "Yellow Book states tend to do narrower projects with a narrower focus."

Gary VanLandingham points to the Yellow Book's emphasis on independence as a reason why Florida's OPPAGA adopted the American Evaluation Association (AEA) standards in the 1990s. The Florida legislature wanted OPPAGA to work more closely with legislators and to analyze policy rather than management issues. OPPAGA leaders decided that the AEA standards (also known as the "Red Book") were more appropriate for this type of work.

Despite these differences in evaluation approaches, the distinction between Yellow and non-Yellow Book offices is more of a spectrum than a dichotomy. The common thread is a commitment to objective, non-partisan, and thorough audit and evaluation work backed by facts and evidence.

*Jason Juffras is a senior analyst in the Office of the District of Columbia Auditor and serves on the NLPES Executive Committee.*

## Out With the Old (Listserv), In With the New!

Darin R. (DRU) Underwood, Utah

I am excited to provide an informational update about how the membership of NLPES communicates!

For many years, NLPES has relied on a listserv service implemented by NCSL's internal IT department more than two decades ago. Over the last several years, this service has proven unreliable – whether it be unplanned service disruptions, spam firewalls, or maybe even the occasional solar flare. It's possible that you weren't aware, but you may have missed emails sent to & from the listserv. In short, the technology used to communicate across the membership has proven faulty.

Fortunately, NCSL has found a replacement for that technology called Breezio. We hope that this modern, supportable and more reliable platform will become a tool that all of us may use to engage more fully with our NLPES peers and for NLPES to house some of its structural information (bylaws, for example) and research data that will be helpful for all of us to have at our fingertips.

NLPES's Beta Testing Group is pre-populating the platform with some basic items, and we will be ready to send you the new tool in the coming weeks. The first message will come from [no-reply@groups.ncsl.org](mailto:no-reply@groups.ncsl.org) and will be a welcome message!

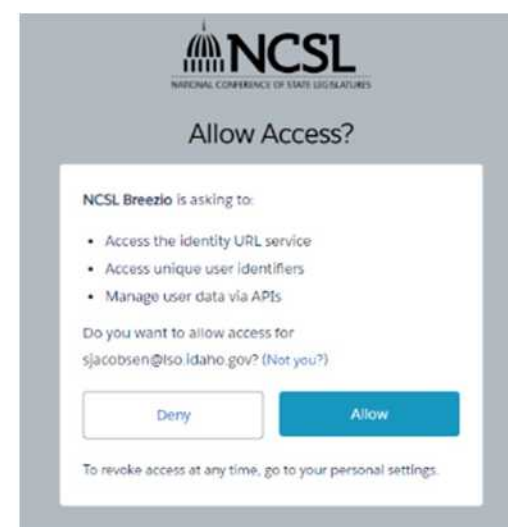
Here is what you will need to do to activate your membership in this new tool. 1) Make certain you know your NCSL login and password. 2) Visit [www.ncsl.org](http://www.ncsl.org) and log-in to your account. 3) Then in the address bar navigate to [groups.ncsl.org](http://groups.ncsl.org).

You will receive this question pop-up (see graphic at right) that asks for permission to access your name, legislature, and email address from NCSL's database in order to verify that you are indeed legislative staff.

Once you reach the main page you will see the NLPES Group. Please participate in discussions, read articles, and get involved! Notifications from the NLPES Group are set to only go out in a weekly digest. If you prefer more frequent communications, you may change your settings under Notifications.

The new NLPES Platform and the NLPES Annual Professional Development Seminar are the primary ways for our membership to share ideas, and so its importance to our organization cannot be understated. Best of luck to you all in your legislative sessions and please reach out to [Megan McClure](#) at NCSL with any questions!

*Darin R. (DRU) Underwood is Deputy Auditor General for Utah and the 2023-2024 NLPES Executive Committee Chair.*



## Report Spotlight: Evaluating the Sufficiency of the Gas Tax to Meet Louisiana’s Transportation Needs

Gina Brown and Irina Hampton, Louisiana

Louisiana is decades behind most states in funding its transportation needs. The state needs to identify new revenue sources or find ways to increase current revenue sources (such as raising Louisiana’s gas tax), index the gas tax for inflation, and account for more efficient vehicles. Otherwise, Louisiana’s transportation backlog of over \$18 billion in projects will only continue to grow.

[This initial report](#), which won a [2023 NLPES Excellence in Research Methods Award](#), and its [supplemental version](#), provided the legislature with information regarding the impact of not increasing the gasoline tax in over 30 years. The tax is the main revenue source for funding transportation projects, and recommendations on how to start addressing the backlog.

For example, if Louisiana’s 20 cents per gallon gas tax was indexed to the consumer price index since 1990, the gas tax would be 41 cents per gallon in 2021. It is important to note that during this time frame, the cost of building materials, labor, and other expenses increased by 144.8%.

One of the main focuses of this report was addressing losses in gas tax revenues due to more fuel efficient and electric vehicles because Louisiana’s five-year gas tax revenue forecast did not directly account for this phenomenon. We estimated that fuel efficiency and electric vehicles will cause Louisiana to lose \$563.3 million in gas tax revenues from 2023 to 2032.

In 2022, the [Louisiana Legislature](#) enacted road usage fees on electric vehicles. However, these fees were not high enough to offset revenue losses. As a result, the state could still lose \$59.3 million annually by calendar year 2032 from improved vehicle fuel efficiency technologies.

We developed a complex model that estimated what the gas tax and the user fee on electric vehicles would need to be to offset losses at the pump. Our model, which used STATA script, generated multiple scenarios for the state’s overall amount of gas tax collected and what the road usage fees would need to be. We clearly described our results to the legislature showing how it could modify the road usage fees to make up lost revenue. Using our model, we created multiple alternatives showing the impact of different fees.

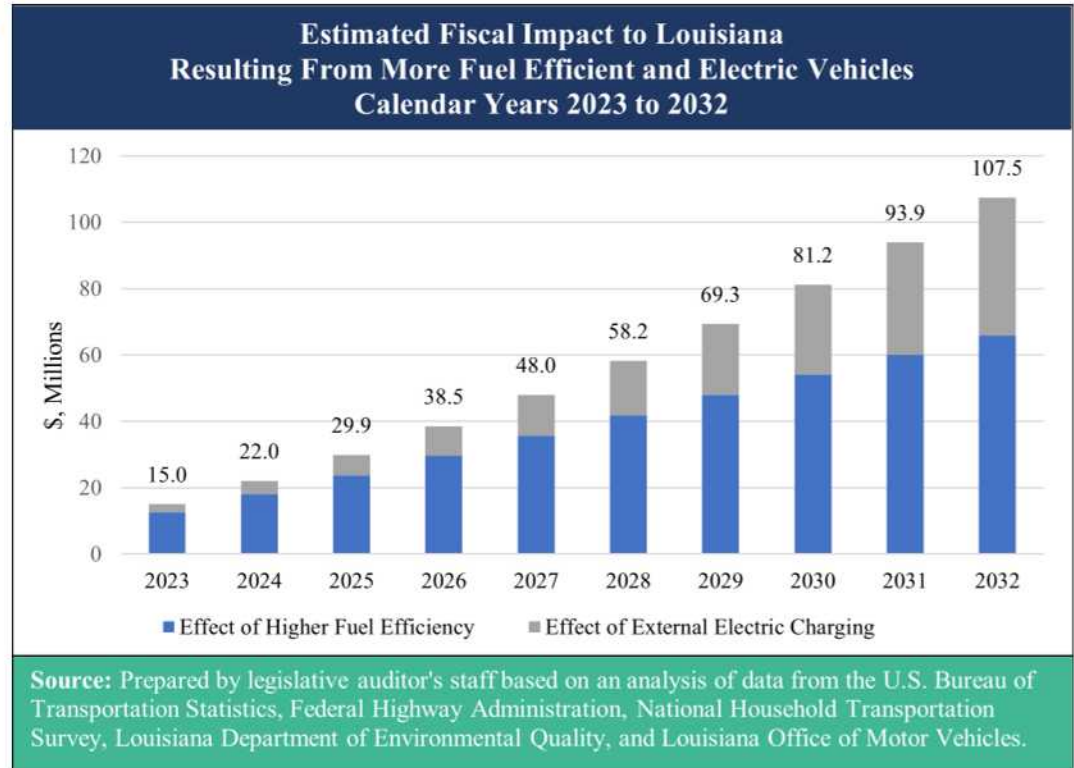
Overall, more fuel-efficient vehicles have a larger dollar impact on the state’s gas tax than hybrid and electric vehicles, and the new road usage fee did not address this problem. The exhibit below shows how much the annual road user fee would need to be for each vehicle type, depending on what type of revenue losses are being offset by the road usage fees.

Our model was based on the number of vehicles by type within the state, average useful life and replacement rates, fuel efficiency, annual vehicle miles traveled, gasoline- and battery-powered miles for plug-in hybrids, and average statewide fuel prices.

It was important for us to analyze the different vehicle types because the decision of whether and how the tax should apply to hybrid and electric vehicles was debated by the legislature. The usage fees that the legislature ultimately adopted resulted in an inconsistent approach that only partially addressed the issue because it treated plug-in hybrids and non-plug in hybrids the same way, and did not address revenue losses from increased fuel efficiency.

Our report articulated the problems with the new road usage fees and provided insight on how they could be corrected. After our first report was issued, the legislature asked us to issue another report that estimates what road usage fees would need to be to address the state’s backlog of transportation projects needed to bring the state’s highway system up to established quality, safety, and capacity thresholds over a 30-year period if the gas tax is not increased.

*Gina Brown is a performance audit manager and Irina Hampton is a senior performance auditor with the Louisiana Legislative Auditor.*



Vehicle Type	Amount	Mandated Road Usage Fees	Alternative 1: Offset Losses from More Fuel Efficient Vehicles	Alternative 2: Offset Losses from Electric Vehicles	Alternative 3: Offset Total Losses (Combines Alternative 1 + Alternative 2)
Internal Combustion Engine Vehicles	Annual Fee Per Vehicle	\$0	\$10	\$0	\$10
	Total Revenue Generated	0	43,935,192	0	43,935,192
Plug-in Hybrid Electric Vehicles	Annual Fee Per Vehicle	60	33	63	96
	Total Revenue Generated	23,817,322	13,185,974	24,807,192	37,993,166
Hybrid Electric Vehicles	Annual Fee Per Vehicle	60	66	0	66
	Total Revenue Generated	7,967,643	8,758,998	0	8,758,998
Battery Electric Vehicles	Annual Fee Per Vehicle	110	0	112	112
	Total Revenue Generated	16,446,176	0	16,765,573	16,765,573
All Vehicles Total	Total Revenue Generated	\$48,231,141	\$65,880,164	\$41,572,765	\$107,452,929

## Chair's Corner (cont.)

I truly believe that the value of our work is directly related to the relationships we foster with those we audit and evaluate. No doubt there are times when the relationship can seem more adversarial than one of connection or even respect. I get that the adversity is often the very nature of our work; but that doesn't mean we can't have it as a goal to work as mutual colleagues as much as possible.

Seeing people more deeply can begin in our own project teams and offices, and certainly within our NLPES community!

Over the holidays I re-read Dickens' classic novel *A Christmas Carol* (OK, I also watched *The Muppet's Christmas Carol* which may just be my favorite adaptation). I think this interchange between Scrooge and Marley's Ghost best captures my message:

"But you were always a good man of business, Jacob," faltered Scrooge, who now began to apply this to himself.

"Business!" cried the Ghost, wringing its hands again. "Mankind was my business; charity, mercy, forbearance, and benevolence, were, all, my business. The deals of my trade were but a drop of water in the comprehensive ocean of my business!"

I wish you all a great year as we undertake our business of impactful legislative audits and evaluations, as well as a year full of "Mankind [as our] business" as we seek to better see others deeply and be seen.

*Darin R. (DRU) Underwood is Deputy Auditor General for Utah and the 2023-2024 NLPES Executive Committee Chair.*

## In Memoriam: Greg Fugate (cont.)

(never that!) but because we knew he would "speak our performance language" and, since he valued both the review process and the performance audit environment, we knew we would receive thoughtful and useful feedback designed to spark improvements. Greg did not just check a box!

Greg and I, along with another colleague, had dinner on his last night in Atlanta. We reminisced on all the fun times we had while serving on the committee and we laughed...a lot. Greg spoke of wanting to get back involved in NCSL and hoped to attend the NLPES PDS in New Mexico. He looked forward to an upcoming camping trip and, someday, retiring to a small town in Utah. He spoke fondly of Arlo, his beloved dog, and 12-layer coconut cake in Charleston. It was the best of catching up with old friends and colleagues - happy shared memories, common language, and promises to do a better job of keeping in touch.

Greg announced his diagnosis the following week. I think back to that evening at dinner often and about all the plans Greg had to do more. By the end, through all the expressions of appreciation and gratitude, I hope Greg understood the lasting impact he had on so many of us through the kind, thoughtful, generous, and enthusiastic way in which he approached work and life in general. He loved this work. And he treasured his relationships with colleagues. I hope his dedication to the profession and the missions of NLPES and NCSL inspires us all to carry the torch in his honor.

*Shunti Taylor is the Deputy Director at the Georgia Department of Audits and Accounts.*

## Report Titles: Sizzle and Steak

Jason Juffras, District of Columbia

First impressions can be deceiving.

As *The Working Paper* began exploring how NLPES member offices write report titles, it seemed there were two main approaches: (1) titles that reference the report's subject ("Department of Revenue") and (2) titles that convey a key finding or message ("Department of Revenue Could Strengthen Tax Enforcement").

But reality turned out to be more complex. Offices using a subject-based title comprise a clear majority in NLPES, and there are nuances to each category.

The [Office of the District of Columbia Auditor](#) usually uses a message-based title, but that does not mean the titles are always critical (example: "[D.C. Nursing Homes Saw Better Outcomes than Elsewhere During Early Covid-19 Waves](#)"). D.C. Auditor Kathy Patterson states that, "I have a strong preference for summary titles perhaps because of my own background in journalism, and a desire to tell the story of the audit." She adds that, "I think it's a courtesy to try to tell the story in as few words as possible."

In next-door Maryland, the [Office of Program Evaluation and Government Accountability](#) (OPEGA) uses subject-based titles such as "[Evaluation of the Office of Student Financial Assistance](#)." OPEGA Director Mike Powell believes this approach "helps build your reputation as fact-based, objective truth-tellers." He also points out that evaluation reports have multiple findings and recommendations; therefore, condensing them into a short title may oversimplify.

**STATE OF NEW HAMPSHIRE  
MENTAL HEALTH WORKFORCE  
LICENSING**

Jay Henry, supervisor of performance audits in [New Hampshire's Audit Division](#), states that his office uses

"boring" titles to ensure consistency among its financial and performance audit reports (the former typically have subject-based titles).

He adds that, "We're not there to make a name for ourselves or have a splashy audit ... The audits are really written for management to make changes." In addition, the state legislature typically requests audits of large divisions or entire departments - a broad scope that does not lend itself to short summary titles.

Patrick Dean, assistant director of the [Alabama Commission on the Evaluation of Services](#) (ACES), expresses similar views. ACES usually uses subject-based titles (such as "[A Follow-Up Evaluation of the Teacher Workforce](#)") because, "We're very cautious as an independent evaluation agency. We're not trying to play the media 'gotcha' game and draw eyeballs." Dean adds that ACES uses stronger section titles and other sub-headings in its reports to clearly convey findings.

Based on feedback from legislators, Utah's [Office of the Legislative Auditor General](#) recently began adding report subtitles to describe more clearly the contents of its reports. A recent example of the new style is "[A Performance Audit of Utah Housing Policy: A Case for Strategic Statewide Planning and Accountability](#)." Utah's approach therefore reflects a possible middle ground.

Our supreme audit institution (yes, that is a [real term of art](#)), the U.S. Government Accountability Office (GAO), usually conveys an overarching message, but in a cautious, measured tone. A recent example is, "[Cybersecurity: Federal Agencies Made Progress, but Need to Fully Implement Incident Response Requirements](#)." Nevertheless, some GAO report titles summarize only the subject of the report, exemplified by "[Troubled Asset Relief Program: Lifetime Cost](#)."

Ultimately, the appropriate title may be context-dependent, reflecting not only the wishes of our legislative overseers, but also the evaluation objective, scope and methodology, and the findings and recommendations that emerge from field work and data collection.

*Jason Juffras is a senior analyst in the Office of the District of Columbia Auditor and serves on the NLPES Executive Committee.*



## Looking Back on the 2023 Professional Development Seminar

Adam R. Fridley, West Virginia

The National Legislative Program Evaluation Society hosted its [2023 Professional Development Seminar](#) in beautiful Santa Fe, New Mexico in the waning days of October into early November. The PDS brought together more than 130 performance auditors and program evaluators from 27 states for three days of programming designed to foster professional development and growth and afford participants the opportunity to network and share ideas with peers from other states.

Participants at this year's PDS took part in 4 general sessions and had their choice among 26 different concurrent sessions. Concurrent sessions at this year's PDS presented attendees with a number of sessions dedicated to discussing specific audit and evaluation topics, such as evaluating school districts, crime and public safety, homelessness and homeless supports, procurement, and pandemic spending.

If you missed out on the fun, or were able to attend and just want a refresher on any of the topics covered at the 2023 PDS, all presentation materials and contact information for each panel's presenters can be found via the NCSL app or provided upon request through our NCSL liaison, [Megan McClure](#).

Our sincerest thanks to NCSL, the NLPES Executive Committee, all of our wonderful panelists at this year's PDS, and of course, our gracious hosts in New Mexico for their hard work, dedication, and the warm welcome that made for a terrific professional experience.

*Adam Fridley is an audit manager with the West Virginia Legislative Auditor's Office and serves on the NLPES Executive Committee.*

## The Startups

Mike Powell, Maryland

Ever wondered what it's like to start a new program evaluation office? Marcus Morgan and Regina Birchum can tell you.



Marcus is the Director of the [Alabama Commission on the Evaluation of Services](#) (or ACES), and Regina is the Interim Director of [Oklahoma's Legislative Office of Fiscal Transparency](#) (or LOFT). Both have been with their offices since they began, in 2019 and 2020, respectively.

Marcus had come to the Alabama legislature from the private sector, and spent a few years piloting different approaches to helping the legislature know how well a program was working before settling on ACES. He says their primary objective is to advise the governor and legislature on how to "change the culture of policymaking from one that is focused on who we serve, to what we accomplished by serving those people." One evaluation found that former inmates who had received job training in the correctional system were not working in the fields for which they'd been trained, but instead were working low-skill, low-wage jobs. Marcus and his small staff of three have also found that, contrary to conventional wisdom, there wasn't a statewide teacher shortage in Alabama, but pockets of shortages in certain areas and disciplines.

Regina has also engaged in what LOFT calls "mythbusting". She says "there's quite often a narrative or an assumption, and we'll say, 'what's that grounded in?'" She came to LOFT from a startup nonprofit (after spending 15 years in government), to meet the legislature's interest in a GAO-like office that helped support data-driven policymaking. A fiscal crisis (that turned out not to be a crisis) in Oklahoma's health department convinced the legislature they needed greater oversight over agencies.



Some of Oklahoma's work has led directly to other evaluations. After an evaluation of COVID relief spending, LOFT was asked to evaluate state parks - "we thought, very naively, won't this be a nice break?" says Regina. That project uncovered a no-bid contract that was \$12 million over budget, and led to an evaluation of central procurement, which then led to an evaluation of the administrative services office.

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## Spatial Analysis Using Zip Codes

Victoria Hall, Maryland

The U.S. Postal Service (USPS) created the [Zone Improvement Plan](#) (ZIP) Code in 1963 to speed mail sorting. It took Mr. Zip to win over some holdouts (my grandparents among them), but ZIP Codes are now common in datasets outside of mail delivery, which makes it tempting to use them for spatial analysis. But where mapping precision is needed, use caution. Here's why.

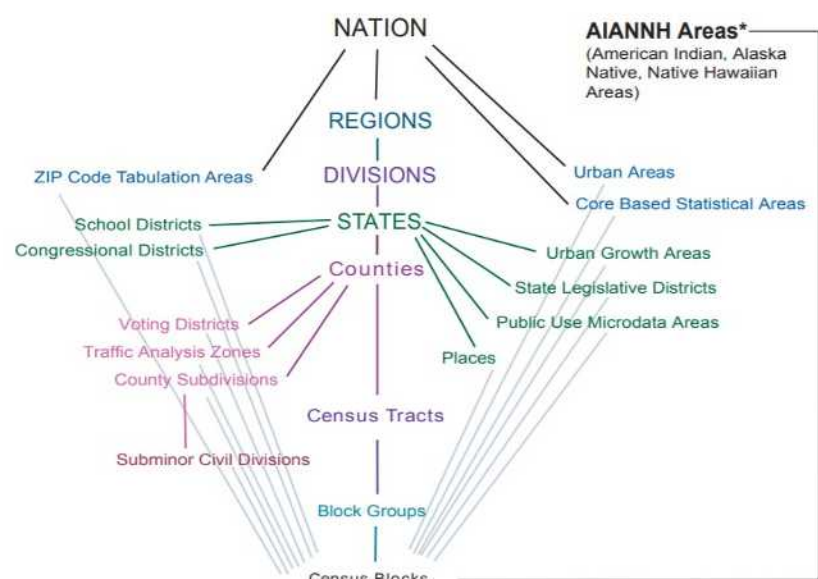
The basic nature of ZIP Codes is that they are really *delivery routes* - a list of addresses grouped for efficient mail delivery - and not bounded geographic shapes like a county or a state.

Consider a neighborhood bisected by a busy highway. A postal carrier would be challenged to deliver to homes on both sides of that road without driving to the next safe turnaround or playing Frogger with their lives. To make delivery faster and safer, USPS may assign addresses on each side to different delivery routes, and hence, to different ZIP Codes. ZIP Codes may even cross state lines. The resulting ZIP Code may be unrelated to any other political, jurisdictional, demographic, cultural, or natural characteristics.

Because many people want to combine data associated with ZIP Code data to census data, the U.S. Census Bureau has helpfully defined [ZIP Code Tabulation Areas](#) (ZCTAs) by aggregating Census Blocks to approximate ZIP Codes.

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Standard Hierarchy of Census Geographic Entities



## The Startups (cont.)

Both offices have already evolved. ACES found their early reports were too detailed. Marcus says they have “shortened (their) reports tremendously, and focus(ed) on the presentation”. Oklahoma has gotten better at refining their scope before they begin a project, and engaging with stakeholders. Incredibly, LOFT had to hire 10 staff and deliver on a workplan of 11 projects in their first year.

Which, by the way, was when the COVID pandemic arrived. Perhaps surprisingly, both Marcus and Regina say the pandemic had little impact on their offices, although both noted the pressure of trying to keep staff safe. Marcus also cited the challenge of having to deliver presentations virtually.

Both are already looking to the future. ACES is looking to modestly expand staff so they can add policy expertise and increase the number of projects they can deliver. LOFT completed its first stress test of the State budget, something they plan to do regularly, and they’re looking for an increased role in advising on the implementation of recommendations.

Unsurprisingly, both Alabama and Oklahoma relied on NLPES and NLPES member organizations for advice and guidance in launching their startup program evaluation offices. New Mexico’s Legislative Finance Committee was helpful to both. John Turcotte, former National Staff Chair of NCSL, personally advised Oklahoma.

*Mike Powell is the Director of Maryland’s Office of Program Evaluation and Government Accountability, and serves on the NLPES executive committee.*



## Staff Happenings

**Kara Collins-Gomez** was appointed by the Florida Legislature as the coordinator for the Office of Program Policy Analysis and Government Accountability.

**Eric Beverly** was selected as the Executive Director of the Texas Sunset Advisory Commission.

**Regina Birchum** is serving as the Interim Director for the Oklahoma Legislative Office of Fiscal Transparency.

Finally, a warm welcome to **Adam Fridley** (West Virginia) and **Mike Powell** (Maryland) as newly elected NLPES Executive Committee members, and a big thanks from the Executive Committee to **Eric Thomas** (Washington) for serving as the 2022-2023 chair.

## Spatial Analysis Using Zip Codes (cont.)

Census Blocks are the smallest statistical entities maintained by the U.S. Census Bureau. Like Legos, Census Blocks can be used to build good things, but maybe not your pillow, and depending on the use case also maybe not your geospatial analysis. Here’s the challenge: think of each address in a ZIP Code like colored dots on a map, and the Census Blocks like Legos. You can’t move the dots or cut the Legos, and you must connect the Legos into a shape that covers as many dots of the same color as possible.

USPS does a great job with this: most ZCTAs look a lot like the ZIP Codes they try to approximate. By one estimate, roughly half of all ZCTAs share over 90% of their area with their associated ZIP Code, and over two-thirds of ZCTAs share at least 80% of their area with their ZIP Codes (Langer, 2016). But exceptions abound – and also can creep in over time since as USPS may update ZIP Codes any time but the U.S. Census Bureau draws ZCTAs just once a decade.

You might notice that some mapping applications (like Google Maps) will create a bounded area (shape, polygon) for a ZIP Code you type in. These can work to create a geocoded polygon to map your data associated with a ZIP Code. Just know that the algorithms vary by application, and no bounded shape approximating a ZIP Code is 100% “right” — because ZIP Codes aren’t really bounded shapes.

A ZIP Code may also have noncontiguous delivery areas. From the postal carrier’s perspective, this route has them delivering to one group of addresses, then traveling some distance to deliver to another group of addresses. Translating such a route into a ZCTA (or other polygon) may result in multiple, separate polygons associated with one ZIP Code. When you join data based on ZIP Codes to ZCTAs with multiple polygons, to which ZCTA polygon should the new data be joined? And if a spatial analysis is based on density per square mile, have land areas for all polygons comprising the ZCTA been included? Lots of smart people have thought about these conundrums and you can find workarounds. For example, consider displaying ZIP Code-based data as points (rather than polygons) that offer broad insights only. In sum, map ZIP Code data with care and avoid implying more precision to your map than your dataset warrants.

*Victoria (Tori) Hall is a principal evaluator with Maryland’s Office of Program Evaluation and Government Accountability.*

*The Working Paper* is published two times a year by the [National Legislative Program Evaluation Society](#), a professional staff association of the National Conference of State Legislatures. NLPES serves the professionals of state legislative agencies engaged in government program evaluation. The purposes of NLPES are to promote the art and science of legislative program evaluation; to enhance professionalism and training in legislative program evaluation; and to promote the exchange of ideas and information about legislative program evaluation.

*The Working Paper* is produced by the NLPES Communications Subcommittee:

- Darren McDivitt (Texas), chair
- Adam Fridley (West Virginia), member
- Mike Powell (Maryland), member
- Darin Underwood (Utah), member

Please contact [Darren McDivitt](#) with any article suggestions, comments, or questions.