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THE STATES AND LOCALITIES
July 2019

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1. Walgreens internal analysis, Patient Outcomes Performance Department. January 2019. **2.** Taitel MS et al. *Patient Prefer Adherence*. 2017;11:373-379. **3.** Akinbosoye OE et al. *Popul Health Manag*. 2016;19(6):454-461.

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Dialogue


Who's the Boss?

In Defense of Managers

In his May Assessments column, "Who's the Boss?", Alan Ehrenhalt extolled the virtues of mayoral government, and of strong mayors in particular. "The best strong mayors," Ehrenhalt wrote, "are the heroes of urban history." While he noted that the city manager system is the most popular form of government in America, in place in 55 percent of U.S. cities, he also pointed out that 21 of the nation's 30 biggest cities operate under some form of strong-mayor regime. The original, rigid form of city manager government, Ehrenhalt said, "isn't practical now in any city of decent size." Some readers disagreed.

As a strong advocate of council-manager government, it is with pride that I can point out that two-thirds of Moody's AAA-bond-rated communities operate under the council-manager form. Council-manager cities, according to the IBM report "Smarter, Faster, Cheaper," are nearly 10 percent more efficient than cities with "strong" mayor forms of government. And the majority of All-America City Award recipients for the past five years have been council-manager.

Residents of council-manager communities can expect to see a professionally qualified staff led by an appointed manager who is ethically compelled to tell the governing body what they need to know rather than what they want to hear. Residents can expect to see an appointed manager and senior staff that find themselves responsibly at the intersection of political and administrative arenas, facilitating the connection between what is "politically acceptable" in the community and what is "operationally sustainable." These two basic elements of effective governance could occur under any form of government, but I deeply believe that they are embedded within the council-manager structure. This does not mean that every council-manager government does these things well, but if they do not, it is not the fault of the structure, which is designed to promote effectiveness.

Council-manager government is fundamentally about structure—the place in which democratic values, processes and professionalism are embedded. This structure and these qualities cannot exist when communities seek purely "heroic" leadership.

Consider all the challenges we face, things like affordable housing, homelessness, opioid abuse and climate change. No "heroic leader" is going to solve these issues. Rather, they require leadership and organizational structures that foster a culture of experimentation anchored in trusting relationships between the governing body and an independent administrative staff.

"Heroic" mayors capture our attention. But I would rather focus on a system that dependably provides access to democratic values; that promotes professionalism; that facilitates the connection between politics and administration. I strongly believe that these are the characteristics of the council-manager structure, not the mayor-council form.

—John Nalbandian, Professor Emeritus, School of Public Affairs & Administration, University of Kansas; former mayor of Lawrence, Kan.

Housing Matters

Is the solution to the nation's housing problem simply to add more units? No, argued Nicole Gelinas, in her Transportation and Infrastructure column in May, "What the YIMBYs Don't Get." Relaxing zoning laws to "let people build anything anywhere," she wrote, "is a simplistic reading of supply and demand, and it doesn't work." In particular, she pointed to Manhattan, which has added significant new housing in recent years, yet home prices continue to increase.

Nicole Gelinas writes that the law of supply and demand does not apply to housing because "the area around Central Park South has become a veritable forest of super-tall residential towers, each well above 1,000 feet," and yet Manhattan continues to become more expensive.

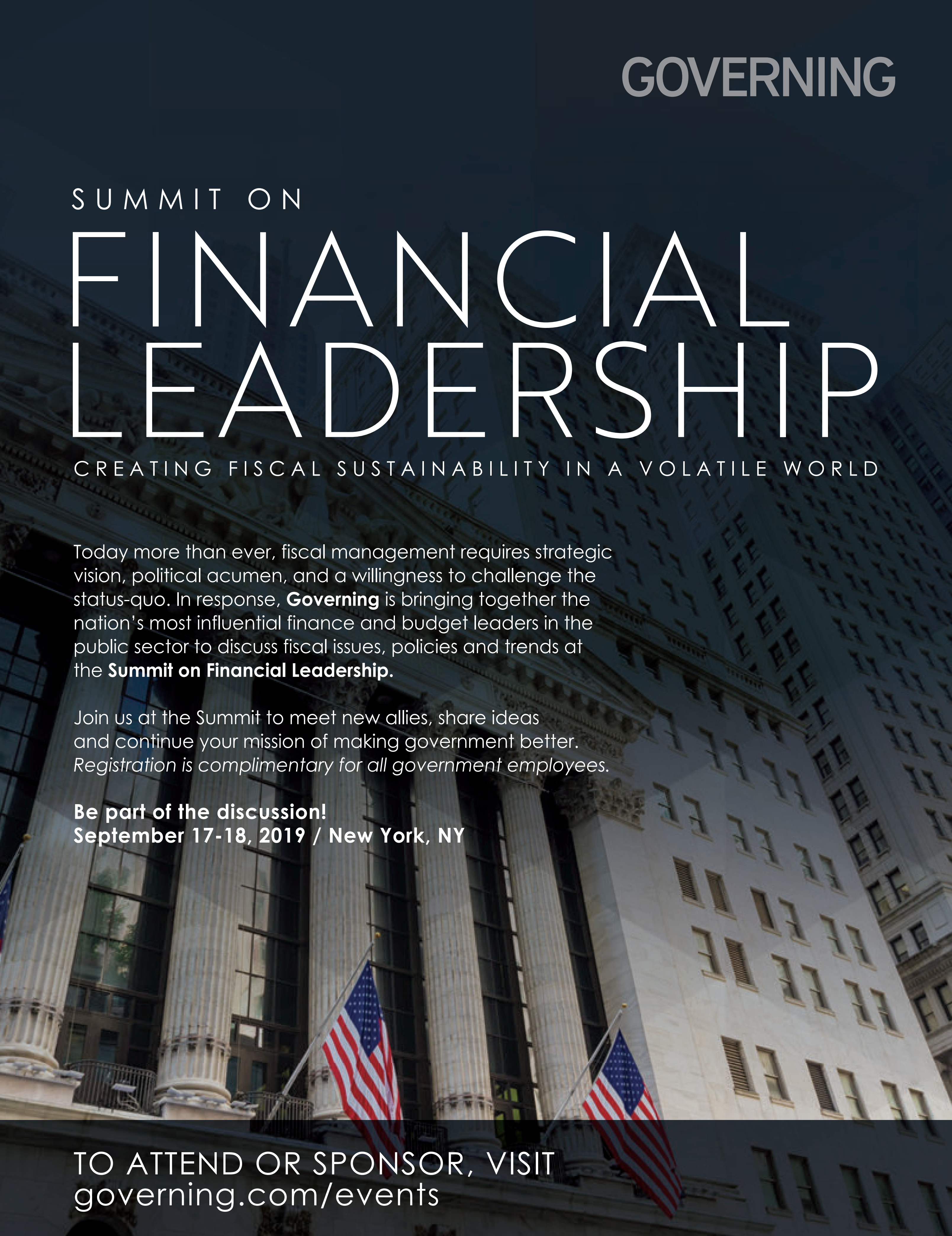
Evidently, Gelinas believes that New York has permitted enough housing to satisfy demand because some new buildings have been built. But this theory seems implausible for two reasons.

First, housing construction has actually slowed down in New York in recent decades. In 2017, just over 25,000 units were built in New York. By contrast, in 1963, 60,000 units were built. In fact, in every year between 1960 and 1966, over 30,000 units were built—a record matched not once since 1966.

Second, New York lags far behind some less expensive cities in housing construction. According to American Community Survey data, 59,294 housing units have been added in New York since 2010, or roughly 72 per 10,000 residents. By contrast, Seattle has added about 19,462 units, or 320 per 10,000 residents. Houston has added 46,203, or 220 per 10,000 residents. And just as the law of supply and demand would suggest, these cities are cheaper than New York.

—Michael Lewyn, Director of the Institute on Land Use and Sustainable Development and Associate Professor of Law, Touro College

***Governing* is a fan of John Oliver's late-night HBO show *Last Week Tonight*, in which he tackles important news stories with insight and cutting comedy. So we were happy to see when, in a recent episode on the problems with America's system of medical examiners and coroners, Oliver cited our August 2018 story on the topic, "Dead Reckoning," by Mattie Quinn.**
Thanks for the mention, John!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Gentrification looks different in different places. Brooklyn's Dumbo neighborhood has grown in ways that are distinct from other enclaves nearby.

THE BREAKDOWN

41

The number of states that collected more income tax revenue last year than they did before the 2008 recession, even when inflation is taken into account.

15

The number of states in which at least one legislative chamber has passed a resolution that declares pornography consumption a public health crisis.

$137M

The amount of money rural hospitals in Tennessee have lost in the last three years, a period in which 10 of the hospitals have closed.

1 in 3

The number of villages in Alaska that have no local police protection of any sort.

SOURCES: *USA TODAY, THE TENNESSEAN, ANCHORAGE DAILY NEWS*; IMAGE: SHUTTERSTOCK.COM

Chucking the Chalk

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For nearly a century, cities have enforced parking restrictions by chalking the tires of parked cars, making it easy to determine which ones are abusing the usual two-hour limit. It turns out that this practice is unconstitutional, at least in a handful of states.

In 2012, the U.S. Supreme Court ruled that police had violated the rights of a suspect by attaching a GPS tracking device to his car and monitoring his movements for 28 days. The decision was unanimous, but the justices were divided 5-4 over what the problem was. Four justices thought that ongoing surveillance violated privacy rights. The majority, however, ruled that the issue was trespassing: Police had physically touched the suspect's car.

This spring, the 6th Circuit Court of Appeals applied that precedent and logic, finding that the practice of chalking tires in Saginaw, Mich., was unconstitutional. "There has been a trespass in this case because the city made intentional physical contact" with vehicles, the court concluded. The ruling applies throughout the 6th Circuit, which includes Kentucky, Ohio and Tennessee, as well as Michigan. Saginaw is appealing the decision, but for now, cities throughout the region are putting away their chalk. "It's unfortunate because as a business owner, you don't want people sitting in those parking spots for 12 hours," says Tom Miller Jr., vice president of Saginaw Future, an economic development agency. "It puts a strain on the municipality, because then the alternative is to hire more parking folks."

They may not have to hire more people, but cities and counties will have to come up with something to replace chalk. They can certainly put in meters, but there are more modern technologies available. Enforcement vehicles can be equipped with scanners that detect license plate numbers. Traffic cameras can be similarly configured to monitor cars. Sometimes officers take out their phones and snap pictures of plates. "Parking enforcement is going increasingly digital," says C.J. Gabbe, an urban planning professor at Santa Clara University in California. "Cities are increasingly trying to use technology in the on-street parking game."

It's possible that the court decision will nudge more localities to modernize their parking enforcement. There are costs upfront, but they'll be able to use the digital information they glean to get a better grasp of how parking is used and what the community's needs really are. That's a potential silver lining for Saginaw and other cities. But future judges may have to decide whether constant digital parking surveillance is somehow less intrusive than a stripe of chalk. *—Alan Greenblatt*

STREAMLINING LITTLE ROCK

All governors have lots of people who answer to them. Often, too many. When Asa Hutchinson took over as governor in Arkansas in 2015, he soon realized he had more departments than he could effectively oversee. He's managed to slice that number substantially, without laying anyone off.

This year, the legislature approved a bill promoted by the governor to simplify the bureaucracy by dropping the number of cabinet agencies from an unmanageable 42 down to just 15. No programs were eliminated or functions canceled. It was an exercise in trying to get the flow chart flowing. "When the organizational structure is so discombobulated," says state Rep. Andy Davis,"the governor cannot effectively reach into those agencies and get thousands of employees going where he wants them to go."

In addition to the cabinet-level departments, Arkansas had more than 200 smaller agencies, boards and commissions. Hutchinson started doing mergers of a few of those almost as soon as he took office in 2015. Reorganizing the entire government required more work. Hutchinson knew this from experience. He served as an original undersecretary at the federal Department of Homeland Security when it was created after the 2001 terrorist attacks, combining 22 separate agencies into a sometimes-unwieldy bureaucracy.

Hutchinson took his time in Arkansas, creating an advisory board that spent countless hours talking with agency directors about what they did and which other agencies they most often interacted with. The governor surveyed legislators and held public forums around the state. He also made sure that state employees had a seat at the table while the new structure was being designed. "Right now, communication just doesn't reach all these silos," says John Bridges, executive director of the Arkansas State Employees Association, which supported the effort.

Although the plan was designed over a period of years, it had to be implemented in a hurry. Hutchinson signed the bill in April, putting the new structure in place by July 1. Instead of separate departments overseeing banking, insurance, workforce training and economic development, for instance, all those functions will now be housed within a new Department of Commerce.

No doubt there will be bumps along the way. There always are. Arkansas has experienced these in the past. In 2005, Gov. Mike Huckabee merged the departments of Health and Human Services. His successor, Mike Beebe, split them back apart just two years later, determining that the state's two largest departments were simply too massive to be run as a single entity. (They're still separate under the Hutchinson plan.) Way back in 1971, Gov. Dale Bumpers merged 60 agencies into 13 cabinet departments, but in the years that followed, their numbers bloated back up. Every program had a champion and, it seemed, supporters who believed its mission could be best accomplished independently.

If there's reason to be skeptical about whether the current effort will make a permanent difference, Hutchinson has taken pains to ensure that streamlining will be an ongoing mission. Arkansas now has a Department of Transformation and Shared Services. It will support every other department by managing personnel, buildings, procurement and technology. The "transformation" part comes from its other mission, which is to be constantly looking for ways to make things more efficient across the whole of state government.

Combining agencies and functions is always harder in reality than on paper. Still, at least Hutchinson can now convene cabinet meetings where everyone can find a seat. "It was just really not a good administrative structure," says Amy Fecher, who's overseen the reorganization for the governor. "Commissions and agencies were not given really any direct supervision, or the support to do the work." *—Alan Greenblatt*

DAVID KIDD

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THE DISAPPEARING CAP ON KIDS

The welfare family cap may be an idea whose time has passed. Over the last quarter-century, about half the states have put this sort of limit on welfare benefits, which means women who have a certain number of children receive no additional dollars when they give birth to another one. But at least eight states have repealed the policy since 2002, including three in the past three years.

The 1996 federal welfare law allowed states to impose the cap on families. By that time, California and New Jersey were already doing it. Increasing the size of a mother's welfare check for a new birth, it was thought, only encouraged women to have more children. "The impetus behind family caps was that if you give more money for larger families, it would encourage non-marital fertility and encourage dependence," says Greg Acs, vice president of income benefits and policy at the Urban Institute.

If reduced family size was the plan, it didn't work. Numerous studies have found that the cap has not led to any decrease in fertility or family size among recipients of cash welfare. Even in places where it looked like fertility had dropped, Acs says, it turned out that women simply didn't bother reporting children to agencies when the kids wouldn't count toward their benefits.

"I grew up in poverty," says Massachusetts state Rep. Marjorie Decker, sponsor of a family cap repeal that became law in April over Gov. Charlie Baker's veto. "My family never got the memo that if you have more babies, you'll get rich."

Advocates argue that caps actually hurt children lower in the birth order by depriving them of support. The benefit for additional children is not especially generous. In Massachusetts, it's $100 per month. That may cover the cost of diapers, but leaves hardly anything for food or clothing. In other states, the extra benefit is much lower. Still, for families living in deep poverty, any additional dollars are helpful. "Taking resources away from children when they're born has never been a successful strategy," Decker says.

In Massachusetts, only one legislator in the House and one in the Senate voted against Decker's bill. California and New Jersey have both lifted their caps in the past two years, joining several other states, including red states such as Oklahoma, Nebraska and Wyoming. Fifteen states still have caps on the books, but the momentum toward repeal could encourage more to lift them. "I believe this policy is in its final days," says Jessica Bartholow, of the Western Center on Law & Poverty, "because it has proved to be a failed intervention." *—Alan Greenblatt*

A gun rights amendment in Iowa has been delayed by at least two years, thanks to a clerical error.

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A Not-So-Minor Mistake

Running elections is the highest-profile part of a secretary of state's job. But in most states there are myriad other responsibilities, such as handling business licenses, overseeing notaries, and performing a wide variety of disparate clerical functions. Most of those are mundane, but screwing them up is not a victimless mistake.

This year, a clerical error by the Iowa secretary of state's office set back adoption of two constitutional amendments by at least two years. "Whether it's by oversight or intent, the secretary of state shouldn't have effectively a pocket veto over otherwise duly passed constitutional amendments," says state Sen. Zach Whiting.

Here's what happened: Last year, the Iowa Legislature approved two potential amendments. One would have clarified the gubernatorial line of succession. The other would have enshrined Second Amendment-style gun rights language in the state constitution, guaranteeing the right to keep and bear arms and effectively eliminating gun control statutes.

In Iowa, constitutional amendments have to be passed by two consecutive legislatures, then go to voters for final approval via ballot measure. There's one other small step, however, and it went wrong. The state constitution requires that when an amendment has been passed the first time, voters must be informed at least three months ahead of the election in which they'll elect a new legislature. To make it official, the secretary of state is in charge of publishing notices in newspapers.

This time, the publishing requirement fell through the cracks. Apparently, the error was innocent. Legislators send over official documents in folders known as "bill jackets," but there's no outward difference in appearance between a piece of paper for routine filing and a constitutional amendment that needs to be published. The secretary of state's office missed the deadline. Secretary Paul Pate, a lifetime member of the National Rifle Association, apologized to the governor, legislators and the Iowa Firearms Coalition, which backed the gun rights amendment.

The damage had been done. The clock has been reset and the amendment, which likely would have appeared on the 2020 ballot, won't appear before 2022, at the earliest. The same thing has happened before. Back in 2004, Secretary of State Chet Culver failed to publish notice about a proposed amendment to strike the words "idiot" and "insane" from the state constitution in describing mentally incompetent people who aren't allowed to vote. The process had to start over and that amendment wasn't approved until 2008.

In response to all this, legislators this year voted to take away the duty of publishing notices from the secretary of state, making themselves responsible for the task. Presumably, amendment sponsors will be motivated to make sure it gets taken care of.

Legislators have cut out the middleman, but ended up rubbing a little salt in the secretary of state's wounds. While his office will no longer have the authority to publish notices, the price of taking out newspaper ads will still come out of his budget. *—Alan Greenblatt*

Assessments

BY ALAN EHRENHALT

The Fables of Gentrification

A lot of what we think we know about it turns out to be wrong.

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Most likely you've heard the old Yogi Berra line about the restaurant in St. Louis: "Nobody goes there anymore. It's too crowded." If Yogi were still around, I wonder if he might make a similar remark about cities: "Nobody wants to live there anymore. They're too expensive."

The two Yogi-isms make roughly the same amount of sense. Cities become expensive because people do want to live there. They get even more expensive when there's not enough good living space to meet the demand. That's pretty much the whole story. Virtually every attempt to make it more complicated is, well, an unnecessary complication. Why the demand exists, especially among millennials, is a legitimate question. But it doesn't change the fundamentals.

Still, it's helpful to take a look at some of the most exotic gentrification theories out there. The economist Joe Cortright recently drew up a list of more than a dozen that have been seriously proposed for why central cities are getting pricey—why they are gentrifying.

Here are some: too many art galleries; too many gourmet restaurants; too many Whole Foods stores; too much barista-brewed coffee; too many fancy parks; too much school choice. Now, a few of these phenomena do have something to do with the attraction of central cities to affluent young professionals, but they tend to follow the arrival of newcomers with money. They are a response to the demand for urban living, not the cause of it.

Still, as Cortright makes clear, the proliferation of dubious propositions about urban revival has made it difficult to determine exactly what is going on in many of America's central cities. Just lately, however, a careful study of the whole gentrification issue has emerged to help us separate myth from reality. Titled *American Neighborhood Change in the 21st Century*, it was produced by the Institute on Metropolitan Opportunity at the University of Minnesota Law School.

Much of the research is technical, but the conclusions are difficult to dispute: Gentrification is not the dominant feature of American urban life at this point. It is concentrated in a relatively few cities, most of them along the coasts, with Washington, D.C., perhaps the most striking example. Far more urban change is being created by poorer people and immigrants moving to suburbs than by rich people moving downtown.

And actual displacement—the popular notion of wealthier white newcomers forcing out long-term minority residents—is even more rare. In virtually every city in the country, for example, immigrants now settle first in suburbs, not in central cities. So they aren't examples of urban displacement. Nor can the departure of African-Americans from most central cities be taken as a proxy for displacement. This is a group that experiences so much natural churning and movement that identifying true displacement is a difficult task. "It is a mistake," the Minnesota study concludes, "to classify gentrification-driven displacement as an endemic or universal problem."

What we can draw from that study is that while gentrification is at its root a simple phenomenon, it can manifest itself in a wide variety of ways within a single metro area, or even a single city. I got a good sense of this recently when I spent a few days in Brooklyn. I wandered through some of the borough's most intriguing neighborhoods, all of which could be said to have gentrified in some way, but each in a distinctly different fashion.

One of my stops was Clinton Hill, a tiny outpost of century-old Victorian and Italianate homes that sits right next to Bedford-Stuyvesant, the borough's most iconic black community. Clinton Hill represents the idea of gentrification that many of us carry around in our heads. A generation ago, it was black and largely poor, and many of its brownstones had fallen into disrepair. But it was too close and convenient to Manhattan to stay that way. In the 1970s and 1980s, a smattering of white professionals began moving in and taking a chance on living with what was still a disturbingly high crime rate. Starting in the 1990s, crime began to decline, both on the streets of Clinton Hill and on the subway line that serves the neighborhood. The trickle of middle-class arrivals became a flood. In 2010, African-Americans still represented the largest racial group, but that has changed dramatically since. Today, Clinton Hill has become a rather expensive place to move to. If you walk by one of the neighborhood's playgrounds, you see a fair number of black faces, but most of them belong to the African women who work as nannies for the white professional homeowners. The remaining black residents say they have relatively little contact with the new white families.

Not far from Clinton Hill is Carroll Gardens, a compact and close-in corner of northern Brooklyn that developed early in the 20th century as a working-class enclave for the Italian immigrants who had jobs at the nearby Brooklyn Navy Yard or on the waterfront docks. Its streets were lined with Italian bars, pizzerias and espresso shops. In the past 30 years, it has changed, but not the way Clinton Hill has changed. The hipsters have come, riding their scooters down the commercial streets, shopping at organic grocery stores, stopping in for pastries on their way to work in Manhattan. But the Italian families are still there, and so are many of the family-owned shops that they have operated for generations. I don't want to make any glib generalizations, but my sense was that the two groups had reached a tacit understanding that allows the neighborhood to function successfully almost the way it did in the old days. The conflicts you read about tend to be within the Italian families whose members disagree about whether to stay put or sell their brownstones for a fortune and split the proceeds.

Then, just a couple of miles away, there is Dumbo, a neighborhood so bizarre that I'm struggling to do it justice. Dumbo (which stands for Down Under the Manhattan Bridge Overpass), was once a cluster of factories that produced paint, tin cans, kerosene and a whole raft of other industrial products. After World War II, the factories largely emptied out. Very few people were living in Dumbo. Then a smart real estate developer named David Walentas started marketing what was essentially a wasteland to corporations that didn't want to pay Manhattan rents. Residential towers began cropping up on the empty land that was still plentiful. By 2010, Dumbo's location had made it a magnet for chic restaurants and high-end shopping of all kinds. The population is growing so fast that it's difficult to get an accurate estimate of just how many people live there. But the bottom line is that it soon will be (if it is not already) home to tens of thousands of well-to-do residents. And scarcely anyone had to be displaced to create it.

Some version of each of these scenarios can be found in cities in various parts of the country. But outside the elite corridors on the two coasts, there are more Dumbos than there are Clinton Hills. In the less feverish development taking place in Midwestern cities, for example, most of what's happening is the revival of unused or underused land.

There is, to cite just one example, the Gray's Station neighborhood being created from scratch on the outskirts of downtown Des Moines. A single developer plans to build 3,000 living units on 75 acres, at a projected cost of $250 million over the next decade or so. It goes without saying that the central city will never be same again after it is built. Is it gentrification? Yes, of course. The entire central section of the city will be much more affluent in 2030 than it is now. Is that a good thing? Not everyone thinks so. A couple of years ago, an architect warned that downtown Des Moines was becoming "a cocoon for a certain class of people that links them together under a protective web of same thinking and buying, fueled by a niche culture and social media circles." This was before Gray's Station, but it will be said again many times in the next few years. It seems to me hyperbolic, if not altogether misleading. You may prefer an abandoned railroad yard to a luxury high-rise. Personally, I don't.

There are places in this country where poor people are being displaced from neighborhoods that have become much more expensive and exclusive. We need to identify these and try to mitigate the impact. But we also need to know more about the diversity of gentrification and the way it affects different communities. Until we have a clearer idea of that, we are just going to be talking past each other. **G**

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Washington Watch

BY PETER A. HARKNESS

Our Demographic Destiny

Last year, the national fertility rate fell to its lowest point on record.

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The first four months of this year brought a surprising amount of good economic news. Financial markets were booming, even with a trade war dominating the headlines. Wages were on the rise, unemployment was falling and economic output seemed to be humming along at a pace not seen in at least two decades.

Does that mean it's time to party? Probably not. More recent news hasn't looked quite so rosy, with what seems to be a softening economy and a dismal jobs report last month. But there's an even more foundational reason that should be cause for concern, an important indicator that the financial markets, economic forecasters and certainly the press don't pay much attention to: population trends. Recent Census data shows that population growth has slowed to the lowest levels the nation has seen in more than 80 years. Birth rates have now declined to the point where the under-18 population is now lower than it was in the last Census in 2010. And as the entire population ages, the number of deaths is increasing.

America is changing in ways Washington and the states cannot ignore.

The birth rate began falling around 2007, when many people lost their jobs and homes during the Great Recession. But even as the economy began to bounce back, the births kept dwindling. Last year, the national birth rate hit its lowest point in more than three decades; the fertility rate, a related but different measure, fell to its lowest point on record. There's reason to think it may continue to fall. According to a recent large national survey on family growth, almost half of American women with one child do not intend to have another.

One reason for the drop is that women are waiting longer to have their first child, at least two years longer than a decade ago. The average age for a first-time mother in the United States was 27 at last count, up from 21 in 1972.

This means the American population is aging—fast. The latest projections from Census data covering 2010 through 2018 reveal that the population under the age of 18 fell by 780,000, or 1 percent, while the number of Americans over 55 grew by a whopping 19.2 million, or 8 percent. The decline in the number of young people came in 29 states, particularly in New England and some other Northeast states, the industrial Midwest and in Mississippi, New Mexico and West Virginia.

Contributing to this trend was a falloff in people moving around, or geographic mobility, to a historic low. In the past two years, one-fifth of all states experienced population losses, even accounting for immigration from abroad. The trend was particularly apparent in the Northeast. Other states, including Florida, Texas, Utah and Washington, gained young people either from other states or abroad. But the national projection is clear: Our younger population will continue to experience a long-term decline.

These demographic trends will have a significant impact on governments at all levels for decades to come. Retirement and health-care systems, already under significant stress, will continue to face enormous strains. The same will be true of affordable housing for older Americans.

A fast-growing and increasingly dependent aging population will require more public resources, at a time when the workforce to provide them may be stagnant or even shrinking. Social Security will continue to be a major issue, with fewer contributors paying in and more retirees qualifying to receive it. Tax revenues may be affected by labor shortages, particularly in such vital areas as trucking, home construction, infrastructure improvement and, perversely, home health care for the elderly.

Which brings us to the inevitable subject of immigration from abroad. Around the turn of this century, the natural increase in population exceeded immigration by 50 percent. But the plummeting domestic birth rate means that immigration today accounts for almost as much overall growth as domestic births do. (That's true even despite the fact that immigration rates have also fallen considerably since 2000.) What that means is that our immigrant population has the potential to stabilize our workforce numbers—if we can agree on a reformed policy.

That, of course, is a gargantuan "if," given the discord and gridlock in Washington over immigration reform. The policy of President Trump's administration seems to change by the day. A short time ago, the president told a workforce advisory panel co-chaired by his daughter Ivanka and Commerce Secretary Wilbur Ross that "we're going to let a lot of people come in because we need workers." Only one month later, he declared that the "country is full" and can't take in anyone else. The very next day, the Department of Homeland Security revealed that it had almost doubled the number of guest worker visas issued for this summer to 63,000. So who knows?

What's clear is that our country is facing decades of demographic shifts that will present a sizable challenge for state and federal policy. Ignoring that reality is something we cannot afford to do. G

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Prescription Crackdown

The cost of employee health care is rising, and prescriptions are a big reason why. Hundreds of local governments have found a way to cut back by allowing their employees to purchase drugs imported from countries where medications are offered at lower prices. In Canada, one of the exporters, per capita spending on retail prescriptions is 40 percent less than in the United States.

A private Canadian company, CanaRx, takes prescriptions written by U.S. doctors and finds pharmacies in Canada, Great Britain and Australia that will fill them. It currently services prescriptions for employees of about 500 local governments in America. The company limits its services to brand-name drugs used for health maintenance, and does not export controlled substances, drugs used for short-term use, or expensive specialty drugs.

There are federal rules against organizations importing drugs into the United States, but they don't stop individuals from getting FDA-approved drugs from other countries in limited supply for their own personal use. Recently, however, federal enforcement against the practice has grown. In October, the Food and Drug Administration raided nine stores in Florida that help Americans buy foreign drugs. In February, the FDA sent CanaRx a harsh letter accusing the company of violating sections of the 1938 Food, Drug and Cosmetic Act by introducing unapproved and misbranded drugs into the U.S. CanaRx immediately removed 14 drugs from its list of prescription offerings.

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"In the world of transborder pharmaceuticals, there are a lot of bad actors," says Joseph Morris, the chief counsel for CanaRx in the United States. "We think the regulators, the FDA and state boards of pharmacies are all doing the right thing when they try to crack down on medicines that are dangerous." —*Katherine Barrett & Richard Greene*

Seeking Secure Elections

Jocelyn Benson and John Merrill are something of a political odd couple. She's a Michigan Democrat who backed Hillary Clinton, and he's a Donald Trump supporter who represents Alabama. But the two secretaries of state came together back in May to testify before Congress, calling on the federal government to provide more funding and resources for states and localities to strengthen the nation's voting systems. The pair also led 18 other secretaries of state on a voting-rights history tour of Alabama, in the hope of inspiring further bipartisan collaboration.

The question is whether the secretaries can bridge enough of their differences to unite around federal legislation to improve election security. While appearing before a U.S. House committee, Benson and Merrill along with other witnesses asked for more federal funding for election administration. They agreed on several ways to improve it—replacing paperless voting machines with paper ballots, updating old software and adopting post-election audits.

Some election security advocates believe a good place to start would be the allocation of $1.2 billion proposed in H.R. 1, an anti-corruption and voting rights bill. But most Republicans in Congress oppose H.R. 1. GOP Rep. Rodney Davis of Illinois, the ranking member of the House committee, objects to the fact that the legislation would "force states to allow online voter registration, automatic voter registration and same-day voter registration with no safeguards."

This is where the secretaries of state diverge. Their priorities also differ on the issue of voter fraud. While it doesn't appear to be a concern for Benson, the Michigan Democrat, Merrill of Alabama mentioned the problem in his testimony, noting that six people in his state were convicted of crimes related to voter fraud. —*Graham Vyse*

Urban Notebook

BY SCOTT BEYER

In Defense of Foreign Investment

Of all the talking points used against building more housing in big cities, one of the most common is a simple question: Why build units that will just get snapped up by foreign speculators? Writing in *CityLab* recently about the housing market in Vancouver, Andy Yan, a director at Simon Fraser University, discussed real-estate speculators and other outside buyers and pessimistically asked, "Who are we building for?" My colleague Nicole Gelinas recently wrote in *Governing* that high-rise construction in New York City merely induces demand from the overseas rich, who view the units as investments and keep them empty.

Foreign investors thus get lumped in with other scapegoats who are thought to "take" housing from more deserving recipients. These include Airbnb guests, college students, techies and immigrants, among others. Some cities impose regulations against these groups, cracking down on Airbnb, outlawing student housing in certain areas, or taxing foreign speculation.

But this mindset is impractical, because it ignores the complexity of modern urban housing markets. At a time when global travel is easy and labor more fluid than ever, cities are full of temporary workers and visitors. With rising global wealth—and instability—there are also many foreigners looking for second homes, or wishing to diversify their assets by purchasing U.S. real estate.

Speculators from overseas take much of the blame for rising home prices. But foreign speculation is really a net win for cities.

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Cities can respond in either of two ways. They can view these unorthodox housing uses as a legitimate form of demand, and allow enough construction to accommodate it, alongside the more traditional demands. Or they can nitpick about the "right" and "wrong" uses of housing, and write laws accordingly. But one thing's likely: Neither strategy will stop the activity or cool the market, because no city can just wall off people or capital.

And why would cities want to? Foreign speculation is a net win for municipalities. This kind of development generates impact fees, tax revenue and construction jobs. If units are left empty, it may create bad optics, but it also means the absentee owners are giving money to the city without using services.

If cities really think foreign speculation is a social ill, they should at least note the causes. When cities have a housing shortage, it inflates prices. Speculators (whether foreign or domestic) then view that housing as an investment, since values will continue to appreciate, making it worthwhile for them to buy and sit on properties. By contrast, writes Dan Bertolet of Sightline Institute, in metros that are fast-growing but rapidly adding housing supply, such as Houston and Tokyo, "foreign investment does no harm to housing affordability and may even ease prices if it yields additional homes that end up being occupied by locals."

In fact, housing supply is what this whole foreign speculation issue hinges on. If a city uses regulations to restrict supply, then non-resident homebuyers (who in Vancouver consume 8.2 percent of housing stock) will crowd out residents. But if cities build enough housing to account for foreign buyers, they help temper the competition. The question, again, is whether cities want to allow enough housing to meet all these different demands.

Right now, North America's hottest cities aren't doing that. The ones with the most visible foreign speculation issues—New York City, San Francisco, Vancouver—all have low vacancy rates and minimal new permits. In Vancouver, the rental vacancy rate is now below 1 percent. If these cities permitted more housing, they would reduce the competition that foreign speculators impose on traditional homebuyers. And they would lessen the incentive for speculation in the first place. G

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Behind the Numbers

The School Race Gap

Majority-white communities often have minority-dominated public schools.

In Rockland County, an affluent patch of suburbia north of New York City, 64 percent of the children are non-Hispanic whites. But a solid majority of the public school pupils are non-white. There's a simple reason for that: Nearly half of the kids are in private school. Many of them are from Orthodox Jewish families who sent their children to yeshivas. As in much of the country, public student enrollment doesn't closely reflect the population of children living in the community.

To show where this kind of mismatch exists, *Governing* compiled aggregate K-12 enrollment data for all larger U.S. counties reported to the Department of Education. Census estimates covering the under-18 population for 2013-2017 were then compared with average public-school enrollment over the same period.

Nationally, public schools are less white than their communities, with blacks and Hispanics generally over-represented in those schools. The discrepancy isn't very large in most places at the county level, typically a few percentage points. But the gap is far larger in some jurisdictions, and it's in these areas where there can be a serious disconnect between taxpayers and support for public schools. Under- or overrepresentation is often much more apparent in smaller areas within counties, such as individual towns and districts.

One major factor is the size of private school enrollment, which strongly correlates with demographic discrepancies. White students are vastly overrepresented in private schools because their families can afford them. Even with financial assistance, less affluent families often can't provide transportation or pay fees for afterschool programs.

Besides Rockland County, other jurisdictions where white students are least likely to enroll in public schools include the boroughs of Manhattan and Brooklyn; the city of San Francisco; Jefferson Parish, La., outside New Orleans; and Montgomery County, Ala. In general, it's in urban counties and in the South where public schools are least reflective of local demographics.

In Manhattan and Brooklyn, whites are underrepresented in public schools by about 19 percentage points. White students are most overrepresented in the South, such as in East Baton Rouge Parish, La. Disparities in private school enrollment are much less noticeable in most of the Midwest.

As might be expected, wealthy jurisdictions show particularly large discrepancies. In San Francisco, 29 percent of children are white, but they account for only 14 percent of public K-12 enrollment and 9 percent of high school enrollment. Similar discrepancies exist in the District of Columbia. But it's not just a matter of affluence. Lori Bezahler, president of the Edward W. Hazen Foundation, which advocates for disadvantaged students, notes that many minority families aren't familiar with private-school enrollment lotteries or can't take time off from work for school visits. "There are a lot of barriers, some intentional and some unintentional," she says.

Charter schools also have greater racial discrepancies than traditional public schools, with a disproportionately high black enrollment compared to neighborhood population, according to Brookings Institution research. Homeschooling is a factor that pulls in the opposite direction, with white students being overrepresented. The most recent federal estimates suggest more than 3 percent of all U.S. students are homeschooled.

Many states offer private school tax credits or vouchers. The effects of these programs on school population vary, depending in part on how they're structured. After Milwaukee established the country's first major school choice program in 1990, its private schools saw a big shift, becoming more black and Hispanic. Today, Milwaukee County's public schools are an outlier, in that their demographics are nearly identical to those of the school-age population as a whole. Other places where schools closely reflect the overall population despite high private enrollment include Norfolk County, Mass.; Waukesha County, Wis., which borders Milwaukee; and Westchester County, N.Y., although larger differences may exist in individual districts or neighborhoods.

Stark demographic disparities can have negative financial ramifications. Declines in white enrollment in New York City public schools decades ago coincided with reduced funding. In Rockland County, the Jewish yeshivas have long been a source of tension. In 2014, a state-appointed monitor for one troubled school district in Rockland went so far as to conclude that the school board "appeared to favor the interest of private schools over public schools."

"The big risk of all of this is that taxpayers, particularly more affluent taxpayers, will see no real reason to further invest in public school systems," says William Berry of the Southern Education Foundation. "It leads to a continuous downward spiral for students in these schools." G

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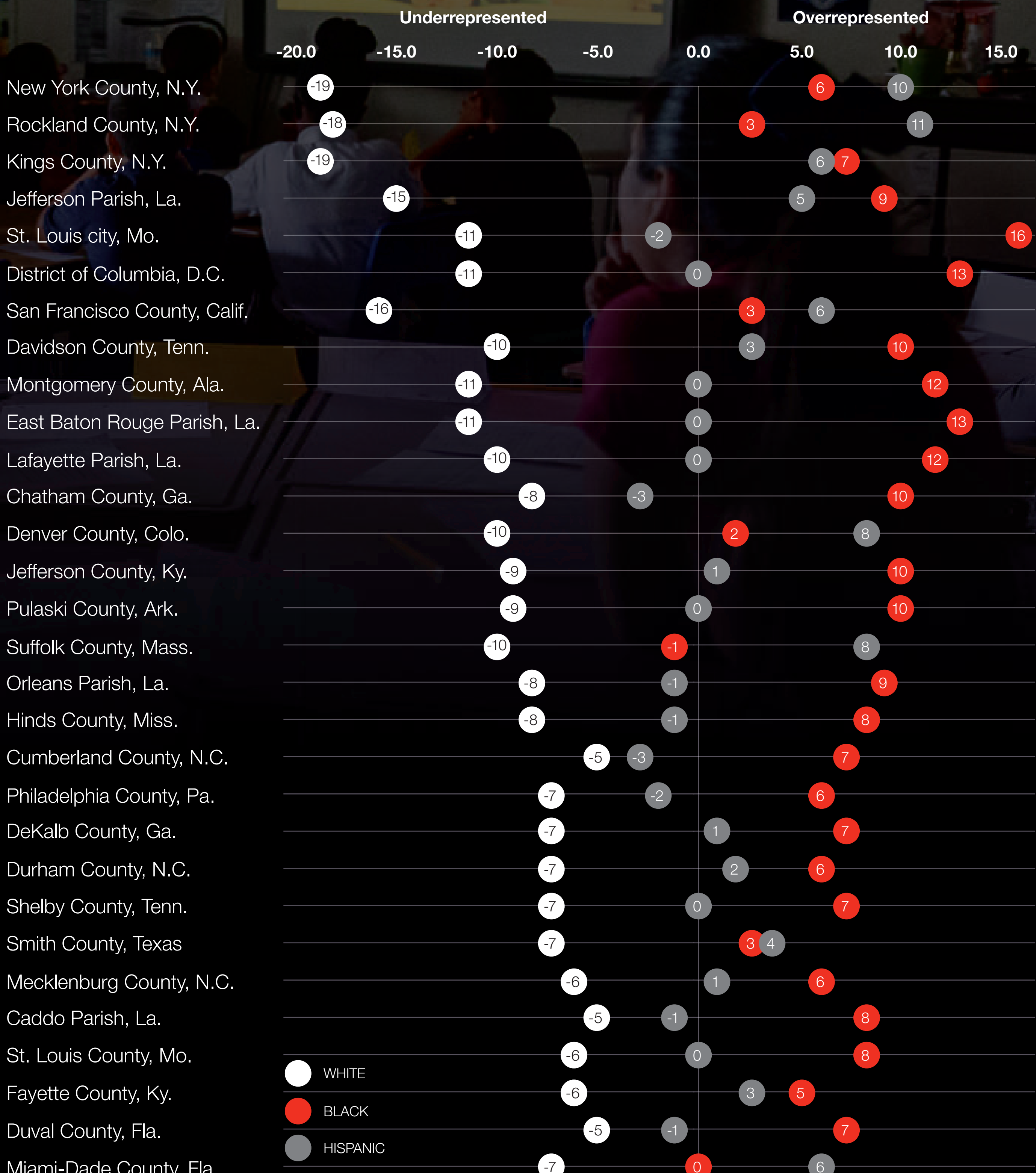
BY MIKE MACIAG

Where Public Schools Don't Resemble Local Demographics

These counties with at least 50,000 children have the largest demographic discrepancies. Figures refer to percentage-point differences between a group's share of annual average enrollment for all public schools located within a county and the under-18 population for 2013-2017.



GOVERNING CALCULATIONS OF NATIONAL CENTER FOR EDUCATION STATISTICS ANNUAL ENROLLMENT DATA FOR 2013-2017 SCHOOL YEARS, 2013-2017 CENSUS AMERICAN COMMUNITY SURVEY ESTIMATES

County leaders like Couy Griffin of Otero County, N.M, have praised President Trump for giving them a seat at the policy table.


COWBOYS FOR TRUMP

Trump's Counties

The administration is focusing on a level of government that past presidents have often neglected.

By Alan Greenblatt

Couy Griffin came riding into town on a horse. Back in February, Griffin led a dozen "Cowboys for Trump" on a 170-mile ride from a farm in Cumberland, Md., to the White House, intending to show support for the president and present him with a hat. They didn't make it past the gate, but President Trump got wind of the event—they were featured on *Fox & Friends*—and called up Griffin, who was already at the airport on his way home to New Mexico, to thank him.

Griffin, who serves on the Otero County, N.M., commission, had the presence of mind not just to flatter Trump, but to bring up policy concerns. Griffin told the president that his county is home to Lincoln National Forest, which he said was mismanaged and presented a severe fire hazard that one day could wipe out the entire neighboring village of Cloudcroft. Trump promised to look into the matter. It wasn't lip service. Griffin soon found himself on a conference call with USDA and Forest Service officials. "Commissioner Griffin, I want to start out by saying you definitely have the ear of the president of the United States on this," said Jim Hubbard, the agriculture undersecretary who oversees the Forest Service.

Not many county officials can bank on being able to draw the president's attention to a parochial matter, but counties in general are finding greater success communicating their concerns to the White House than they have had for a long time, if ever. Top administration officials have consulted with counties about opioids and opportunity zones, disaster response and environmental management. "They're not just talking to us—we've seen real action on things we've been pushing for for years," says Christian Leinbach, who chairs the county commission in Berks County, Pa. "We couldn't even get our concerns heard through channels in the Obama administration."

The White House has invited every county commissioner in the country to attend a series of 35 summits held at the Old Executive Office Building. All told, more than 2,000 have come. Each of the summits featured at least one cabinet secretary; half included Vice President Mike Pence. Trump himself spoke at the last one.

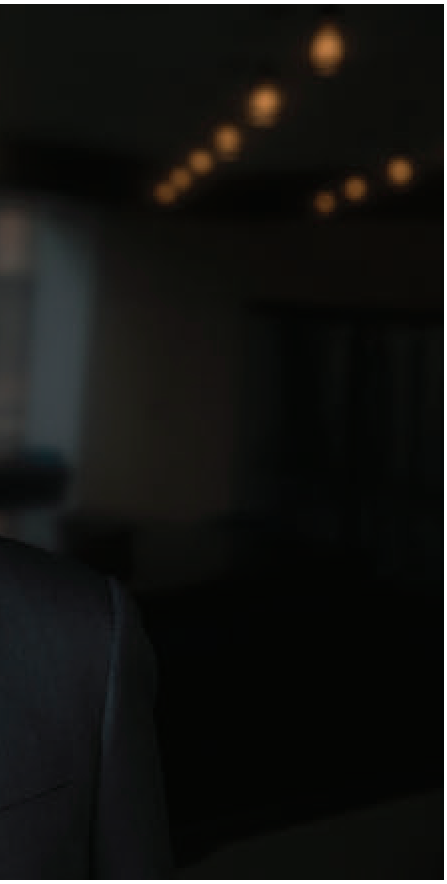
These weren't grip-and-grin occasions where county commissioners took selfies or grabbed napkins embossed with the White House seal. At each event, the White House Office of Intergovernmental Affairs promised to guide them through the federal government as a whole, handing out names and contact information of individual officials who could help them out with problems or concerns, whether at EPA, HUD, the Army Corps of Engineers, or elsewhere. To many of these visiting politicians, it felt like concierge service. Handing out business cards may be no big deal, but county officials around the country say they consistently get quick responses—and quite often results—whenever they reach out to the administration. "It's refreshing for us at a county level to see this level of responsiveness," says Chris Villines, executive director of the Association of Arkansas Counties.

The Trump White House is doing more than acting as a liaison between counties and federal departments. It has created a new competitive grant program that will provide $225 million for rural counties to repair and replace bridges. It's proposed $340 million to clean up sewage that runs from Mexico into 25 border counties from San Diego to Brownsville, Texas. The administration has invited county commissioners to participate formally in the rulemaking process for rewriting regulations, including federal oversight of waterways that some county officials complain burdens them with excessive red tape. "We've always had an open door at the White House with recent presidents," says Matt Chase, executive director of the National Association of Counties (NACo). "What is different about the Trump White House is they're sustaining the outreach. They're inviting any and all county commissioners to tap into the administration."

Left: NACo Executive Director Matt Chase says the Trump White House is "sustaining the outreach" to county leaders. Right: In 2017, Trump signed the Waters of the United States executive order flanked at left by Bryan Desloge, NACo's president at the time, and other county leaders.

It amounts to something of a winning streak for counties, traditionally described by academics as "the forgotten governments" of America. Last year, the Interior Department sent out a record $552.8 million to counties through the payments in lieu of taxes (PILTs) program. The 2018 law reauthorizing the Federal Aviation Administration included several grant programs that flow directly to counties, which are involved in a third of public airports. Thanks in large part to lobbying from counties, that law also contains a provision limiting the Federal Emergency Management Agency to a three-year window for conducting audits on disaster funds, ending the practice under which FEMA sometimes would "claw back" money from counties a decade after paying out grants. EPA's brownfields program offers new liability protections to state and local governments. In December, Trump signed a five-year farm bill that includes increased assistance for rural counties and schools, allows counties to exclude prisoners from population caps on eligibility for rural development programs and gives them greater flexibility in using federal broadband funds.

Policies such as brownfield liability or PILTs aren't going to make a lot of headlines. Day-to-day issues on which counties and the federal government interact can fly so low under the radar that they don't command



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much attention even from policymakers in Washington, let alone the press.

But most key state and federal programs have to be executed by counties when they get to the local level—transportation, Medicaid, public health, mental health and services for children, youth and seniors among them. Counties own nearly half the roads in the country and are largely responsible for stormwater and sewage. Yet presidents and governors routinely have given them short shrift, treating them as places to dump their problems, rather than partners in devising solutions. No matter how often county officials parrot the line that they provide more services than cities do, even to city residents, they rarely have commanded the attention that cities and states are able to claim. Counties have traditionally been treated like redheaded stepchildren by federal officials. It's always easier to deal with 50 states than 3,069 counties.

Counties still aren't getting everything they might want from this administration. Trump has made it a crusade to cut back on Medicaid and Affordable Care Act spending; many of those dollars flow through counties. The president also sought deep cuts to the Supplemental Nutrition Assistance Program (SNAP), still better known as food stamps. Counties administer SNAP in just 10 states, but those states are home to nearly a third of the people who receive the benefit. Trump's budgets have called for eliminating Community Development Block Grants, a rare source of flexible federal funding for localities.

But to the extent counties are looking for relief from federal regulations and unfunded mandates, their desires align with the larger goals of an administration looking to slice through the federal rulebook. "We've listened to state and local leaders where they think there's not smart regulation that's hampering opportunity and growth," says Doug Hoelscher, who directs the White House Office of Intergovernmental Affairs. "We don't always give 'yes' answers, but I think we give answers on a lot more things than prior administrations."

Every administration takes a different approach to federalism. Although George W. Bush had been governor of Texas and selected several governors as cabinet secretaries, his Office of Intergovernmental Affairs functioned as a command center, giving states and localities their marching orders. Barack Obama, the first president elected from a big city in nearly a century, quickly scored points among state and local officials with a more open approach. Under Obama, HUD, EPA and Transportation at least talked publicly about knitting together programs on the local level in a more collaborative way.

But the primary conduit for Obama policies was the nation's cohort of big-city mayors. While past presidents tended to do business with states, to the extent they cared about other levels of government at all, Obama worked

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directly with mayors on a variety of programs he couldn't get through Congress, including minimum wage increases, paid sick leave requirements, early childhood education and community policing.

It made sense for Obama to find common cause with mayors. For half a century and more, big cities have been dominated politically by liberal Democrats. Counties have been different. Hillary Clinton ran extremely well in 2016 in the biggest ones, carrying 88 of the 100 most populous counties, but that largely was the extent of her success. All told, she carried fewer than 500 counties, while Trump won more than 2,500. He took two-thirds of the vote in rural counties and small towns. Paying close, ongoing attention to friendly counties may be rare for a president, but it makes perfect political sense for Trump. "We typically think of the president as the leader of the whole nation, but presidents also act like members of Congress do," says Michael Sances, a political scientist at the University of Memphis. "They try to do things for their own base to shore up their reelection prospects."

The mere act of talking to county officials is a way of keeping Trump's bond with supporters from rural and small-town areas who complain about being ignored by Washington. "Having that reputation is something that's noticed back home, outside the beltway," says Hoelscher, the White House intergovernmental affairs director. "It's not the biggest news above the fold, but usually with these initiatives it's local news that these local leaders are coming to the White House."

Many local leaders say that under director Doug Hoelscher, the White House Office of Intergovernmental Affairs has been much more responsive to counties' needs than under previous administrations.

The administration isn't devoting its downward attention exclusively to counties. During his first two years in office, the president met with governors in person 65 percent more often than Ronald Reagan had at the same point in his term. His office is also launching a series of summits for state legislators, similar to those organized for county commissioners.

For county officials, however, after long neglect in Washington, a White House invitation is so unusual and unexpected that they sometimes think it must be a prank.

Amy Galey, a commissioner from Alamance County, N.C., reported her email to her county's IT department, convinced it was an attempt at hacking.

But the communications keep coming. When Hurricane Michael was bearing down on the Atlantic Coast last October, the Office of Intergovernmental Affairs called county officials even before the storm landed, making sure they had access to the federal contacts and resources they'd need. They keep following up after disaster strikes. "Our lead here from FEMA is in constant contact with us, almost on a daily basis, sending us fact sheets about what needs to be done, what eligible moneys are available, the process you should use," says Mary Ann Borgeson, a commissioner in Douglas County, Neb.

There have been complaints that when counties in red states such as Nebraska get in trouble, they are given A-plus treatment, but when solidly Democratic California counties suffer historic wildfires, the president criticizes them for bad forest management. Trump's 2017 tax-cut package eliminated deductions for personal losses from wildfires and earthquakes—twin calamities in California—but maintained the tax break for victims of hurricanes in the predominantly Republican Southeast. In June, Congress approved a $19 billion disaster relief package intended to provide help primarily to victims of hurricanes and flooding.

The county customer service ethic promoted by the White House has started permeating down to various federal agencies. Judd Freed is the director of emergency management for Ramsey County, Minn., which includes St. Paul. He notes that there are plenty of apps on his phone that are great at telling him the weather where his brother lives, but his department relies on moment-to-moment information from the National Weather Service regarding local conditions practically on a block-by-block basis. "Under the Obama administration, we did have pretty good access to them," Freed says. "Under the Trump administration, they have made an outstanding effort to remain accessible to us."

It's less than likely the average voter will ever know that the administration went to bat for her county on sharing weather data or ending FEMA clawbacks. But voters will hear about bridges being built, or possibly that their public works department is saving money thanks to environmental deregulation. "The focus of the national media is on the acrimony and the disruptions going on in Washington, D.C.," says San Diego County Supervisor Greg Cox. "The White House certainly understands that counties have a lot of responsibilities. So far, we've seen some pretty substantive things being addressed."

The county courthouse gang may not be the machine bosses they once were, but having local officials talk up the president can't hurt in the places Trump relies on most for votes. Even during the 2016 campaign, Trump's people were unusually alert to the value of doing outreach with NACo and counties. "The goal here might be to sway Republicans who weren't totally sold on Trump in 2016, showing he can be pragmatic," says Sances, the Memphis professor. "If they hear from county officials that, despite the tweets, he's doing real things to help us here, that explicit messaging will convince some people on the fence."

Trump has won over some reluctant county officials individually. A few Republican commissioners who've attended the White House summits have admitted to reporters that they backed other candidates in the primaries in 2016, but have since come to believe that Trump has their interests at heart. "I don't agree with everything the Trump administration has to say—especially President Trump," says Leinbach, the commissioner in Berks County, Pa., "but I've got to tell you his actions speak very loud."

Douglas County, Neb., commissioner and incoming NACo President Mary Ann Borgeson says FEMA has been in constant contact with her office.

DAVID KIDD

Griffin, the "cowboy commissioner" from New Mexico, goes a lot further. Initially, he dismissed Trump as "a New York Yankee real estate tycoon who we know is not one of us." Now he believes Trump will "go down as the greatest president that we've ever had."

Despite the access he's gotten to decisionmakers in the Forest Service and USDA, though, Griffin still hasn't gotten what he wants from them in terms of cleaning up the national forest. He's confident that Trump will make it right. The president, after all, has already invited him to return to the White House, telling Griffin there are 20 acres on the South Lawn where he can ride his horses when he comes back to deliver his hat. **G**

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TECHN

Google's sister company wants to build the city of the
be designing smart cities? **By John Buntin**

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OPOLIS

future on Toronto's waterfront. Should a private tech giant

Just one kilometer east of downtown Toronto, the largest civil engineering project in North America is reshaping the course of the Don River, a major waterway. "We're extending the Don by about 2 kilometers," says Cam Coleman, a communications director with the Canadian construction firm EllisDon. Once the project is complete, a canyon of caissons, drilled 40 to 80 meters into the bedrock and filled with concrete, will carry the river southward, through a largely vacant industrial area known as the Port Lands and out into Lake Ontario. The result will be a whole new set of neighborhoods—750 acres of waterfront property near the heart of a big city that is growing prodigiously.

The new area will fill up rapidly. Looking back toward downtown on a recent morning, Coleman pointed out a new island rising just opposite a fire-gutted warehouse on the docks. At the moment, it's a pile of mud. But in a few years' time—if all goes according to one tech giant's plan—it will be the home of Google's Canadian headquarters. It will also be the center of the most technologically advanced neighborhood in the world.

Revitalizing a waterfront, changing the course of a river, setting the rules by which neighborhoods operate—these are things that government, not the private sector, has traditionally done. Government initially took the lead in reimagining Toronto's waterfront, too. Back in 2001, the federal, provincial and local governments teamed up to create a new entity, Waterfront Toronto, charged with doing just that. The parks, trails and high-rise buildings rising along the harborfront today testify to that strategy's success.

But two years ago, Waterfront Toronto decided to do something different with a 12-acre parcel of property at the edge of the Port Lands known as Quayside. It decided to make those 12 acres into a neighborhood that showcased "smart city" solutions. It put out a request for an "innovation and funding partner." In October 2017, Waterfront Toronto announced the winner of the competition—Sidewalk Labs, the sister company of Google.

The partnership agreement was announced with great fanfare. According to the terms of the deal, Sidewalk would invest $50 million in creating a new entity, Sidewalk Toronto, and developing a plan for the Quayside area. Sketches put forward a picture of a technological wonderland. Residents would inhabit eco-conscious timber high-rises that were elegant, airy, green and cheap. Units would be modular: They would expand for families and contract when kids left. Robots in underground tunnels would deliver packages and reduce waste. Above ground, autonomous vehicles would ferry residents around, removing the need for parking spaces. Solar power would light the neighborhood; fresh air off the chilly waters of Lake Ontario would cool it in the summer. Removable pavers would make street repair easy. And everywhere—*everywhere*—there would be sensors, sorting the flow of people, bicycles and driverless cars; noting when trash bins need emptying; and calibrating building light and temperature settings, allowing the physical environment to interact with visitors and residents. News and design sites around the world rushed to publish images of this futuristic Elysium.

It wasn't long before some Torontonians began to have second thoughts. The first one was about privacy. What would Sidewalk Labs do with the mountain of information Quayside would collect about residents and visitors? This remains a central focus of the debate about whether the company should be allowed to realize its vision. However, as Sidewalk Labs has moved ahead with its plan, an even more consequential debate has emerged—a debate over government's role, and government's ability, to shape the future of the smart city. Companies such as Google already shape our digital worlds. The debate unfolding in Toronto may determine whether they shape our physical worlds as well.

Toronto has been one of the fastest-growing big cities in North America for more than a decade. Canada's open immigration policies account for much of this growth. It is far easier for well-off, skilled people to immigrate to Canada than to the United States. Most of them make their home

DAVID KIDD

in or around Toronto. Forty-six percent of the city's 6 million residents are immigrants; tens of thousands more arrive every year.

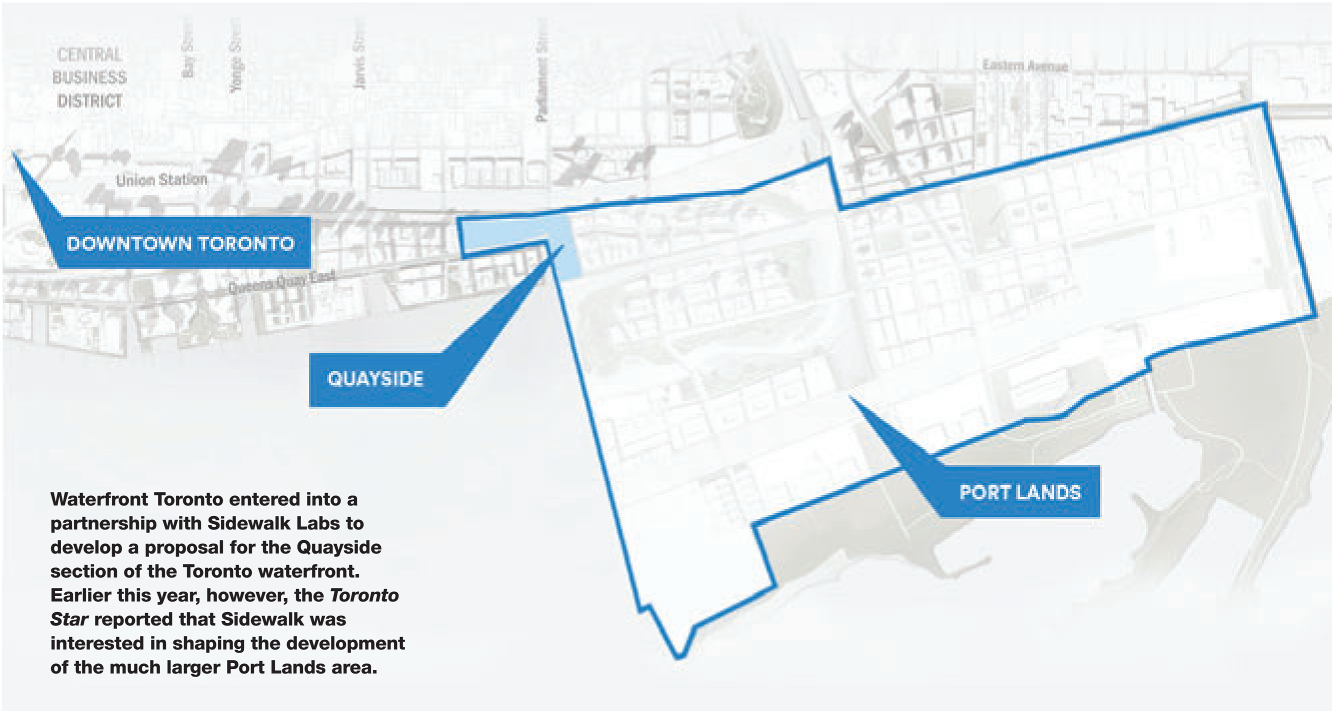
This growth has produced winners and losers. Homeowners and property holders have been winners. Property values have risen sharply, boosting city revenues and allowing elected officials to keep property taxes low. But rising property values have also made housing unaffordable to many Torontonians and put the city's transit system under intense pressure. Voters could have chosen to respond to these pressures by increasing public investment. They haven't. Instead, conservative governments in Ontario and at the federal level have slashed support for public housing and public transit. In 2010, Torontonians elected an outspoken, car-loving populist mayor, Rob Ford. Ford died in 2016, but his like-minded brother Doug was elected premier of Ontario last year. Among his first actions were cutting the size of Toronto's city council in half and moving to take control of the city's subway system. Although Ford vowed to fund improvements in that system, much of his plan to pay for them relies on billions in federal and city aid that he hasn't been able to secure.

Ford's actions have upset many of Toronto's elected officials. However, the various levels of government have worked well together in other ways. The new agency they combined to create, Waterfront Toronto, was designed to take more risks than government agencies typically would. Indeed, assuming responsibility for certain risks, such as environmental remediation and regulatory approval, was Waterfront's central purpose. "We take all that on," says Meg Davis, Waterfront Toronto's chief development officer. "Then the developers take on the risks that they're the most equipped to bear, which include construction, market, design risk, all of those sorts of things."

Waterfront's approach proved remarkably effective. A billion dollars in public investment leveraged more than $10 billion in private-sector investment. High-rise office towers and condominiums and a branch of George Brown College quickly spread across the harborfront. Gradually, development moved east, toward the Port Lands. Eventually, Waterfront Toronto's attention came to rest on the 12-acre parcel of land on the edge of the Port Lands known as Quayside.

Waterfront Toronto owned most of Quayside outright. That gave the agency the freedom to look for something big to try. It didn't have to look far. Its managers listened to consultants describe "smart cities" as a $1.8 trillion business opportunity. So they decided to seek a private-sector partner that could offer ideas to transform the way issues of sustainability, mobility and

Sidewalk Toronto's offices in Quayside showcase a variety of "smart city" technologies such as pavers with lights inset that could direct cyclists and pedestrians.



Waterfront Toronto entered into a partnership with Sidewalk Labs to develop a proposal for the Quayside section of the Toronto waterfront. Earlier this year, however, the *Toronto Star* reported that Sidewalk was interested in shaping the development of the much larger Port Lands area.

SIDEWALK TORONTO

affordability are addressed. The agency reached out to more than 50 companies around the world. In the end, it found itself considering three proposals. One company stood out for the scope of its ambitions: Sidewalk Labs.

Tech companies are strangely personal things. Their intellectual property consists of 0s and 1s, of code and bits. But their cultures reflect the personalities of their founders. Sidewalk Labs is legally a sister company of Google and a subsidiary of Alphabet, Google's global parent. But its mission and mindset reflect the ambitions of its founder and CEO, Dan Doctoroff.

Doctoroff has been described as the greatest builder in New York City since Robert Moses. Unlike Moses, Doctoroff entered public service mid-career. After starting out as an investment banker, he led New York City's bid to land the 2012 Olympics. That effort failed, but it attracted the attention of billionaire businessman Michael Bloomberg, under whom Doctoroff served as deputy mayor for economic development and rebuilding. In that job, Doctoroff led a variety of major efforts, ranging from the creation of more than 150,000 affordable housing units to the development of the massive mixed-use Hudson Yards project on Manhattan's West Side.

After Bloomberg left office, Doctoroff ran his media and financial information company, until Bloomberg himself decided to return to a leadership position at the company. In 2015, Doctoroff and Google's then-executive chairman Eric Schmidt announced the formation of Sidewalk Labs. Its premise was that cities were ripe for reinvention. Sidewalk would use new technologies, in Doctoroff's words, "to fundamentally bend the curve on virtually every aspect of quality of life."

As for how Sidewalk would make money doing this, that would come later. "We believe that if we can demonstrate that level of improvement there'll be plenty of ways to make money," Doctoroff says. Quayside would be where the company was going to figure this out.

In October 2017, Waterfront Toronto announced that Sidewalk Labs had been selected to develop a plan for Quayside. The initial reaction was overwhelmingly positive. Elected leaders from all three levels of government turned out for the announcement. Sidewalk announced it would invest $50 million to develop a detailed plan, and quickly set up an office in the area, with a staff of 30 people. In addition to hosting its Toronto workforce, the office serves as a demonstration space for new technologies such as permeable street pavers, modular apartments, "dynamic streets" with integrated lights to direct pedestrians and cyclists, and other sensor-driven technologies.

Sensors were an inescapable part of the smart city project from the beginning. That effectively guaranteed that privacy and data collection would be concerns. Sidewalk and Waterfront Toronto were aware that their affiliation with Google, a company that earns most of its money by serving targeted ads to consumers whose lives and preferences it understands in intimate detail, might raise issues. Doctoroff was adamant that Sidewalk was not interested in earning money in a similar fashion. "We've made that clear pretty much from day one," Doctoroff says. "That is just not a part of our business model." However, he and Waterfront Toronto knew from the start that not everyone would take his word for it. To address privacy concerns, Waterfront created an advisory council. It included a prominent privacy advocate, Ann Cavoukian, the well-regarded three-term Ontario privacy commissioner, as a consultant.

Cavoukian developed a framework she called "privacy by design," whose first precept was that privacy should be the default option: People should have to opt out of privacy protection, not take special steps to ensure it. Cavoukian also had strong opinions about cameras and sensors and the data they captured. She insisted that when a sensor collected any information on a person, all personal identifiers needed to be removed at the source before any data was sent to a central server. Processing data at the source was more computer-intensive and thus more challenging than uploading data to a central server and processing it there. Nevertheless, Sidewalk indicated that it agreed with this standard. Cavoukian was pleased by their commitment. "I told them we're going to make this a smart city of privacy," she says, "not a smart city of surveillance like everywhere else in the world."

However, Sidewalk didn't fully appreciate the commitment Cavoukian thought they were making. At an advisory board meeting last October, Sidewalk and Waterfront executives proposed what they saw as a novel solution to privacy concerns—an independent trust that would hold all data generated and collected by the Quayside project. But Sidewalk also said that while vendors involved in Quayside would be encouraged to "de-identify" data, it did not have the power to require other companies to do so. "The minute you lay it out like that, you're going to have personally identifiable data collected, which is totally unacceptable," Cavoukian says. The next morning, she resigned.

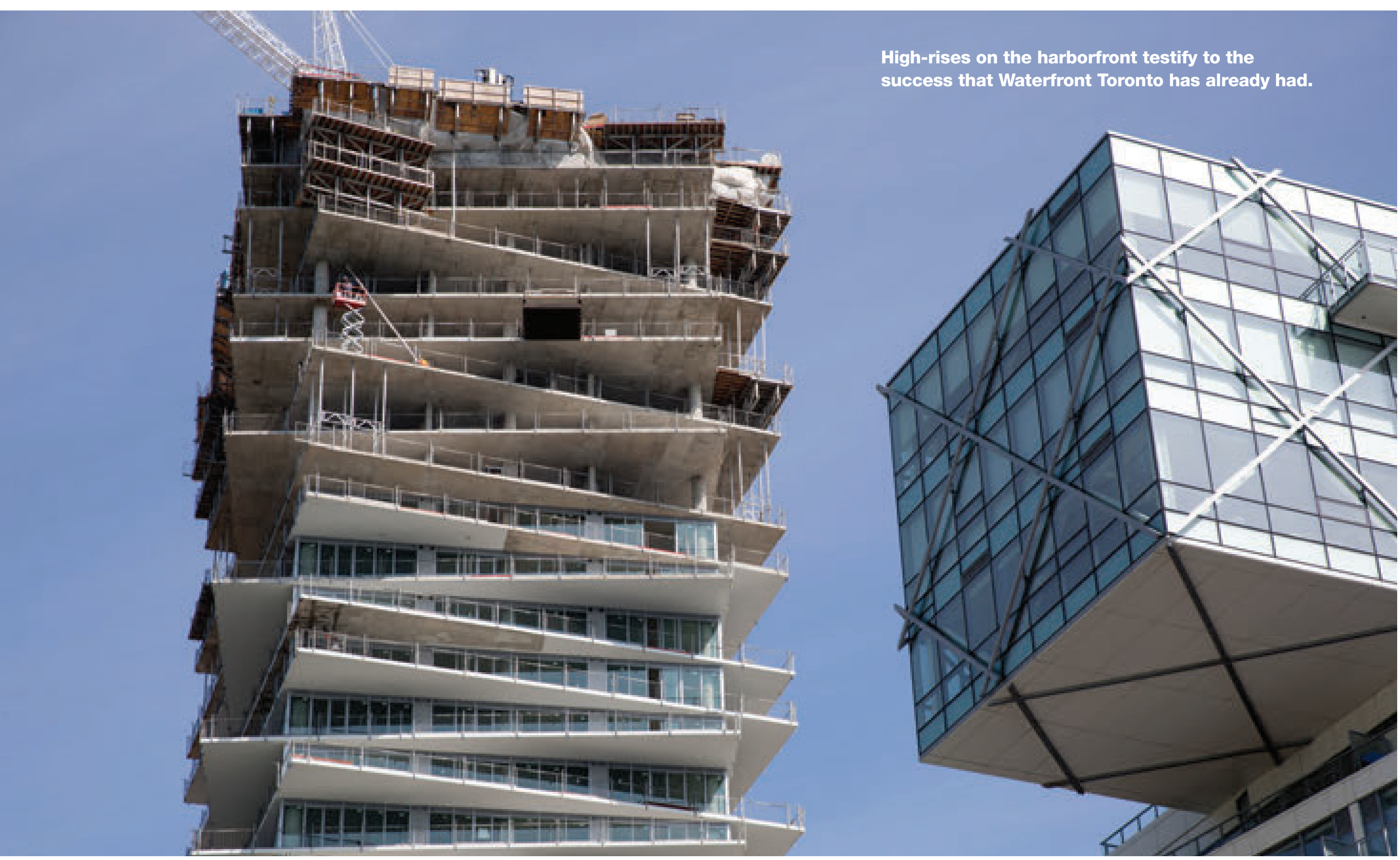
Cavoukian's resignation ignited a media firestorm that caught both Sidewalk Labs and Waterfront Toronto off guard. Sidewalk quickly announced that it supported her stringent guidelines but could not guarantee they would be binding on every company or vendor operating in Quayside. Doctoroff immediately called to ask what had happened and what could they do to get her back. Cavoukian declined to rejoin Sidewalk Labs, though she says she did not intend for her action to create "such a negative backlash."

The fallout, however, was only just beginning.

Jim Balsillie is one of Canada's best-known tech executives. He was the longtime head of Research in Motion, the company that launched the first popular mobile computing device, the BlackBerry. Balsillie has been critical of Waterfront Toronto's partnership agreement with Sidewalk Labs from the beginning. "The first principle in a democratic smart city strategy is for citizens and their government to agree on the data governance policies that a vendor must respond to," says Balsillie. Instead, he continues, Waterfront Toronto "has turned the most valuable piece of undeveloped real estate in North America over to a two-year-old startup with zero development experience."

Worse, in Balsillie's opinion, is that Waterfront Toronto was unwittingly allowing Google to develop a smart city operating system that could entrap rather than empower cities and their residents.

"Making data open does not address the core issue of control, and control of the data determines who can monetize it," Balsillie says. With access to parent company Alphabet's portfolio



High-rises on the harborfront testify to the success that Waterfront Toronto has already had.

DAVID KIDD

of patents and its vast trove of preexisting data, Sidewalk Labs would enjoy an enormous advantage converting data generated by Quayside into profitable applications, even if other companies had access to that data too.

Democracies, notes Miovision CEO Kurtis McBride, another critic, are organized in ways that give citizens the chance to change leadership or change direction every few years. In contrast, tech giants such as Google "are really good at using technology architecture to implement business models that survive decades." In short, says McBride, "democracy and technology are built on different principles."

Waterfront Toronto and Sidewalk Labs have worked hard to respond to these criticisms. Waterfront hired an intellectual property expert recommended by Balsillie. Sidewalk Labs held a series of public meetings to address the concerns. But efforts to respond were hampered by a lack of clarity about the relationship between Sidewalk Labs, Sidewalk Toronto and Waterfront Toronto. Sidewalk Toronto's building on the waterfront showcasing new technologies made it the focus of media attention. But what was Sidewalk Toronto? The Toronto office of Sidewalk Labs? A partnership between Sidewalk and Waterfront Toronto? Who should be responding to these criticisms? To many, it was unclear.

Also unclear was Sidewalk Labs' business model. If the company didn't intend to make money by selling information to advertisers, how did it intend to make money? To Balsillie, the answer was simple. "Sidewalk Labs is a poorly disguised data and real estate front for Google," he says. "No matter how much they try to hide this, it always comes out."

Earlier this year, a report in the *Toronto Star* lent credence to this viewpoint. The paper published a report suggesting that Sidewalk was considering plans to implement innovations across the entire 715-acre Port Lands area, not just the 12-acre Quayside parcel. It was also allegedly willing to spend hundreds of millions of dollars to bring light rail to the Port Lands—something the city had long sought but never proposed to fund. The internal documents cited in the report suggested that in exchange, the company might seek a share of property tax revenue from developments whose value would be increased by the proximity of mass transit.

The scope of Sidewalk's ambitions—and the idea that an American tech company was prepared to step in to address a problem that government had failed to address—bothered opponents of the project. Doctoroff and Sidewalk Labs insisted they had nothing to hide. Creating a zone for autonomous vehicles or a district-wide energy system could not be accomplished on a

Toronto's most ambitious current project, the redirection of the Don River, will open 700 acres of waterfront property near downtown to redevelopment.

DAVID KIDD

parcel of 12 acres. Doctoroff noted that Sidewalk's proposal had mentioned the larger Port Lands parcel numerous times. Critics were not appeased. The Canadian Civil Liberties Association sued Waterfront to prevent it from acting on Sidewalk's proposal. A media-savvy technologist, Bianca Wylie, formed a new coalition to oppose Sidewalk's vision of a privatized neighborhood for Quayside. But its first public meeting produced an unexpected result.

The meeting took place this spring in a library on Toronto's East Side, across the Don River from downtown. Councillor Paula Fletcher, a critic of the deal, presided, along with Bianca Wylie. Two nervous-looking staff members from Waterfront Toronto sat in the audience. By the time the meeting began at 6:30, some 200 people had filled the room. It was not a pro-Sidewalk crowd. But it turned out to be pro-government—or at least pro-Waterfront Toronto.

Waterfront Toronto chief development officer Meg Davis viewed Quayside as an opportunity to innovate using a public-private partnership model. Critics see it as an abdication of government responsibility and the privatization of public space.

DAVID KIDD

Wylie spoke up and said she trusted Waterfront Toronto and was going to give them a chance. One of Waterfront's representatives rose to speak. He announced that Waterfront would set up its own public comment process to review the master plan for Quayside that Sidewalk Labs was expected to present in the early summer.

Still, Wylie didn't soften her skepticism about the role of Google, or the partnership approach. "Why," she asked, "would you empower a vendor to that degree to be working on a project like this, which is this wonderful opportunity to engage people?"

As one might expect, Canadian tech executive Kurtis McBride sees a more significant role for the private sector in fostering smart cities. "Smart cities," he says, "are an opportunity to develop and use technologies that can make cities more livable, democratic, efficient and sustainable." Still, he cautions, "there is a danger in thinking technology can solve problems that are not tech-related or that vendors should lead these strategies."

Surprisingly, that's a sentiment with which Sidewalk's Dan Doctoroff agrees. "We agree government should be setting the rules," he says. "That's what I always believed when I was in government. Government's job is to create the conditions at the end of the day for the private market to be successful. And we believe, very strongly, that that is government's job here. The fact that a private party participates in that doesn't mean the usurping of government's authority. In fact, we believe very strongly in government's role to set the rules to oversee it. And we're eager to kind of follow that model."

But it's a mistake, he adds, to think that governments will be able to realize the potential benefits of smart cities on their own. "We hope to develop a set of products or services that get deployed in Toronto for the first time that then have value to other places around the world," he says. "I think what's probably not appreciated is the kind of risks that we're prepared to take in order to demonstrate that." Sidewalk, for example, is ready to take the risk of building 30-story wooden skyscrapers to demonstrate to both governments and more cautious developers that timber buildings' time has come. "We're prepared to take that risk to demonstrate that it can work commercially and that's why we're doing the development we are."

Whether Sidewalk's ambitions will ultimately attract or put off local residents remains to be seen. The first indication will come later this year, when Waterfront Toronto's board will vote first on the plan. A vote by Toronto's city council will follow, most likely before the year is over. Cavoukian, the privacy expert, remains wary. "Trust is at an all-time low," she says.

Doctoroff admits that he was caught off guard by the controversies Sidewalk Toronto has elicited. He wishes he'd done some things differently, foremost among them articulating a data use and privacy policy earlier. But his experiences in Toronto haven't changed his thinking about Sidewalk's mission at all. Problems such as sustainability, affordability, health and mobility, he says, "have only gotten worse." As for improving the quality of urban life (and profiting in the process), "we are more and more convinced of the possibility."

"So," he continues, "I think the mission is exactly what we thought it would be." **G**

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Students at Pueblo del Sol Elementary in West Phoenix. Arizona has by far the nation's worst student-to-counselor ratio.

An Unanswered SOS

An alarming number of schoolchildren are in crisis. So is the school counseling system that's supposed to support them.

By Mattie Quinn

Photographs by David Kidd

JANINE MENARD IS MOVING QUICKLY through her busy day. On a Monday morning at Pueblo del Sol Elementary, a dual elementary and middle school in West Phoenix, she visits a fourth-grade classroom that's getting a lesson in understanding "different perspectives." Menard, the school counselor, goes over scenarios aimed at tapping into the children's empathetic side. They discuss ways to bridge gaps in understanding using emotional intelligence.

An hour later, Menard heads upstairs to a room of seventh-graders to teach them about sexual harassment. They go over the difference between sexual harassment and rape, and learn that sending or posting unsolicited photos on social media counts as sexual harassment. Menard asks them about behaviors they see around school—like boys who grab girls in the hall, or kids teasing someone for their sexual orientation.

After those two lessons, it's back to her office, where she meets with students for the rest of the day. Her docket today includes two refugee girls who've been subjected to merciless taunts and a girl who's been "acting out" in class for reasons unknown.

As the sole full-time counselor for Pueblo del Sol Elementary, Menard, who is also the chair of the Arizona School Counselors Association, has a caseload of 1,100 kids. The school is overwhelmingly Hispanic and low-income, with test scores falling far below state averages. Domestic violence, absentee parents and drug use run rampant in many of the students' homes. Many kids come to school loaded with trauma. "This area just really eats up these kids," Menard says between counseling sessions.

The mental health needs at Pueblo del Sol and all around the state are significant, but Arizona public schools are woefully unequipped to handle them. The statewide ratio of students to school counselors is 905 to 1, according to the latest numbers from the American School Counselor Association. It's the highest ratio in the country by a long shot. Michigan, the state with the second-highest ratio, has 741 students for every one counselor. The national average is 455 to 1.

Although a master's degree in counseling is usually a prerequisite for being a school counselor, in the past several decades counselors have been pigeonholed as aides, often called on to help high school kids figure out their post-graduation plans and sometimes to monitor achievement tests. As mental health becomes less stigmatized and existential threats like school shootings and climate change supercharge a school child's worries, kids are beginning to expect—and need—more mental health guidance. Menard says kids are googling their symptoms and come into her office and say they have depression or anxiety. "It's self-diagnosis," she says, "but still, there's something behind that—they have a need."

Arizona may be in the worst shape, but states in general offer little recourse for this growing cry for help. School districts across the country are grappling with a lack of mental health resources. Menard worries that, like many school counselors, she is so overwhelmed by the number of students and their problems that it impedes her ability to build a rapport with the most troubled students. "A lot of kids are falling in the cracks," she says. She is particularly troubled that she may have missed the warning signs when one of her students committed suicide two years ago.

Arizona's inadequate student/counselor ratio is a symptom of a larger issue in the state, one that goes back to reductions in overall education funding. Years of cuts in the education budget have been devastating—driving up teacher and faculty turnover. In the 2017-18 school year, 3,286 untrained teachers received state teaching certificates. Meanwhile, 42 percent of teachers hired in 2013 left their positions within three years.

"We've been a high-growth state for about two decades," says Christine Thompson, the president and CEO of Expect More Arizona, an education advocacy organization. She notes that between 2010 and 2019, the state's population grew by half a million people. But the Great Recession was taking its toll on state revenues and deep budgets cuts were inevitable. "With population growth happening at the same time," she says, "everyone in education felt those cuts tremendously."

Arizona may be in the worst shape when it comes to school counselors, but school districts across the country are grappling with a lack of mental health resources.

In 2018, Arizona educators—along with those in five other states—went on strike to

Janine Menard, the chair of the Arizona School Counselors Association and the sole counselor at Pueblo del Sol, says she worries about her ability to meet the mental health needs of all 1,100 of her students.

protest years of budget cuts and stagnant wages. At its peak, the strike forced 90 school districts in the state to close as some 50,000 teachers marched on the state capitol. Among other demands, they wanted state lawmakers to restore public education funding to pre-recession levels and to increase teacher pay. Gov. Doug Ducey eventually agreed to a 20 percent raise by 2020, ending the strike.

For school counselors and other mental health providers, there's more at play than pay raises. The student population is a troubled one. Arizona children seem to have more mental health needs than kids in other states. Thirty percent of them have experienced at least two adverse childhood experiences—the highest in the nation, according to data from the state's Department of Health Services. Adverse childhood experiences, often called ACEs, can be such things as experiencing physical or emotional abuse or having an incarcerated parent.

On top of that, poverty takes a toll—Arizona ranks in the top 10 states for highest rates of poverty—as does the transient nature of its residents. "Arizona has a lot of transplants, and it takes a number of years before you have a sense of community in a place you've moved to," Thompson says. "Combined with a high poverty rate, which is also a big contributor, we really see it in kids when they have to move from school to school."

While the kids at Menard's school suffer from problems that arise from poor socioeconomic backgrounds, a few miles southeast of the city, in a more affluent area, there's been a spike in teen suicides in recent years. In a region known as the East Valley, more than two dozen teens took their own lives during the 2017-2018 school year.

Following the spate of suicides, the Chandler Unified School District, located in the East Valley, allocated funds to place a social worker in every high school, conducted suicide prevention training for staff and introduced mindfulness and self-care language throughout the schools. Depression warning signs and suicide prevention tactics were posted in students' planners and around the schools. The school district knew it wouldn't get money from the state, but local officials determined that the investments had to be made. "At the end of the day, you don't ever want to ask 'can you come back at another time' to the wrong kid," says Anne Cordasco, assistant director of counseling and social services in the Chandler Unified School District. "When you're a school counselor, you're holding someone else's heart in your hands."

Arizona's budget for next year includes funding for 200 new school counselors, but "it's not enough," says Janine Menard.

If Menard had a smaller caseload and more resources at her disposal, she says she would focus on kindergartners and try to catch mental health and behavioral problems early. As it is, she doesn't get much time to ask her middle schoolers about professional ambitions and plans once her students graduate eighth grade. "I have zero time to talk about college and career, so there's that exploration of figuring out what you like to do and matching that with skills that they're not getting," she says. "There are just so many social and emotional needs happening."

March for Our Lives, the student-led advocacy organization created in 2018 after the Parkland, Fla., school shooting, is particularly active in Arizona. Although gun violence is a top priority for the group, mental health and bringing down the school counselor ratio also are major issues for the Arizona chapter.

Last fall, the organization held a summit with students from all over the state and posed the question: What makes you feel safe in your schools and in your community?

One issue that the students kept bringing up was help for mental health issues. "No matter the students' political beliefs," says Jordan Harb, executive director of the Arizona chapter of March for Our Lives, "they felt that having more counselors and support networks makes them feel safer. Many of them know people who have been on the verge of ending their life."

Since school budgets are stretched thin, it affects the ability of kids to access their counselors. Harb describes the situation this way: "If you're in a crisis, my counselor can't help you because she's the one administering AP exams, something that shouldn't be her job in the first place."

This year, Harb, along with other education and mental health advocates, lobbied in Phoenix for bills that would have prioritized mental health funding in schools. The two nearly identical bills in the state House and Senate would have appropriated more than $100 million by 2023 to a statewide grant program, where schools could apply for counseling and mental health grants. They would also have explicitly defined the role and requirements of a school counselor and mandated the ratio drop to 550 to 1 by the 2024-2025 school year. Both bills failed.

Jordan Harb leads the Arizona chapter of March for Our Lives, the national student-led movement against gun violence. He has lobbied in Phoenix to increase state funding for mental health professionals in schools.

The situation might be particularly strained in Arizona, but it is not unique. Many school districts across the country have long suffered from a dearth of mental health resources. But a number of states have begun to address the issue. In fact, the overall ratio of school counselors to students in the 50 states has dropped to its lowest point in 31 years, according to the American School Counselor Association. This drop is proof, says Jill Cook, assistant director of the Counselor Association, that states and school districts are beginning to understand the important role school counselors play.

It's estimated that one in five children suffers from a mental health issue. When school personnel aren't available to provide basic support and to make referrals, "that means the children aren't getting the support they need," Cook says. "School counselors develop the scaffolding kids need in order to develop academically."

While there has been improvement, the national average is still double what the association recommends, which is 250 students to every one counselor. Only two states, New Hampshire and Vermont, have a ratio below that number.

Virginia lawmakers approved a bill this year that will require schools to employ one full-time counselor per 455 elementary students; one per 370 middle school students; and one per 325 high school students. However, the bill stops short of fully funding the costs of employing the necessary counselors.

During the Great Recession, California eclipsed Arizona's student-to-counselor calculus. In 2011, it posted a ratio of 1,016 to 1. As state education funding has recovered in recent years, California's ratio dropped back to 663 to 1. That's still not ideal, advocates say, but it shows the impact that can be made when education funding gets restored to pre-recession levels.

Arizona has begun to restore some funding, too. This year, Gov. Ducey's budget included $12 million over the next two years for 200 new school counselors and social workers—the first time in Arizona history that a governor has set aside money specifically for school counselors. Additionally, the Arizona Legislature last month approved $60 million over three years for "school safety," which includes more school counselors. It also mandated that the state define the role of a school counselor, which was something that the two failed bills had sought to address.

Helpful though that is, advocates point out that it will take far more—around $90 million a year—to bring down the student-to-counselor ratio in a meaningful way. "I thank Gov. Ducey and always speak highly of him for doing that," Menard says. "But it's just a start and it's not enough."

"For years we've done things a day late and several dollars short," says Thompson. "Hopefully we'll see more investments in the coming year. It took us a while to get up to 900 to 1, and it'll take us a while to get that number back down." **G**

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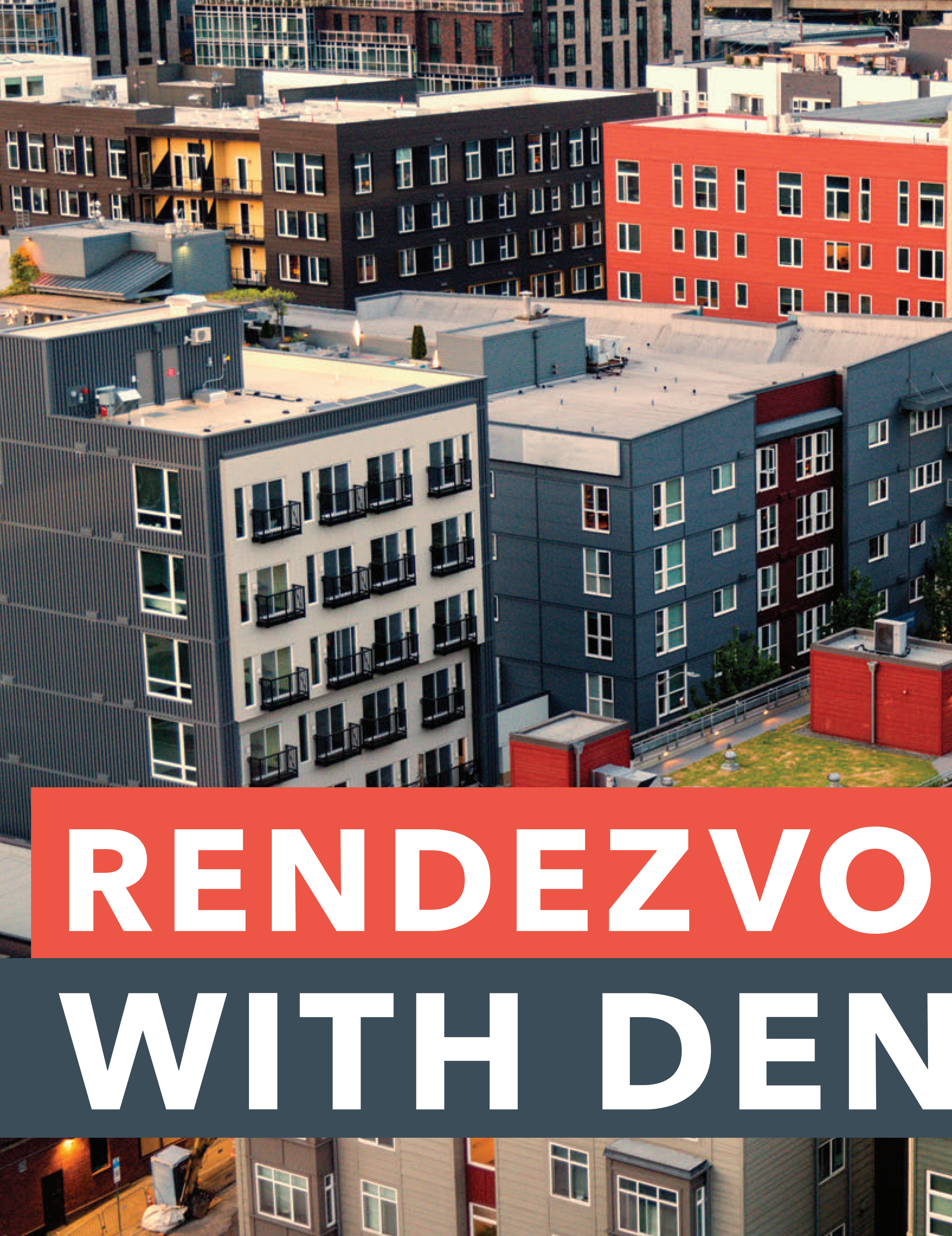

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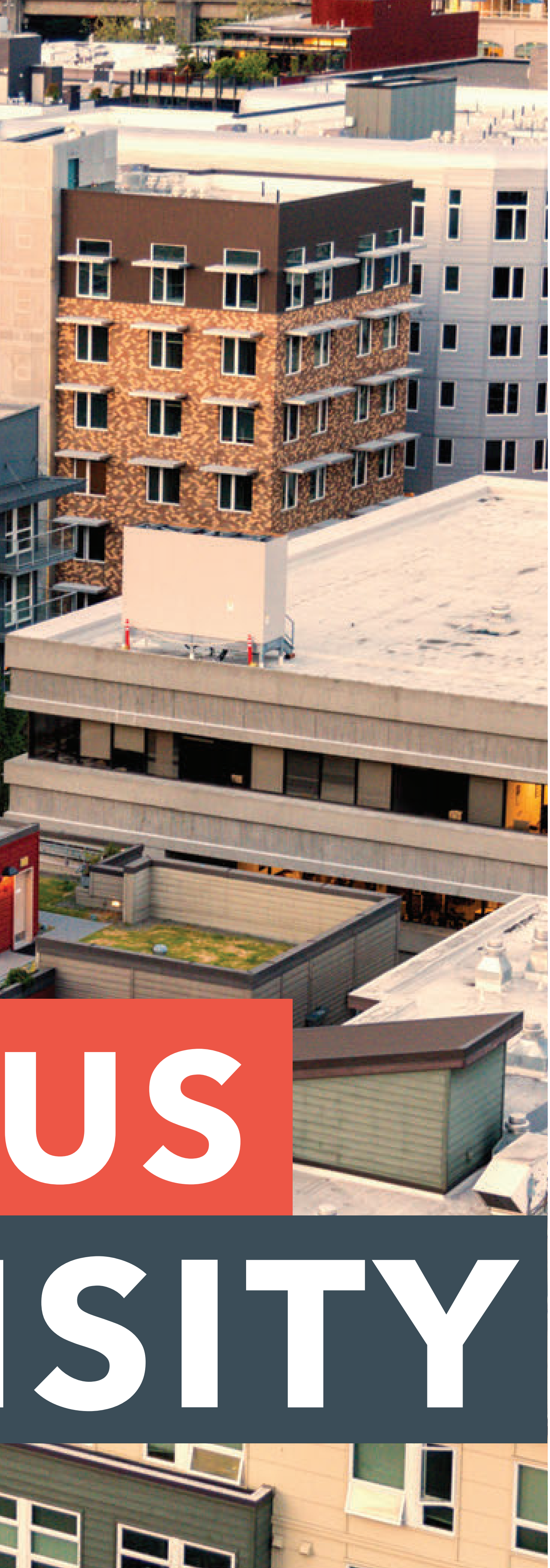

US
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Seattle's Cascade neighborhood has added higher-density apartment buildings in an effort to accommodate the city's population boom.

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REZONING A CITY TO MAKE DENSER NEIGHBORHOODS IS AN IDEA WITH GROWING APPEAL. THE QUESTION IS WHETHER IT WORKS.

BY J. BRIAN CHARLES

Seattle's housing market has been red-hot for almost a decade. Across the Northwest's largest metropolitan area, real estate is not only expensive, upward of a million dollars for homes in some of the nicest enclaves, but often sells in a matter of days.

A complex of forces—the growth of Amazon, the technological might of Microsoft, the jobs those companies bring and a dearth of available real estate—has made Seattle one of the costliest housing markets in the country. Only San Francisco and Las Vegas have outpaced Seattle in rising home prices in the last six years, according to the Case-Shiller Home Price Indices report. It's not just home-buying that has been expensive, but also renting. The rental market may have cooled some in the last year, but that's after years of increases that outpaced inflation. From 2015 to 2016 alone, Seattle saw an almost 10 percent jump in rental prices. The tight market is part of the reason for the city's surging homeless population.

Seattle is a small city, wedged between Puget Sound and Lake Washington on 83 square miles of land. It's about the same size as Madison, Wis., but with about three times as many residents—more than 700,000 by the most recent count. In just the past decade, more than 115,000 people have moved to the area. All that growth is taking place in a city that, like those all over the West, has long relied on single-family homes to meet its housing needs. More than two-thirds of the city is zoned single-family. The result is that Seattle simply is not dense enough to cope with the surging demand. When a multi-unit project is built, it's usually a luxury apartment building. "While there is more supply," says Andrew Lofton, executive director of the Seattle Housing Authority, "it's not coming online for moderate income earners."

In April, Seattle followed the lead of Minneapolis in enacting a zoning reform law. But where Minneapolis approved sweeping changes that eliminated exclusive single-family zoning in many of its neighborhoods, Seattle scaled back its own ambitions. City planners originally wanted to up-zone 50 neighborhoods. That idea was opposed by a coalition of 26 neighborhood groups, and the fight was fierce. One public comment submitted to the city read: "The density Bolsheviks are coming to town, and they're gonna burn your single-family house to the ground."

Seattle settled on what locals call "The Grand Bargain." Twenty-seven neighborhoods will be up-zoned, allowing for greater density and looser height restrictions, but only if developers agree to either build affordable housing on the new site or pay into the city's affordable housing fund. Seattle estimates the plan will bring an additional 4,000 affordable units to the city.

That Seattle decided to use a scalpel to carve out areas for up-zoning instead of taking a hammer to its zoning ordinance, as Minneapolis did, underscores just how intensely residents resist changes. Minneapolis made history in December when it became the first city in the nation to up-zone its entire jurisdiction. It was a highly divisive move. More than 10,000 comments, many in opposition, were lodged during the public comment period. A lawsuit was filed claiming that increased density would be likely to cause "the pollution, impairment, or destruction of the air, water, land or other natural resources." The up-zoning grew out of a long-range vision document called Minneapolis 2040. Its proponents have accused detractors of using environmental arguments—which have considerable traction in the progressive city—to maintain residential segregation. Those allegations, in turn, were challenged in the public comments. "Anyone who doesn't get on board with their plan," an opponent wrote, "for any reason at all, is racist."

The housing crisis has forced cities from Minneapolis to Seattle, Philadelphia to Austin, and the entire state of California to walk headlong into a portion of urban policy that has long been a political minefield. It's hard to avoid. According to the Joint Center for Housing Studies at Harvard, more than half the nation's renters are cost-burdened, meaning they spend more than 30 percent of their income on rent. The most obvious answer for many cities is to increase the housing supply by going after single-family zoning, which has been sacrosanct in much of the nation for more than 100 years.

A growing number of cities are looking to up-zone, to allow developers to build higher and denser apartment buildings in what were single-family neighborhoods. More supply, the argument goes, will drive down rents. But up-zoning impacts have been hotly debated. In New York, up-zoning did increase supply, but it did not drive down prices. "It can be a double-edged sword," says Diana Lind, author of the forthcoming book, *Brave New Home: The Smarter, Cheaper, Happier Future of Housing*. "It doesn't always create more affordability, but it does fix the capacity issue."

In Chicago, up-zoning hasn't delivered very well on its promise to draw investment. Yonah Freemark, an urban scholar at the Massachusetts Institute of Technology, has studied the impact of up-zoning adopted by Chicago in 2013 and expanded in 2015. Increasing density and lifting height restrictions weren't enough to lure developers to the lowest-income neighborhoods. "Zoning is all based on a market reaction. If developers don't want to respond to your zoning change, then nothing will get built," Freemark says. "We have seen low-income and underdeveloped communities rezone, and investors still don't want to build in those communities." Up-zoning alone, according to Freemark, won't unleash the market to provide enough housing to bring down costs. Cities will have to do much more.

Given the limited success zoning changes have demonstrated in promoting affordable housing, and given the political backlash they spark, why are cities looking at them as a solution? The answer lies in how zoning has historically shaped our cities, and how it continues to do so. Without some sort of zoning changes, even critics agree cities won't be able to meet their housing demands. "All these cities," Lind says, "have outdated zoning laws that prohibit people from living the way they want to live." Still, the path forward on zoning will be a tricky one to navigate.

In 1916, the New York City Board of Estimate released the first zoning map in the nation's history. Neighborhoods were labeled either "residential," "commercial" or "industrial." The zoning ordinance also set standards for the latest innovation in construction—the skyscraper. Setback requirements made sure the skyscrapers sprouting up like weeds in Manhattan didn't completely blot out the sun. Other cities followed, but intentions weren't always pure. In 1917, the Supreme Court banned cities from drafting ordinances that mandated where black families could and couldn't live. Cities got around this by drafting zoning codes that separated apartment buildings (the ones with most of the minority and poorer tenants) from single-family homes. This was especially true in the industrial cities where black families from the South and immigrants from eastern and southern Europe were arriving in droves.

Philadelphia has been debating updates to its zoning codes for years.

Single-family zoning was the first of many obstacles erected to segregate communities. Redlining, which cut off needed investment in the form of federally backed mortgages, and covenant restrictions, which kept minorities and some ethnic white residents corralled in poorer neighborhoods, helped institutionalize the racial wealth gap. Those practices made it harder for poor black families to move to the more desirable white communities. Currently, 40 percent of black households own their homes, compared with 70 percent of white households.

Restrictive covenants were ruled unconstitutional by the Supreme Court in 1948, and the 1968 Fair Housing Act ended redlining for good. Zoning regulations were the last major legal barrier to integrating neighborhoods. Homeowners have used them for decades to block the construction of apartment complexes and protect their single-family neighborhoods.

In this century, as affluent white professionals moved back to the urban core, rising rents came with them. This was also partly a result of zoning codes, and in no place was it more apparent than in New York City. Michael Bloomberg became mayor of New York in 2002, and in less than six years his zoning reform campaign rezoned 6,000 city blocks. The process was uneven. Low-income neighborhoods such as Long Island City in Queens and black and Latino neighborhoods in Brooklyn were up-zoned to allow greater density. Developers didn't drive this process—policy did. The intention, Lind says, "was to incentivize demand." Meanwhile, affluent neighborhoods like Park Slope in Brooklyn and Richmond Hill in Queens were down-zoned. The net result: High-rise luxury apartments went up in Long Island City; market-rate condominiums replaced older single-family homes in overwhelmingly black Bedford-Stuyvesant; and affluent Park Slope and Richmond Hill remained virtually untouched.

In those first six Bloomberg years, 180,000 new apartment units were built in New York City, but few of them were in the affordable category. Minorities and the poor felt the squeeze. "When you are building 40-story buildings, and each unit sells for $10 million and you have a private swimming pool, you weren't doing up-zoning to make housing more affordable," says Randy Shaw, executive director of the Tenderloin Housing Clinic, which advocates for affordable housing. "The way up-zoning has been done in New York has promoted gentrification."

The racialized history of zoning practices explains why Minneapolis Mayor Jacob Frey took up the issue. Frey is a Virginia native and a former professional distance runner who fell in love with the city when he competed in a marathon there in 2006. He moved to Minneapolis the day after graduating law school. In 2017, he ran for mayor on a platform of racial equity. "Minneapolis has a long history of redlining

DAVID KIDD

and intentional segregation," Frey says. "We literally had maps that described North Minneapolis being for blacks and Jews." The divide still exists for black residents and newly arrived African immigrants. Most of them live on the city's North Side, while the southwest section of town is largely white.

Now, Minneapolis has eliminated exclusive single-family zoning everywhere in the city. In addition, developers won't be allowed to build the exclusive towers in the park that have become the symbol of New York's up-zoning and gentrification. High-rises will be permitted near transit hubs, but triplexes (three-unit buildings) will be allowed all across the city. Developers must make 10 percent of the units in their buildings affordable to those earning less than 60 percent of the average median income in Minneapolis, or $36,473. The ordinance adds in a sweetener for developers who go beyond the requirement. If they make 20 percent of the units affordable, the city will add in cash assistance for the project. Minneapolis, says Frey, "wanted to make sure the precision of our solution matched the precision of the segregation."

Philadelphia has been through these things before, and is still fighting over them. In 2011, toward the end of Michael Nutter's first term as mayor, the city embarked on an ambitious plan to revamp its zoning. Like many cities, Philadelphia hadn't updated its zoning maps since the 1950s. Nutter proposed remapping 12,000 acres of land, and clustering high-density development around transit hubs. "Over the years, the areas around elevated train stations became blighted," says Marty Gregorski of Philadelphia's Planning Commission, "because it was hard to develop those areas for single-family homes."

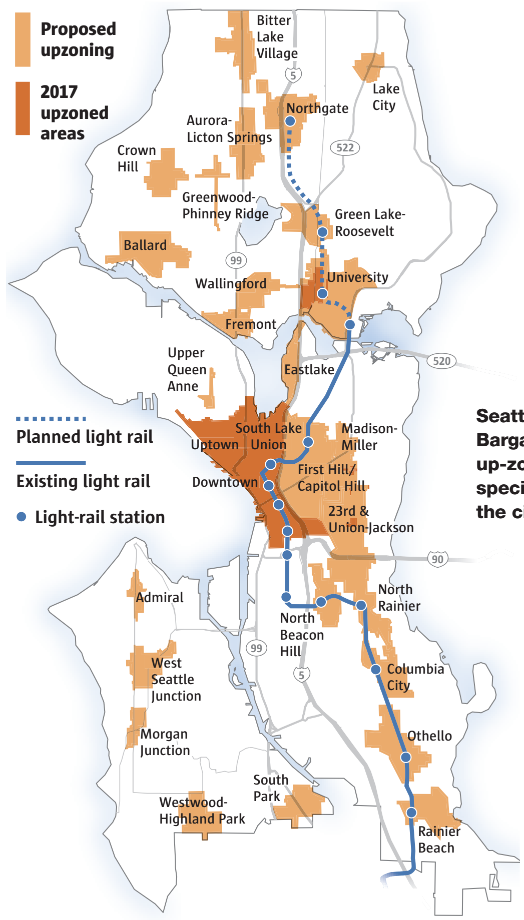
Opponents pushed back. They claimed Philadelphia wasn't New York or Seattle, cities bursting at the seams with recent arrivals. And they were right. The city's current population of 1.5 million is 25 percent lower than at its peak in 1950. Since the plan was unveiled, only 40 percent of the land has been rezoned. Why not more? Blame the process. Rezoning is essentially a prerogative of the city council, which in turn defers to the individual council member from the district in which development is to take place. The effect has been to create zoning fiefdoms across Philadelphia. In many of the places where rezoning has taken place, luxury condominiums have sprouted up. Around Temple University in North Philadelphia, it's not condominiums being built, but new student housing, helped by rezoning. The locals call it "dormification."

Much like the homeowners of the past, battling to preserve their neighborhoods, City Council President Darrell Clarke has been a sharp critic of Philadelphia's rezoning efforts. "There are significant concerns about gentrification, significant concerns with density," Clarke told WHYY public radio in Philadelphia. "We aren't sure that [the rezoning of 2011] accomplished its intended goal. The simple reality is that we need to revisit it." In May, Clarke pushed two bills in the Philadelphia City Council to slow development. The first bill calls for less density and more parking. The second bill gives even more control over zoning to the council.

In most of America, zoning and density arguments continue to be fought in city council meetings and zoning board hearings. The one dramatic exception is California, where the statewide housing crisis is perhaps the most acute in the nation. According to the state's own estimates, California needs 1.8 million new housing units by 2025 to meet the demands of its growing population.

For Minneapolis Mayor Jacob Frey, zoning restrictions are an issue of racial equity.

DAVID KIDD



Seattle's "Grand Bargain" allows up-zoning in 27 specific areas in the city.

EMILY ENG/THE SEATTLE TIMES

The dearth of affordable housing has increased rents enormously in traditional middle-class neighborhoods. On the Westside of Los Angeles, for example, it has pushed middle-income renters east in search of cheaper housing. That in turn has displaced lower-income Latinos in neighborhoods like Boyle Heights and Highland Park.

The issue has been forced to statewide attention by State Sen. Scott Wiener, a Democrat from San Francisco. In spring 2018, Wiener proposed S.B. 827, a bill to allow the state to override local zoning ordinances and mandate taller housing units near transit stops. S.B. 827 faced a strong backlash and died in committee.

This year, Wiener tried again with a new bill, S.B. 50. This effort has also drawn criticism. The Los Angeles City Council unanimously passed a resolution opposing it. Council members said the bill, which allows developers to pony up in-lieu payments when they don't reach affordable housing goals for a new development, wouldn't be effective in addressing affordability. But they also echoed sentiments that have deep roots in California's housing culture. Councilman Paul Koretz complained that S.B. 50 would add unwanted crowding to low-slung residential neighborhoods. "In Los Angeles, we already have densified," Koretz insisted to a real estate publication. S.B. 50 was sidetracked in committee in May, and has effectively been taken off the legislative agenda until 2020.

The opponents of S.B. 50 use the term "Manhattanization" to describe the kind of places they do not want their neighborhoods to become. They mention it almost anytime a high-rise project is proposed. But the critiques of S.B. 50 go beyond whether it will transform Los Angeles into a West Coast version of New York City. They are about local control. Randy Shaw of the Tenderloin Housing Clinic says Los Angeles could do something about its housing crisis at the local level, even in the absence of state action, and that it should, because, as he puts it, "Los Angeles can't be a one-story town."

San Francisco is making its own efforts to deal with the problem locally. It launched a pilot program in 2018 that allows developers to construct denser and, in some cases, taller structures in exchange for affordable housing built on-site. If developers can build more dwellings in a building, which can be accomplished by loosening height restrictions, they can offset the revenue that they miss out on by constructing affordable units. With a plan like that, Shaw says, "you aren't gentrifying a neighborhood, you are bringing in lower-income people. That's the opposite of gentrification."

When Seattle settled on its "Grand Bargain" for up-zoning, it may have fallen into the same trap New York City did more than a decade ago. Only 6 percent of the exclusive single-family zones in the city will be up-zoned. Much of the up-zoning will occur along Seattle's Link light rail line and in what have long been low-income neighborhoods. Like New York before it, Seattle's decision could unleash the brute force of the market on its low-income residents, while sparing many of its more affluent residents from the impacts of up-zoning.

Ground zero for this fight is Seattle's Central Area neighborhood. Once a thriving black commercial and cultural hub that nourished the musical talents of Quincy Jones, Jimi Hendrix and Sir Mix-a-Lot, Central Area fell on hard times in the 1970s and '80s. Crime rose and property values plummeted. In recent years, affluent white Seattle residents have moved in and begun to push black residents south to neighborhoods such as Rainier Beach. With up-zoning now passed by the city, that movement could intensify.

The Chateau Apartments is a low-slung 21-unit complex in the Central Area neighborhood. Most of the renters are poor; most use Section 8 vouchers to assist with their rent. In March, the residents of the Chateau received notice from the new owner that the building was being demolished. In its place will stand a 73-unit complex. Seattle's up-zoning requires the developer to set aside only five affordable units in the new building. It's the kind of bargain up-zoning often offers. "The idea behind up-zoning is that you are supposed to get more units out of it," Freemark says. "But the problem is you are going to displace people."

Seattle's Southside residents fear that what is happening at the Chateau will ripple across their part of town. The Rainier Beach Action Coalition partnered with several other community organizations to send a letter to the city in February, supporting a bill by Councilwoman Lisa Herbold to force developers who tear down affordable housing to replace it one-for-one in their new development. For the Chateau, that would mean 21 of the 73 units would be made affordable. The plan was shelved, and replaced with an executive order calling for more help with evictions, and using nonprofits to locate displaced tenants in housing in their original neighborhood. The order, signed by Mayor Jenny Durkin, did not call for developers to replace low-rate rental units one-for-one or pay any additional money into the city's housing fund. **G**

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Taking Control of Employee-Initiated Expenses

The latest cloud-based applications offer greater visibility and management of this potential budget-buster.

David Ballard, Senior Vice President for Public Sector, SAP Concur

Research shows that employee-initiated expenses — hotel bills, meals, airfare, mileage, etc. — represent the second-largest employee expenditure for state and local governments after payroll.[1] Unfortunately, these costs also may be one of the least-managed areas of public sector budgets. One critical challenge is that many agencies struggle with legacy systems dependent on paper expense reporting and other outdated practices that make it difficult to track and account for this costly area.

In this Q&A with *Government Technology*, David Ballard, senior vice president for public sector at SAP Concur, discusses how automated expense reporting systems with modern mobile apps and cloud services help state and local officials better understand, optimize and reduce employee-initiated expenses.

Q: What are some of the problems that result from poor expense management?

A big one is non-compliance with internal purchasing policies, including the use of unapproved vendors. Employees may book rooms at favorite hotels without realizing their organization has negotiated better rates with approved vendors. Mileage allowances are another huge area. Whether intentionally or because they don't understand government policies, employees often overreport miles on their expense reports.

Q: How can a modern expense reporting application address these issues?

SAP Concur has many tools to gain greater visibility into expenses to control them more effectively. For example, the platform can automatically enforce expense guidelines so employees use approved vendors unless a manager allows an exception because of a special circumstance. We also offer a mobile app that integrates with Google Maps to automatically track how many allowable miles people drive and then send the data to an employee's expense report. Similarly, we've established relationships with many airlines and hoteliers to create eReceipts. When employees travel, these partners generate the receipts and send them directly into the traveler's expense records. Employees don't need to fill out these expenses in their reports as they are already itemized in the system.

Q: What other capabilities should organizations look for when evaluating expense management applications?

Cloud-based SaaS applications are key. They have minimal management overhead compared to on-premises solutions, which means IT personnel can spend time on tasks that align to their agency's mission critical goals.

Government officials should also look for applications that are easy to configure to meet the unique needs of their organizations. They should make sure the system offers flexibility to support existing policies and methodologies. Just as important, they should be able to change those policies over time as they optimize their expensing practices.

Q: What business benefits can government officials expect to see?

Reducing costs is one potential benefit. When organizations have complete and accurate data, they can analyze spending volumes and perhaps negotiate better rates with hotels and other suppliers. In addition, we've seen organizations significantly reduce annual mileage reimbursements. Agencies also can speed reimbursements to employees, sometimes shortening the time from a couple weeks down to same-day payments.

ENDNOTE

1. https://www.concur.com/newsroom/article/3-ways-technology-can-modernize-employee-spend-for-state-and-local

SAP Concur is the world's leading provider of integrated travel, expense, and invoice management solutions, driven by a relentless pursuit to simplify and automate these everyday processes. With SAP Concur, a top-rated app guides employees through every trip, charges are effortlessly populated into expense reports, and invoice approvals are automated. By integrating near real-time data and using AI to audit 100% of transactions, organizations can see exactly what they're spending without worrying about blind spots in the budget. SAP Concur eliminates yesterday's tedious tasks, makes today's work easier, and helps organizations run at their best every day.

Learn more at **www.Concur.com**

BETTER VISIBILITY AND CONTROL FOR EXPENSES

Reporting and processing expenses all too often requires inefficient, cumbersome, confusing effort. Employees struggle to complete expense reports correctly and track paper invoices and receipts. Approvers can't readily determine expenses align with agency policy. And finance staff can't easily obtain spend data that allows for better monitoring, vendor negotiation and budget planning.

These limitations are particularly true for paper-based processes, but they also exist in older expense-processing software.

A better approach is offered by the cloud-based SAP Concur solutions. Concur Expense, Concur Invoice and Concur Detect by AppZen streamline tasks for employees and approvers and increase transparency, compliance and control for the agency.

SIMPLIFY EXPENSE REPORTING

Concur Expense integrates employee expense data into a single online system for simpler processing and management. Data flows automatically into Concur Expense from credit cards, select suppliers and receipt photos captured by a mobile app. Employees save time by creating and submitting accurate, in-policy expense reports from their smartphones. Managers can review and approve expense reports anywhere, anytime by using the Concur mobile app.

AUTOMATE INVOICE PROCESSING

Concur Invoice offers a single system to approve purchase requests, capture invoices, and automate approval routing and payments. A single dashboard helps the agency better monitor and manage invoices for employee-initiated expenditures.

IMPROVE EXPENSE TRANSPARENCY AND COMPLIANCE

SAP Concur solutions support expense transparency and policy enforcement end-to-end. Employees always know the status of each expense report and approvers know when submitted reports need review. Agency policies can be built into SAP Concur for automatic enforcement when employees submit expense reports and invoices — improving compliance. Utilizing the latest in artificial intelligence (AI) and machine learning, SAP Concur solutions can audit expense reports automatically, reducing expense reporting errors and the potential for fraud, waste and abuse by 66 percent.

Concur Expense also provides visibility into total spending, helping agency managers monitor budgets more effectively and forecast more accurately. Detailed data on spend levels, such as by location or vendor, helps the agency negotiate rates and identify needed policy changes.

MODERNIZE EXPENSE REPORTING AND PROCESSING

Expense reporting, processing and tracking no longer need to involve paperwork, manual activity and limited reports. SAP Concur solutions in the cloud help governments improve expense processing and budget control, while increasing transparency and policy compliance.

Cautiously and slowly, state procurement offices are taking up modern purchasing processes. *By Liz Farmer*

BUYING BETTER

As consumers, we've been part of a tech-driven revolution. Most of the companies we buy from remember our preferences and automatically offer suggestions for similar purchases. When we are interested in a product, we look online at customer ratings and reviews to make sure we are getting a quality item that will last. Cumbersome chores, like filling out forms with our address or credit card information, are done for us automatically. If we have a question about a product or the process, a chatbot pops up to help out.

In state and local government, where one-third of annual expenditures go toward buying goods and services, this experience is a rarity. Although hundreds of billions of taxpayer dollars are spent each year on everything from printer paper to snowplows, many state procurement offices remain stuck using old-fashioned methods. Whether it's because of restrictive policies or a fear of failing in an unpleasantly public way, state purchasing practices have been slow to adapt to the 21st century.

But there are signs of change. There is a growing shift away from buying the "best of the cheapest" toward buying smart. That is, taking into account the whole experience, from before a product or service is chosen to long after it's purchased. "When you have the suppliers and the buyers all communicating well, working in lock step and understanding the process, you're naturally going to get the best savings possible," says Jim Colangelo, Michigan's chief procurement officer. "And all that while preserving a positive relationship with suppliers which, in my experience, is more valuable than squeezing them for an extra $50,000."

Another change has been the attempt by some purchasing departments to find new ways to learn quickly from glitches as they happen and adjust their approach toward what's working. In business circles, it's known as fail-fast. In some cases, it is freeing purchasers from the long-entrenched fear of experimentation that can hobble the procurement process.

These are two of several findings in a newly released Governing Institute report highlighting some of the biggest emerging trends and issues in state contracts and purchasing. Over the past year, researchers assessed state purchasing processes in 28 states and the District of Columbia, weighing factors such as contract management and effective implementation of technology. Among other findings, they learned that data and analytics are now driving all parts of the procurement process, a sign that states are seeking to be more responsive and flexible. While gaps remain—such as in using technology to improve the customer and vendor experience—states in general are moving toward a more modern approach to buying.

A BREAK FROM THE PAST

At the heart of the risk-averse procurement culture is this reality: When something goes wrong, it generates bad, sometimes high-profile publicity. That leads to more regulations or rules about what procurement offices can or can't do. When things go swimmingly, the public never hears out about it. So rather than try something different and risk, say, the charge of favoritism, many states stick with long-established processes for soliciting and choosing vendors.

That's what makes the shift away from low price and toward value such a departure for states. All but one of the states surveyed—Hawaii—ranked best value above low price in the Institute's survey. Jason Soza, Alaska's chief procurement officer and a member of the National Association of State Procurement Officials (NASPO) board of directors, says the shift has been happening very gradually for some time. It's finally starting to become more visible as offices are taking a more holistic view and factoring in things like repair costs and how long a product will last. "We've hit a tipping point," he says. "The survey is reflecting that."

Even when regulations require states to place price first, purchasers are finding workarounds. Wisconsin's statute, for example, still requires its procurement office to award business to the "lowest responsible bidder"—antiquated terminology better suited to the days when states mostly bought commodities and construction. After consulting with lawyers, procurement officials determined that the law allows them to award a bid to multiple, low-cost suppliers.

That means that on a recent bid for wireless services, for example, the office set its price parameters and awarded the contract to a group of companies that came in with the lowest bids. Then, officials approached the companies individually to negotiate deals that they felt gave the state the best value. "It opens the door for us to deal with them after the fact in a way that a lot of states that might have 'best value' in the law are already doing upfront," says Sara Redford, Wisconsin's procurement director.

Meanwhile, there's evidence that some states are shedding the procurement community's long-held fear of experimentation. A number of states are adopting agile approaches, such as immediately building and improving off lessons learned (when,

DATA AND ANALYTICS ARE NOW DRIVING ALL PARTS OF THE PROCUREMENT PROCESS, A SIGN THAT STATES ARE SEEKING TO BE MORE RESPONSIVE AND FLEXIBLE.

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say, something goes wrong or a new factor comes into play) and making it more important to respond to a change than to follow the original plan.

New York, for instance, has put new procedures in place so that vendors can quickly add new technology products or services to centralized contracts as they become available. The office can also adjust to vendor and customer preferences such as submitting electronic price lists or conducting virtual pre-bid meetings. This kind of flexibility is key for an office whose customers range from the state transportation department to a small Adirondack ski town.

"We are rejecting any answer that begins with 'because we always have,'" says New York State Office of General Services Commissioner RoAnn M. Destito. "This involves trying something new and letting our customers and vendors react to it, which in turn allows us to identify opportunities for improvement." In this environment, she adds, officials can address challenges and seize opportunities within a matter of months instead of years.

USING TECHNOLOGY

The new trends are encouraging for those who want to see states become nimbler in their purchasing, but there's a long way to go. States largely don't use modern customer-service tools common in the private sector, such as automated chatbots. Two in three states in the Governing Institute survey don't use electronic invoicing.

Michigan is one that does. In fact, it has enlisted automation to improve the experience for both vendors and for its government agency customers in various stages of the procurement process. The office has created a tool—similar to how TurboTax works for tax filers—that can automatically fill out an RFP for vendors, based on the information they enter. The state is also a leader, along with Utah and Georgia, in tracking its own net promoter score from customers, a practice now common in the private sector. Such scores are used as a proxy for gauging customer loyalty and their overall satisfaction with a product or service.

For many states, a barrier to employing such rigorous metrics is a concern about what the numbers will say. But such information, Michigan's Colangelo says, is essential for any place that wants to improve. When his state started its program, "initially, it was very scary—staff were worried about what their scores might be or if they were hitting their cost savings targets," he says. "But now, it turns out to be a point of pride."

For NASPO's Soza, automation, agility and value are linked. As he sees it, if offices can push past their aversion to risk and use technology to make everyone's experience easier, procurement staff can increase their focus on delivering value. Which means, he says, "the return on the investment in those tools will come quickly."

The desire is certainly there. NASPO's Top 10 Priorities for State Procurement this year and last year included a number of tech-driven goals. "Hopefully," Soza says, "this trend will continue." **G**

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Key Takeaways from the Governing Institute's State Procurement Report

Data and analytics drive all phases of the procurement process. **88%** of states in the survey said they conduct thorough market analyses for large IT projects.

Solutions-based contracts have continued to proliferate. Some states, including Ohio, rely on solutions-based contracts for **more than half** of their annual awards.

Risk-management remains spotty. **46%** of states in the survey do not have a standard process for assessing and managing risk throughout the life of the procurement and contract.

States aren't taking advantage of automation tools to streamline key procurement processes. **86%** aren't using automated communications services such as chatbots or virtual agents. And **67%** have not automated their invoicing functions.

Read the full report at governing.com/procurement2019

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San Diego, CA

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El Paso, TX

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Fort Collins, CO
Mesa, AZ
Riverside, CA
San Diego, CA

Top Performer
Grand Rapids, MI

High-Performing Cities
Chicago, IL
Corona, CA
Louisville, KY
Riverside, CA
San Diego, CA

Top Performer
Dallas, TX

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Cities Rethink Employee Reviews

There's not a lot that people like less than getting criticized. In the local government sector especially, most employees pan the way their employers deal with employee performance reviews. But there's ample experimentation in the public sector right now, providing hope for better ways of giving feedback to workers.

One of the biggest problems with employee evaluations, says Scott Lazenby, who has spent four decades managing cities, is that they tend to take place only once a year. This leaves the potential that a staffer contentedly goes to work every day, only to find at the end of 12 months that his efforts have been systematically unsatisfactory. Equally problematic is the deferred validation for a superior worker.

"What a silly idea it is to store feedback up for one big review at the end of the year," says Lazenby, currently the city manager for Lake Oswego, Ore.

That's slowly changing. Last year, Charlottesville, Va., started emphasizing ongoing communication between supervisors and employees about performance, and formal reviews are now done at least twice a year. In San Mateo County, Calif., a performance evaluation experiment is now in its third year, currently involving 600 of the county's 5,000 employees. The new process abolishes formal annual reviews, doesn't include a rating component and encourages constant communication between supervisors and employees, including meetings every other week.

Whatever reforms are made, it will likely take time to find ones that stick. In Memphis, managers have been regularly readjusting a new evaluation system for the past three years.

The city created a five-point rating scale and tied it to end-of-the-year bonuses. Employees liked the bonuses, but complaints flowed in about the rating system.

Many didn't like that a "3" meant "meets expectations." That sounded "too average," says Eric Sabatini, senior manager of HR analytics and performance for Memphis. The city changed the definitions in 2018—so that a 3 is now considered "strong performance," a 4 is "exceptional performance" and a 5 is "superior performance"—but managers had a tough time distinguishing between them. Who wouldn't?

Memphis has gone back to the drawing board. It's now considering removing numerical ratings altogether.

"We haven't figured this out yet," says Sabatini. "We're looking at options."
—Katherine Barrett and Richard Greene

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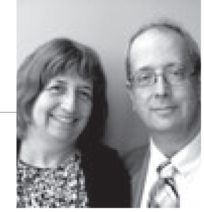
Smart Management

BY KATHERINE BARRETT AND RICHARD GREENE



Zombie Programs

Why is it so hard to kill off bad government initiatives?

The common wisdom is this: Performance data makes it easier for states and localities to winnow down or eliminate ineffective programs. After all, if there's solid proof that something doesn't work, a city council or state legislature would not continue to fund it.

And yet, some powerful evidence recently crossed our desks that caused us to dig more deeply into the validity of that belief.

Our epiphany came from reading the recent Equipt to Innovate survey, a joint effort by *Governing* and the nonprofit Living Cities, covering 66 cities of various size. One of the questions asked was, "Does the city have a policy or ordinance establishing the review and modification of practices, programs, and/or policies that have consistently failed to achieve desired outcomes, using rigorous data analysis and evaluation?"

You'd like to think that most cities would have said yes. But in fact, nearly four out of five respondents said no, they weren't using data analysis to look at why certain programs were consistently failing to achieve their desired outcomes.

That's not how this was supposed to work. The dream of good data was that governments would actually use it to evaluate which programs were working, and which were not. An article in *Government Finance Review* nearly a decade ago said that's "exactly what Budgeting for Outcomes and other priority-based budgeting methods were designed for."

"That was my dream as well," says Ken Miller, founder of the Change and Innovation Agency, which spends its time on programs that affect low-income families and children. (Miller was also once a *Governing* columnist, and he published two books with *Governing*.) When he worked for Missouri Gov. Mel Carnahan in 1998 and 1999, he says "the goal was to use performance management to find programs to get rid of and to invest in." To Miller's disappointment, poorly performing programs seemed to live on, despite efforts to zap them.

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There are several reasons why the data-rational approach doesn't work out. For one thing, any effort to scale back or eliminate a program has a built-in enemy: the men and women who have become true believers in the program's mission, and who might stand to lose their jobs if it goes away. "Their defensive posture is very high," says Chris Fabian, CEO of ResourceX, a consulting group that works to help cities use their funds most efficiently. "They have ownership over their programs."

What's more, analyzing data and evaluating programs requires a lot of resources —resources even some bigger cities don't have. Salinas, Calif., is a case in point. It has a population of 160,000. But as Eric Sandoval, the city's innovation team lead, notes, "a number of cities don't have the management analysts to even think about data tracking, much less repurposing of programs. They don't have the staff to lead the charge." Even if cities somehow could muster up the manpower, he adds, "they don't have the training."

There's another big reason it's so hard to kill off ineffective programs: Almost all of them had a good reason for getting funded in the first place. Even if they don't seem to be working, says David Ammons, an expert in the field who now teaches at the University of North Carolina's School of Government, "the purpose is still sufficiently great that we can't just walk away unless we can find an alternative."

Just because a program isn't achieving its goals doesn't necessarily mean the best solution is to ditch it. In some cases, it might actually be more effective to increase funding, not cut it. Then, too, there's the option of outsourcing programs, not necessarily to save money but to see if that alternative works better.

At any rate, there is some cause for optimism at the heart of all of this. Perhaps the real reason performance information hasn't aided in getting rid of lots of wasteful programs, Miller says, is that governments are not riddled with them in the first place. "It's a unicorn myth," he says, "that there are lots of programs that don't do any good and we're going to get rid of them." **G**

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On Leadership

BY MARK FUNKHOUSER

The GovLove Generation

Millennials are beginning to reshape local government in a big way.

When I was coming of age in the 1960s, we were told not to trust anyone over 30. Today's generational split is as big as that one was, but the threshold age is somewhat higher. Today the biggest divide is between millennials, the oldest of whom are now just under 40, and baby boomers, the youngest of whom are about 55. It's a divide that's beginning to play out in government, and, for now, the biggest impact is at the local level.

Those two generations tend to have starkly different opinions on a range of hot topics in local government. On housing, for example, younger people are more likely to favor increasing density and rebalancing policies that promote homeownership over renting. On transportation, millennials are more supportive of transit alternatives to car ownership. And when it comes to police-community relations, they tend to be far more concerned about abusive police behavior and more supportive of increased civilian oversight of police.

These divisions make governing at the community level difficult, but there's a growing force that, while still largely under the radar, is beginning to make a powerful difference. It's a cadre of younger local government professionals who have joined together under an organization called Engaging Local Government Leaders (ELGL)—true believers whose enthusiasm mirrors that of their avowed heroine, Leslie Knope from the TV sitcom *Parks and Recreation*. Like her, they love local government; in fact, ELGL's signature podcast is called GovLove.

Kirsten Wyatt co-founded the Engaging Local Government Leaders organization.

COURTESY OF KIRSTEN WYATT

The group was founded in 2010 by the husband-and-wife team of Kent and Kirsten Wyatt. The couple had met in the public administration master's degree program at the University of North Carolina and were working as mid-level managers in small cities in Oregon, and they wanted to meet some other young government professionals. It began with a lunch attended by 16 people. "People just really liked the chance to get away from work and get to know one another," Kirsten Wyatt, who became ELGL's full-time executive director about three years ago, told me. "And so we made a commitment to keep organizing those lunches. And then pretty soon we started adding guest speakers to talk about trending topics in the region." ELGL had its first conference in 2013, and today it has a membership of more than 4,000 local government professionals from across the country.

ELGL's culture is distinctly different from what is typical of many professional associations. Its members have, according to Wyatt, "a bias for action" and a drive for sharing and collaboration—"not just staying in your lane and climbing some career ladder." The organization doesn't avoid taking positions on issues of governance and public administration that its members feel passionate about. It has, for example, "definitely taken some very pronounced stances on things like diversity, equity and inclusion, and getting more women and people of color into local government leadership," Wyatt says. It has also been outspoken on family leave and other workplace policies that could go a long way toward keeping talented people in government in the face of increasing competition from the private sector.

As I listen to people talk about that problem and so many others that confront local governments, as well as the negative image that government in general must contend with, I frequently find myself telling them about ELGL and how, as Wyatt puts it, so much of what it does is about "finding the joy in local service." It's a sentiment I'm sure Leslie Knope could get behind. **G**

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HOW OHIO EPA REINVENTED PERMITTING AND COMPLIANCE ASSISTANCE

Every business, whether it's a manufacturer, body shop, restaurant or a dry cleaner, must comply with environmental regulations. Failure to follow these rules can put the public at risk. But a citizen who opens a nail salon, for example, may not know how to store and dispose of chemicals or which permits are needed. In most cases, that person will call the state environmental protection agency (EPA) or visit the agency website to find the information.

In the past, information on Ohio EPA's website was difficult to find. This resulted in multiple phone calls, which irritated business owners and overwhelmed Ohio EPA employees. Ohio businesspeople often had to call as many as five program offices to find out which regulations and permits applied to their businesses. But in many cases, Ohio EPA employees could not easily give businesses the information they needed. The complexity of the regulations and the number of groups involved frustrated everyone involved, and the consequences could be severe. Misunderstandings could result in a business taking the wrong action, which could harm citizens and damage the environment.

CREATING A WIZARD

Years earlier, Ohio EPA developed a custom permit wizard to help business owners locate the information they needed. But the wizard was outdated, lacked functionality and Ohio EPA no longer had staff that could support it. Agency leaders needed a new way to enable self-service to reduce costs and staff workload. They also needed to improve the consistency of their information.

In late 2015, Ohio EPA released a request for a new compliance and permit wizard that could increase self-service and connect field resources with back-office systems to improve operational efficiency. TruePenny People, a company that specializes in Oracle Policy Automation technology, responded to the request.

"Ohio EPA leaders had some big ideas about what they wanted to accomplish," says Raj Dubey, president of TruePenny People. "They didn't just want to update their existing wizard, they wanted something that would be very customized toward each person's experience and each business' situation, but that could also answer routine citizen questions."

Ohio EPA was an early adopter of Oracle Service Cloud and decided to build a new environmental permit, license and registration information one-stop wizard based on Oracle Service Cloud's Oracle Policy Automation.

"Rather than replace a custom product with a custom product, we would use Oracle Policy Automation and Oracle Service Cloud to provide Ohio EPA a solution that would allow them to consolidate and better leverage their existing knowledge base," says Shane Caldwell, Oracle Policy Automation specialist at TruePenny People. "That would also take some of the pressure off their staff and allow them to focus on more strategic activities."

THE OHIO EPA JOURNEY

Ohio EPA had an ambitious six-month timeline. This was a challenge given that complex regulatory requirements had to be built into the tool. That meant involving the right subject matter experts (SMEs) and conducting rigorous testing to ensure the correct information would be provided to users.

"IF WE CAN GET PEOPLE INFORMATION DIRECTLY, IT MAKES THE PROCESS MORE EFFICIENT AND PROVIDES A BETTER EXPERIENCE FOR BUSINESSES IN THE STATE."

Rick Magni, Chief Information Officer, Ohio EPA

"One of the biggest challenges was finding the right people to work with," says Rick Magni, chief information officer for Ohio EPA. "We are fairly siloed, so just finding the right people was a challenge. We have a lot of experts, but they aren't all experts in the same thing."

Once the correct SMEs were identified, TruePenny's Oracle Policy Automation specialists worked one-on-one with them to develop a series of questions, known as an "interview," that could be integrated into the agency's existing website. The team effort continued through the refining and testing phases of the project, allowing agency SMEs to increase their Oracle Policy Automation skill sets.

Working together, Ohio EPA and TruePenny People launched the new compliance and permit wizard within the agency's six-month window.

A NEW EXPERIENCE FOR OHIO BUSINESSES

Ohio EPA's new online permitting and compliance wizard reduces agency silos and makes life easier for entrepreneurs in the state. Using the wizard, Ohio business owners can easily determine which permits, registrations, licenses or notifications are required by federal or state EPA regulations. The wizard directs users through a series of questions and uses embedded logic to determine if a permit is required. The dynamic nature of the software determines which questions are applicable based on the previous answers provided, so a hairdresser is not asked questions that apply to a plywood manufacturer, for example.

At the end of the interview process, the user can download a "roadmap" that includes recommendations and information regarding requirements, local contact information and steps to take to begin the permitting process. It also suggests a series of steps businesses can take to comply with environmental regulations.

"There are educational mechanisms within the wizard to confirm people understand what they are using," says Magni. "For example, one question is 'Do you use hazardous waste?' If they reply no, the next question might ask whether they use certain chemicals. On that list could be something like methyl ethyl ketone, which is indeed a hazardous chemical. In that way we — and they — find out they are indeed using hazardous waste. It adds another layer of security and compliance and reduces our liability."

To help improve the citizen experience, most references to EPA regulations and jargon have been omitted from the wizard wherever possible. And the system is available 24/7, so Ohio EPA offices don't need to be open for citizens to access information.

Since its implementation, Ohio EPA's new permitting and compliance wizard has improved consistency in customer-facing guidance, reduced time and effort for Ohio businesses, and increased Ohio EPA's staff work capacity.

"If we can get people information directly, it makes the process more efficient and provides a better experience for businesses in the state," says Magni.

Magni says the wizard will help Ohio EPA increase compliance, reduce liability and improve public safety. The wizard is also serving as a model for future Oracle Policy Automation application development at Ohio EPA. Some applications currently in development include better systems to notify Ohio EPA of a water line break and route that information to the right person day or night, a grants management application, and an application to help Ohio EPA employees monitor fish populations in local rivers — a primary indicator of water quality.

"We have a slew of use cases we're looking at," says Magni. "Leveraging Oracle Policy Automation has a lot of potential benefits for many types of state agencies, and the return on investment is there."

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Public Money

BY ANNE KIM

On the Way to Decay

In 1901, a Colorado Springs dentist named Frederick McKay noticed many of his patients had peculiarly mottled brown teeth—but far fewer cavities than the norm. The cause, Dr. McKay determined after years of investigation, was high levels of natural fluoride in the town's water. His discovery eventually led to the widespread fluoridation of public water systems across America and a dramatic decline in tooth decay over the past 70 years.

Numerous studies have shown the protective effects of adding fluoride to water, especially for kids, and the Centers for Disease Control and Prevention hails community water fluoridation as one of the 20th century's top 10 public health achievements. State and local budgets have benefited too, thanks to lower public expenditures for dental care.

Unfortunately, a significant number of localities are now undoing their investments in fluoridation, thanks to a small but vocal minority of anti-fluoride activists using pseudo-science to trump data. The result has been the spread of misinformation about fluoride's benefits, as well as higher costs for both taxpayers and families.

According to the anti-fluoridation Fluoride Action Network (FAN), more than 200 communities in the United States and Canada have rejected public water fluoridation since 2010, from small towns such as Sheridan, Wyo., to bigger jurisdictions such as Bucks County, Pa. In Portland, Ore., residents have voted down fluoridation four times since 1956, most recently in 2013. In 2018, at least 13 communities put water fluoridation on the ballot, while many other localities debated the issue at the city council level without a public vote.

Localities should resist anti-fluoride activism—for public health and budgets.

Like anti-vaccinators, anti-fluoride activists rely on spurious medical research to argue fluoridation's hazards. FAN, for instance, blames fluoride in water for everything from cancer to diabetes to low IQ to, ironically enough, tooth decay. "I've got a list as long as your arm of different claims," says dentist Johnny Johnson, president of the pro-fluoride American Fluoridation Society. None of these claims, however, is backed up by valid science or facts.

One thing that is backed up by facts? Fluoridation saves money—for consumers as well as governments. A 2016 Health Affairs study estimated the nation's net savings from fluoridation to be nearly $6.5 billion a year from avoided dental costs. Conversely, ending fluoridation can be costly. One study in New York found that residents in non-fluoridated counties were 33 percent more likely to undergo dental procedures, while a Louisiana study found that Medicaid-eligible kids in non-fluoridated communities were three times more likely to get dental treatment than kids in fluoridated areas and at twice the cost.

Dentist David Logan witnessed these impacts firsthand in Juneau, Alaska, where voters ended fluoridation in 2006. The immediate effect, he says, was an increase in cavities among his adult patients, "specifically in older adults where the root surface gets exposed." Today, his colleagues are seeing many more cavities in kids and at "levels they haven't seen before in their practicing career."

All of this is expensive. Logan, now executive director of the Alaska Dental Society, notes that simple fillings cost about $175 in his community, while crowns cost upward of $500. "It's a very significant

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amount," he says, "especially when that cost is disproportionately borne by the public through Medicaid."

A 2018 study of Juneau's Medicaid records found that since the end of fluoridation, Juneau's kids undergo one more cavity-related dental treatment per year than before, at a cost of $300 per child on average. The study also found the highest costs among children under 7, who've had no exposure to fluoridated water.

Logan is hopeful this study will help bring fluoride back to Juneau. But he admits he was badly outgunned six years ago by the opposition. "You don't have to have facts. All you need is something sexy to say," he says. "We had people with lots of letters after their names, but we didn't put a face on it and got crushed."

Next time, he says, he'll be ready, as should all localities where anti-fluoride activists have made a stand. At stake is not just the integrity of science but public budgets and public health. G

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Transportation + Infrastructure

BY NICOLE GELINAS

Homeownership's Hidden Debt

Buying property also means taking on a jurisdiction's retirement liabilities.

It's no secret that younger Americans are not buying homes in the numbers previous generations did. These days, only 35 percent of households headed by people under the age of 35 own their houses or apartments, compared to 40 percent just 20 years ago. It's easy (and valid) to say that younger people are put off by their lack of accumulated wealth. But even if the under-40s were flush with cash, they would have another good reason to avoid buying property in some of the country's most densely populated areas: They also would be purchasing decades' worth of pension and other long-term liabilities related to government workers.

Millennials face obvious financial hurdles in making six-figure purchases. They are less wealthy than their baby-boomer counterparts were at the same age. According to the Pew Research Center, millennials' median net household worth in 2016 was $12,500—40 percent less, in inflation-adjusted dollars, than the $20,700 that represented boomers' wealth in the early 1980s.

But even if millennials had ample earnings to save and invest, they still would have to pause before making investments in the nation's highest-valued property markets. Consider the broadly defined New York City area, including Connecticut and New Jersey. According to Zillow, the median listing price for a home in Connecticut as of this May was $329,900. In New Jersey, it was $339,000. In Westchester County, N.Y., a popular bedroom community just north of New York City, it was $699,000.

Those are serious investments, even if the purchase price were the only cost of homeownership. But in buying a house and the land it sits on, the purchaser is also taking on a share of the jurisdiction's future liabilities.

Let's consider Connecticut first. Ranked by household income, it's the fifth-richest state. Yet Connecticut's wealth has not helped it come close to adequately funding its future liability for public-employee pensions. Connecticut owes $37.5 billion on that score, plus another $22 billion for public-sector retiree health care. That works out to $42,500 for each of the state's 1.4 million households. That's not money for future investments that return value, such as infrastructure; it's money that should have been collected from past taxpayers. Instead, the debt has been pushed to the future. It should by rights be deducted from today's home values.

New Jersey's households are looking at an even bigger bill for that state's unfunded public-sector retirement liabilities: $52,500. And it's by no means an East Coast-only phenomenon: Californians are on the hook for $19,100 per household. Unfunded retirement obligations exist across much of the country; Pew estimates that state governments alone owe $2.1 trillion, an average of $17,300 per household.

Would-be property owners should consider that state and local governments could levy a combination of higher property, income and sales taxes sufficient to attempt to make good on these obligations. But renters subject to crushing income and sales taxes could simply move away—leaving property owners with the bill, or with lower property values reflecting the clearer understanding of that liability.

Alternatively, states and localities could begin to pare back current spending to fund these obligations, or in extreme cases even begin to default on them. That would precipitate far inferior government services, such as education and health care, and infrastructure, such as transit and roads. And it would likely produce public-employee unrest in the form of protests and lawsuits against benefit cuts.

In any event, it's hard to blame millennials from holding back on purchasing property. After all, they would not just be buying saleable, appreciating assets, as the baby boomers once did. Rather, they'd be buying the massive liabilities that the boomers are leaving behind. **G**

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Health + Human Services

BY MATTIE QUINN

The Long-Term Care Gap

Some states are chipping away at covering what Medicare and Medicaid don't.

More than 15 percent of Americans have already reached the age of 65, and by 2030 that number will have risen to one in five as the last of the baby boomers reach retirement age. Despite these numbers, insurance options to cover the long-term health-care needs that many aging Americans will need are elusive. While Medicare pays for medical services in a nursing facility, it covers the cost of the stay itself only for short stints. And Medicaid typically covers long-term care only for those Americans with virtually no assets.

It's an issue that state legislatures are continually revisiting, but overall there's been little progress toward meeting the full health-care costs of the elderly. This year, however, the state of Washington passed legislation that will go further than any other state in closing coverage gaps for a large proportion of its residents.

The program will be funded by a wage tax of about 0.6 percent, which kicks in in 2022. Beginning in 2025, the state will offer a maximum lifetime benefit of $36,500 for a person to use for long-term care needs, with the benefit indexed to rise annually with inflation. The coverage isn't universal: To use the money—up to $100 a day—a resident will need to have worked and paid into the program for at least three years in the past six or for a total of 10 years with five years of uninterrupted work. In addition to the standard stay in a nursing home, the benefit will cover items such as installing wheelchair ramps at home and providing services such as those offered at an assisted living facility or by in-home care.

A challenge for the state will be to make sure that as residents' paychecks reflect the new wage tax, they understand where their money is going. "We need a backstock of resources, and that's what this does," says Jason McGill, health policy adviser to Gov. Jay Inslee. "They might not know what they're paying into, and it's our next step to communicate what that is and why it's important."

While Washington's approach is broader than most, advocates say there are plenty of other ways to chip away at the unaffordability of health care for the elderly. "It's not one thing or the other. It's a series of policy changes that will change the landscape," says Elaine Ryan, vice president for state advocacy and strategy integration at AARP.

Ryan lists helping with caregiver expenses as a good place to start, given that the average out-of-pocket cost for a caregiver is $7,000 a year. Hawaii took such a step in 2017 with legislation providing $70 a day for up to a year for caregiver expenses. A couple of other states are weighing tax credits for caregiving costs, and a bipartisan federal bill taking that approach is pending.

Another step that would lessen the burden of long-term health care costs would be to implement more flexible sick-leave policies that would make it easier for employees to care for aging relatives. "It's hard to believe you don't have that for anything other than your own health," says Ryan.

Whatever approaches a state considers must be framed around the need for options across the continuum of a person's life, in Ryan's view. "We need these systems to be more contemporary," she says. "That's why when we communicate the need for these policies at the state level, we refer to them as a whole-family caregiving journey." **G**

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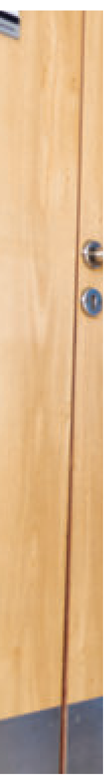

Nursing home stays will be covered under a new program in Washington state.

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Energy + Environment

BY DANIEL C. VOCK

There's Something in the Water

A common group of chemicals has emerged as a major environmental threat.

The first inkling the city of Ann Arbor had that its drinking water was contaminated was five years ago. That was when the federal government started including a class of common industrial chemicals called PFAS (per- and polyfluoroalkyl substances) in routine testing it asked the city to do. At the time, few people in the Michigan city understood how dangerous and prevalent those chemicals could be.

Researchers and regulators came to learn that the most common PFAS—a designation that covers thousands of chemicals—are linked to kidney and testicular cancer, pre-eclampsia, liver malfunction and weak immune responses, which limit the effectiveness of vaccines.

With the public growing increasingly alarmed, Ann Arbor spent a million dollars to filter many of the chemicals from its water and raised its rates to cover the cost of ongoing treatment. It is one of the few water utilities to take such a drastic step as the federal government, state regulators and other utilities grapple with how to respond to a type of pollution that was barely understood until recently.

This class of chemicals has been used in the production of everything from Teflon pans and stain-resistant carpet to fast-food containers and firefighting foam. The chemical bonds that make them useful in those situations also make them extremely hard to break down in the natural environment. As a result, the so-called forever chemicals, which were first manufactured in the 1940s, have been found all around the world—in the air, soil and water, and in polar bears, bald eagles, salmon and nearly every human that's ever been tested.

As of March, at least 610 locations in 43 states—many of them associated with drinking water systems or military bases—were known to be affected by PFAS pollution, according to the Environmental

PFAS chemicals were once used in everything from nonstick pans to firefighter foam. Contaminated groundwater has been identified in 43 states.

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Working Group, an advocacy organization. That's likely an understatement because in most states, there's no routine system for testing for the chemicals in the environment.

Worries about the health effects of PFAS in drinking water grew last year when federal health researchers warned that the U.S. Environmental Protection Agency's recommended thresholds for the chemicals were seven to 10 times too high. The conclusions were so alarming that the Trump administration initially tried to block the release of the draft report, fearing, according to internal emails, a "public relations nightmare." The water in Ann Arbor at one point had 43 parts-per-trillion (ppt) of PFOS, one of the chemicals; the authors of the 2018 draft report said the threshold for PFOS should be 7 ppt, not 70 ppt, as the EPA recommends.

Brian Steglitz, Ann Arbor's water treatment plant manager, says residents pushed for action. The city is home to the University of Michigan, and its residents are well-educated and engaged, he says. Local officials didn't want to risk people thinking their drinking water wasn't safe. So the city replaced its filters, which initially cost $850,000 (a tenth of its operating budget) and will add nearly $200,000 in extra costs every year. Plus, the utility started issuing monthly water quality reports, instead of the annual reports required by federal law.

The city's goal is to comply with the most stringent regulations on PFAS in the country, whether it's legally obligated to or not. The EPA and Congress are considering national rules for the chemicals, but those efforts are hampered by the fact that scientists have only studied a few of the thousands of chemicals classified as PFAS. Regulators and lawmakers are debating whether to restrict just the few compounds that are known to be dangerous or the entire class. They haven't agreed what level of exposure is safe, if any.

While the federal government deliberates, local and state governments are taking action, too. But that means the drinking water standards could be different in Michigan than they are in New Jersey, says Steglitz.

"Our customers have one question, and that's the question that everyone's asking all around the country: Is my water safe to drink?" Steglitz says. "They want a 'yes' or 'no' answer. They don't want a 'yes, but ... .' I don't think you want to be the state with the highest [thresholds]."

"The most challenging thing" about PFAS, he adds, "is that the science isn't moving fast enough to keep up with the media coverage and the political attention. How do you communicate the unknown to your customers so they can still continue to have faith and confidence in municipal water systems? That is difficult." **G**

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Last Look

DAVID KIDD

Niagara Falls State Park is America's oldest state park—and certainly one of the wettest. Established in 1885, the park replaced unsightly commercial and industrial development that had encroached on the famous cataracts, blocking access and views. Today, thanks to a series of wooden walkways and decks, park visitors can get within a few feet of Niagara's Bridal Veil Falls. Because it would never survive the massive ice that builds up in winter, the wooden structure is dismantled every autumn to be cleaned, repaired and put into storage. After the spring thaw, soaking-wet workers reconstruct the walkway as frigid water splashes around them. The structure is wedged into crevices in the rocks without anchors or bolts, and no two walkways are exactly alike from year to year. **—David Kidd**

Meeting the Public Sector's Benefits Strategy Needs

A robust employee-benefit strategy is essential for all businesses — and even more so for those in the public sector where employees expect benefits stability for their health, retirement and more. In this Q&A, Brian Day, Aflac's public-sector director, and Neil Browder, owner of Mark III Employee Benefits, a brokerage in Charlotte, N.C., discuss how collaborations between benefits-strategy organizations and brokers can lead to better client outcomes. Their responses are based on personal experiences in the public-sector market and therefore may not be applicable to the entire public-sector market.

Brian Day, Public-Sector Director, Aflac (left)

Neil Browder, Owner, Mark III Employee Benefits (right)

Q: What are some unique factors that should be considered when developing public-sector benefits strategies?

Browder: Private companies often have budgets that allow them to offer higher salaries than those in the public sector. As a result, government workers often expect more from their benefits — making a strategic approach to benefits critical to meeting recruiting and retention goals. And because their employees' benefits are also their benefits, agency leaders often get personally involved in the selection process. We uncover what matters to them, as well as to their employees.

Day: Whether employees are newer to the workforce or nearing retirement, there's a need for stability and financial protection. Public-sector employees want emotional and financial well-being and expect their employers to provide benefits that help meet those needs. Many individuals work for the public sector because their benefits help provide peace of mind.

Q: How is Aflac helping public-sector employers become more competitive in recruiting and retention?

Day: We find that improved employee education helps public-sector agencies maximize the investments they make in benefits. For example, helping employees understand how their benefits work together often leads to better decisions. It's about showing them where efficiencies can be gained: how their health plans work, how supplemental insurance policies can enhance their coverage and how their other benefits fit in.

Q: How is Aflac teaming with brokers to help support government workers?

Day: In short, we've improved our offer with exclusive advantages for the public sector. When we started our public-sector division, we first needed technology that delivered full benefits administration. Next, we needed to provide flexible spending account and health savings account administration, along with dependent audit and 403(b) services. Then, we needed to provide a generous and competitive underwriting offer. In just over two years, we've made those things a reality and it has put us in a position to best serve public-sector clients. Often, agencies bear the costs of making benefits and services available, as well as the costs of promoting and facilitating enrollments. Our goal is to help provide the resources — from enrollment, communication and education to technology and subsidies — that fit an agency's revenue strategy. This will help agency leaders focus more on employee satisfaction, talent attraction and retention.

Q: Does a well-designed benefits strategy help with recruitment and retention?

Browder: Public-sector employees, especially in urban environments, often seek jobs with high-quality, reliable benefits. Their financial strategies are more conservative than those of private-sector workers. Public-sector employers who deliver more complete benefits experiences can ultimately increase their chances of attracting and retaining top talent.

For more information, visit **Aflac.com/PublicSector.**

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Preparing for the Network of Tomorrow, Today

A government executive's guide to understanding the **network of the future** and its role in transformative change.

government technology

AT&T

In Dallas, intelligent sensors will detect when a street light is out and automatically alert repair crews. In the San Francisco Bay Area, officials will use video analytics from traffic cameras to monitor congestion and automatically adjust express lane tolls. And in Georgia, virtualization and other new technologies will enable the state's central IT organization to roll out new capabilities faster than ever before to support the needs of state agencies.

It's clear that state and local governments are in the midst of a technology revolution. Cloud models, "as-a-service" solutions, Internet of Things (IoT), artificial intelligence (AI), mobile devices and other innovations are already helping public sector organizations improve services to constituents; save money, time and labor; and keep workers happier and more productive.

But fundamental to these advancements is network connectivity on an unprecedented scale. As states and cities grow smarter and more connected, enterprise networks will need to be more scalable, available, accessible and secure than ever before — even as architectures, devices and applications continually evolve.

This is tough to do, however, when capital-intensive networks are reaching end of life and are difficult to maintain. According to a NASCIO survey, 90 percent of state government agencies say at least one-fifth of their IT infrastructure is a legacy system. It's a risky way to operate.[1]

90% of state government agencies say at least 1/5 of their IT infrastructure is a legacy system.

"[Government agencies] used to be able to buy equipment for their networks, and as long as it still received power they could use it for a long time with the intent of using scarce government dollars as efficiently as possible," says George Spencer, associate vice president, AT&T Public Sector. "Over time, it's harder to maintain this equipment, so they fall behind."

Old network strategies simply won't work in an environment where new technologies emerge at an exponential pace, user expectations change rapidly and security threats continually multiply — all while state and local budgets remain stagnant.

It's time for forward-thinking government leaders to embrace a new approach. We call it the network of tomorrow. This guide will show you what it is, and how you can get there.

The Network of Tomorrow

The network of tomorrow is characterized as much by the technology that underpins it as the innovation it enables. While yesterday's network was based on capital-intensive hardware implementations, the network of tomorrow is software-based, enabling organizations to flexibly set up, change and secure network environments without purchasing and deploying expensive physical devices. Instead, features and capacity can be changed via software configuration. And intelligent automation within the network enables it to deliver a level of performance and reliability that is crucial in an everything-is-connected world.

"It's really about an intelligent network," says Greg Kaleski, product marketing manager, AT&T Public Sector. "The WAN is no longer a static, one-size-fits-all thing, because you can now control the route that different apps can take; you can have one vendor bringing in a wireline connection and another vendor bringing in a mobility connection and then route preferentially based on your needs."

The result of these capabilities is a network that quickly scales up capacity when it's needed and scales back down when it's not. This software-centric, cloud-based approach also alleviates staffing and resource burdens associated with in-house network deployment. Agencies can add applications to the network without waiting for the IT team to build out more bandwidth; therefore, new services roll out remarkably fast. Just as important, sophisticated security features are built in and maintained by top industry talent.

"Software-defined networking enables a new model and that's significant. We aren't just evolving; we are looking at a paradigm shift for how governments provide service to their end users," says Michael Keenan, technical sales manager, AT&T Public Sector. "We're moving from a model where you're locked in with different vendors and buying a whole bunch of boxes that you have to support to an approach where you are subscribing to a service and paying a rate for what you use."

Network of Tomorrow Tenets

Software-Defined Networking (SDN)
This is an architectural framework to create intelligent networks. Using virtualization, automation and other technologies, it enables organizations to respond more quickly to change, centralize traffic management and deliver network services anywhere in the network, regardless of the specific devices that the network connects to.

Network Functions Virtualization (NFV)
This replaces dedicated routers, firewalls and other traditional network hardware with software that runs on commercial servers and performs these functions through an application instead of hardware.

Network as a Service (NaaS)
This is a model for consuming network services virtually on a pay-for-use basis or for a monthly fee. The service provider is responsible for network operations and management.

CASE STUDY

Managed Services and SDN Pave the Way for Growth

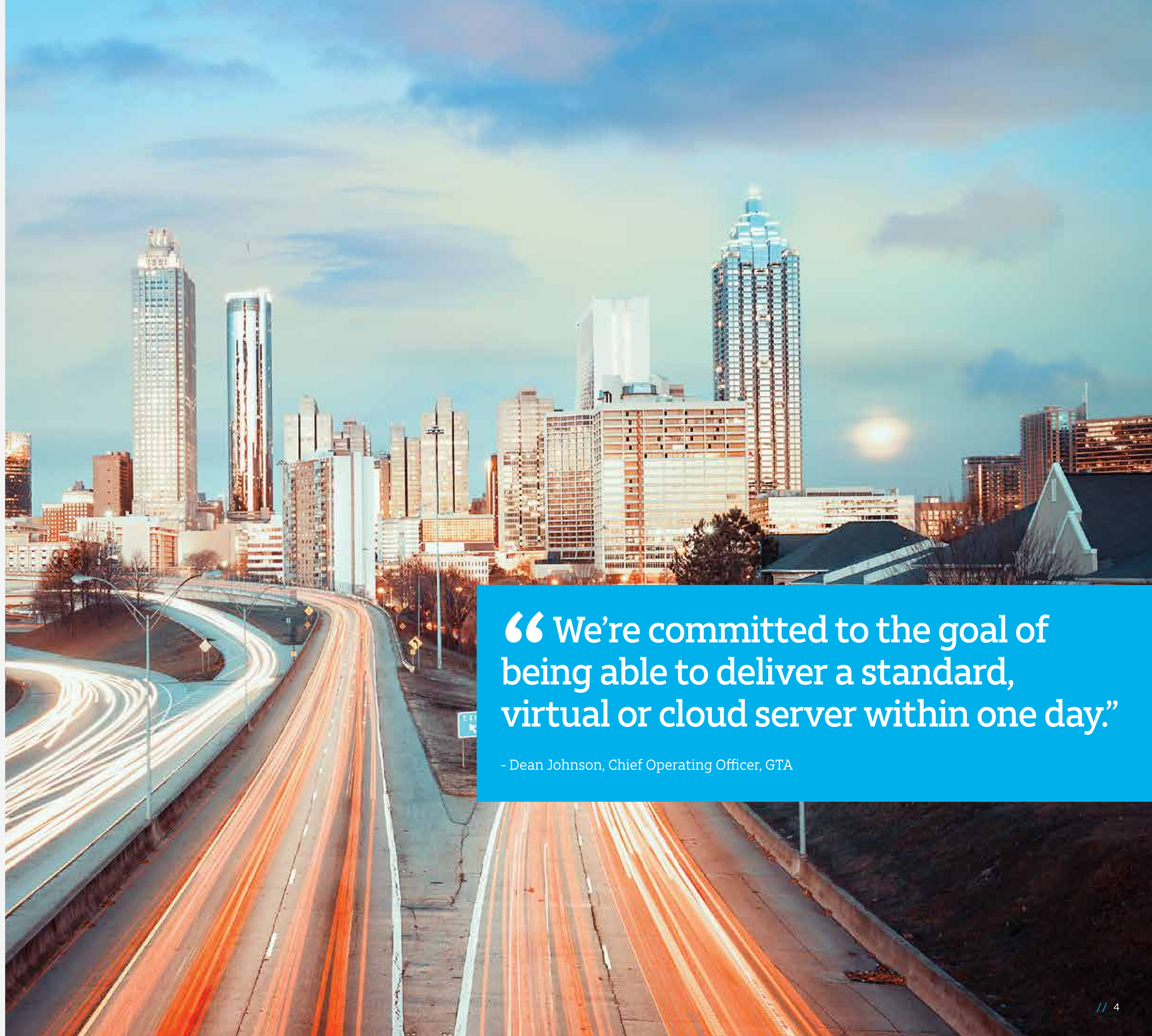
The Georgia Technology Authority (GTA) is the central IT authority for the state of Georgia. In collaboration with AT&T, it's using a managed services approach to deliver wide area network (WAN), local area network (LAN), voice and other network services to the 1,300 state and local government entities that it serves. A third-party integrator handles the day-to-day coordination and management of service delivery. When end users need new network capacity, changes or repairs, they simply put in a request for service.

"Managed services save the state a lot of time, effort and resources; the network is secure, reliable and recoverable; and there's a built-in refresh cycle so technology is always up to date," says Dean Johnson, Chief Operating Officer of GTA.

The solution has also alleviated the need for a large staff of skilled network technicians because qualified service providers handle day-to-day technical tasks.

As part of its collaboration with AT&T, GTA plans to implement SDN and more virtualization within the next few years. SDN is essential for Georgia to meet its growing IT demands, including delivery goals that GTA established in a new contract for server services. GTA needs to enable faster network provisioning so that it will align to the rapid provision capabilities the service provider plans to implement.

"We're committed to the goal of being able to deliver a standard, virtual or cloud server within one day," says Johnson. "These aggressive timelines are light years from where we are today, and they would be very difficult to meet without introducing more automation and some prepackaged functionality — such as pre-assigned IP addresses, VLANs and firewall configurations — that we're currently working with AT&T to architect and engineer."



> "We're committed to the goal of being able to deliver a standard, virtual or cloud server within one day."
>
> - Dean Johnson, Chief Operating Officer, GTA

Future Ready

The network of tomorrow helps state and local organizations prepare for many current and future challenges and trends, such as cybersecurity, mobility, IoT and other innovations.

Enhancing Cybersecurity

According to NASCIO, security and risk management has been the No. 1 priority of state CIOs for the last five years.[2] But recruiting and retaining qualified IT and cybersecurity staff is a huge challenge for state and local governments, who are losing expertise and institutional knowledge at the same time they must compete with the private sector for skilled IT and cybersecurity personnel.

"Many state and local governments struggle to acquire and maintain the resources required to gather intelligence and protect themselves, their constituents and their critical infrastructure from digital attacks," says Princess Young, a cybersecurity awareness program lead for the Department of Homeland Security.[3]

And although cybersecurity is a top priority in most organizations, the approaches many of them take to prevent breaches are antiquated.

"The prevailing methodology in cybersecurity right now is the defense-in-depth approach, where organizations put hardware appliances in place to do specific security functions," says DuWayne Aikins, principal architect, AT&T Public Sector. "But that's costly and time consuming, and by the time those solutions are installed they need to be refreshed. They simply can't keep up with the rapidly evolving threat landscape or today's extensive network ecosystem."

Today's attacks are often stealthy, targeted and persistent; range from ransomware and distributed denial of service (DDoS) attacks to encrypted malicious web traffic and phishing attacks; and exploit vulnerabilities in cloud services, mobile applications, the IoT and other resources.

Emerging technologies and the movement of data to and from off-premises locations further expose the network to vulnerabilities and risks. Traditional security hardware such as firewalls, routers and intrusion prevention systems cannot protect data once it leaves the enterprise, and it is inadequate against threats that use encryption or other legitimate resources to make it past ordinary lines of defense.

The modern threat environment requires a shift in focus to intelligence gathering, incident detection and rapid remediation. The network of tomorrow allows states and local governments to easily incorporate these functions via virtualization and managed services. In addition, the network of tomorrow is easier to set up and provision than a traditional network, which means IT and cybersecurity teams can quickly adjust configurations to reduce risks and remediate threats.

"When functions are centralized and virtualized, it's a lot easier to have a unified security posture," says Aikins.

"The use of software and virtualization is vital for both current and aspiring cybersecurity professionals to face the unique challenges that this field presents," adds Young. "These technologies are particularly powerful when combined with other resources and research, including everything from educational programs to other risk management solutions."

Looking into the future of network security, Don Parente, associate vice president of engineering and architecture, AT&T Public Sector, foresees the increased use of SDN for network compartmentalization. Many government intranets have thousands of public sector employees on them. With such ubiquitous access, the insider threat and the risk of unauthorized access increase.

"With SDN, we can quickly set up purpose-built networks with very few people on them. If you can define a network in near real-time and reduce authorized communities to smaller groups, then you can contain information more easily," says Parente.

> "When functions are centralized and virtualized, it's a lot easier to have a unified security posture."
>
> - DuWayne Aikins, Principal Architect, AT&T Public Sector

Tips for Success: Engagement and Communication are Key

Industry experts agree that open information sharing within an organization and with technology vendors is vital to maintaining a robust security posture. George Spencer, associate vice president, AT&T Public Sector, says that many CISOs and their organizations make the mistake of going at it alone and think their team and security controls are sufficient to fully protect their environment.

"It takes an army to successfully win the battle on an ongoing basis," he says.

Spencer recommends organizations engage in public-private partnerships and keep the lines of communication open.

Young agrees: "Collaboration across all sectors is increasingly vital to the security of organizations and individuals across the nation. Sharing threat indicators, potential risks, observed trends and new technologies allows us to build resilience against cyber threats."

> “With virtualized security functions, greater visibility and automated controls, we can add capacity and take advantage of new opportunities much faster.”
>
> - Phil Bertolini, CIO, Oakland County, Mich.

CASE STUDY

Improving Security with SDN

The use of shared services is a main tenet of Michigan’s Oakland County Department of Information and Technology. Recognizing that not all departments and agencies have the IT expertise and resources to do everything on their own, the county uses a model where the larger organization shares services with smaller ones. One example is its G2G Cloud Solution, which provides e-commerce capabilities to counties throughout the state and is supported by network services from AT&T.

“We’ve found that by sharing, smaller governments don’t need to buy and we can lower our overall cost of transactions,” says Phil Bertolini, CIO for Oakland County.

Security is woven into shared services. This approach takes the burden off smaller departments and helps ensure they are protected. Ultimately, it also protects the network as a whole.

“Without the network, none of this happens. The cloud, IoT and other innovations don’t work without connectivity,” says Bertolini.

To that end, the county is in the middle of a complete modernization of its networks. SDN and virtualization are key aspects of the overhaul and will enhance the department’s ability to quickly secure and manage traffic across these networks.

“With virtualized security functions, greater visibility and automated controls, we can add capacity and take advantage of new opportunities much faster, at far lower cost and with more consistent security policies across the network,” Bertolini says.

Government on the Go

State and local agencies need to provide ubiquitous, on-demand network access to multiple groups of users, including a new generation of remote workers and a diverse constituency.

"Governments are trying to support a workforce that increasingly includes employees who want to log in from home or a local café. They are also trying to accommodate remote work to alleviate the high cost of office space and improve productivity and workflows for people in the field," says Keenan.

At the same time, citizens, businesses and private partners expect 24/7 access to personalized, consumer-like mobile services, as well as smart city innovations that improve quality of life, save taxpayer dollars and spur economic growth.

This demand for a more mobile-friendly government not only increases WAN traffic and bandwidth requirements, but also introduces new routing challenges as thousands of devices at the edge attempt to access network resources and cloud-based services. Smart devices, which are now the computing device of choice for many users, strain the network even further and create unpredictable demand by streaming video, using VoIP and performing other data-intensive processes.

Traditional hardware-based network approaches cannot scale as quickly and flexibly as needed to meet this demand. They cost too much, take too long to deploy and rely on human intervention.

The network of tomorrow provides flexible, software-based network services that, in essence, can run themselves. By allowing the network to automatically create virtual network connections, these services can provide processing power and new routes on demand. Organizations can accommodate citizen, workforce and line-of-business demands for secure, reliable, high-performance mobile connectivity within days — if not hours.

Using SDN and virtualization, for example, agencies can automatically provision additional capacity in the event of a disaster; use quality of service (QoS) prioritization to ensure critical applications are continuously available to mobile users; differentiate routing so highly sensitive mobile communications travel a different, more secure route than other types of data; and optimize routing to make the best use of existing resources.

Tips for Success: Plan for the Non-Wired WAN

In the near future, schools and some government agencies won't have wired connections anymore because their networks will be based on 5G or 6G cellular connections. As this evolution continues, organizations that support WAN will have to consider non-wireline solutions and their strategy to implement them.

"With WAN, you have to start thinking about mobile data connections, because whether they're supportive, backup or — with the advent of 5G — primary WAN connections, you're now moving away from a purely wireline model to these new technologies," says Spencer.

CASE STUDY

Using Technology to Beat Traffic

The Contra Costa Transportation Authority (CCTA) in California's Bay Area is working on several projects that rely on mobile connectivity to improve transportation across the region. One project is to relieve heavy congestion along Interstate 680. The project will rely on video cameras to monitor traffic speeds, and then use that data to automatically set tolls for express lanes. In addition, when traffic drops below a certain speed, buses will be able to use the right shoulder, and ramp meters will hold traffic on nearby onramps until a bus passes by. All of this will be coordinated via the wireless network.

When asked what organizations should consider when undertaking similar projects, Randy Iwasaki, Executive Director of CCTA, emphasizes the importance of network reliability and flexible bandwidth.

"Network safety from both the transportation and mobile connectivity perspective is going to be increasingly important," Iwasaki says. "You're going to get a lot more data from cell phones in the future and you need a network that can handle that. You have to have a redundant system to ensure network communication is never lost, and you need expandable bandwidth for quickly relaying high volumes of video and other data back and forth."

> "You're going to get a lot more data from cell phones in the future and you need a network that can handle that."
>
> - Randy Iwasaki, Executive Director, CCTA

The Explosion of Endpoints

States and cities are adopting IoT technologies to do everything from manage energy efficiency in public buildings to monitor flood levels.

While IoT brings new levels of efficiency, cost savings and innovation to state and local governments, it also creates new complexities. IoT not only increases the amount of data traveling across the network, but also the number of endpoints — potentially hundreds of thousands — connecting to the network. In addition, each device and use case has unique requirements for power, bandwidth, reliability and communication with other applications or devices. These requirements impact the type of network technology IoT requires (e.g., Bluetooth, Wi-Fi, 4G, or Ethernet/LAN); depending on the use case, organizations may need to create multiple network connections.

IoT security is also a challenge. Besides concerns about device vulnerabilities, organizations must be sure the network itself and data connected to devices is protected.

Next-generation networks give organizations the tools they need to flexibly set up, customize and secure IoT networks. SDN allows them to centrally manage data flows on highly distributed IoT networks; NFV allows them to virtually provide the unique combination of functions that each IoT use case requires; and NaaS allows them to quickly add bandwidth as needed. For example, an organization can partition part of the network infrastructure to provide a virtual dedicated space for a specific application.

> “You can mitigate that (human) threat by separating networks for things from networks for people.”
>
> - Don Parente, Associate Vice President of Engineering and Architecture, AT&T Public Sector

Tips for Success: Implement an Intranet of Things

When it comes to IoT security, AT&T advocates for an “**Intra**net of Things” rather than a public internet of things. An **Intra**net of Things is an internal network with private IP addresses. With a next-generation network, organizations can easily set up an **intra**net for a specific purpose.

“People are one of the main causes of breaches — whether because they mistakenly click on a malicious email or intentionally do harm. With the flexibility of an advanced, software-based network, you can mitigate that threat by separating networks for things from networks for people,” says Parente. “The network is already there. It’s just a simple matter of provisioning.”

> “With a video camera and AI system, we can dispatch crews when the park needs attention.”
>
> - Michael Sherwood, Director of Innovation and Technology, Las Vegas

CASE STUDY

Smart City Connectivity Streamlines Asset Management

The city of Dallas and the city of Las Vegas are using their networks to take IoT to the next level of smart city innovation. In Dallas, a Living Lab in the historic district is home to an intelligent street light project that uses the network to automatically notify the city when a light is out or needs repair.

In Las Vegas, the city’s Innovation District is piloting a park maintenance program that sends video images of the park to the cloud for analysis, and then alerts staff when the grounds are littered or need other care.

Jennifer Sanders, Executive Director at the Dallas Innovation Alliance, paints a picture of the types of benefits that accrue in both use cases.

“Usually when there’s a lighting outage, a citizen must report it to 311 or the utility, or repair trucks roam around looking for outages,” she says. “Now, intelligent sensors will detect that the light is out and automatically notify the city. This creates operational savings by enabling crews to plan repairs and routing more efficiently.”

Besides reducing the cost of truck rolls and labor, the system will also reduce the number of wasted trips by ensuring the right parts are on the truck when it goes to a job.

Michael Sherwood, Director of Innovation and Technology for the city of Las Vegas, points out the benefits of using AI with IoT.

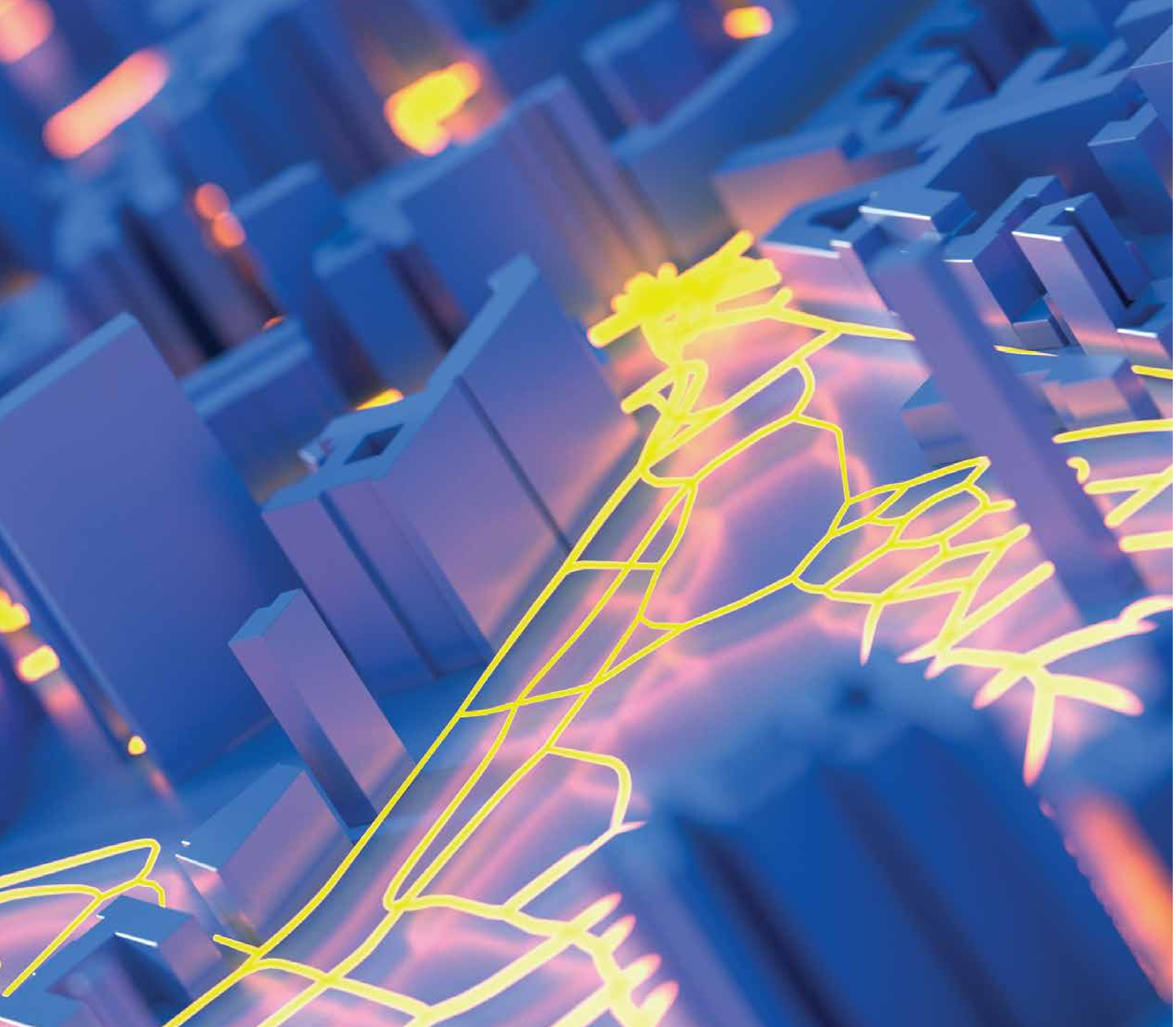
“Today, we manage a park by sending a crew out whether the park is dirty or clean. It’s an inefficient use of resources. With a video camera and AI system, we can dispatch crews when the park needs attention,” he says.

With both cities engaged in numerous complex smart city projects, the importance of a flexible, scalable, reliable and secure network cannot be overstated.

“We’re a mix of Wi-Fi, fiber, cellular and microwave networks; it’s important to have a network that supports multiple use cases and connectivity options,” says Sanders.

Sherwood notes that security is always top of mind in IoT projects.

“We have a living, breathing network made of many systems combined together. The most important piece of IoT is the data, and we need to protect that data to protect people, public safety and the network as a whole,” he says.



The Promise of a Faster Network

The fifth generation of mobile networks, 5G, will ultimately revolutionize the way government entities operate and serve citizens. In December 2018, AT&T became the first and only company in the U.S. to offer a mobile 5G network. 5G and edge computing have the capacity to deliver an unprecedented opportunity to augment and elevate the human experience.

Edge computing can shift the workload of transmitting vast amounts of data away from hardware to the network, through software-defined applications. This model allows businesses to route applications' specific traffic to where they need it and where it's most effective, whether that's in the cloud, the edge of our network or on their premises. Today's applications are high-performance and power hungry, generating massive amounts of data that require real-time computing power.

"Edge computing helps fulfill the promise of the cloud to transcend the physical constraints of our mobile devices," says Andre Fuetsch, president of AT&T Labs and chief technology officer, AT&T Communications. "The capabilities of tomorrow's 5G are the missing link that will make edge computing possible."[4]

Mobile 5G will be about more than just speed. It will also eventually bring ultra-low latency — a key enabler for virtual reality, autonomous vehicles and IoT, all of which depend on a highly efficient network response to orchestrate data rich experiences. Meeting the security challenge for 5G mobile networks is a key focus for service providers, manufacturers and other stakeholders. Some believe moving computing power and other capabilities closer to the edge inherently makes networks less secure. However, technologies such as network virtualization and edge computing together with device management and automated threat detection and response will help create more flexible and highly secure networks to meet this challenge. Software-defined networking makes it possible to develop a multilayered approach to security that simultaneously considers the communication layer, hardware layer and cloud security. Government operations stand ready to benefit from sophisticated access management capabilities while increasing their security against distributed attacks by cyber threats.

In addition, AT&T is working to enable an ecosystem of 5G devices, all connected to an intelligent, software-driven network that can react in near real-time. With these capabilities, ideas that seemed like science fiction will increasingly start to become reality. Tomorrow's robots will be deep learners, harnessing edge computing to process massive amounts of data in order to get smarter as they go about their business. The successful progression of 5G networks will deepen the human-machine relationship.

AI and human "hybrid intelligence" combines human knowledge, flexibility, beliefs, and instincts along with the blindingly fast speed and steadiness of machine logic.

"Robots will learn from their mistakes and share what they learn collectively so all of the robots improve over time," says Ken Goldberg, UC Berkeley Professor of Robotics, Automation and New Media.[5] Instead of fearing a robot revolution, we can look forward someday to working alongside intelligent machines designed to help us successfully achieve our goals.

In addition, 5G will eventually support an explosion of immersive experiences as mixed reality and digital twins expand our reach. Digital twins are real-time digital models of our cities, factories and other environs that could enable predictive, crystal ball-like simulations. As populations continue to grow, city planners are constantly challenged with the impacts to traffic patterns, pedestrians, video surveillance, real estate and more. Over the next decade, the network will become an overlay on top of our physical world. Virtually every object, every interaction and every observation will become a piece of data which informs advanced simulations. The use cases across the public sector seem limitless.

5G's ultra-fast speeds and ultra-low latency will ultimately help enable a convincing virtual world for learners to collaborate as never before. Recess could become in-the-field research by superimposing a digital understanding of physics on playground equipment. Imagine high school students thousands of miles away controlling a robot inside an active volcano. And graduate students across the world exploring the rain forest together and virtually discussing their findings. Each of these learning experiences will be social, connected, collaborative and immersive — driving deep engagement and elevating the human experience.

The AT&T 5G Innovation Program, launched in February 2019, will develop ideas and test use cases with industry leaders on AT&T's live mobile 5G network. The goal is to bring future 5G experiences to life today.

"What's vital here is to create the right conditions for 5G innovation to flourish," says Fuetsch. "We believe 5G will ultimately be the "yes, you can" network — regardless if you're a global enterprise, government agency, education institution, small business or consumer. These are just some of the ways we're fostering innovation in 5G environments to create tomorrow's unforeseen inventions."

Mobile 5G will be about more than just speed. It will also eventually bring ultra-low latency — a key enabler for virtual reality, autonomous vehicles and IoT.

Getting Started

Industry experts recommend the following suggestions to better understand, design and activate the network of tomorrow.

UNDERSTAND

Identify stakeholders' needs.
The Georgia Technology Authority (GTA) invites executive branch agencies to actively participate in defining business and technical requirements and evaluating proposed solutions.

"Doing so helps ensure that service providers meet individual agencies' needs in addition to the needs of the enterprise, and helps to ensure buy-in throughout the life of the relationship," says Johnson of GTA.

Understand the current landscape and environment.
Document what is on your network or what connects to your network (e.g., data, applications, mobile devices, SaaS applications, IoT sensors) and understand how each component impacts your network.

DESIGN

Develop a plan.
Clarify business goals and map those goals to the appropriate technology. Consult with the vendor community to understand what's possible and determine a roadmap for getting there.

"Organizations usually need help to understand and segment their scope of work into areas. They have to take into account applications, resources, budget, procurement vehicles and more. It's not just about technology. It's about what happens on Day 2 and how you operationalize it and take care of it," says Samantha Thibault, director of emerging technologies, AT&T Public Sector.

Prioritize.
Don't wait to resolve every issue before getting started. Determine what you can do most quickly, look for quick wins and break projects into smaller, iterative pieces.

"Doing things with software is much faster than doing things with hardware. You can instantiate new network functions virtually, simply by logging into a portal," says Keenan.

SDN and virtualization also allow organizations to develop and test disruptive technology more quickly and iteratively, which allows them to fail faster.

"Failure is a part of innovation, and it's better to fail early than at a large scale," Keenan says.

Incorporate all anticipated work into a single plan.
A master plan facilitates project management, helps standardize approaches and allows you to negotiate the best rates and contracts.

Update network procurement practices and policies.
Be sure RFPs and other processes can accommodate new service models, such as NaaS. Where possible, take advantage of other organizations' contract vehicles to streamline procurement.

Formalize processes.
Doing so ensures network capacity and security requirements are always considered (and budgeted for) when new services are added or infrastructure changes are made.

Pick your vendors wisely.
Choose a stable, experienced vendor that has a history of success and a culture of innovation.

ACTIVATE

Educate.
Be sure procurement staff and legislative bodies understand the unique characteristics and requirements of a next-generation network. Provide IT personnel ongoing training in managing services and performing other tasks that are not traditionally within their purview.

Communicate.
Share information and solicit input internally, across departments and agencies, and with vendors to encourage adoption and stay current on opportunities and risks.

CONCLUSION

The Future is Now

The hardware-defined networks of yesterday can no longer keep up with the shifting network landscape and growing demands of today and tomorrow. The network of tomorrow allows users to simply go to a web portal to set up, change and secure network capabilities on demand. In just a short time, the portal will be seen as a stepping stone to even greater possibility, where applications can automatically self-provision additional bandwidth and the network becomes increasingly programmable.

Regardless of where government organizations stand on the road to the network of tomorrow, it's time to move forward. The opportunities are waiting, and the future is now.

Endnotes:

1. NASCIO. The 2016 State CIO Survey – The Adaptable CIO. September 2016.
2. NASCIO. State CIO Top Ten Priorities for 2018 (as well as for 2014, 2015, 2016, 2017). nascio.org/Portals/0/Publications/Documents/2017/NASCIO-TopTen-2018.pdf
3. All quotes from Princess Young received via an email interview in July 2018.
4. AT&T Futurist Report "A Faster, Smarter Future: Emerging Applications for 5G and Edge Computing" in collaboration with the Institute for the Future (IFTF)
5. Ibid

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