

CLIMATE &amp; ENVIRONMENT

# Chuckwalla National Monument would protect swath of California desert and preserve a sacred land



Thomas Tortez of the Torres Martinez Desert Cahuilla tribe walks into Painted Canyon. (Tyrone Beason / Los Angeles Times)

By **Tyrone Beason**  
Staff Writer

April 28, 2024 3 AM PT

Thomas Tortez Jr. leads a group across a gravelly wash in Painted Canyon, at the spot where his Cahuilla tribal ancestors once lived in a village.

The solar eclipse is underway. Suddenly, a strange yelp echoes from a ridge of craggy outcroppings.

Perhaps the yelp comes from a hiker who's been struck with awe while climbing ladders into terraced slot canyons that seem to funnel echoes to the heavens.



Stones direct hikers to a trailhead inside Painted Canyon near Mecca, Calif. (Tyrone Beason / Los Angeles Times)

Maybe it's a coyote crying out as the moon passes partway in front of the sun, briefly cooling the dry desert wind and bathing bands of red, sandstone and iron green rocks in an otherworldly light.

Or might it be Mukat, the exiled Cahuilla creator god who roamed among the ironwoods, smoke trees, palo verdes and ghost flowers?

Tortez, tribal council chairman of the Torres Martinez Desert Cahuilla Indians, spikes the sand with the desiccated yucca stalk that he's repurposed as a walking stick. He seems at ease with the mystery of the sound and the mystique of this section of the Mecca Hills Wilderness.



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His people have cherished and watched over this canyon in the eastern Coachella Valley for thousands of years. Now they are among the Indigenous Californians, conservationists and other nature lovers who want President Biden to designate 627,855 acres of desert where the canyon sits as the Chuckwalla National Monument.

Rep. Raul Ruiz, a Democrat who represents the desert communities in eastern Riverside and Imperial counties that border the proposed land mass, joined with California Sens. Alex Padilla and Laphonza Butler in introducing legislation to support the creation of the monument and to expand Joshua Tree National Park by 17,915 acres.



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National Park Service, USGS

Lorena Iniguez Elebee LOS ANGELES TIMES

Chuckwalla sits at the heart of a burgeoning ecological and economic zone — a short drive from the city of Indio and the [date farms](#) of Mecca, and near the vast mineral

flats and off-grid settlements of the Salton Sea and the towering Santa Rosa Mountains. It would become the fifth-largest land-based national monument in the continental U.S.

In announcing the legislation on the steps of the U.S. Capitol this month, Padilla said he was especially gratified that a coalition came together to craft the monument proposal — Indigenous leaders, community members, environmental groups, recreationists, renewable energy companies and local businesses.



Thomas Torteiz hikes up a terraced canyon inside the proposed Chuckwalla National Monument. (Tyrone Beason / Los Angeles Times)

Speaking later by phone, Ruiz touted the monument as important for helping California meet its conservation and climate change goals without encroaching on public lands already designated for other uses, such as green energy projects. Ruiz says his congressional district produces the most renewable energy on federal land in the U.S.

Evidence of these intersecting interests is clear in Chuckwalla, where power lines channeling electricity from solar farms farther east cut across the land.

Ruiz says the design of the monument proposal is distinct in that it gives Indigenous tribes the power to co-manage Chuckwalla alongside the federal Bureau of Land Management.

“In Congress, I really have seen a movement toward incorporating tribal, Indigenous knowledge in land stewardship,” Ruiz says.



POLITICS

**Their stolen land in Orange County was given back. Now they're ready to heal**

Dec. 10, 2023

Co-existence doesn't come without tension. In another section of desert south of the Salton Sea, construction has started on a \$1.85-billion [lithium mine](#) and geothermal power plant, prompting some pushback from residents there who argue that developers haven't adequately weighed the impacts on the environment and public health.

Torteiz says pushing for Chuckwalla's monument designation is hugely important to tribes, given that so many are vying for a stake in the region's future.



Thomas Torte, council chairman of the Torres Martinez Desert Cahuilla Indian Tribe. (Tyrene Beason / Los Angeles Times)

Members of the Cahuilla, Chemehuevi, Mojave, Quechan and Serrano nations who call the California desert home worked together to call for Biden to establish the monument using the authority granted to presidents under the Antiquities Act of 1906, which was enacted to safeguard threatened cultures as well as precious lands. The Fort Yuma Quechan Indian Tribe wants Biden to use the same authority to establish 390,000 acres of their ancestral land in Imperial County as the [Kw'tsán National Monument](#).

Torte says the Antiquities Act was written for places like these.

He notes how bands of rock swirl and stack on top of each other and jut skyward at gravity-defying angles. It's all the result of millions of years of sediment flows, soil erosion and the endless clash of the San Andreas Fault's two plates.

"It's like a timepiece — chapters in history," he says of the open-faced geology of this canyon.

This place holds the ancestral memory of tribal members too.

The landscape may look desolate and unforgiving to an outsider — a setting where Chuckwalla lizards, cactus wrens and western tanager thrive — but for the Cahuilla it is a paradise.

According to the Cahuilla creation story, Torte says, the people of this desert were born from a bolt of lightning that lit up the sky and flooded the empty land with life.

"Even the darkness is alive," he says. "There's a spirit there."

Torte says that his Cahuilla elders on the Torres Martinez reservation, which is a short drive down the hill, acclimated themselves to the arid conditions and 100-degree-plus summer temperatures. They would trek great distances between hidden streams and through slots as narrow as alleyways in order to build up their resistance to extreme thirst.

"You would think of it as odd now, but they would practice *not* drinking water," says Torte, 62. "My mom was born on the reservation — there were no hospitals back then. She remembers running around in the desert barefoot on dirt roads. Imagine doing that now."



CLIMATE & ENVIRONMENT

**Black farmer looks to ancestors to help Californians battle climate change**

Nov. 16, 2023

The Cahuilla learned to live in harmony with all aspects of the ecosystem. They gathered plants and seeds for food and medicine, cut grass to weave baskets and built steps leading to wells to retrieve groundwater. They cremated their dead on wood funeral pyres for three days, to purify the bodies of the deceased and transition their souls back into the Earth.

The Cahuilla also charted trade corridors reaching from the Colorado River to the shores of the Pacific, where coastal tribes traded shell jewelry for obsidian tools and animal skins from the interior.

The ancient trails still exist, Tortez says. Southern Californians know them as State Route 74, which runs west from Palm Desert to the ocean, and Interstate 10, which skirts Chuckwalla's northern edge.

Tortez's ancestors didn't need paved roads or signs. As a young man, he was amazed to learn from older relatives of how ancestors could travel from one hill to the next, through disorienting expanses of sand and rock, yet never lose their bearings.

"If you can imagine, they can remember when their grandparents were able to run up to the mountains with a message and come back down with another message, like it was nothing, like going to Wal-Mart," Tortez says with a chuckle.

As Tortez contemplates Chuckwalla's richness, another member of the hiking group, Stephanie Dashiell, an environmental consultant who is manager of the national monument campaign, spots a thorny ocotillo growing high on a cliff.

The canyon is even more awash in colors than usual because of the [frequent winter rains](#): blueish lupines, indigo bushes, pinkish-purple sand verbena, golden desert poppies, powdery desert lavender, mallow blossoms in creamy orange, lemon-yellow brittlebush.

Dashiell, 43, steps in close to enjoy a creosote bush's telltale aroma of black tar and sand after a storm. With seeds that look like tiny cotton balls, the plant can produce clones of itself for hundreds or even thousands of years.



Environmental and outdoor consultant Stephanie Dashiell takes in the heady smell of smoke and rain given off by a creosote bush in the proposed Chuckwalla National Monument. (Tyrone Beason / Los Angeles Times)

The flora seen in Chuckwalla are true survivors.

"The plants here have so much grit," Dashiell says. "There's not that much left in the Coachella Valley that's natural like this, where you just have the native species and it hasn't been transformed into agriculture or golf courses. The desert is really important."

Even the desert soil has properties which could prove beneficial as the [state plans to transform millions of acres](#) into landscapes that absorb more carbon than they release, as part of Gov. Gavin Newsom's goal to make California carbon-neutral by 2045.

“Plants themselves sequester carbon but in the desert soils there’s this caliche layer,” Dashiell says. “It’s this compact, hard, almost cementlike layer. A lot of carbon is stored in that.”



CLIMATE & ENVIRONMENT

California wants to harness more than half its land to combat climate change by 2045. Here's how

April 22, 2024

Joining the hike are local residents Camila Bautista of Audubon California, which has championed the monument designation, and Brenda Ortiz, a youth ambassador for the Chuckwalla campaign.

Ortiz, 21, has lived in the Eastern Coachella Valley her whole life.

She says the monument designation is important for other reasons. The valley is exploding not just with industry but with walled-off housing subdivisions, as well as a race track and other attractions.



Lupines bloom after a winter of rainstorms in a wash that cuts through Painted Canyon in the eastern Coachella Valley. (Tyrone Beason / Los Angeles Times)

It can be hard for locals in California's desert, many of whom are Latinos working low-wage farm jobs, to feel as if the change they see around them takes their priorities into account, Ortiz says.

"We're always asking for more affordable housing, for more resources for low-income communities, and yet we're met with these developments that are only meant for a few exclusive members from outside," Ortiz says. "Some are only a few miles away from trailer home parks."

A desire to make public lands more accessible to people of color and economically distressed communities drives an effort closer to Los Angeles, where a different coalition wants Biden to expand the San Gabriel National Monument by adding 109,000 acres of wilderness adjacent to the city.

Ortiz says Chuckwalla would be a place where those who don't normally picture themselves in the outdoors can relax, get exercise and simply be at one with nature.

"I just feel like it's a project that's really for everybody," she says.

Tortez nods. The Indigenous people of the desert have maintained bonds with each other despite forced displacement and the fact that their reservations are carved up to resemble squares on a checkerboard, interspersed with parcels that are not under tribal control.

Chuckwalla will help strengthen their sense of common cause, he says.

Tortez is proud to show a first-time visitor a side of this landscape that some outsiders might miss. He thinks again about his people's creation story and the plight of Mukat.

Given his awesome yet unpredictable powers, many Cahuilla felt it wasn't safe for him to live among mere mortals, Tortez says. So Mukat went to live out his days here.

Villagers communicated with Mukat by sending coyotes into the hills to bring back his messages of wisdom and warning.

Once he died and was cremated, it was said that his ashes gave rise to the same medicinal and culinary plants that Dashiell spots during the tour.

"His remains are within this area," Tortez says. "Everything here spurred from the remains of that creator."

Tortez stops to gaze at a cliff face that is so red it resembles dried blood and so hulking that humans look tiny by comparison.

The Cahuilla believe that red rocks are evidence of the shaman's eternal sorrow.

"It's a sign of his heart bleeding," Tortez says.

As Tortez speaks, a strong, cold gust suddenly blows down through the canyon, drowning out his voice but filling him with delight.

"He heard!" Tortez yells over the force of the wind. "He can't be seen, but he's speaking now."



Clouds float above part of the proposed 627,000-acre Chuckwalla National Monument, between Joshua Tree National Park and the Arizona border. (Tyrone Beason / Los Angeles Times)



CLIMATE & ENVIRONMENT

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April 7, 2024

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Dec. 24, 2023



**Tyrone Beason**

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CLIMATE &amp; ENVIRONMENT

# As salmon are released into the Klamath River, tribal leaders see a ‘symbol of hope’



About 90,000 juvenile coho salmon were released into the Klamath River by the California Department of Fish and Wildlife on April 16. (Shane Anderson / Swiftwater Films)

By Ian James  
Staff Writer

April 21, 2024 3 AM PT

While work crews continued dismantling dams on the Klamath River, leaders of four tribes gathered on a riverbank last week to watch and offer prayers as a valve on a tanker truck was opened. From a chute, a stream of water filled with wriggling fish poured into the river.

Over two days, workers from the California Department of Fish and Wildlife released 16 truckloads of juvenile salmon that were raised in a newly built hatchery. About 500,000 salmon swam downriver, and tribal leaders said they expect these fish will flourish when they migrate back upstream in a few years to spawn in a free-flowing river.

“They’re a symbol of hope,” said Phillip Williams, a member of the Yurok Tribal Council.

Williams said as he watched the fish disappear into the river that he thought about how he and many other tribal members will be able to catch some of those salmon when they return in three or four years.

“They’re going to feed families,” Williams said. “So that was really, really emotional.”



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The young fish were raised at the Fall Creek Fish Hatchery and included about 90,000 coho salmon, a threatened species, as well as more than 400,000 fall-run Chinook salmon.

The last time state workers released Chinook salmon in February, they let loose more than 800,000 fish in a tributary upstream of Iron Gate Dam, which is slated to be removed, and the fish were later [found dead in the river](#). Biologists determined the salmon died as they passed through a tunnel beneath the dam.

To prevent that from happening again, state officials selected another location just downstream of Iron Gate Dam.



Coho salmon are released into the Klamath River in Siskiyou County on April 16. (Matt Mais / Yurok Tribe)

They also ran a test ahead of time, placing groups of young salmon into the river in 2-foot-long plastic cylinders, called “live cars,” to ensure the water quality was right for the fish to survive their journey to the ocean. That two-day test confirmed the fish stayed healthy in the river.

This time, state officials said the release was a complete success.

Karuk Tribe Vice Chair Kenneth Brink sang as the stream of fish-filled water gushed into the river within sight of the dam. Others offered prayers.

“This river is our church, and that salmon is the cross on that church,” Brink said.

“It’s going to be a very, very, very healing experience to be able to see the salmon come back, to have our religion come back, and to be able to live as Karuk people,” he said in a video recorded after the release. “It’s like a new beginning.”



CLIMATE & ENVIRONMENT

### The Klamath River’s dams are being removed. Inside the effort to restore a scarred watershed

March 24, 2024

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Leaders of the Shasta Indian Nation and the Quartz Valley Indian Tribe also watched as the salmon headed downstream.

It was the first major release of coho salmon into the Klamath since the removal of four dams began last year.

Water is now passing through tunnels in three remaining dams near the California-Oregon border, and reservoirs that once submerged valleys [have been drained](#).

Work crews have been blasting and tearing into one concrete dam. Sometime this fall, the dams are scheduled to be completely removed, reestablishing a free-flowing stretch of river for the first time in more than a century. Once the dams are gone, salmon will be able to swim upstream and spawn along about 400 miles of the Klamath and its tributaries.

Some of the fish that were released are expected to return in a few years as adults to Fall Creek Fish Hatchery, a \$35 million facility that was built as part of the dam removal agreements between California, Oregon and the utility PacifiCorp, which operated the dams.



People gathered on the banks of the Klamath River on April 16 to watch as hatchery-raised salmon were released downstream of Iron Gate Dam, which is slated to be removed this year. (Jason Hartwick / Swiftwater Films)

Some of the fish are also expected to be among the first to spawn in the wild along stretches of the river that were previously sealed off by the dams.

“These fish are going to be the fish that help the population that comes back,” said Charlton “Chuck” Bonham, director of the California Department of Fish and Wildlife.

The draining of the reservoirs this winter sent [muddy, sediment-laden water](#) flowing downstream. The abrupt worsening of water quality caused a drop in the amount of oxygen in the water, killing fish including nonnative perch, bluegill and bass that had been introduced in the reservoirs.

The state’s tests have shown the river conditions have improved and are now suitable for salmon to thrive, Bonham said. “The releases over the last couple of days show the river is good and only going to get better.”



CLIMATE & ENVIRONMENT

**The largest dam removal in history stirs hopes of restoring California tribes’ way of life**

Oct. 5, 2023

Later in the spring, state hatchery managers plan to release nearly 2 million Chinook salmon smolts into the river.

Scientists expect that the \$500-million dam removal project, the largest in history, will help boost salmon populations in the coming years.

Salmon populations have suffered declines in recent years, and fishing for Chinook salmon was [banned along the California coast](#) this year for a second year in a row.

Leaders of the Yurok and Karuk tribes plan to decide soon how much, if any, fishing they will allow this year.

## More to Read

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April 29, 2024



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April 23, 2024



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April 23, 2024



Ian James

Ian James is a reporter who focuses on water in California and the West. Before joining the Los Angeles Times in 2021, he was an environment reporter at the Arizona Republic and the Desert Sun. He previously worked for the Associated Press as a correspondent in the Caribbean and as bureau chief in Venezuela. He is originally from California.

CLIMATE &amp; ENVIRONMENT

## Column: Disneyland just promised electric cars at Autopia. Gas will be gone by 2026



Disneyland guests wait in line for Autopia in March. (Allen J. Schaben / Los Angeles Times)

By Sammy Roth  
Climate Columnist

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When the Walt Disney Co. announced earlier this month that it would at long last [ditch the smog-spewing gasoline engines at its beloved Autopia](#) attraction in Anaheim, the company left a few key details to the imagination.

Would the new ride vehicles be purely electric? Or would they be hybrids that still burned some climate-wrecking, oil-based fuel? And how long would it take for Walt Disney's creative and engineering heirs to make the long-overdue switch?

After I wrote a story [breaking the news](#) about the company's plans, a coalition of electric vehicle activists launched a campaign to pressure Disney to commit to electric vehicles — not hybrids — and to phase out gasoline within two years.

On Thursday, those activists won.

In a written statement, Disneyland spokesperson Jessica Good confirmed to The Times that electrification “means fully electric — it does not mean hybrid or any other version of a gasoline combustion engine.” She added that the theme park “will no longer be using the current engines within the next 30 months.”

That means by fall 2026, Disneyland guests will no longer have to worry about breathing lung-damaging exhaust as they wait in line for Autopia — and park employees won't have spend hours-long shifts inhaling those fumes as they work the ride.

It's not yet clear when the newly electrified Autopia will reopen.

“Reimagining an attraction does take time, so we don’t have a reopening date at this time,” Good said.



TRAVEL & EXPERIENCES

Will Disneyland get an Avatar land? It’s likely. Here’s what else may be in store

April 17, 2024

Zan Dubin, the electric vehicle advocate leading the pressure campaign, was thrilled when she heard Thursday’s news. She called it a “huge victory” and a powerful reminder that climate activism works.

“All it takes for bad stuff to keep happening is for good people to do nothing,” she said, paraphrasing Abraham Lincoln. “And we refuse to stand by and do nothing.”

Dubin had been planning to lead a [rally](#) outside Walt Disney Studios in Burbank on Sunday, to urge the company to do better on Autopia. She’s told me she’s moving forward with the event, although she said it will now be more of a celebration.

“We are thrilled,” she said.

The stories that Disney tells at its theme parks — and on its streaming services, cruise ships and other platforms — are far more than entertainment. They play a powerful role in shaping how we understand our world and ourselves. That’s why the company’s decision to close Disneyland’s Splash Mountain ride — which was [based on a racist film](#) — and its increasing embrace of [LGBTQ+ characters](#) in its films have become such political flash points. The opponents of progress know that these choices matter.

If you care about climate progress, you should care about Autopia.



Disneyland visitors wait to exit the Autopia attraction in March. (Allen J. Schaben / Los Angeles Times)

When the ride opened in 1955 as a centerpiece of Walt Disney’s Tomorrowland, it helped cement in the American consciousness the idea that gas-guzzling cars — and sprawling freeways — were the promise of the future. Within a year, President Eisenhower had signed the bill that would create the Interstate Highway System as we know it today.

Nearly 70 years later, cars, trucks and other modes of transportation are the nation’s largest source of heat-trapping emissions — emissions that have fueled record global temperatures for [10 straight months](#), resulting in deadlier heat waves, fires and storms. Fossil fuel combustion also produces regular old air pollution that researchers say kills [millions of people](#) each year.

[Switching from gasoline engines to electric cars](#) alone won’t solve all of our environmental and public health problems.

Mining to supply lithium for lithium-ion electric car batteries can be [environmentally destructive](#) in some places. Freeways have historically been built through low-income communities of color, [tearing apart vibrant neighborhoods](#). The more we can rebuild our cities around public transit, electric bikes and green space — and less around cars — the happier and healthier we'll be.

Beyond Autopia, Disney has an opportunity to promote that kind of future in Tomorrowland.

As I [wrote earlier this month](#), Disneyland fans agree that the once-futuristic land hasn't been especially forward-thinking for a long time. To my mind, clean energy and sustainability would make the perfect theme for a new and improved Tomorrowland. There's already a major public transit element in the Monorail. Throw in some gas-free induction stoves at the main restaurant, some solar panels, some environmental films at the currently empty movie theater — it could be pretty awesome.



CALIFORNIA

**Huge Disneyland expansion to add new rides, restaurants and hotels wins OK**

April 17, 2024

But even short of all that, we're going to need a lot of electric vehicles, fast, to get the climate crisis under control. And for Disney to start telling the story of those EVs at Autopia is a big deal. The company deserves credit for getting it right.

"I'm glad they're stepping up and doing the right hitting," said Joel Levin, executive director of Plug In America, a national electric vehicle advocacy group that's sponsoring this Sunday's rally. "It's a great way for the public to experience electrification, to turn it into a teachable moment, rather than the experience of standing next to a gas lawnmower, which is what it feels like now."

Autopia's [original sponsor](#) was Richfield Oil, which later merged with another company to create ARCO. From 2000 through 2012, oil giant Chevron Corp. [took a turn](#) as the iconic attraction's financial backer. The ride's current sponsor is Honda.

It's not clear whether Honda will play a role in Autopia's reimagining. The automaker didn't respond to a request for comment, and Disney declined to comment. MotorTrend magazine, though, [reported in 2016](#) that Honda's sponsorship deal would run for 10 years, meaning it could be due to expire in 2026 — in line with Disney's newly promised timeline to phase out gas engines.

Whether it's Honda or some other company, there should be no shortage of eager sponsors — for an all-electric Autopia, and for whatever other sustainable, climate-friendly innovations Disney might want to display in Tomorrowland. The future is bright.



**Sammy Roth**

Sammy Roth is the climate columnist for the Los Angeles Times. He writes the twice-weekly Boiling Point newsletter and focuses on clean energy solutions. He previously reported for the Desert Sun and USA Today, where he covered renewable energy and public lands. He grew up in Westwood and would very much like to see the Dodgers win the World Series again.

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PLANNING MAGAZINE

# Green Means Go: Seattle's AI Solution to Reduce Stoplight Idling

*Soon, AI may do more than just drive your car — it might control traffic lights and help reduce greenhouse gas emissions.*

[INNOVATIONS \(/PLANNING/SECTION/INNOVATIONS/\)](#) TRANSPORTATION



AI is being used to monitor and adjust traffic signal timing at three Seattle intersections in a city with 1,125 traffic lights. Photo by Radowitz/Shutterstock.

**March 14, 2024**

By JOE TEDINO

Artificial intelligence (AI) seems to be everywhere these days — including the roads. Drivers in Seattle are now traveling through some traffic lights adjusted by an AI algorithm.

Applying AI to traffic signal timing is the next step in a global trend to analyze mobile data from vehicles and apply it to urban transportation management. The goal is to reduce vehicle idling time, improve safety, and, in the process, cut greenhouse gas emissions (GHG).

Seattle is the first city in North America to experiment with Google Research's [Green Light](https://sites.research.google/greenlight/#intro) initiative, which uses AI to manage signal timing to improve the flow of traffic.

In a public-private partnership with Google that is cost-free for Seattle, the city is testing those AI tools to determine when to change signal timing at three intersections, according to Mariam Ali, deputy press secretary for the Seattle Department of Transportation. "They make recommendations, and we implement them — but the technology is all theirs," says Ali.

Google uses AI and driving trends from maps on smartphones to model traffic patterns and make recommendations for traffic light changes that can improve traffic flow. These AI-based recommendations work with existing infrastructure and traffic systems, and city engineers can monitor the impact and see results within weeks. "By optimizing not just one intersection but coordinating across several adjacent intersections to create waves of green lights, cities can improve traffic flow and further reduce stop-and-go emissions," Yossi Matias, vice president of engineering and research at Google, wrote in a [blog post](#)

(<https://blog.google/outreach-initiatives/sustainability/google-ai-reduce-greenhouse-emissions-project-greenlight/>).



Seattle's transportation department has used AI to adjust signals at the intersections of 15th Avenue and Market Street (above), Greenwood Avenue and 80th Street, and on 53rd Street in the Ballard neighborhood. Google identified these lights for a pilot project based on its traffic analysis. Photo by SDOT/Flickr.

The typical driver in the U.S. lost 51 hours due to congestion in 2022, a 15-hour increase from the year before, according to an annual [transportation study](https://inrix.com/scorecard/#form-download-the-full-report) (<https://inrix.com/scorecard/#form-download-the-full-report>). Those delays amounted to about \$870 in lost time and about \$550 in added fuel costs. In addition to lost time, congestion can affect productivity by causing freight delays or preventing employees from getting to work on time.

"Traffic signals are one of the largest causes of delay along arterial roadways," says Karl Typolt, a transportation systems engineer at Transpo Group in Kirkland, Washington. Transpo Group, a transportation planning and engineering firm, was not involved in the Seattle trial, but Typolt works on the ways that cities can improve traffic flow. "There's only so much green time to allocate to different movements and modes. Agencies have to balance who gets priority at an intersection — vehicles, pedestrians, cyclists, or public transit — while improving safety and reducing carbon emissions."

Transportation accounts for about 29 percent of total U.S. GHG emissions, making it the largest single contributor, according to the Environmental Protection Agency. The agency states that each gallon of gasoline burned produces about [20 pounds](https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle) (<https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>) of carbon dioxide, which can build up at stoplights and cause pollution hot spots.

Seattle officials started discussions with Google in 2022 after the company completed research to reduce carbon emissions in Tel Aviv and later in Rio de Janeiro. "Since they only use Google driving trends to make their recommendations and don't interact with our systems, we saw it as a very low-risk, high-potential return opportunity," Ali said in a statement.

## Using AI to solve traffic problems

Other government agencies looking for help to reduce idling time while also reaching their sustainability goals can turn to AI and other data analytics tools to cut carbon emissions. Google says Green Light is helping to lower emissions and save fuel for up to 30 million car rides a month in the 12 cities on four continents where it operates. And [tests conducted in the past two years](https://blog.google/outreach-initiatives/sustainability/google-transportation-energy-emissions-reduction/) (<https://blog.google/outreach-initiatives/sustainability/google-transportation-energy-emissions-reduction/>) indicated the potential to reduce stops by up to 30 percent and reduce emissions at intersections by close to 10 percent.

"What AI can do is take a lot of big data and make it small and actionable," says Deepak Ramnath, AI product manager at INRIX, a Kirkland-based data analytics company that works with public transportation agencies. "The question becomes: What is that small and actionable thing you are trying to accomplish, and can AI help with that? Not all cases can be solved by AI."

## How AI is fixing traffic lights | Project Green Light



Google's Green Light project, which works with existing infrastructure, has the potential to reduce stops by up to 30 percent and reduce greenhouse gas emissions at intersections by close to 10 percent.

INRIX is not involved in the Seattle project but has provided transportation data tools to cities including Los Angeles and Boston.

Transportation planners need to determine their strategy for using AI and big data. Transportation management consultants say that AI algorithms can coordinate traffic lights at different intersections to achieve different goals: minimize traffic stops, prioritize different types of traffic (such as emergency vehicles or buses), enhance pedestrian safety, or alleviate congestion which can boost overall transportation efficiency.

Another consideration is cost. Adding signal infrastructure and data management tools can be expensive. "The key to success is making sure there is funding in place, [that] there are projects in place for these larger capital investments, and that they have staff that will use and maintain the tools once they are operational," Typolt says.

Agencies also need to realize that technology changes quickly. AI was once primarily associated with the tech sector, including smartphones, computers, and software development. But its use has exploded, driven by an increase in the availability of data, improvements in computing power, and a growing awareness of the benefits of AI. "What can be solved now with AI is 100 percent different than what [will] be solved five months from now," says Ramnath. "That is both exciting and scary, especially if you're trying to do five-year budget planning."

Consultants suggest that transportation planners test new data tools at a few intersections, similar to what Seattle is doing, to help them get a feel for what is possible. Large, one-off music and sports events are prime testing grounds where traffic planners can experiment with AI and data analytics techniques.



Transit officials in Austin, Texas, used data analysis from two weeks during the city's 2022 SXSW festival to change light timing and smooth traffic flow, saving some drivers up to a minute at some intersections. Photo by Aaron Rogosin.

Officials in Austin did just that in 2022 during the annual citywide music and film festival SXSW, which brings 300,000 visitors and \$380 million in economic activity to the city for two weeks in the spring. During the festival's first weekend that year, engineers in Austin's Mobility Management Center (MMC) used INRIX signal analytics to evaluate traffic signal performance in and around downtown, according to Lance Ballard, an MMC manager. After collecting and analyzing data — from traffic lights, as well as anonymous GPS data from vehicles and mobile devices — the mobility team laid out plans to help alleviate logjams during the second weekend of the festival by retiming signals at eight locations around the city.

"The signal changes led to an improvement in delay and a benefit of approximately \$10,000 of delay savings for the eight locations where the MMC adjusted timings for SXSW between Weekend 1 and Weekend 2," Ballard said.

INRIX also considered the trial to be successful.

"It was a success story from the perspective that [Austin's traffic engineers] were able to test, make changes, and measure the impact," says Steve Remias, a product manager at INRIX. Overall, in its [2022 annual report \(https://www.austintexas.gov/sites/default/files/files/ATD%20PIO/Austin%20MMC%202022%20Annual%20Report\\_DIGITAL.pdf\)](https://www.austintexas.gov/sites/default/files/files/ATD%20PIO/Austin%20MMC%202022%20Annual%20Report_DIGITAL.pdf), Austin credited using INRIX data sets across the city with realizing \$800,000 in annual savings for road users and reducing delays at intersections by 35 percent.

Meanwhile, Seattle's ongoing agreement with Google renews annually, providing ample time to extend AI from the three intersections included now to other areas. Ali says the city also is considering adding a fourth location near Lumen Field, home of the Seattle Seahawks football team, to help alleviate traffic headaches.

The city also proposes to reduce GHG emissions by 50 percent by 2030 to meet its climate change goals, according to the [Office of Sustainability & Environment \(http://www.seattle.gov/environment/environmental-progress/climate-change\)](http://www.seattle.gov/environment/environmental-progress/climate-change). Since Green Light can be scaled to analyze thousands of intersections at the same time, stretching it across the city may help.

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Joe Tedino is a Chicago-based writer focusing on the environment, technology, and sports.

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