

Colonial Parkway Rehabilitation Schedule, Closures, and Detours



Construction/Project Milestones		Anticipated Timeframe
Segment A – Yorktown to Fusiliers Ramp		Summer 2023 to Winter 2024-25
Segment D – Felgates Creek to King Creek		Spring 2024 to Winter 2024
Segment E – King Creek to Penniman Road		Spring 2024 to Winter 2024
Segment F – Penniman Road to Parkway Drive		Winter 2024 to June 30, 2026
Segment G – Parkway Drive to Route 199		Summer 2023 to October 31, 2025
	Route 199 to Visitors Center Drive (North England Street ramp open to Williamsburg Circle for local traffic only; tunnel closed)	Summer 2023 to Summer 2024
	Route 199 to Visitors Center Drive (North England Street ramp closed; tunnel closed)	Summer 2024 to Winter 2024
	Newport Avenue to Parkway Drive (North England Street ramp closed; tunnel closed)	Winter 2024 to Spring 2025
	Williamsburg Circle to Parkway Drive (North England Street ramp open; tunnel open)	Summer 2025 to October 31, 2025
	Complete Construction	June 30, 2026

Phase 1 Traffic Control Plan

SECTION OF COLONIAL PARKWAY CLOSED:

- **Segment G:** Route 199 to Williamsburg Circle (Colonial Parkway from Visitor Center Drive to England Street will remain open to local traffic/buses as long as possible)
- **Segment A:** Yorktown to Fusiliers Redoubt Ramp (Interchange with Route 17 closed)

DETOURS IN PLACE:

- **From Fusiliers Redoubt Ramp to Yorktown** – Use Fusiliers Redoubt Ramp to Water Street, West, to Old Williamsburg Road, South, to Goosley Road, East, to Cook Road, North, to Ballard Street
- **From Yorktown to Fusiliers Redoubt Ramp** - Use Ballard Street to Cook Road, South, to Goosley Road, West, to Old Williamsburg Road, North, to Water Street to Fusiliers Redoubt Ramp
- **From Yorktown to Jamestown** – Use Fusiliers Redoubt Ramp Detour from Yorktown to Colonial Parkway then use Penniman Road (Route 641), South, to Route 199, West, to Colonial Parkway
- **From Jamestown to Williamsburg Visitor Center** – Use Colonial Parkway to Route 199, East, to I-64, West, to Exit 238 (Capitol Landing Road) to Route 132, South, to Visitor Center Drive
- **From Jamestown to Yorktown** – Use Colonial Parkway to Route 199, East, to Penniman Road (Route 641), North, to Colonial Parkway then Fusiliers Redoubt Ramp Detour to Yorktown
- **From Williamsburg Visitor Center to Jamestown** - Use Visitor Center Drive to Route 132, North, to Capitol Landing Road, North, to I-64, East, to Exit 242 (Route 199, West) to Colonial Parkway

DURATION: Summer 2023 to Spring 2024

Phase 2 Traffic Control Plan

SECTION OF COLONIAL PARKWAY CLOSED:

- **Segment G:** Route 199 to Williamsburg Circle
- **Segment A:** Yorktown to Fusiliers Redoubt Ramp
- **Segments D & E:** Felgates Creek to Penniman Road

DETOURS IN PLACE:

- **From Jamestown to Williamsburg Visitor Center** – Use Colonial Parkway to Route 199, East, to I-64, West, to Exit 238 (Capitol Landing Road) to Route 132, South, to Visitor Center Drive
- **From Jamestown to Yorktown** – Use Colonial Parkway to Route 199, East, to I-64, East, to Exit 247 (Jefferson Avenue - Route 143) to Yorktown Road (Route 238) to Goosley Road, East, to Cook Road, North, to Ballard Street
- **From Yorktown to Jamestown** – Use Ballard Street to Cook Road, South, to Goosley Road, West, to Yorktown Road, South, to Jefferson Avenue, West, to I-64, West, to Exit 242 (Route 199, West) to Colonial Parkway
- **From Yorktown to Williamsburg Visitor Center** – Use Ballard Street to Cook Road, South, to Goosley Road, West, to Yorktown Road, South, to Jefferson Avenue, West, to I-64, West, to Exit 238 (Capitol Landing Road) to Route 132, South, to Visitor Center Drive
- **From Williamsburg Visitor Center to Yorktown** – Use Visitor Center Drive to Route 132, North, to Capitol Landing Road, North, to I-64, East, to Exit 247 (Jefferson Avenue - Route 143) to Yorktown Road (Route 238) to Goosley Road, East, to Cook Road, North, to Ballard Street
- **From Williamsburg Visitor Center to Jamestown** – Use Visitor Center Drive to Route 132, North, to Capitol Landing Road, North, to I-64, East, to Exit 242 (Route 199, West) to Colonial Parkway

DURATION: Spring 2024 to Winter 2024

Phase 3 Traffic Control Plan

SECTION OF COLONIAL PARKWAY CLOSED:

- **Segments F & G:** Penniman Road to Williamsburg Circle

DETOURS IN PLACE:

- **From Jamestown to Yorktown** – Use Colonial Parkway to Route 199, East, to Penniman Road (Route 641), North, to Colonial Parkway
- **From Yorktown to Jamestown** - Use Colonial Parkway to Penniman Road (Route 641), South, to Route 199, West, to Colonial Parkway
- **From Yorktown to Williamsburg Visitor Center** – Use Colonial Parkway to Penniman Rd (Route 641), South, to Route 199, West, to I-64, West, to Exit 238 (Capitol Landing Road) to Route 132, South, to Visitor Center Drive
- **From Williamsburg Visitor Center to Yorktown** – Use Visitor Center Drive to Route 132, North, to Capitol Landing Road, North, to I-64, East, to Exit 242 (Route 199, East) to Penniman Road (Route 641), North, to Colonial Parkway

DURATION: Winter 2024/2025 to Spring 2026

From: The Roosevelt Group <Jpatton@rooseveltdc.com>
Sent: Friday, June 23, 2023 7:59 AM
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Subject: [EXTERNAL] Executive Insight Brief



Executive Insight Brief

June 23, 2023

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Aerospace & Defense

[Lockheed backs new AETP engine for F-35 \(Breaking Defense\)](#)

PARIS AIRSHOW — Lockheed Martin is officially supporting an alternative to the legacy F135 engine that powers the F-35, the head of the company's aeronautics division said in

an interview at the Paris Airshow today. “I’m going to advocate, and I do advocate, for [the Adaptive Engine Transition Program, or AETP], another engine,” said Greg Ulmer, Lockheed’s executive vice president of aeronautics. “I think some of the approaches today are very short-sighted and not considering a longer-term view” for the F-35, he added. Ulmer’s backing of a new engine for the Joint Strike Fighter stems in part from its decades of remaining service life, which will include future upgrades. “Let’s put as much margin in the airplane as we can today, such that in the future, I don’t have to put another motor in. I don’t have to bring new power and thermal management cooling into the airplane,” he said. And, Ulmer highlighted, an adaptive engine brings further improvements beyond power and cooling increases, such as greater thrust and fuel efficiency. “So you get the benefit of new capability in terms of power and cooling. But you also get aircraft performance improvement with AETP,” he said. “I’m thinking broader. I’m thinking longer-term.” The advocacy of the jet’s prime contractor on behalf of AETP is a boon to GE Aerospace, which has been pushing for an adaptive engine option, and is conversely a blow to incumbent engine manufacturer Pratt & Whitney, which is seeking to continue its lock on powering the tri-variant fleet. Both engine manufacturers have designed prototypes through AETP, which would be expected to compete in the event that an adaptive engine solution is ultimately pursued, but Pratt, as the incumbent engine provider, stands to benefit from keeping the F135 in place and improving it through its preferred Engine Core Upgrade (ECU). Despite the Air Force’s decision to shutter AETP as part of its fiscal 2024 budget request, Ulmer insisted that interest in AETP prevails in the halls of the Pentagon. “I think they’ve made a decision informed by block four and the requirements as they understand them today. I think there’s elements within the Pentagon talking along the lines that there will be a block 5 and a block 6, and there’ll be other considerations in the future,” he said. It’s unclear how the fighter’s international buyers might react to a decision to re-engine the aircraft with the pricey adaptive powerplant, which Ulmer described as a “trade” that each customer will have to weigh depending on their planned requirements. Since the adaptive engine won’t fit with the vertical takeoff and landing variant of the fighter, for example, Ulmer reasoned that the ECU will be available to those customers who don’t want to field an adaptive engine. Additional sustainment infrastructure will be needed to support more than one engine type, though Ulmer downplayed that concern, emphasizing that capability requirements must come first. “If the capability is required, from a technology perspective, they’ll have to put the infrastructure in place to support that,” he said. “If they go to an [adaptive engine], they’ll have to put whatever those deltas are in place to support that,” he said. “But it’ll be capability driven, in my view.” But funding AETP — much less AETP and ECU simultaneously — will be expensive, a key reason why Air Force Secretary Frank Kendall said earlier this year that the service decided to discontinue AETP. Members of the House Armed Services Committee would seek to keep AETP going in FY24 with approximately \$588 million in funding, according to draft text of the legislation previously posted by the committee, with House appropriators similarly backing continued funding but at the lower amount of \$150 million. Ulmer said that \$150 million would be enough to keep the program alive until next year, when the F-35 Joint Program Office (JPO) is expected to formalize its requirements for power and cooling out to the end of the aircraft’s service life. Alongside engine modernization, the JPO is also pursuing changes to the aircraft’s Power and Thermal Management System (PTMS). “We’ll use the requirements to define what we need, and then we’ll determine what we think

provides the best solution,” he said. On Monday, Raytheon Technologies (now rebranded as RTX) through its subsidiary Collins Aerospace emphasized that its offering for the PTMS, called the Enhanced Power and Cooling System, would offer significant cooling margin to support future upgrades. Ulmer said he’s open to options beyond the current Honeywell-supplied PTMS, though he emphasized that the requirements must come first before the right choice for the Joint Strike Fighter can be identified. “Just because someone has an offering today, doesn’t mean that’s the solution,” he said.

[Pentagon accounting error provides extra \\$6.2 billion for Ukraine military aid](#)

[Biden, Modi announce major deal on fighter jet engines, drones \(Politico\)](#)

President Joe Biden and Indian Prime Minister Narendra Modi will mark their countries’ growing defense trade partnership Thursday by announcing a landmark deal for General Electric to build military jet engines in India with Hindustan Aeronautics, a state-owned company. “The U.S.-India defense partnership has been growing stronger through the years, but we’ve now entered really sort of a next generation defense partnership,” a senior administration official told reporters. “This is a trailblazing initiative to manufacture F414 engines in India and will enable greater transfer of U.S. jet engine technology than ever before.” The agreement, which is subject to congressional review, is a clear sign of closer defense ties between two countries that share concerns about China’s increasing military might. Senior administration officials also highlighted several other areas of increased defense cooperation ahead of Modi’s visit Thursday to the White House for talks with Biden and to attend a state dinner in his honor. Those include four agreements, one of which is already in force, that will allow U.S. naval vessels to undertake servicing and major repairs at Indian shipyards. The two countries also have created a bilateral forum known as INDUS-X to facilitate joint innovation on defense technologies and accelerate the integration of India’s budding private sector defense industry with the U.S. defense sector. The two leaders are also expected to announce India’s commitment to buy MQ-98 SeaGuardian drones from U.S. manufacturer General Atomics. “That’s going to substantially grow India’s [intelligence, surveillance and reconnaissance] capability which I think is incredibly important and and useful to them, both ... above their seas and on their borders,” a senior administration official said. In the non-defense sector, Utah-based Micron Technology is making an investment of more than \$800 million that it will use, along with financial support from Indian authorities, to build a \$2.75 billion semiconductor assembly and test facility in India, the officials said. Applied Materials, a semiconductor manufacturing equipment company, will announce a new semiconductor center for commercialization and innovation in India and Lam Research, another semiconductor manufacturing equipment company, will announce a training program for 60,000 Indian engineers, the officials said. Biden and Modi will also announce “deliverables” in other areas including renewable energy, critical minerals, telecommunications, quantum computing and health care, the officials said. In all of those areas and others, “there is no partner more consequential now and into the future than India,” a senior administration

official said.

[U.S. and Iran in indirect talks over nuclear program and prisoners](#)

[Ukraine hit bridge linking Crimea to mainland \(Reuters\)](#)

KYIV, June 22 (Reuters) - Ukrainian missiles struck one of the few bridges linking the Crimea Peninsula with the Ukrainian mainland early on Thursday, cutting one of the main supply routes for Russian occupation forces in southern Ukraine as Kyiv pushes to drive them out. Vladimir Saldo, the head of the Russian-installed administration in occupied parts of Ukraine's Kherson province, released video of himself on the Chonhar road bridge, where craters had been blasted through the asphalt. "Another meaningless act perpetrated by the Kyiv regime on orders from London. It solves nothing as far as the special military operation is concerned," he said, vowing to repair the bridge and restore traffic. He threatened to retaliate by targeting a bridge linking neighbouring Moldova to NATO-member Romania: "A very serious response is coming very soon." The Chonhar bridge hit overnight is one of just a handful of access roads to Crimea, which is linked to the Ukrainian mainland by a narrow isthmus. Alternative routes require hours-long detours over roads in poor condition. Russia's RIA news agency quoted Russian-installed transport officials in Crimea as saying repairing it could take weeks. The bridge is beyond range of the battlefield rockets Ukraine has used for a year, but within reach of newly deployed weapons such as British and French air-launched cruise missiles, allowing Kyiv to hit logistics routes Russia had deemed safe just weeks ago. The strike was "a blow to the military logistics of the occupiers," said Yuriy Sobolevsky, a Ukrainian official on the governing body for the Kherson region. "The psychological impact on the occupiers and the occupying power is even more important. There is no place on the territory of Kherson region where they can feel safe," he said. Russian investigators said four missiles had been fired by Ukrainian forces at the bridge, the RIA news agency reported. It quoted a spokesman for military investigators as saying that markings found on the remains of one of the missiles suggested it had been made in France. Ukraine is attacking Russian supply lines to disrupt Moscow's defence of occupied territory in the south, where Kyiv is in the early stages of its most ambitious counteroffensive of the war. Kyiv says it has recaptured eight villages so far, but it has yet to commit the bulk of its forces to the fight and its advancing troops have yet to reach the main Russian defensive lines. In its latest update on the fighting, Ukraine's military reported "partial success" in the southeast and east. Troops were reinforcing positions they reached after attacking towards the villages of Rivnopil and Staromayorske, said General Staff spokesman Andriy Kovaliov, referring to settlements in a Russian-held area where Ukrainian forces pushing south have so far captured four villages. He also described fierce fighting in the east, where Ukraine says it has been holding off Russian attacks. Russia says it has fended off the Ukrainian counterattack and inflicted heavy casualties, which Ukraine denies. Ukrainian President Volodymyr Zelenskyy has acknowledged that progress has been slow so far, but says his troops are advancing cautiously into heavily mined and well-defended areas to minimise losses. Zelenskyy on Thursday accused Russia of planning a terrorist attack on the

Zaporizhzhia nuclear power plant, Europe's largest, which is in Russian-held territory near the front line. Moscow denied any such plan.

Budget & Appropriations

[House appropriators back Homeland Security funding bill \(Politico Pro\)](#)

House Republicans approved their Homeland Security spending bill in full committee on Wednesday, voting 33-25 in support of \$63 billion in discretionary funding for fiscal 2024, a 3 percent increase. Under the measure, FEMA would receive \$26 billion, about a 2 percent increase. Another \$20 billion would go to disaster response programs. The Coast Guard would be funded at \$12.5 billion, a 7 percent bump, while the Secret Service would get just over \$3 billion, also a 7 percent increase. About \$10.7 billion would go to TSA, a 14 percent increase. Immigration and border funding: The measure calls for nearly \$20 billion for Customs and Border Protection, a 19 percent increase above current spending. Immigration and Customs Enforcement would be funded at nearly \$9.8 billion, a 16 percent increase. U.S. Citizenship and Immigration Services would be the only agency to receive a substantial funding cut. The agency would get almost \$122 million, a 55 percent reduction from current levels. Amendments: The panel adopted a bipartisan manager's amendment by voice vote, combining several tweaks Democrats sought with others from Republicans. Rep. Henry Cuellar of Texas, ranking Democrat on the Homeland Security subcommittee, called the amendment "very balanced." The manager's amendment increased funding in the bill for grants FEMA provides for community projects, emergency operations centers and for mitigation efforts to prepare for disasters. The six-page amendment also requires a briefing on the idea of consolidating medical care for migrants in DHS custody, among several other directives. The panel also adopted an amendment by Rep. David Joyce (R-Ohio), chair of the Homeland Security subcommittee. That amendment, approved 34-22, would increase funding for immigration detention programs. Among a slew of other conditions, the amendment would ban funding from being used to classify any communication as misinformation, disinformation and malinformation. No funding could be used to terminate or suspend social media accounts, or to suppress or promote social media content. Scene setter: Appropriators munched on popcorn throughout the markup, which wrapped up about five hours after it began. Even though the bill is usually among the most controversial of the 12 annual funding measures, the debate remained amiable. Cuellar said the process of crafting the legislation had been a "good one," despite his party's opposition to the funding levels, and Joyce thanked lawmakers for their "civility." What's next: Now that the Appropriations Committee has approved the measure, House Republican leaders plan to attempt to bring the spending bill to the floor this summer, along with the other 11 measures to fund the government for the fiscal year that begins Oct. 1. Since Democrats are expected to remain united in opposition to the measure, the whipping effort is likely to be tricky for Republican leaders.

Senate adopts funding totals for fiscal 2024 spending bills

House conservatives eye "unauthorized" spending to broadly slash federal budget following debt deal (The Washington Times)

Conservatives in the House think they have found the secret path to force instant, deep cuts in government spending. The conservatives say all it would take is for the House to refuse to fund “unauthorized” programs — the 1,100 line items in the spending bills that Congress approves every year, even though the specific legislative authority for the underlying agency or program lapsed years ago. The idea has been percolating on Capitol Hill for years. Until now, it was seen as far-fetched — a right-wing nuclear option for cutting spending. That’s changing. Key Republicans are floating the idea after the budget deal between President Biden and House Speaker Kevin McCarthy. They say the maneuver would be a shortcut to eliminating billions of dollars from the annual budget. “This is a real plan to put downward pressure on spending after the horrible [McCarthy-Biden] debt bill,” said Rep. Matt Gaetz, Florida Republican. “We should be doing this ASAP.” Rep. Nicole Malliotakis, New York Republican, said a review of unauthorized programs should be part of any discussion to rein in government spending and the national debt. She also said it should be targeted to root out waste. “The lack of action to rein in unauthorized appropriations is costing Americans hundreds of billions in tax dollars,” Ms. Malliotakis said. As with so much else in Washington, the mechanics are a bit arcane. Congress holds the power of the purse and generally divides that into two pieces. On the one hand, it creates and sets policies for, or “authorizes,” government agencies. On the other hand, it allocates — or appropriates — money to carry out those policies. In Congress, lawmakers often can’t agree on updating policies and sometimes never get around to it. Major programs such as the Endangered Species Act and the Justice Department haven’t been officially authorized in years. Under a House rule, no unauthorized program is supposed to be funded. Without funding, the program or agency can’t operate. Lawmakers regularly waive the no-authorization rule as part of rules governing debate on spending bills. What if they don’t waive the rule this year? Rep. Michael Simpson of Idaho, a senior Republican and chairman of the Appropriations subcommittee that oversees Interior Department spending, raised the idea this spring during budget hearings with agency chiefs. “We technically are not supposed to fund anything that is not authorized. Traditionally, they waive that rule when they ... bring it to the floor. What are you going to do if the Rules Committee says, ‘No, we’re not going to waive that provision?’” Mr. Simpson said. The Congressional Budget Office tracks unauthorized spending and said 1,108 authorizations expired before the current fiscal year and 355 more will expire during the year. CBP calculated that \$510 billion was spent in 2023 on activities whose authorization had expired. Rep. Andrew Clyde, Georgia Republican, took the issue directly to Attorney General Merrick Garland. “In your opinion, should unauthorized agencies or unauthorized programs in the federal government receive funding through this Appropriations Committee?” he prodded. Mr. Garland seemed stumped but replied: “At a high level of generality, it seems like a syllogism. If it’s unauthorized, it shouldn’t have appropriations.” Mr. Clyde then sprung the trap. He pointed out that the Justice Department hadn’t been

reauthorized since 2009. “How can I, in good conscience, appropriate taxpayers’ money to an unauthorized agency?” the congressman said. Later, in a statement to The Washington Times, Mr. Clyde said it was “greatly concerning” that Congress allowed programs, agencies and entire departments to receive money for years without direct authorization. “As a new member of the Appropriations Committee, I’m committed to conducting thorough oversight of expired authorizations and unauthorized appropriations as part of the ongoing process to eliminate woke, weaponized and wasteful spending,” he told The Times. The office of Rep. Rosa DeLauro of Connecticut, the top Democrat on the Appropriations Committee, didn’t respond to requests for comment for this report. The House Republican rules package this year required each committee to submit a list of unauthorized spending programs by the beginning of March. Republican leaders plan to use the list as a blueprint for spending cuts in the government funding battle. Rep. Cathy McMorris Rodgers, Washington Republican, said she plans to use her position as chair of the House Energy and Commerce Committee to go after “zombie” programs. “I intend to lead by example and start with the programs under our committee’s jurisdiction,” she said. Blocking spending on unauthorized projects is a blunt instrument. Many lawmakers are unlikely to want the Justice Department outright defunded. Peter Hanson, a political science professor at Grinnell College in Iowa, said the threat could be a viable negotiating tactic. Still, it will require unity from a conference with divisions over how far to push the spending issue. “The real question for the GOP is what it hopes to gain from such tactics. For some members, the fight is the goal. For others, hardball tactics are used to gain leverage in budget negotiations to achieve a larger end,” Mr. Hanson said. It wouldn’t take much for a few Republicans to force the spending authorization issue simply by refusing to vote for the rules of debate. Those are almost always party-line votes that the majority wins. Yet given the narrow Republican edge in the House, a handful of Republicans joining Democrats could defeat a rule and effectively block the spending bills from reaching the floor. Conservatives did that earlier this month. Angered by the McCarthy-Biden debt deal, conservatives refused to back a rules-of-debate package, halting floor action on a series of Republican bills. The conservatives relented after Mr. McCarthy promised to reach for deeper spending cuts.

[House lawmakers target Pentagon plan to ramp up missile production for Ukraine](#)

[Federal policy on homelessness becomes new target of the right \(The New York Times\)](#)

The bipartisan approach that has dominated federal homelessness policy for more than two decades is under growing conservative attack. The policy directs billions of dollars to programs that provide homeless people with permanent housing and offer — but do not require them to accept — services like treatment for mental illness or drug abuse. The approach, called Housing First, has been the subject of extensive study and expanded under presidents as different as George W. Bush and Barack Obama. President Biden’s homelessness plan makes Housing First its cornerstone and cites it a dozen times. But Housing First has become a conservative epithet. Republican lawmakers, backed by

conservative think tanks and programs denied funding by Housing First rules, want to loosen the policy's grip on federal dollars. While supporters say that housing people without preconditions saves lives by getting them off the streets, critics say it ignores clients' underlying problems and want to shift funding to groups like rescue missions that demand sobriety or employment. Some even blame Housing First for the growth in homelessness. "No more Housing First!" said Representative Andy Barr, Republican of Kentucky, after introducing a bill last month that would offer more money for programs with treatment mandates. Senator J.D. Vance, Republican of Ohio, used two recent hearings to argue that Housing First ignores the root causes of homelessness. The Cicero Institute, a Texas policy group, is promoting model state legislation that bars Housing First programs from receiving state funds. A documentary it produced with PragerU, a conservative advocacy group, cuts between critiques of Housing First and footage of people living in tents on the street and shots of drug use. The escalating war over an obscure social service doctrine is partly an earnest policy dispute and partly an old-fashioned rivalry between groups seeking federal funds. But it is also a new ideological and political flashpoint, with former President Donald J. Trump and others on the right using it to promote their argument that homelessness in liberal cities is an indictment of Democratic governance more broadly. Joe Lonsdale, the tech mogul behind the Cicero Institute, has called Housing First part of a "Marxist" attempt to blame homelessness on capitalism, and Mr. Trump, in seeking a return to office, has pledged to place homeless people in "tent cities." "The attack on Housing First is the most worrisome thing I've seen in my 30 years in this field," said Ann Oliva, chief executive of the National Alliance to End Homelessness, an advocacy group with bipartisan roots. "When people have a safe and stable place to live, they can address other things in their lives. If critics succeed in defunding these successful programs, we're going to see a lot more deaths on the street. Until Housing First emerged a generation ago, services for homeless people were built on a staircase model: Clients were meant to progress from shelters to transitional programs, where training or treatment would ready them for permanent apartments. In practice, services were weak and failure rates high, with large numbers of noncompliant people returning to the streets. The new approach flipped the script, offering housing first — subsidized apartments with no preconditions — and hoped that residential stability would promote further advancement. Supporters emphasized that Housing First was not "housing only": it included services like psychiatric treatment, but on a voluntary basis. Though skeptics feared that troubled people would leave or get evicted, early results were impressive. After five years, 88 percent of the clients in a New York City program called Pathways to Housing remained housed, compared to 47 percent in the usual system of care. Despite the lack of treatment mandates, Pathways clients were no more likely than those in the regular system to report mental illness or substance abuse. A large experiment covering five Canadian cities achieved similar results. Citing such studies, supporters praise Housing First as unusually "evidence based." Contemporaneous research also offered hopes of cost savings. While most people entering shelters were quickly rehoused, work by Dennis Culhane of the University of Pennsylvania showed that a small minority became chronically homeless and consumed tens of thousands of dollars of services in jails and emergency rooms — roughly what it cost to house them. Supporters hoped Housing First would prove "not only more humane but for some people potentially cheaper," Mr. Culhane said. Housing First exploded from a model to a movement under a Republican

administration. Philip F. Mangano, the Bush administration's top homelessness official, proved relentless in promoting Housing First programs, and the approach, which initially targeted the chronically homeless, broadened to a wider range of people experiencing homelessness. The Obama administration placed a preference for Housing First into the main federal grant programs, which now provide about \$3 billion a year to local groups. From 2007 to 2016, chronic homelessness fell by more than a third. For social workers used to seeing people languish on the streets, a breakthrough seemed at hand. "I can still feel the emotion — 'Wow, we can house everyone!'" said Adam Rocap, deputy director of Miriam's Kitchen, a social services agency in Washington. Optimism about ending homelessness ran so high, he said, some of the agency's staff members asked if they should seek other jobs. Since 2007, the stock of permanent supportive housing has more than doubled to 387,000 beds, while the Department of Housing and Urban Development found 582,000 people were homeless on a single night last year, and researchers estimate the number experiencing homelessness in a year could be three times as high.

Advanced Technologies

[Biden meets with AI experts in effort to manage its risks \(NBC News\)](#)

President Joe Biden met with artificial intelligence experts in San Francisco on Tuesday as part of his administration's efforts to manage the risks posed by AI. In brief remarks to reporters before the closed-door meeting, Biden said he wanted to hear from the world's leading experts on the technology, which he said poses "enormous promise" and "risks." "As I've said before, we will see more technological change in the next 10 years than we've seen in the last 50 years and maybe beyond that," Biden said before the event, which included Democratic Gov. Gavin Newsom of California and experts who the White House said recognize both AI's potential risks and its benefits. "My administration is committed to safeguarding America's rights and safety, from protecting privacy to addressing bias and disinformation to making sure AI systems are safe before they are released," Biden said. He also argued that social media has shown the harm powerful technology can do without safeguards, noting that he asked Congress in his State of the Union address to pass bipartisan legislation "to put strict limits on personal data collection, ban targeting and advertising to our children and require companies to put health and safety first." Vice President Kamala Harris will convene civil rights leaders and consumer protection groups next month to discuss the rise of AI, Biden said Tuesday. In May, Harris hosted the leaders of several companies developing artificial intelligence products at the White House — including Google and Microsoft — and the administration unveiled a \$140 million investment in seven new AI research centers. The Biden administration last year released a framework to mitigate threats posed by AI, and in February, Biden signed an executive order directing federal agencies to root out bias and promote equity in the design and use of new technologies, including AI. "AI is a top priority for the President and his team," a White House official said in a statement Tuesday. The use of artificial intelligence has exploded in popularity. ChatGPT, an AI chatbot, has become a global sensation: It has passed an MBA final exam, raised concerns about academic cheating and helped people craft emails to their co-workers and loved ones. But ChatGPT's ascent has also

brought concerns over the development of artificial intelligence to the fore, prompting Congress to scramble to understand and regulate the nascent technology. Biden, citing AI experts he said he had met with, warned in a commencement speech this month that AI could "overtake human thinking" and "change the character" of future wars. "So we've got a lot to deal with," Biden told graduating students at the Air Force Academy. "An incredible opportunity, but a lot do deal with."

[Chuck Schumer Joins Crowd Clamoring for AI Regulations](#)

[Silicon Valley VCs rush into defence technology start-ups \(Financial Times\)](#)

Investment in military tech start-ups is booming as the war in Ukraine and geopolitical tensions with China lead to growing confidence that the US government will give lucrative contracts to Silicon Valley companies making cutting-edge defence systems. US venture capitalists have agreed more than 200 defence and aerospace deals in the first five months of this year worth nearly \$17bn — more than the sector raised during the entire of 2019, according to data from PitchBook. This boom has mirrored the gold rush also experienced by the artificial intelligence sector, even as investment in start-ups in other parts of the tech industry has plummeted in recent months amid a broader downturn. US venture investment in defence start-ups surged from less than \$16bn in 2019 to \$33bn in 2022, PitchBook data shows. Investors piled a record \$14.5bn into such start-ups in the first quarter of this year. Silicon Valley had shunned defence technology for years, spooked by association with controversial overseas conflicts and wary of the Pentagon's notoriously slow and risk-averse procurement process, which has favoured established defence contractors. According to interviews with more than 15 investors and founders, this wariness has given way to a belief that start-ups are finally in line to take a significant share of the US's mammoth defence budget, which has grown over two decades to reach a record \$886bn for 2024. Large VCs including Andreessen Horowitz and Sequoia Capital have begun to invest in companies that build defence products as well as, for the first time, "kinetic" weapons systems, a military reference to active warfare including lethal force. "We are seeing more VCs saying they are comfortable investing in start-ups doing . . . tech that can have a kinetic effect used purely for the military," Mike Brown, a partner at San Francisco-based Shield Capital and the former director of the defence innovation unit at the US Department of Defence. Sequoia Capital led a seed round of about \$6mn into Mach Industries earlier this year, according to two people with knowledge of the deal. Mach was started by 19-year-old MIT dropout Ethan Thornton last year and develops hydrogen-powered weapons and defence systems. Sequoia declined to comment. Anduril Industries, a defence tech company valued at \$9bn whose largest backer is Andreessen Horowitz, recently revealed it was in talks to develop its first weapons by creating a "loitering munitions" version of its autonomous drones — aerial weapons systems that can wait passively for a target and then attack.

[FTC to argue Microsoft's deal to buy Activision should be paused](#)

[Apple fixes iPhone software flaws used in widespread hacks of Russians \(The Washington Post\)](#)

Apple on Wednesday said it had fixed two newly discovered security flaws in its iPhones and iPads that had been used to hack thousands of devices in Russia, underscoring the seriousness of a campaign that Russian intelligence blamed on the United States. Apple credited the discovery of the flaws to researchers from Russian security software maker Kaspersky Lab, which said three weeks ago that its senior employees were among those targeted. At the same time as Kaspersky's initial announcement, Russia's Federal Security Service, known as the FSB, accused the National Security Agency of being responsible. It did not provide evidence or explain how it reached that conclusion. The NSA did not respond to a request for comment. Kaspersky said previously that the attack worked by sending an iMessage with a malicious attachment. Without ever seeing that message, the phone's user would be infected and the attacker could run code of their choosing. The infection would disappear when users turned their phones off and on again, which experts say consumers should do at regular intervals. Apple's optional Lockdown Mode also blocked the attacks. On Wednesday, Kaspersky gave more detail, saying that the malicious code installed after infection had 24 commands, including extracting passwords from Apple's Keychain, monitoring locations, and modifying or exporting files. "As we delved into the attack, we discovered a sophisticated iOS implant that displayed numerous intriguing oddities," said Kaspersky's Georgy Kucherin, one of three credited by Apple with discovering the vulnerabilities. Kaspersky dubbed the attack Triangulation, and it and others have released tools to check if devices are infected. Apple said the fixes would protect iPhones running iOS 15.7 or earlier, which became out of date in September. More recent versions of the operating system had other improvements that made them impervious to the attacks. Apple said 90 percent of customers who bought devices in the past four years have updated to iOS 16, the latest major release. Kaspersky thanked Apple for working with it to analyze and repair the flaws. Kaspersky in the past has exposed a number of the most sophisticated spying tools the NSA is known to have worked on, including some related to Stuxnet, which disabled Iranian uranium enrichment tools. U.S. officials later said that Kaspersky's consumer anti-virus program had been used to extract classified material from an intelligence employee's home computer. Kaspersky was banned from federal machines, and its share of the U.S. market plummeted. The infection technique used in Triangulation is similar to that used by NSO and other vendors of high-end spyware. The White House and other U.S. officials have blacklisted NSO for dealing with repressive governments that then spied on innocent citizens.

Military Installations & Communities

[Air Force Has Moved Families 15 Times to Evade LGBTQ+, Racial Discrimination](#)

(Defense One)

The Department of the Air Force has moved military families 15 times over the past two years to help them escape racist or anti-LGBTQ+ harassment. “Since 2021, the Department of the Air Force has granted 15 relocation exceptions to policy for members experiencing a range of racial- and LGBTQ+-related discrimination,” a department spokesperson said. Department officials have previously said that military families with LGBTQ+ members have been forced to move to new bases because of harassment at school. The Air Force started tracking these specific movements in 2021, and doesn’t have any data on it before then. Requests to move bases, or “relocation exceptions to policy,” are made before the end of a standard tour, and are “typically made as a result of a personal hardship significantly greater than what others encounter in similar circumstances,” the spokesperson said. Asked which bases or installations military families have requested to leave, the Air Force said, “We do not normally release relocation details due to the risk of personal identification of these families.” “When I’m forced to move families from installations, because their school will do nothing when their LGBT kid is being bullied—that worries me, because that’s distracting from the mission, that’s detracting from our readiness,” Alex Wagner, assistant Air Force secretary for manpower and reserve affairs, said earlier this month. “If servicemembers are thinking and concerned about the experience their kids are having, they’re not going to be focused on their jobs. They’re not gonna be focused on their mission,” Wagner said. Troops can request a relocation ETP at any time, and it’s “rare” for it to be denied, the spokesperson said. If it is rejected, it’s typically due to delays of mandatory clearance for dependents, including medical, and/ or delay of travel documents for overseas assignments, they said. As the Pentagon works to protect military families from discrimination, right-wing politicians have introduced and passed a record number of anti-LGBTQ+ laws and stoked anti-LGBTQ+ rhetoric. Conservative lawmakers have also argued that “woke-ism” is causing the military’s recruiting woes—although top military leaders have repeatedly said there is no evidence that diversity policies have harmed recruiting or readiness.

[Senators Propose Crackdown on Retired Military Work for Foreign Powers](#)

[Pentagon set to implement law requiring them to provide mental health services after lengthy delay \(CNN\)](#)

The Pentagon is set to implement a law that requires them to provide mental health services for troops after a delay of more than a year, according to a defense official with knowledge of the matter. The law is named the Brandon Act after Brandon Caserta, a 21-year-old sailor who took his own life at Naval Air Station Norfolk in June 2018. In letters to his parents and to his friends, Caserta said he was constantly hazed and bullied in the Navy, and he saw no other way out. “This will save lives,” said Democratic Rep. Seth Moulton, who sponsored the act, in a statement. “Shame on the Pentagon bureaucrats who took 15 months, during which even more service members died by suicide, to make this happen. The DOD still has a lot of work to do to curb the shockingly high number of suicides among our young men and women who serve, but this is a big step in the right

direction.” Passed into law as part of the 2022 National Defense Authorization Act (NDAA), the Brandon Act requires the military to provide a mental health evaluation if a service member self-reports a problem or seeks help. It also allows service members to seek confidential help outside the chain of command. But the law languished for more than a year, as the Defense Department said it was working on how best to put into effect the requirements of the act. On Friday, Under Secretary of Defense for Personnel and Readiness Gil Cisneros is expected to sign a policy to start the implementation of the law, the defense official said. Caserta had told his commanders that he was suffering from depression, but they took no action, according to his father, who served 22 years in the Navy, and his mother. “It took way too long for something like this to take place,” Teri Caserta told CNN. “A bill like this that can save military service members’ lives, we should not have had to fight this hard.” Caserta’s parents plan to attend the Friday signing ceremony at the Pentagon. “I’ve had so many service members’ moms tell me that if the Brandon Act was in place, their son or daughter would be alive today,” Caserta said. In 2021, the latest year for which numbers are available, 519 US service members died by suicide. Though a slight decrease from the previous year’s 582 suicides, the trend over the last decade and more has been increasing. “Once implemented, service members will be able to request a mental health evaluation for any basis, by initiating a referral through a commanding officer or supervisor,” Assistant Secretary of Defense for Health Affairs Dr. Lester Martinez-Lopez told CNN in a statement. “The new process will require the commander or supervisor to refer the service member to mental health provider and protect the confidentiality of the service member to the maximum extent practicable in accordance with applicable laws and DoD policy.” In March, Sen. Mark Kelly, a Democrat from Arizona who co-sponsored the Brandon Act, pressed the Defense Department on why it had yet to implement the law. “In DoD, this is a major problem,” Kelly said at the time. “It’s affecting readiness. But that’s not the reason to do it. The reason to implement this is it’s the right thing to do and it will save people’s lives.”

[At WA Military Base, Families Battle Mold, Rodents And More Despite Promised Reforms](#)

[Husker Engineers Earn Grant To Protect Military Bases Against EV-Based Attacks \(Clean Technica\)](#)

Most are watching the gradual shift from gas-powered to electric vehicles through the mirrors of the environment, climate or automotive industry. That shift has introduced a different issue, and a new challenge, for the University of Nebraska–Lincoln’s Cody Stolle and his colleagues at the Midwest Roadside Safety Facility. But the researchers are focusing on more than just the safety of EV passengers. The Husker engineers are also gearing up to protect those who could be targeted by the vehicles: in this case, American soldiers stationed at the 1,000-plus U.S. military installations at home and abroad. With the aid of \$3.6 million in funding from the U.S. Army’s Engineer Research and Development Center, research teams at Nebraska and Auburn University are working to safeguard the entry points of military bases against the specific threats posed by hostile-driven EVs. For

starters, an EV battery so outweighs the engine of a gas-powered vehicle that the EV itself will often carry hundreds or even thousands of extra pounds in total. An EV carries that weight differently, too, with a center of gravity lower than its conventional counterpart. Despite the added heft, an electric motor also produces torque almost immediately after foot meets pedal, lending it a zero-to-60 acceleration that puts most internal combustion engines to shame. The Nebraska team will be accounting for each of those factors, plus others, in refining barriers that ring the perimeters of U.S. military bases and protect the gated checkpoints used by friendly vehicles. Stolle said those passive barriers — whose designs can range from guardrails to post-like bollards — must be engineered to withstand high-speed ramming from EVs, which make up a growing percentage of the world's automotive fleet. To devise and test their designs, the team — which includes Ronald Faller, research professor and director of the Midwest Roadside Safety Facility; Joshua Steelman, associate professor; and others — will employ a combination of the digital and the tangible. The former will include the most sophisticated modeling and simulations of classical mechanics on the planet. Some of those in-house computer simulations can model general vehicular dynamics, especially the ways that the forces acting on any one component will influence the behavior of another. The engineers are also receiving support from Ansys, whose software can simulate the energy transfer of a collision by effectively isolating certain variables, then integrating the results into larger models on a millisecond-by-millisecond basis. Another donation, from Caresoft Global, will provide the team with comprehensive modeling specific to EVs. But the Husker team will regularly test its designs in the physical world, too, pitting them against the brute force of, say, a 15,000-pound truck slamming bumper-first into a barrier at 50 miles per hour. Those crash tests will take place roughly every three months over the next four years, each marking a chance to evaluate refinements and incorporate the lessons imparted by twisted metal. The Midwest Roadside Safety Facility is no stranger to model-based simulations or crash tests. The facility relied on both while developing the Steel and Foam Energy Reduction (SAFER) Barrier System, which was installed at Indianapolis Motor Speedway in 2002 and now lines the walls of nearly every oval track driven by IndyCar and NASCAR. It did the same when designing the Midwest Guardrail System, a “flagship product” that has emerged as the standard across U.S. highways and been adopted throughout much of Asia, Africa and Australia. Just as the SAFER barrier informed the design of the Midwest Guardrail System, Stolle said, the latter is informing the team's approach to passive barriers at U.S. military bases. But whereas the facility's two signature civilian-centered projects were designed to cushion and redirect crashes occurring at oblique angles, the team is now engineering against head-on impacts. That can mean weathering up to three times the energy of a glancing, unintentional crash.

Homeland Security

[Former FBI analyst sentenced to nearly 4 years for illegally retaining classified docs \(NBC News\)](#)

A former FBI intelligence analyst was sentenced Wednesday to nearly four years in prison for illegally retaining hundreds of classified documents at her home. Kendra Kingsbury, 50,

of Garden City, Kansas, was sentenced to three years and 10 months in federal prison without parole by U.S. District Judge Stephen R. Bough. In October, Kingsbury pleaded guilty to two counts of unlawfully retaining documents related to national defense. Similar to the charges facing former President Donald Trump, Kingsbury's case involved alleged violations of the Espionage Act. Kingsbury, who held a TOP SECRET/SCI security clearance and was an intelligence analyst for the FBI for more than 12 years, was accused of repeatedly removing sensitive government materials from a secure workspace. Some of the documents she removed and retained in her North Kansas City residence included national defense-related classified documents. Prosecutors alleged in court documents that Kingsbury improperly removed and unlawfully retained about 386 classified documents. The retained documents were stored in various formats, including hard drives and compact discs, prosecutors said. Kingsbury allegedly admitted to investigators that she retained and destroyed other documents that could have included classified or national defense-related information. In their sentencing memo, prosecutors said, "The FBI ultimately determined that over 20,000 documents that originated either at the FBI or some other government agency were found in the defendant's residence." Kingsbury put national security at risk "by retaining classified information in her home that would have, if in the wrong hands, revealed some of the government's most important and secretive methods of collecting essential national security intelligence," they wrote. Some of the documents were classified "SECRET" by the FBI, prosecutors said, and they detailed intelligence sources and methods tied to the federal government's counterterrorism and counterintelligence efforts, as well as defense against cyberthreats. Documents linked to sensitive human source operations in national security investigations and the FBI's technical capabilities were also found, in addition to documents that delved into the FBI's priorities and objectives or that were tied to open investigations, prosecutors said. The national defense information Kingsbury unlawfully retained also included documents classified by another government agency as "SECRET," according to court documents. Allegedly tucked into that batch of retained documents was information about intelligence sources and methods related to U.S. government efforts to collect intelligence on terrorist groups, including al Qaeda, and information about a suspected associate of Osama bin Laden. Prosecutors said the FBI found Kingsbury had also "initiated searches" in classified FBI databases using information obtained from the sensitive and classified government materials uncovered at her home. An FBI investigation into why the documents were removed "revealed more questions and concerns than answers," prosecutors said. In pressing for probation, Marc Ermine, an attorney for Kingsbury, had argued that she "suffered from extensive health issues and family tragedies throughout her tenure with the FBI," including the murder of a family member, that led to mental and physical struggles and caused difficulty at work. Kingsbury's attorneys did not immediately respond to a request for comment about her sentencing, which comes about two months before Trump's scheduled trial date. Trump is accused of causing classified and national defense information to be removed and stored in various parts of his Mar-a-Lago club in Palm Beach, Florida. He pleaded not guilty in Miami this month to charges that include 31 felony counts related to retention of classified materials.

[Democrat, Republican team up to limit Chinese purchase of U.S. farmland](#)

[DOJ launches cyber unit with national security focus as China, Russia threats mount \(CNBC\)](#)

The U.S. Department of Justice announced Tuesday a new unit within its National Security Division focused on pursuing cyber threats from nation-state and state-backed hackers, formalizing an increasingly significant part of the national security apparatus into the Justice Department's hierarchy. In a statement, Assistant Attorney General Matt Olsen said the new unit would allow the DOJ's national security team "to increase the scale and speed of disruption campaigns and prosecutions of nation-state threat actors, state-sponsored cybercriminals, associated money launderers, and other cyber-enabled threats to national security." The DOJ has aggressively pursued state-backed cyber actors, especially those in China or North Korea. National security officials outside the DOJ have also emphasized China as a top cybersecurity concern, including the U.S.' top cybersecurity official. The announcement made no mention of Chinese cyber efforts, which CISA Director Jen Easterly described last week as an "epoch-defining threat." But in a separate event Tuesday at the Hoover Institution at Stanford University, Olsen emphasized the work that the DOJ has been doing to combat Chinese cyber efforts. "China has compromised telecommunications firms," Olsen said at the event. "It conducts cyber intrusions targeting journalists and dissidents in order to suppress the free flow of information. And the PRC is capable of launching cyberattacks that could disrupt U.S. critical infrastructure." Concerns over corporate and industrial espionage have long been a concern for top government and corporate executives, especially as Chinese concerns seek to leapfrog and develop equivalent technology, allegedly off the backs of U.S. innovation or research. Last month, the Secretary of the Navy confirmed the Navy had been "impacted" by a China-backed hacking group that was seeking intelligence and data. The release did emphasize the threat posed by Russian malware and ransomware groups, which researchers and practitioners characterize as potent but less coordinated and less strategic than incursions from China. While Chinese hacking groups have "lived off the land," gathering intelligence and data, Russian and North Korean groups often seek to extort their victims for profit, generating revenue for themselves or their governments. Building cases against those groups can take years, and don't always result in an arrest, given the far-flung nature of the hacking groups. "NatSec Cyber will serve as an incubator, able to invest in the time-intensive and complex investigative work for early-stage cases," Olsen said.

[U.S. is rejecting asylum seekers at much higher rates under new Biden policy](#)

[Got a Warrant? FBI May Need One to Search U.S. Data in Foreign Spy Database \(The](#)

[Wall Street Journal](#)

U.S. lawmakers are weighing one of the sharpest restrictions on government surveillance in decades. Democrats and Republicans alike are considering whether to require the Federal Bureau of Investigation to obtain a warrant before searching a controversial database of foreign intelligence for information related to Americans, despite pleas from Biden administration officials that doing so could stifle a powerful intelligence tool. The National Security Agency, under a law known as Section 702 of the Foreign Intelligence Surveillance Act, has the power to vacuum up the content of calls, texts, emails and other electronic information from U.S. technology providers. It is intended as a national security surveillance tool that targets foreigners living abroad, but it also collects data on an unknown number of Americans, such as when they communicate with a foreign suspect overseas. Privacy advocates, who have long urged changes to the law, argue that the FBI has abused that authority and pointed to recently disclosed wrongful searches of U.S. data about George Floyd protesters and Jan. 6 rioters as evidence of their longstanding concerns. That push has encountered stiff resistance from the Biden administration on grounds it could jeopardize national security. The pressure on Section 702 poses a significant challenge for a surveillance program that national security officials say is among the most valuable intelligence tools at their disposal, vital to combating terrorism, thwarting foreign cyberattacks and spying on adversaries like China and Russia. "I will only support the reauthorization of Section 702 of Foreign Intelligence Surveillance Act if there are significant reforms," Sen. Dick Durbin (D., Ill.), chair of the Senate Judiciary Committee, said at a congressional hearing last week. At least a half dozen other senators indicated interest in pursuing a warrant requirement, as have lawmakers in the House. The law expires at the end of the year absent congressional renewal. Biden administration officials have said a broad warrant requirement would slow investigators' ability to disrupt threats and warn victims of danger. In a bid to stave off major overhauls, the FBI said it supported codifying internal changes made to how it searches for U.S. data, such as requiring analysts to proactively opt-in to using the database and mandating written justifications. Lisa Monaco, the deputy attorney general, said last week that she was notified that her name came up in FBI searches of the 702 database before she returned to government in 2021 as part of an investigation into a foreign hacking campaign. "A few years ago, before I came back to government in my current role, the FBI was able to look at its information that was collected under this authority, this 702 authority, and they saw information in there indicating that a hostile nation-state was trying to hack the personal emails of former government officials," Monaco said. "It turns out one of those former government officials was me." Monaco, who worked in the Obama administration, said the FBI was able to understand the attack and warn her, allowing her to "take very swift action to protect myself." A Justice Department official said Monaco's disclosure of the episode showed how a warrant requirement would have hampered the FBI from quickly disrupting a threat. The Justice Department declined to comment on the identity of the foreign nation-state. Congress has weighed a broad warrant requirement for Section 702 before. During its last reauthorization in 2018, a coalition of bipartisan senators—including Vice President Kamala Harris, who was then representing California—introduced amendments to the law to require a warrant for some U.S. searches of the data. Section 702 was narrowly renewed then with a limited warrant requirement for the FBI to earn approval from a judge before searching for U.S. data in relation to an open criminal case that had no ties

to national security. Critics said the rule was virtually meaningless, and the FBI hasn't complied with the requirement, according to government transparency reports.

Transportation & Infrastructure

[Why California Transit Agencies Are Rebounding at Such Different Rates \(The New York Times\)](#)

In California, already famous for its love of automobiles, our dependence on cars only deepened during the coronavirus pandemic, as millions of people stopped commuting by train or bus. Bay Area Rapid Transit, which for decades catered to workers headed to downtown San Francisco from the suburbs, has been hit particularly hard by the shift to remote work, and it is now scrambling for ways out of a deep financial hole. The ridership on the 131-mile network these days is only about 35 percent of what it was before the pandemic, according to the American Public Transportation Association. This dismal rebound isn't universal across California. The San Francisco-focused Muni system, Los Angeles's buses and trains, and the AC Transit bus service based in Oakland have all been doing much better in 2023 so far, carrying closer to two-thirds of their prepandemic ridership. On the other hand, Caltrain, the Silicon Valley commuter rail service, has been faring even worse than BART, attracting only one-quarter of its former ridership, according to the transportation association. The variance among these transit systems reveals something about how public transportation functions in our state — and perhaps offers some clues as to its future. For example, take Los Angeles's sprawling Metro system. Compared with BART, largely a commuter rail line for affluent workers, the Metro agency in Los Angeles, which offers bus, subway and light rail service, serves a lower-income population that is less likely to be able to work from home or to afford a car. Metro's rebound has been much greater than BART's in part because so many of its customers have no other option. In April, ridership on buses in Los Angeles — by far the most popular mode of mass transit in the city — was almost 80 percent of what it had been in April 2019, according to agency data. The Mercury News reported last summer that more people were using public transportation in Los Angeles than in the Bay Area, a historic reversal. Brian D. Taylor, director of the Institute of Transportation Studies at U.C.L.A., noted that public transit had long sought to serve two distinct populations: workers with means, who can be lured out of their cars if public services are convenient enough, and lower-income people who rely on public transit as their only way to get around. Up until the pandemic, BART was thriving alongside a booming tech industry, making a good case for the power of the first group, Taylor told me. Ridership on BART and Caltrain, which also served technology workers, was growing while other California transit agencies were lagging, he said. "Then the pandemic hits, and the script flips entirely," Taylor said. "Downtown San Francisco has had the slowest recovery of any downtown in the country, so the shining bright spot of public transit in California suddenly became the biggest Achilles' heel." He added: "In many ways, L.A. rebounded faster and has recovered more because it didn't have as many affluent riders to lose." There's also been a shift in the kinds of trips people are making. Instead of commuting to the office in rush hour every morning, people might be more likely to pop out in the middle of the day to run to the grocery store or pick up their children from

school, or get on the train to meet friends in the evening. To adapt, BART is planning to shift its schedule to reduce weekday rush-hour service and offer more weekend and evening trips instead. There's also the question of where a bus or train makes stops. Rail systems tend to serve fewer, more concentrated destinations, while bus systems stretch farther into neighborhoods and reach a more diverse set of locations. BART mainly shuttles people between the suburbs and San Francisco's downtown commercial centers, while the Los Angeles bus system stretches into all pockets of the city.

[White House to launch travel blitz with 'major' infrastructure announcement Monday](#)

[Biden says I-95 repair is top priority for government; Dem governor says it can be done within two weeks \(Fox News\)](#)

President Biden on Saturday pledged the federal government's full support for reconstruction efforts in Pennsylvania after a portion of Interstate 95 near Philadelphia collapsed last weekend. The president delivered remarks at the Philadelphia airport after taking an aerial tour of the damage on I-95, where a tanker truck caught fire below an overpass causing the collapse last weekend. A delegation of Pennsylvania officials was with the president, including Democratic Gov. Josh Shapiro, senators Bob Casey, D-Pa., and John Fetterman, D-Pa., and Rep. Brendan Boyle, D-Pa., who represents the Philadelphia area. "I want to say that we're with you. We're going to stay with you until this is rebuilt, until it's totally finished," Biden said. "There's no more important project in the country right now as far as I'm concerned." The collapse is snarling traffic in Philadelphia as the summer travel season starts, upending hundreds of thousands of morning commutes, disrupting countless businesses and forcing trucking companies to find different routes. One body was pulled from the wreckage. The resulting fire caused the collapse of the northbound lanes of I-95. The southbound lanes were compromised by the heat from the fire, authorities say. Construction crews began work on building a temporary roadway after debris from the collapse was demolished days ahead of schedule, the Pennsylvania Department of Transportation said Friday. Biden praised those who worked quickly to clear debris and said \$3 million in federal emergency funds were immediately made available to offset the cost of repairs. "This is just a down payment," Biden said. "We'll be getting a lot more federal funding out the door in the coming weeks." Shapiro said Saturday that, with assistance from the federal government, I-95 will be reopened within the next two weeks. "We are going to get traffic moving again thanks to the extraordinary work that is going on here by these union trade workers," Shapiro said. Fetterman spoke as well, comparing the moment to when he and Biden visited a collapsed bridge in western Pennsylvania last year. "He promised to make sure that any resources that they needed and any help and support — and guess what? And guess what? That bridge was rebuilt less than a year well, well in front of time and again," the senator said. Biden said the federal government will reimburse Pennsylvania "100%" of the costs during the first 200 days of reconstruction and 90% afterward. The president said more than 150,000 vehicles use I-95 daily, including 14,000 trucks. "It's critical to our economy. It's critical to our quality

of life," Biden said. "We're going to continue to do everything within our power to get this back open as quickly and easily as possible, not leaving until it's done."

[GM to invest nearly \\$1B in Ohio engine facility](#)

[D.C. Metro: Massive funding increase needed to avoid 'catastrophic' cuts \(The Washington Post\)](#)

Metro launched a campaign Tuesday to raise support for a massive increase in annual funding the transit agency says is needed to pay for current service levels and avoid "catastrophic" cuts that could include thousands of layoffs, reduced operating hours and 30-minute waits for trains. The push to galvanize support for bridging a projected \$750 million shortfall has been expected since Metro lost nearly half its weekday rail ridership to telework during the pandemic. After three years of subsisting on federal relief aid, transit leaders say more money from Virginia, Maryland, the District, the federal government, or a special tax or fee are the only solutions without significant cuts. The campaign comes two days before transit leaders are scheduled to present Metro's board with a sobering snapshot of the financial state of the system, which in recent weeks has been returning to service levels last seen before the pandemic. The presentation will offer a bleak prediction for transit in the Washington region if Metro doesn't receive a dedicated infusion of annual funding by July 2024, the start of a new fiscal year. At that point, transit officials say the amount of the shortfall will grow in subsequent years, mirroring a rise in other costs to operate the nation's third-largest rail system. Metro leaders say they aren't yet planning for cuts, but rather are offering an assessment of reductions that would be needed if Metro had to balance its budget with existing money. "The only way to cut service enough is to eliminate about two-thirds of bus, rail and MetroAccess service for the region," said Thomas Webster, Metro's chief of planning and performance. "That is catastrophic levels of service reduction." Many transit agencies have looked to their state governments for more money as they run out of the pandemic-related aid that helped them withstand historic drops in fare revenue more than three years ago. In Metro's case, it must rely on four primary subsidy providers — Maryland, D.C., Northern Virginia's cities and counties, and the federal government — to come together and find a solution. The funding request follows a turbulent few years that included a federal derailment investigation, a year-long train shortage, a surge in fare evasion and elected leaders casting doubt on Metro's leadership at the agency's highest levels, leading to the resignations of Metro's former leaders. Metro General Manager Randy Clarke, who was hired about a year ago, pointed to the transit system's latest internal customer survey Tuesday to explain why he is optimistic the region's business and civic leaders will support handing over more money. He said 84 percent of riders are satisfied with Metrorail, matching the highest level in years, while more than 70 percent feel the same about the Metrobus system. "It's just too important to the region, and too many people worked so hard to build this incredible regional asset," Clarke said. "I find it hard to believe that anyone is going to be supportive of these types of cuts. They devastate the region." D.C. Council Chairman Phil Mendelson (D) said he has already had discussions about increased Metro funding with regional

leaders. He called the amount Metro needed “daunting” but said there might be ways to decrease the burden on local and state governments. For example, he said, the ordered return of the federal workforce to downtown offices would bring more riders. “That certainly would make a difference,” Mendelson said. In Maryland, Del. Marc Korman (D-Montgomery) said the request doesn’t come as a surprise to lawmakers. He said additional funding for Metro will compete with funding for other projects in the pipeline in the state. “We have a lot of transportation needs in our state and in our region,” Korman said. “It will be in the mix of things we need to discuss.” Earlier this year, state lawmakers passed legislation to create a transportation funding commission to decide state priorities, a list that includes Metro funding, the American Legion Bridge and the Red Line project in Baltimore. A spokesman for Gov. Wes Moore (D) said finding “creative strategies for funding” Metro is among the transportation projects the administration and commission will consider. Montgomery County Council President Evan Glass (D-At Large) said Congress may need to revisit how Metro is governed and funded, given the scope of the agency’s funding needs.

Biotechnology & Healthcare

[Cell and gene therapy manufacturing: the next generation of startups \(BiopharmaDive\)](#)

Developing a new drug is a long, expensive process that comes with a high risk of failure, often because would-be medicines are unsafe or ineffective. For companies specializing in cell or gene therapies, an equally pressing concern is figuring out how to reliably make their products. Unlike small molecule or antibody drugs, genetic medicines typically involve a variety of specialized parts woven together through a complex process. “Ex vivo,” or outside-the-body, treatments can involve a multi-week process for collecting, multiplying and modifying a patient’s cells in a laboratory. Even the simpler “in vivo” therapies have multiple pieces, including engineered viruses and synthetic genetic material, that are challenging to produce at scale. The approvals of a dozen cell- and gene-based medicines for cancer and inherited diseases in recent years has given young drugmakers a path to pursue. But most of those approvals were won by large pharmaceutical or biotechnology companies that invested heavily in manufacturing. Startups, by contrast, don’t yet have that luxury. Still, cell and gene therapy research is booming. More than 2,200 clinical trials testing these types of treatments were ongoing globally as of last year, according to the Alliance for Regenerative Medicine. The surge has often outstripped the capacity of large contract manufacturers, leaving startups facing waitlists that can stretch one to two years. A growing group of new manufacturers aim to help. Since 2017, at least half a dozen companies have launched with plans to ease the “bottlenecks” slowing down aspiring cell and gene therapy developers. Many have been started by veterans of the young field and gotten the backing of top venture firms. Here’s what they aim to accomplish and how their work is progressing: What are the main bottlenecks in cell and gene therapy manufacturing? Cell and gene therapies involve materials that aren’t used in many of the other products the pharma industry is well-versed in producing. Scientists design synthetic genetic material to deliver into patients, either via their own cells, benign viruses known as vectors or specially made bubbles of fat. Constructing these treatments

is tricky even in a research setting, where small amounts of such material might be required for early experiments. But it's much harder for companies running clinical trials, or preparing for mass production. Manufacturing delays can wreak havoc on young companies, causing them to miss milestones that could endanger future funding. Established gene therapy biotechs like UniQure or BioMarin Pharmaceuticals have spent years and millions of dollars to build their own plants. But startups and academic labs — where a number of the approved cell and gene therapies originated — can't afford that. "Academics have truly cutting-edge research, and I have been blown away by some of the creative ideas, novel modalities and breakthrough innovations that came about," said Ran Zheng, the CEO of Landmark Bio, a Massachusetts-based company that caters to cell and gene therapy developers. "But that information needs to be translated into therapeutics, and this is the biggest, and probably the first, hurdle [startups] have to overcome." Turning to contract manufacturers like Thermo Fisher and Catalent can be a solution, but brings problems of its own. Transferring technology from a small lab to a larger organization can be arduous and require troubleshooting for glitches that arise in the process. Big CDMOs may also prioritize more lucrative work with larger biotech and pharmaceutical firms. And they're struggling to meet the surging demand for cell and gene therapy manufacturing tools themselves. Building up capabilities internally can be costly for startups. Viral vectors, for instance, are expensive to make and handle. "You often see companies trying to own their own manufacturing and unfortunately, in this environment, if the product's not successful, that's a heavy capital and operating expense to carry," said Mike Paglia, a senior executive with ElevateBio, a richly funded startup that helps manufacture cell and gene therapies.

[FDA rejects Alder's eye cancer injection, citing lack of well-controlled studies](#)

[Primary care providers urged to ask about anxiety during checkups \(The Washington Post\)](#)

Your primary care provider may start asking you about feelings of anxiety as part of a routine checkup, based on new recommendations from an influential health panel. The recommendation, published by the U.S. Preventive Services Task Force on Tuesday in JAMA, the American Medical Association's journal, stems from concerns about a [burgeoning mental health crisis](#), with growing concerns about depression, anxiety and suicide. Although the task force advice isn't mandatory, its recommendations typically change the way doctors practice medicine in the United States. The new guidelines state that asymptomatic adults ages 19 through 64, including those who are pregnant and postpartum, should be screened for anxiety disorders, using questionnaires and other screening tools. The task force said last fall it would [recommend anxiety screening](#), but waited for public input before making the recommendation final. In October, the group also recommended [anxiety screening for children ages 8 to 18](#). The group, an independent panel of doctors and other experts appointed by the Department of Health and Human Services to evaluate care aimed at prevention or early detection, said it didn't find sufficient evidence to assess the benefits vs. risks of anxiety screening for those 65 and older.

Previous guidelines from the task force have suggested screening for depression, but not anxiety disorders — which affected about 19 percent of U.S. adults in the past year and are estimated to affect 31 percent at some point in their lives, [data shows](#). The new advice, experts say, may help clinicians assess, diagnose and treat anxiety disorders earlier, resulting in a better prognosis for patients. “There are a lot of patients who come to primary care who may be experiencing symptoms but don’t bring them up,” often because of the stigma surrounding mental health issues, said [Michael Silverstein](#), vice chair of the task force. “So it’s about finding people and alleviating that burden earlier rather than waiting for them to come to their doctors with signs or symptoms.” Michael Albert, chief of internal medicine at Johns Hopkins Community Physicians, said he hopes the recommendation may lay the groundwork to help close the existing shortage in mental health resources — such as loan relief for students entering a mental health profession, and better reimbursement from insurance companies for mental health care — to allow for better access to mental health care. “I applaud the USPSTF recommendation,” he said. “I hope it moves the needle on a national basis on what it takes to increase access to services that patients may need.”

[Pfizer's PARP drug follows Lynparza with narrow clearance in prostate cancer](#)

[AI, Cell/Gene Therapy, Precision Medicine Drive Bullish Biotech Investment \(GEN Edge\)](#)

While life sciences investment has retreated from its all-time highs during the COVID-19 pandemic, investors surveyed by a national business law firm are still bullish about the sector based on the growth potential seen in artificial intelligence (AI), cell and gene therapy (CGT), and other new technologies. According to the 2023 Investment Funds Outlook Report issued recently by Barnes & Thornburg, more than one-third (36%) of 125 people surveyed included the life sciences as among areas of current investment or focus. Of those life-sci investors, 29% said they plan to invest an average of between \$6 million and \$10 million in a life sciences fund, while 28% said they will invest an average \$1 million to \$5 million. Encouragingly, 18% of investors plan to invest more than \$25 million on average, and 16% between \$11 million and \$25 million—though the remaining 9% said they will only invest less than \$1 million. The 125 investors consisted of limited partners, sponsors, and service providers who were surveyed in February with help from market data services provider Dynata. Survey respondents hailed from 29 U.S. states and represented hedge fund, private equity, credit, and venture capital organizations across the life sciences and more than a dozen other industries. The life sciences investors told Barnes & Thornburg they will continue to pour as much capital into their life-sci funds as they did before the financial markets turned bearish two years ago. That bearishness is reflected in declines for most biotech stocks as well as the 37% year-to-year decline in the total value of U.S. and European VC deals reported by EY, to \$16.88 billion in 2022 from \$26.62 billion in 2021. PitchBook data reported by commercial real estate firm Cushman & Wakefield a 28% year-over-year decline in U.S. life-sci venture investment, to \$35.8 billion from \$49.2 billion. During Q1 2023, EY reported a total \$2.381 billion in venture capital was

invested in biotech companies, down 72% from the \$8.541 billion invested a year earlier, and lower than any quarter of 2022. The VC decline is of particular concern since the market downturn has impeded companies from raising greater sums of capital (and investors from cashing in on or “exiting” their investments) by going public, whether by completing initial public offerings (IPOs) or by forming special purpose acquisition companies (SPACs). According to EY data, total biotech IPO value generated in Q1 2023 was \$280 million, down 18% from \$342 million in the year-ago quarter. “Even though there’s been some decline in VC investment activity, there’s still a lot of optimism. There’s still a lot of activity,” John E. Kelly, a partner in Barnes & Thornburg’s Washington, D.C., office, and chair of the firm’s Healthcare Industry Group, told *GEN Edge*. The pandemic heightened interest in life sciences and vaccine and drug development, sparking a surge in life-sci investment that continued a trend of increasing investment seen in the latter part of the last decade. And while VC investment has since declined along with that interest in life-sci, the amount of venture capital invested into early-stage biotechs remains on the high side, Kelly said. “We think that that activity and that excitement and optimism from investors really has to do with the innovation in the industry as well as just our experience through the pandemic, watching the value and importance of what different therapies can provide.” That optimism has remained, Kelly said, despite what he termed a slight decrease in the number of investors who focus on life sciences among those surveyed since the onset of the bear market.

Climate & Development

[Countries on Front Lines of Climate Change Seek New Lifeline in Paris \(The New York Times\)](#)

An unusual if guarded optimism has descended upon Paris, along with hundreds of world leaders, bankers and climate activists. They have come for a two-day conference billed as the new Bretton Woods. The reference is to the 1944 gathering in New Hampshire where diplomats hammered out the monetary institutions to rebuild countries after World War II — the World Bank and the International Monetary Fund. Now, the goal is to rebuild those systems to weather a looming crisis: the entwined dangers of poverty and climate change. “We don’t have to choose between the fight against poverty and the fight for the climate and biodiversity,” the French president, Emmanuel Macron, argued last year. Many believe a new international monetary system, one that offers developing countries facing climate crises not more crippling debt but financial support, might be in the making. On Wednesday, on the eve of the conference, 13 world leaders, among them President Biden, published a public letter in some 40 newspapers, including *Le Monde*, saying that they were determined “to forge a new global consensus” and that the summit would stand out as a “decisive political moment.” There is also trepidation. Some worry that the conference could prove to be another grand summit held by a leader who loves his self-appointed role as multilateral consensus builder and disrupter — but does not always deliver results. “The French president has a taste for international initiatives, except it’s been more than six years now that he’s been president, and he’s exhausted energy and trust,” said Cécile

Duflot, director general of the poverty-fighting group Oxfam in France. The summit, she said, should result in concrete promises of debt relief and not just “chitchatting.” “When you have 62 countries today that are paying more on debt payments than on health care, it’s obvious that we are in a dysfunctional system,” Ms. Duflot said. The conference grew out of the ideas not of Mr. Macron but of the prime minister of Barbados, Mia Mottley. Last November, Ms. Mottley sketched out a proposal for financial reform from the stage of the United Nations climate change summit, known as COP27, in Sharm el Sheikh, Egypt. She and her team called it the Bridgetown Initiative. Ms. Mottley described the financial systems created three-quarters of a century ago as “imperial,” set up as they were before many countries in the world had become independent. She called for a major overhaul so that developing countries most prone to climate change disaster — and already facing debt crises — could access capital to address poverty and damage, and to pay for their transition to a green economy. “Yes, it is time for us to revisit Bretton Woods,” Ms. Mottley said. The response was resounding, if unexpected: Kristalina Georgieva, the head of the I.M.F., endorsed the need for reforms. Mr. Biden’s special envoy for climate, John Kerry, announced that he, too, was on board. So did the chief executive of Bank of America. Mr. Macron, who already hosted international summits on biodiversity, protection of oceans and forests, was also effusive. The project seemed a natural fit for the president of the country that hosted the Paris Climate Agreement, and he soon announced a summit in Paris to make headway on some of the proposals. On the agenda are many of the things Ms. Mottley has called for: using public money to leverage large-scale private investment for developing countries; increasing the access of those countries to financial support from the I.M.F.; and allowing countries to pause payments on international loans after climate-related disasters.

[Virtual Power Plants are Coming to Save the Grid, Sooner Than You Might Think](#)

[Clean, sustainable fuels made "from thin air" and plastic waste \(ScienceDaily\)](#)

Researchers have demonstrated how carbon dioxide can be captured from industrial processes -- or even directly from the air -- and transformed into clean, sustainable fuels using just the energy from the Sun. The researchers, from the University of Cambridge, developed a solar-powered reactor that converts captured CO₂ and plastic waste into sustainable fuels and other valuable chemical products. In tests, CO₂ was converted into syngas, a key building block for sustainable liquid fuels, and plastic bottles were converted into glycolic acid, which is widely used in the cosmetics industry. Unlike earlier tests of their solar fuels technology however, the team took CO₂ from real-world sources -- such as industrial exhaust or the air itself. The researchers were able to capture and concentrate the CO₂ and convert it into sustainable fuel. Although improvements are needed before this technology can be used at an industrial scale, the results, reported in the journal *Joule*, represent another important step toward the production of clean fuels to power the economy, without the need for environmentally destructive oil and gas extraction. For several years, Professor Erwin Reisner's research group, based in the Yusuf Hamied

Department of Chemistry, has been developing sustainable, net-zero carbon fuels inspired by photosynthesis -- the process by which plants convert sunlight into food -- using artificial leaves. These artificial leaves convert CO₂ and water into fuels using just the power of the sun. To date, their solar-driven experiments have used pure, concentrated CO₂ from a cylinder, but for the technology to be of practical use, it needs to be able to actively capture CO₂ from industrial processes, or directly from the air. However, since CO₂ is just one of many types of molecules in the air we breathe, making this technology selective enough to convert highly diluted CO₂ is a huge technical challenge. "We're not just interested in decarbonisation, but de-fossilisation -- we need to completely eliminate fossil fuels in order to create a truly circular economy," said Reisner. "In the medium term, this technology could help reduce carbon emissions by capturing them from industry and turning them into something useful, but ultimately, we need to cut fossil fuels out of the equation entirely and capture CO₂ from the air." The researchers took their inspiration from carbon capture and storage (CCS), where CO₂ is captured and then pumped and stored underground. "CCS is a technology that's popular with the fossil fuel industry as a way to reduce carbon emissions while continuing oil and gas exploration," said Reisner. "But if instead of carbon capture and storage, we had carbon capture and utilisation, we could make something useful from CO₂ instead of burying it underground, with unknown long-term consequences, and eliminate the use of fossil fuels." The researchers adapted their solar-driven technology so that it works with flue gas or directly from the air, converting CO₂ and plastics into fuel and chemicals using only the power of the sun. By bubbling air through the system containing an alkaline solution, the CO₂ selectively gets trapped, and the other gases present in air, such as nitrogen and oxygen, harmlessly bubble out. This bubbling process allows the researchers to concentrate the CO₂ from air in solution, making it easier to work with. The integrated system contains a photocathode and an anode. The system has two compartments: on one side is captured CO₂ solution that gets converted into syngas, a simple fuel. On the other plastics are converted into useful chemicals using only sunlight. "The plastic component is an important trick to this system," said co-first author Dr Motiar Rahaman. "Capturing and using CO₂ from the air makes the chemistry more difficult. But, if we add plastic waste to the system, the plastic donates electrons to the CO₂. The plastic breaks down to glycolic acid, which is widely used in the cosmetics industry, and the CO₂ is converted into syngas, which is a simple fuel." "This solar-powered system takes two harmful waste products -- plastic and carbon emissions -- and converts them into something truly useful," said co-first author Dr Sayan Kar. "Instead of storing CO₂ underground, like in CCS, we can capture it from the air and make clean fuel from it," said Rahaman. "This way, we can cut out the fossil fuel industry from the process of fuel production, which can hopefully help us avoid climate destruction." "The fact that we can effectively take CO₂ from air and make something useful from it is special," said Kar. "It's satisfying to see that we can actually do it using only sunlight." The scientists are currently working on a bench-top demonstrator device with improved efficiency and practicality to highlight the benefits of coupling direct air capture with CO₂ utilisation as a path to a zero-carbon future.

We're building roofs wrong. A different approach can save money and lives.

[A giant drilling machine moves Stockholm toward an emission-free future \(Bloomberg\)](#)

In a narrow, humid tunnel about 200 feet below the streets of Stockholm, a drill longer than the city's tallest skyscraper nibbles away at granite and gneiss. After more than three years, the 1,000-ton machine, named Elektra, is at the halfway point of its journey. Moving at a steady pace of 70 meters (230 feet) a week, the hulking machine is inching across the Swedish capital, burrowing a subterranean channel that will enable the city to overhaul its aging electricity infrastructure and finally, fully go green. Once ready, the tunnel will solve a problem that has beset not only Stockholm but cities worldwide. As fast-growing metropolises have sought to cut carbon emissions through electrification, their networks have been unable to keep up with surging demand. When Stockholm's tunnel project is completed in late 2028, stretching 13.4 kilometers from the wealthy northern suburb of Danderyd to the middle-class neighborhood of Hammarby Sjostad, it will be the newest element in a 15-billion Swedish kronor (\$1.37 billion) plan by the national grid to upgrade and expand the infrastructure that transfers power into the city. During the transition, old overhead powerlines will be pulled down and new ones will be fed underground, helping increase the city's overall capacity to 6 to 6.5 gigawatts. The national grid operator is drilling a tunnel that will run for more than 13km. While Sweden generates an abundance of power — it was Europe's biggest electricity exporter last year — the network supplying Stockholm can only support about 3.5 gigawatts. That isn't enough when demand peaks on the coldest days of the year, nor is it enough to support new subway stations, commuter tunnels, thousands of electric vehicle chargers or to electrify ports and ferries. Which means that large, energy-intensive projects needing to connect to Stockholm's grid end up waiting in line until resources are available. As a stopgap measure, local grid manager and supplier Ellevio AB in 2019 struck a deal with plant operator Stockholm Exergi AB for emergency supplies during the coldest days. Adding to the pressure is that the city plans to be completely fossil fuel-free by 2040 — five years before demand is expected to surge to more than a third of current levels, according to a June report commissioned by Ellevio. As time passes and demand grows, the need to upgrade the grid becomes more apparent. The fragile state of existing infrastructure was made clear on April 26, when a combination of human error and faulty equipment knocked out power to trains and subway lines for about an hour during the morning rush, leaving tens of thousands of commuters stranded. Traffic lights also went out, and two nuclear reactors north of the city were shut down temporarily. Even Elektra has been hit by the shortages. On a cold winter's day in early December 2021, the machine, which consumes enough electricity to supply a small town, had to stop operations for about four hours as Stockholmers ramped up their heaters. Per Eckemark, head of the grid division at Svenska Kraftnat AB, the state-owned company that oversees the national grid and the tunnel construction, acknowledged that many of the power lines and substations that supply Stockholm today are coming to the end of their technical lives. "Some of the overhead power lines date back to the 1940s," he said. "With modern technology, we'll reduce the

risk of future outages.” Plans to revamp the grid started to take shape about two decades ago, after outages hit the technology hub of Kista and residential areas north of the capital. A proposal to build a subsea cable around Stockholm, which is partly made up of small islands, was eventually discarded because of cost and reliability concerns, Eckemark said, leaving the tunnel as the only viable option. After years of legal wrangling and red tape, the plan finally got the go-ahead in 2017. When complete, 9 aluminium-based cables will run along the wall of the tunnel, ferrying electricity from the national grid to the local network. For Ellevio, such reinforcements can’t come soon enough. “We have an acute situation, we shouldn’t really be where we are,” said the company’s Head of Asset Management, Saira Alladin. “We really need more capacity.” For the electrification to become a success, it’s vital that the local grid gets updated as well. Ellevio plans to spend the equivalent of its annual turnover in coming years to boost capacity, Alladin said, noting that in Stockholm alone, investment will roughly double to about 4 billion Kronor annually.

Next Week's Hearings

Armed Services Committees

House: None Listed

Senate: None listed

Appropriations Committees

House: None listed

Senate: None listed

Homeland Security Committees

House: None Listed

Senate: None Listed

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