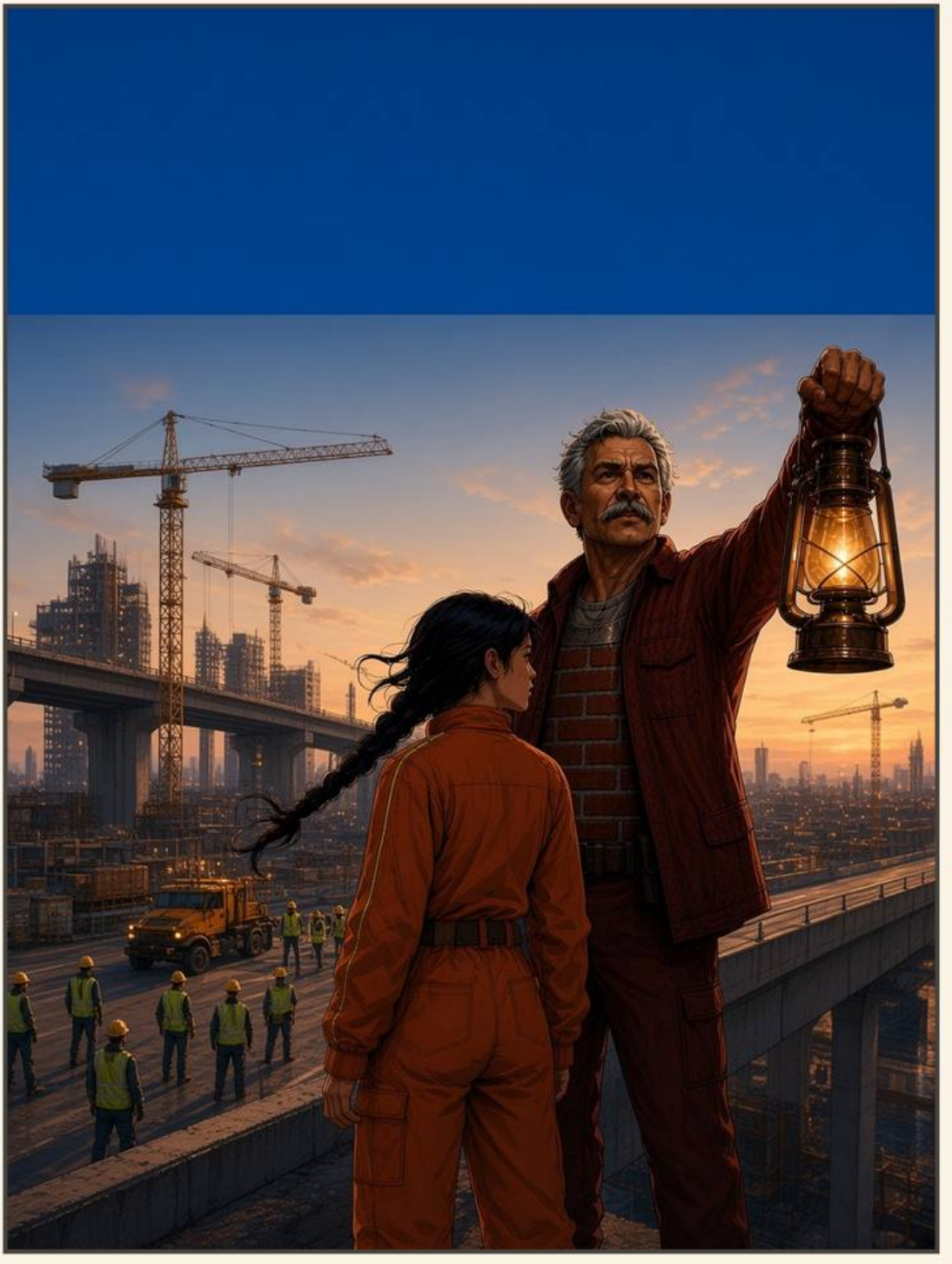
BUILD IT RIGHT

Data Centers #4 · Teens 10–15

with Dess, the Infrastructure Guard and Lena Ashgrove of Channel 5



CREDITS

Build It Right · Data Centers #4 · Teen edition (ages 10–15)
Story and production: GOTB Consulting, Chicago
Lead: Dess · Heroes: Commons, The Auditor, Gridline, Undertow · On screen: Lena Ashgrove, Channel 5

AI-GENERATED ART, FICTIONAL CHARACTERS

All characters, the town of Prairie Bend and Channel 5 are fictional. Any resemblance to real people is a coincidence. No real logos are shown. Real institutions are described by role. Every number in this book was checked against public sources before printing; see 'Sources' near the end.
Safety: stay out of work zones, slow down for the cones, and never ride outside a machine.

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THE CREW

DESS

Our lead. Asks who builds it, and how.

COMMONS

Hero of crews and neighbors. Lantern up.

THE AUDITOR

Sees and reports. Cannot stop anything.

GRIDLINE

Sees where current and freight flow.

DESS

POWER, THEN WATER. LAST PIECE: THE ROADS, THE BRIDGES AND THE CREWS WHO BUILD THEM. NOTHING GETS BUILT WITHOUT THEM.

THE AUDITOR

4.1 MILLION MILES OF PUBLIC ROAD. 39% OF MAJOR ROADS ARE POOR OR MEDIOCRE. BAD ROADS AND TRAFFIC COST THE AVERAGE DRIVER OVER $1,400 A YEAR.

FACT FILE

The U.S. has more than 4.1 million miles of public roads. Bad and congested roads cost the average driver over $1,400 a year; the average driver lost 43 hours to congestion in 2024. 39% of major roads are in poor or mediocre condition (down from 43% in 2020).

Source: ASCE 2025 Report Card, "Roads"

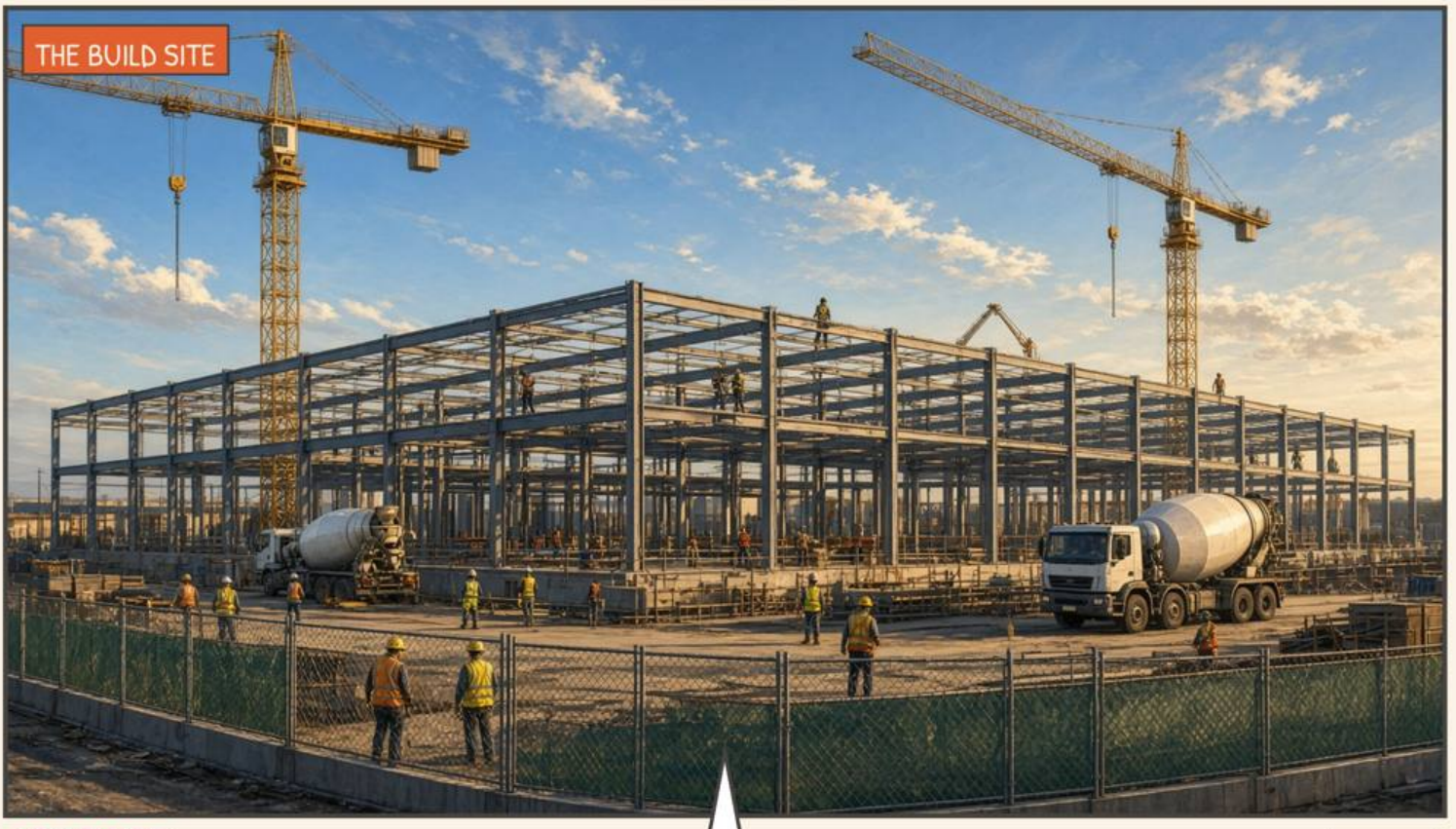
COMMONS

ABOUT 1.67 MILLION CONSTRUCTION LABORERS AND HELPERS NATIONWIDE. MEDIAN $46,680. HARD HATS, STEEL TOES AND OSHA TRAINING BEFORE THE FIRST SHOVEL.

FACT FILE

Also: ~1.67 million construction laborer and helper jobs (2025); median pay $46,680; growing 6% (2025-35); ~137,000 openings a year. They learn on the job, often with apprenticeships from unions or trade groups; OSHA safety training is often required; they wear hard hats, steel-toed shoes and other protective gear.

Source: U.S. BLS OOH, "Construction Laborers and Helpers" (modified Aug 27, 2026)



COMMONS

VERIFIED

ONE DATA CENTER BUILDING: ABOUT 12 TO 18 MONTHS AND AROUND 1,500 WORKERS AT PEAK. THEN ABOUT 50 RUN IT.

FACT FILE

Also: ~50 permanent jobs, about half contractors. About 12–18 months and ~1,500 workers at peak to build one building.

Source: Virginia JLARC; Data Centers in Virginia (2024)

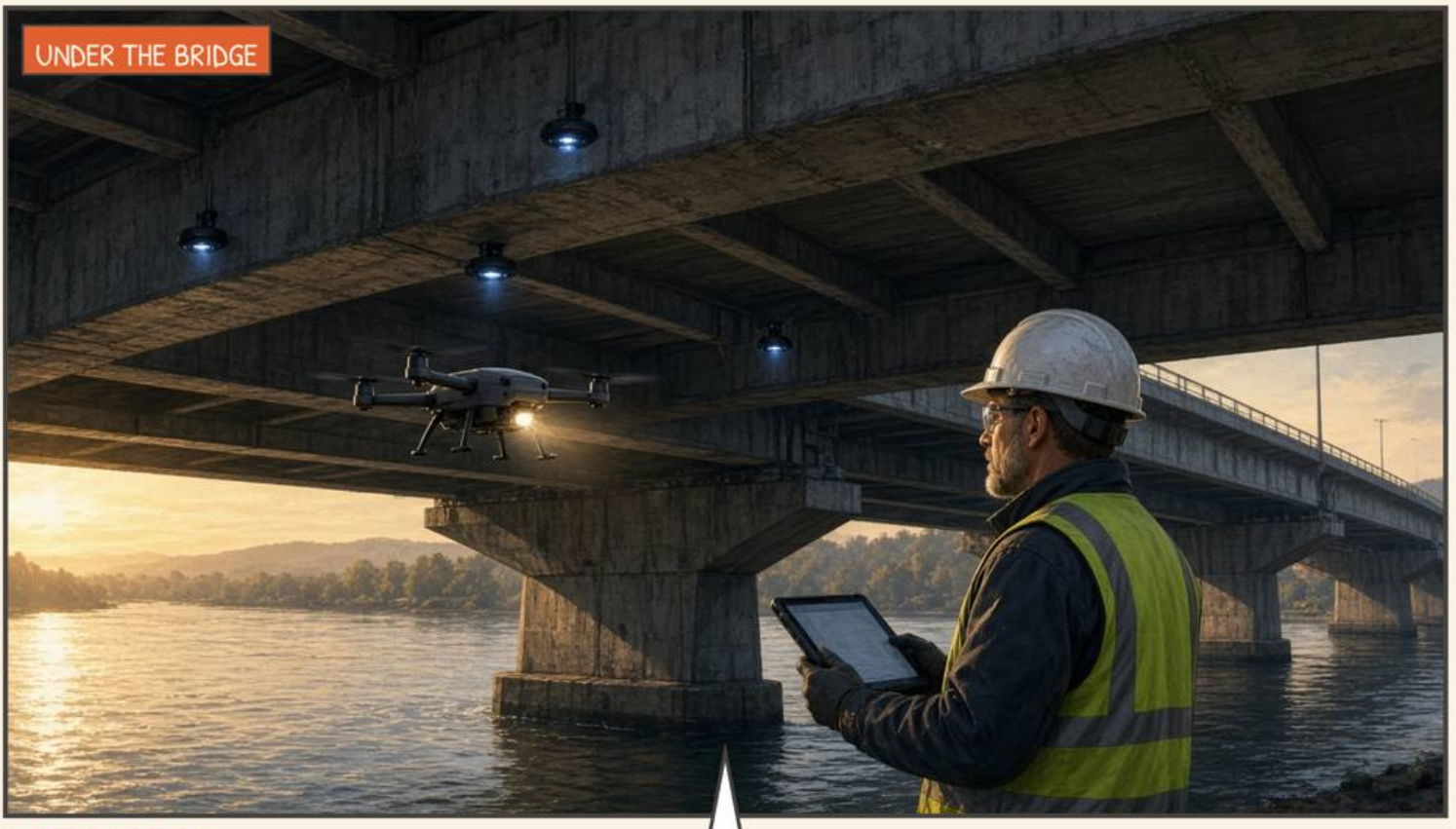
DESS

HIGHWAY CREWS OFTEN WORK OVERNIGHT SO TRAFFIC KEEPS MOVING. THAT'S WHY YOU SEE ORANGE CONES AT 2 AM.

FACT FILE

Road crews may control traffic and run pavement breakers, jackhammers and tampers; highway and bridge crews may work overnight to avoid traffic.

Source: U.S. BLS OOH, "Construction Laborers and Helpers" (modified Aug 27, 2026)



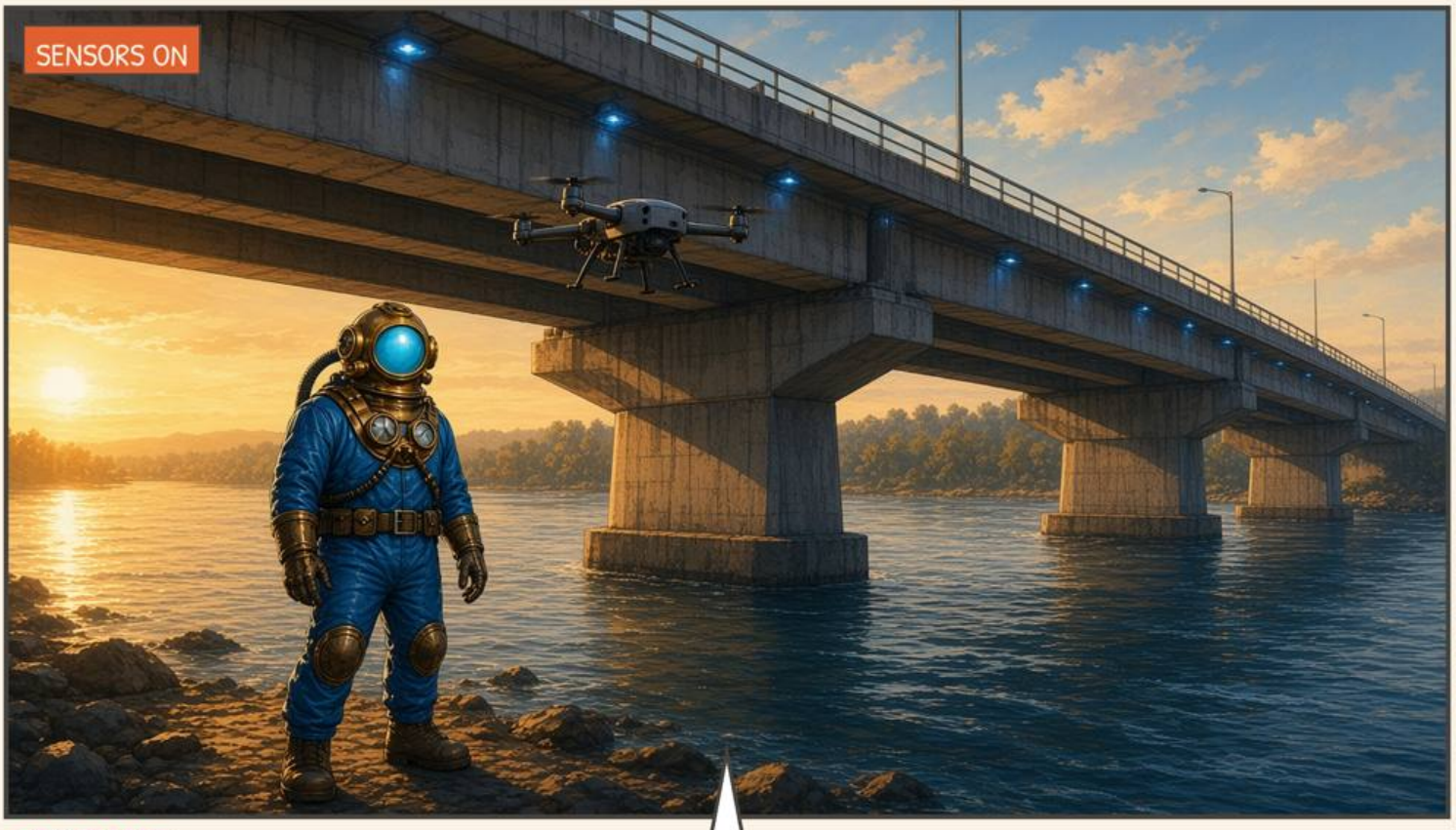
THE AUDITOR

623,218 BRIDGES, ABOUT 47 YEARS OLD ON AVERAGE. 6.8% RATED POOR. AT TODAY'S REPLACEMENT RATE, A NEW BRIDGE WOULD HAVE TO LAST 126 YEARS.

FACT FILE

623,218 bridges; average age ~47 years; 6.8% poor, 49.1% fair, 44.1% good (2024). About 4,927 bridges replaced a year (2014–2023); at that rate, a bridge built today must last 126 years.

Source: ASCE 2025 Report Card, "Bridges"



COMMONS

NEW HIGHWAY BRIDGES ARE DESIGNED FOR AT LEAST 75 YEARS. SENSORS, DRONES AND ULTRASOUND CATCH CRACKS EARLY.

FACT FILE

Since 2007, new highway bridges need a 75-year minimum design life. Sensors, drones and ultrasound help inspectors find problems earlier.

Source: ASCE 2025 Report Card, "Bridges"

LENA (ON SCREEN)

THE FEDERAL GAS TAX, 18.4 CENTS A GALLON, HASN'T CHANGED SINCE 1993. IT HAS LOST ABOUT 80% OF ITS BUYING POWER.

FACT FILE

Federal gas tax of 18.4¢/gal (diesel 24.4¢) unchanged since 1993; it has lost 80% of its purchasing power.

Source: ASCE 2025 Report Card, "Roads"

THE AUDITOR

ENGINEERS WARN YOU CAN'T BUILD YOUR WAY OUT OF TRAFFIC: WIDER ROADS CAN FILL RIGHT BACK UP. THEY SAY FIX WHAT WE HAVE FIRST.

FACT FILE

Also: "No nation can build its way out of congestion" (induced demand); ASCE recommends prioritizing a state of good repair.

Source: ASCE 2025 Report Card, "Roads"

GRIDLINE

TRUCK FREIGHT IS EXPECTED TO GROW ABOUT 91% BY VALUE BY 2050. HEAVIER LOADS WEAR ROADS AND BRIDGES FASTER.

FACT FILE

Truck freight expected to grow 91% by value and 53% by weight, 2022–2050.

Source: ASCE 2025 Report Card, "Roads"

LENA (ON SCREEN)

REPORTED

SINCE 2021, A FEDERAL LAW SENT OVER $591 BILLION TO ROADS, AND WORK BEGAN ON 207,000 MILES. ENGINEERS STILL SEE A $684 BILLION GAP.

FACT FILE

The 2021 infrastructure law (IIJA) provided more than $591B for roads since late 2021; construction started on 207,000 miles of roadway; a $684B 10-year roads funding gap remains.

Source: ASCE 2025 Report Card, "Roads"

DESS

REPORTED

IN CHICAGO, DATA CENTERS CAN GO IN MOST COMMERCIAL AREAS BY RIGHT. A PROPOSAL WOULD ADD PUBLIC REVIEW. ONE SUBURB'S 186-ACRE PLAN WAS WITHDRAWN AFTER RESIDENTS PUSHED BACK.

FACT FILE

In Chicago, data centers are allowed by right in most commercial areas; a proposal would require planned-development review. In a nearby suburb, a developer withdrew a 186-acre rezoning on Tuesday, June 30, 2026 (WTTW/Capitol News Illinois, Jul 1, 2026) after resident opposition; Plan Commission had voted 4-2 against.

Source: WTTW news (Chicago public media); WTTW / Capitol News Illinois (Jul 1; 2026)

COMMONS

SOME WANT THE JOBS AND GROWTH. SOME WANT SLOWER, CLOSER REVIEW. BOTH ARE NEIGHBORS. BOTH GET HEARD.

DESS

POWER, WATER, ROADS, PEOPLE. THE CLOUD STANDS ON ALL FOUR. ASK WHO BUILDS IT, AND BUILD IT RIGHT.

GOTB Consulting works on the infrastructure and procurement behind projects like these.

BY THE NUMBERS

4.1 MILLION MILES

Public roads in the U.S.; 39% of major roads poor or mediocre. (ASCE 2025)

43 HOURS • $1,400

Average driver: hours lost to congestion in 2024; yearly cost of bad roads and traffic. (ASCE)

623,218 • 47 YEARS • 126

Bridges; average age; years a new bridge must last at today's replacement rate. (ASCE)

18.4 CENTS • 1993

Federal gas tax per gallon, unchanged since 1993; lost ~80% of buying power. (ASCE)

1,500 ▯ 50

Workers at peak to build one data center building vs. permanent jobs after. (Virginia JLARC)

1.67 MILLION • $46,680

Construction laborers and helpers; median pay, 2025. (BLS)

TWO SIDES

The strongest case on each side, labeled. Nonpartisan.

BUILD

Jobs, roads and a tax base. Freight is projected to grow 91% by value by 2050; waiting has its own cost.

FIX FIRST

Engineers say you can't build your way out of congestion; repair the network first. Heavy construction wears local roads.

REVIEW IN PUBLIC

A proposal would add planned-development review for data centers in the city; one suburb's 186-acre plan was withdrawn after residents objected (Reported).

WHAT BOTH SHARE

Safe crews, sound bridges, and plans made in the open.

YOUR TURN

What would you ask before a big project comes to town? _____

BUILDER WORDS

BY RIGHT

Allowed under current zoning without a special public vote.

PLANNED DEVELOPMENT

A review process with public hearings for large projects.

INDUCED DEMAND

New road space can fill up with new traffic.

DESIGN LIFE

How long a structure is built to last (75 years for new highway bridges).

APPRENTICESHIP

Paid on-the-job training with an experienced worker.

WORK ZONE

The marked area where road crews are working.

QUICK QUIZ

1. AVERAGE AGE OF U.S. BRIDGES?

a) 12 years b) About 47 years c) 200 years

2. WHEN DID THE FEDERAL GAS TAX LAST CHANGE?

a) 1993 b) 2015 c) Last year

3. WORKERS AT PEAK FOR ONE DATA CENTER BUILDING?

a) 50 b) About 1,500 c) 15,000

4. WHY DO CREWS WORK AT NIGHT?

a) It's cooler b) To keep traffic moving

ANSWERS

1 b · 2 a · 3 b · 4 b

SOURCES

Full list with fact IDs: FACT_BASE.md and NUMBER_CHECK.md (GOTB internal).

ASCE 2025 REPORT CARD

ASCE 2025 Report Card, "Roads"

ASCE 2025 REPORT CARD

ASCE 2025 Report Card, "Bridges"

U.S. BLS OOH

U.S. BLS OOH, "Construction Laborers and Helpers" (modified Aug 27, 2026)

ABOUT GOTB CONSULTING

WHO WE ARE

A Chicago firm working on infrastructure and procurement for the systems communities depend on.

DATA CENTERS

Siting, delivery and community questions.

POWER

Grid connections, substations and lines.

WATER

Supply, treatment and cooling.

PUBLIC WORKS

Roads, pipes and public spaces.

THE END

ASK WHO BUILDS IT, AND BUILD IT RIGHT.

Next time: more from the Infrastructure Guard.

GOTB CONSULTING · CHICAGO

Data centers · Power · Water · Public works

AI-generated art, fictional characters