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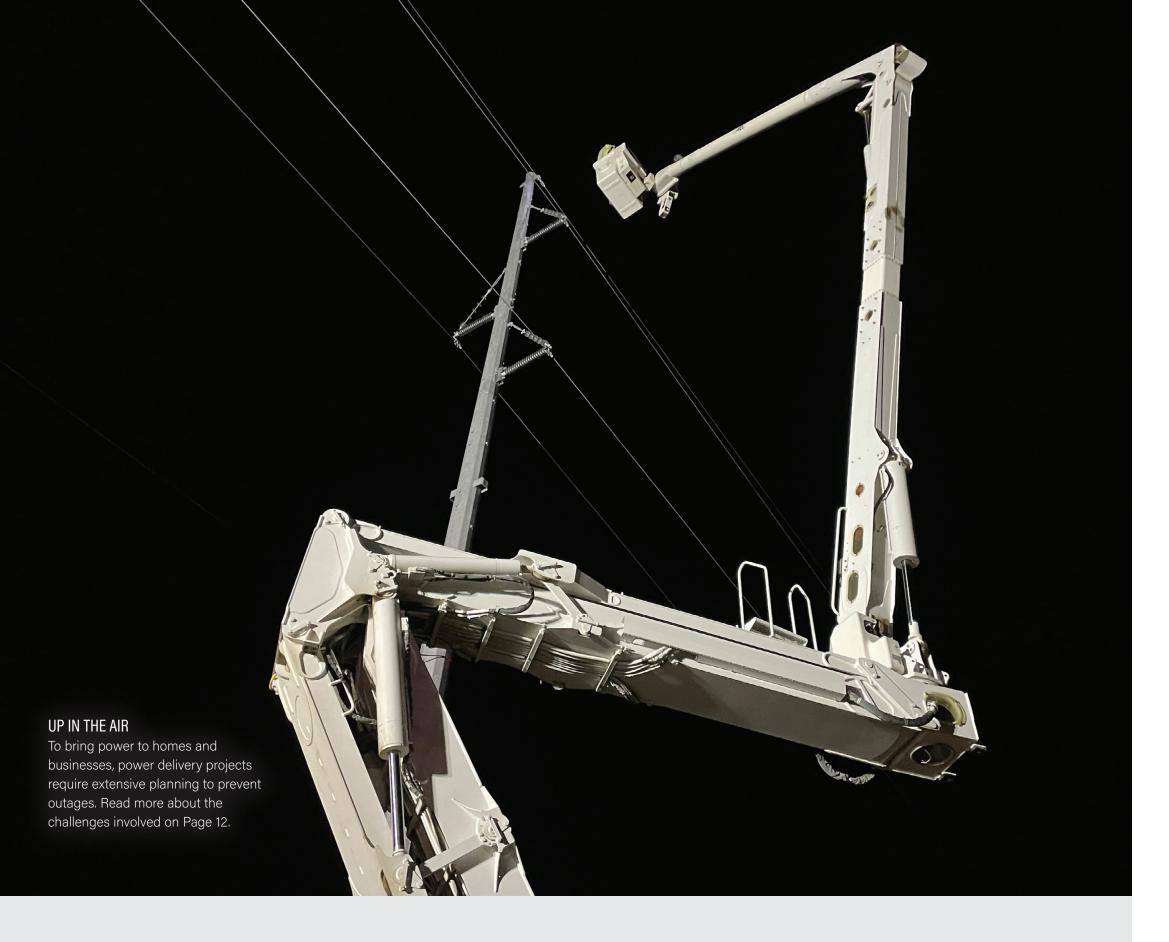














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Kiewit is one of North America's largest and most respected construction and engineering organizations. With its roots dating back to 1884, the employee-owned organization operates through a network of subsidiaries in the United States, Canada, Mexico and Guam. Kiewit offers construction and engineering services in a variety of markets including transportation; oil, gas and chemical; power; building; water; industrial; mining and marine. Kiewit had 2023 revenues of \$17.1 billion and employs 31,100 staff and craft employees.

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KIEWAYS

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FORWARD THINKING

When you've been in business as long as Kiewit, it's not uncommon to work with former clients on updates that fit the needs of a growing population. In this issue, you're going to see some of those ties to the past.

For example, Kiewit helped build the initial light rail track for Phoenix's Valley Metro in 2008, featured on Page 8. The rail line has since grown to serve nearly 13 million passengers per year. Kiewit's latest contribution, a 1.6-mile rail extension in the city's northwest corner, is the first of two major upgrades underway for the client.

In the case of Ottawa's Highway 417, our steadily growing engineering arm was called in to figure out how to replace aging infrastructure without major traffic delays in one of Canada's largest cities. The process, and what it took to make it happen is detailed on Page 16.

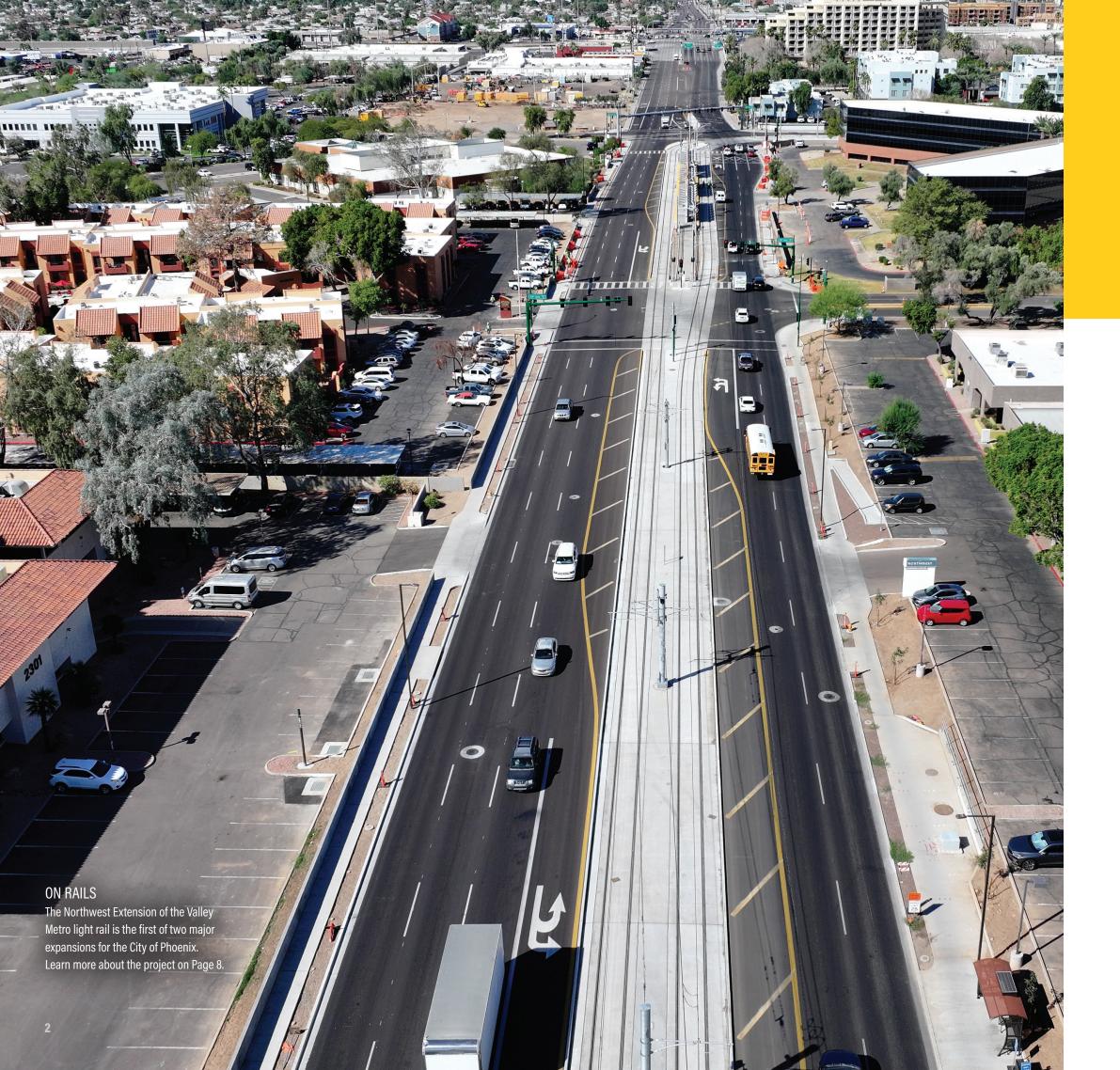
That same engineering expertise is helping us in other markets. When it came to power delivery projects, we used to focus solely on building pre-designed transmission lines and substations. It may surprise you that over two-thirds of our power delivery projects these days are design-build contracts. You can learn more about our innovation in the field on Page 12.

Finally, I invite you to take a look at some notable projects from years past in our Kieways Time Capsule. This issue features a special Kieways retrospective on Page 6 that highlights our work in the hydroelectric space.

Whether it's updating an old job or reimagining a better plan for the future, we are proud to be a continuous part of the work that's improving lives across North America.

RICK LANOHA

President and Chief Executive Officer



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GROWING PHOENIX'S LIGHT RAIL

A 1.6-mile extension of Valley Metro's light rail system takes shape in this Kiewit-McCarthy joint venture.

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KEEPING CANADA'S CAPITAL CITY MOVING

Rapid bridge replacements in Ottawa help to minimize traffic disruption while showcasing new technology.

KIEWIT NEWS

What began in 1884 with two hard-working brothers has grown into a construction and engineering industry leader. As a multi-billion dollar organization, Kiewit can tackle projects of all sizes, in any market. Here's a brief collection of recent news and information from around the company.

OUR MARKETS:

- BUILDING
- (A) INDUSTRIAL
- (a) MARINE
- (X) MINING
- OIL, GAS & CHEMICAL
- POWER
- TRANSPORTATION
- WATER

OUR VALUES:



PEOPLE







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GIRL SCOUTS OF AMERICA VISIT KIEWIT TRAINING CENTER

Nearly 100 Girl Scouts, grades 2 through 12, visited the Kiewit Training Center in Aurora, Colorado, for the "Build Like a Girl" event. The girls learned how rigging pulleys work, operated a crane in a simulator, made wooden crates using miter saws and created concrete flowers.

"We believe in inspiring the next generation of female leadership in our industry, and we are grateful for the volunteers from the Girl Scouts and Kiewit who helped make this event possible. Nothing excites us more than lighting a fuse for young women interested in pursuing a career in construction and engineering," said Area Manager Chris Stolzer. This is the first year the Training Center has hosted the event, and the hands-on activities were led by some of the district's most successful female employees.



NASCAR'S CHRISTOPHER BELL HIGHLIGHTS CONSTRUCTION PARTNERSHIP

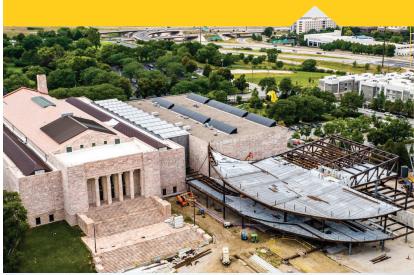
At the NASCAR Cup Series race in Bristol, Tennessee, DEWALT and Kiewit cheered on Christopher Bell in the No. 20 car. Kiewit's logo on the trunk is the latest highlight of the partnership with DEWALT in both racing and construction. Kiewit was first featured on the No. 20 car, then driven by Erik Jones, in 2019.

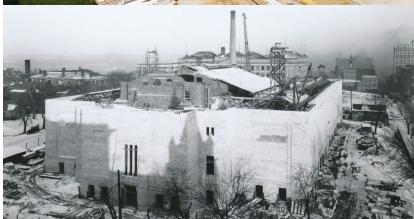
JOSLYN ART MUSEUM SET TO REOPEN DOORS

The reopening of the Joslyn Art Museum is quickly approaching and is set to welcome visitors later this year.

Over the last three years, Kiewit has been building the 42,000-square-foot Rhonda & Howard Hawks Pavilion, a Snøhetta-designed addition to the museum and the second expansion in its history. It features a new entrance and entry atrium, a community room, a new gift shop and ten new galleries. When the museum reopens, 5,000 years of art history will be on display across three buildings, including 100 works new to the collection and four temporary exhibitions. Renovations include updated studios for art classes, a completely refurbished lecture hall and cafe, and reimagined gardens and grounds.

Built by Kiewit and opened in 1931, Omaha's Joslyn is the largest art museum in Nebraska. Peter Kiewit served as the superintendent on the original project, overseeing column and marble installation. In 1994, Kiewit constructed the Museum's first expansion, the Walter & Suzanne Scott Pavilion.





NEW YORK WIND FARM NOW OPERATIONAL

The South Fork Wind Project is officially delivering power to the grid in Long Island, New York, becoming America's first complete commercial-scale offshore wind farm. The wind farm is located off the coast of New York and features 12 turbines capable of generating 132 MW of wind energy, enough power for 70,000 homes.

Kiewit was selected to design and build the 1500-ton substation for the project at its fabrication facility in Ingleside, Texas. Kiewit was responsible for all design, procurement, fabrication, installation and onshore commissioning of the structures. The team also participated in the testing after completion to demonstrate the substation's ability to perform as an integrated part of the overall wind farm.



NO. 2 OVERALL

ENR's 2024 Top Contractor Rankings

KIEWIT RANKS IN TOP CONTRACTOR LISTS

For Engineering News-Record's (ENR) 2024 firm ranking, Kiewit received the following awards in addition to its #2 overall ranking:

- #1 in Domestic Heavy
- #1 in Transportation
- #1 in New Contracts
- #2 in Power
- #4 in Petroleum
- #5 in Working Abroad

ENR compiles data from across the industry each year, taking revenue, contract awards, employee count and other factors to determine rankings for the year. The publication began its Top 400 lists in 1964, and over 60 years Kiewit has steadily climbed in the rankings.

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HYDROELEGTRIC

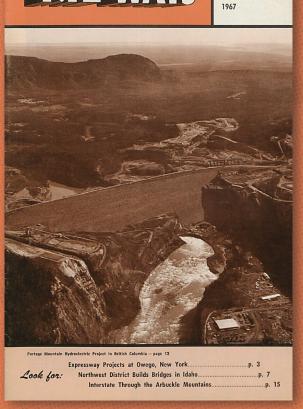
Hydroelectric power has been one of Kiewit's most sustainable markets since its 1930s venture in North Platte, Nebraska. Revisit some of Kiewit's most noteworthy dams in this Kieways retrospective, highlighting hydroelectric projects through the years.

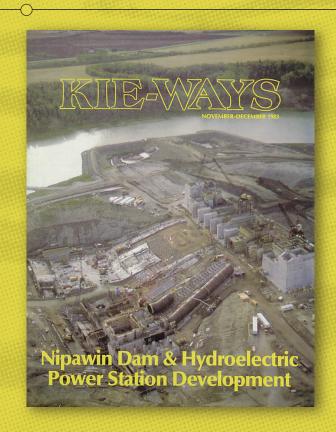
1967 | Portage Mountain

Kiewit crews completed Portage Mountain Dam, the largest hydroelectric project in the Western Hemisphere of its time, in the fall of 1967. Located on the Peace River and nearly 700 miles north of Vancouver, this British Columbia project had a generating capacity of 2,300 MW. Over 57 million cubic yards of fill material were used to construct the dam over a four-year period.



NOVEMBER DECEMBER 1967

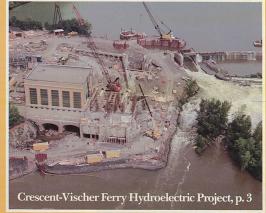




1983 | Nipawin Dam

Development of the Nipawin Hydroelectric
Power Station is one of the foremost examples
of harnessing the Saskatchewan River. The
252 MW project was situated in east central
Saskatchewan, three miles upstream from the
town of Nipawin. The town is named after the
Cree word for a "resting place," where indigenous
families would wait while traders crossed the river
to sell furs and other goods.

SEPTEMBER-OCTOBER 1989



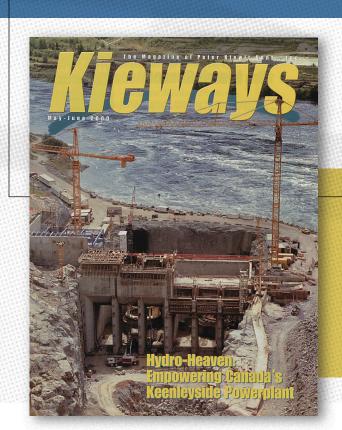
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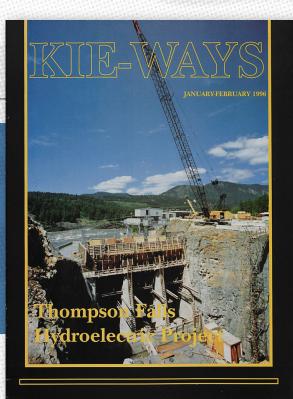
1989 | Crescent-Vischer Ferry

In June 1988, Kiewit was awarded a contract by the New York Power Authority for extensive work on two Mohawk River dams. This included the structural, mechanical and electrical rehabilitation of the Crescent and Vischer Ferry powerhouses and dams, as well as the construction of a new powerhouse at each site. The electrical upgrade amounted to energy savings of 3.2 million gallons of oil per year.

1996 | Thompson Falls

Located on the Clark Fork River 100 miles northwest of Missoula, Montana, this design/build hydroelectric project was built at the site of an existing powerhouse and dam that were constructed in the early 1900s. Besides managing all aspects of the design/build project, Kiewit and its joint-venture partner took on the additional responsibility of procuring the turbine-generator equipment for Montana Power Company.

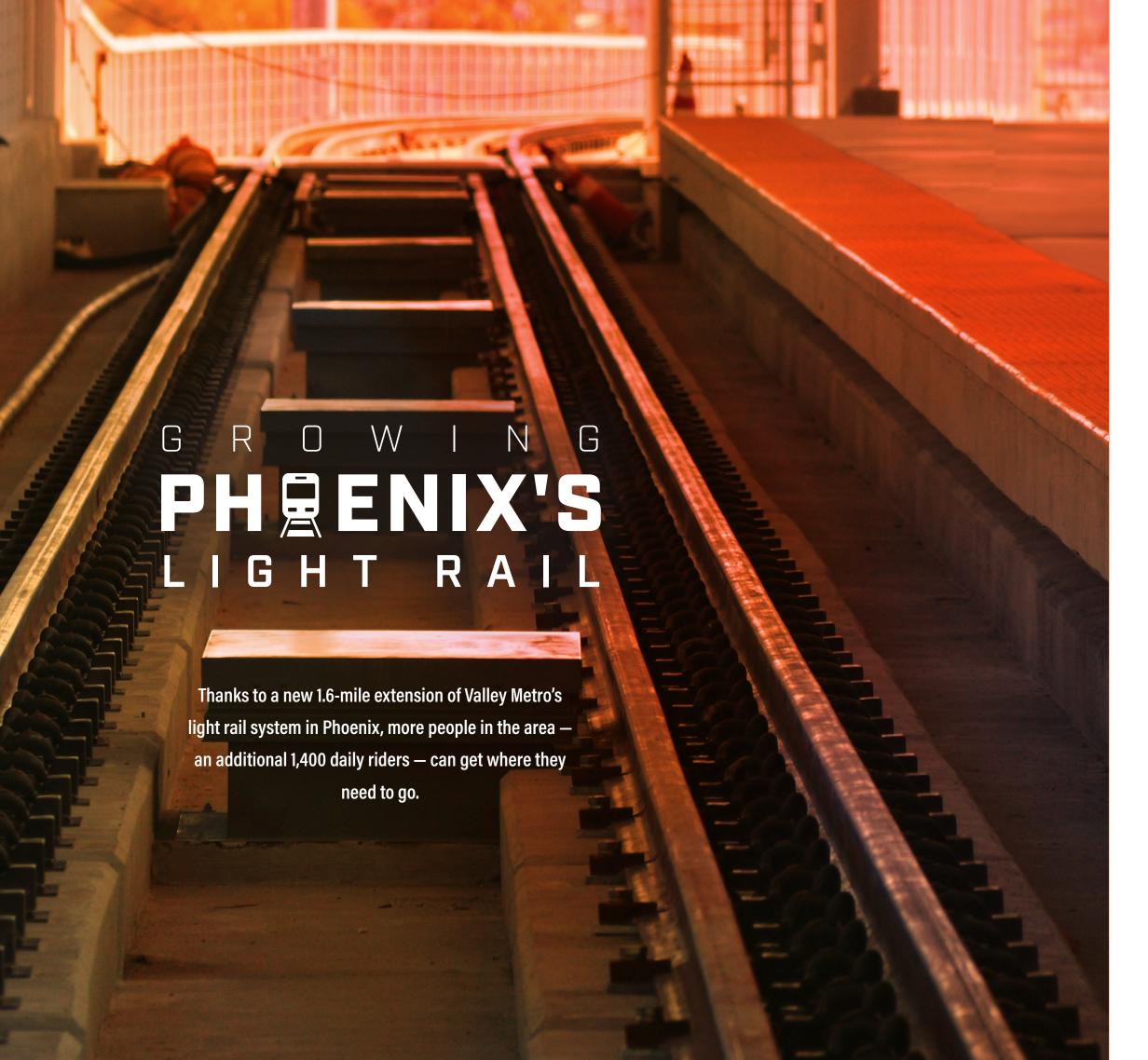




2000 | Keenleyside

Keenleyside Powerplant marked a significant milestone for Kiewit. The project was not only the largest project Kiewit had undertaken in Canada, but also one of the company's most environmentally sensitive endeavors yet. Working with a dedicated environmental team, multiple animal habitats were created and restored throughout the construction timeline.

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Serving Northwest Phoenix, this extension is the latest Valley Metro light rail project for Kiewit. The project was made possible by a Kiewit-McCarthy joint venture (KMJV), with support from Kiewit subsidiary Mass. Electric Construction Co.

The job included several "never-befores" for Valley Metro, including its first light rail aerial station, first parking garage

- a four-story, 90,830-square-foot, 258-vehicle structure
- and first rail-only bridge to traverse an interstate. Other features include a transit center with bus service, public art and new landscaping.

COST SAVINGS, TIMELINE SAVINGS

KMJV was awarded the CMAR (Construction Manager at Risk) contract early in the design concept phase. The timing had immediate cost benefits, said area manager Nick Wiatrowski.

"We had the ability to really work hand-in-hand with the designer and Valley Metro to get the project started on the right foot," Wiatrowski said.

Brainstorming sessions with the team, in the form of facilitated workshops, yielded 141 value-engineering ideas that were implemented, totaling over \$61 million in cost savings.

That early work, driven by strong collaboration between Valley Metro, the City of Phoenix, the designer and KMJV, allowed the project to be completed on time and under budget.

INNOVATIONS AND TRUST

The workshop brainstorms also netted several innovations. One of them was a way to eliminate reinforcing bars usually used in track slab construction.

Instead, reinforcing steel fibers were incorporated into the concrete mix. This trimmed the track slab thickness from 14.5 inches to 12 inches. The new dimensions reduced the quantity of cubic yards of concrete required as well as the amount of excavation to install the guideway.

Using this innovative mix would be another first for Valley Metro, and for light rail construction in general.

Project Manager Nik Hunter credits the owner with being open to innovation and working with KMJV to put new solutions like these into play.

"There were studies and test pours and a lot of analysis that was done, but what was key to making this successful were two things," Hunter said.

"One was having the KMJV use outside-the-box thinking and come up with different ideas and solutions to scheduling and budget challenges." The other was having "a client that's engaged and willing to entertain and incorporate new elements, new features and new processes into their work."

Tony Santana, Valley Metro's deputy chief of design and construction, said for his team, success begins with a good partnership. "In order to be a partner, you have to trust the contractors you have, and that all starts with the qualification process," Santana said. "[KMJV] has a great history of working with Valley Metro projects as well as our design team. I think all of the teams were willing to take smart risks on innovation and incorporate those into the project."

'GRINNING FROM EAR TO EAR'

With the parking garage, KMJV recognized another cost-savings opportunity. The team already had some pre-cast concrete forms that could be repurposed for the garage construction.

"We approached the owner to construct the garage as a design-build option within the joint venture to reduce costs, and they were amenable to that option," Wiatrowski said. "The job still met all of the owner's performance requirements and reduced the cost by about 25 percent, based on designing it around the form work we already had."



Wiatrowski said one of the most exciting things about building light rail is to see the positive change in the communities that light rail serves.

"Light rail is a big economic boost to local communities, from residential development all the way through commercial development."

When service opened to the public in January of this year, Wiatrowski and the rest of the team took an inaugural ride together.

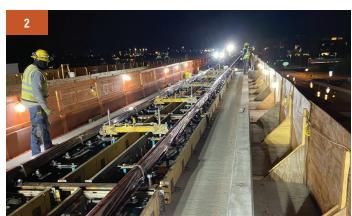
"The track was smooth as can be," he said. "Everybody was just grinning from ear to ear. They were so excited and happy about how well the project turned out."

The large number of people at the grand opening — over 2,000 team and community members — showed the impact of the latest addition to Valley Metro's system for Phoenix residents.

"You could tell by the turnout we had at the opening ceremony," Hunter said. "That was really neat to see the fruits of everybody's labor and how big of a deal that this line is to the community."

Santana remembers the faces of so many who attended that day, people "who appreciated the hard work it takes to build the project but also the long-lasting effect it will have on that community. It's why we do what we do," he said.

"When you have a true partnership and everyone shares the same goal in mind to open on time and on budget, you have a successful project like we did." **K**

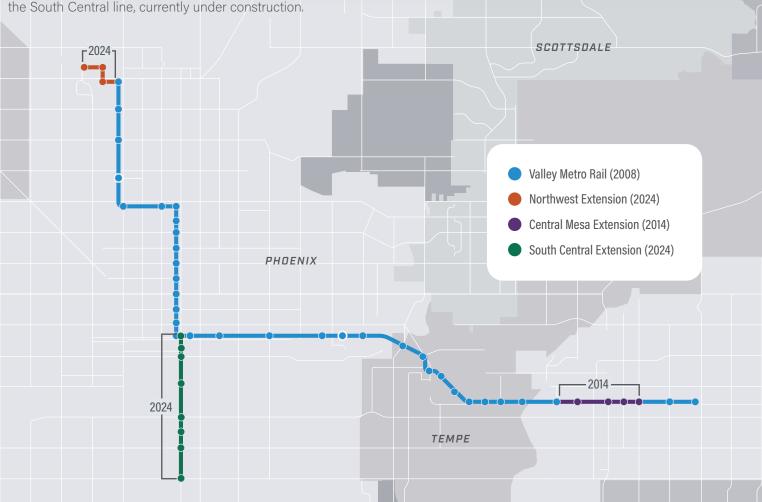




1. The 1.6-mile Northwest Phoenix light rail extension includes three stations: a four-story, 90,380-square-foot, 258-vehicle parking garage; a large rail-only bridge over Interstate 17; a transit center with bus service; public art and new landscaping. 2. Setting the girders for the bridge and structure over I-17, a major thoroughfare, required close coordination with the Arizona Department of Transportation. Originally, the work was set to be performed in two closures, but the team completed it over one weekend. 3. Features including intricate tilework and suspended art are highlighted in the station, including nods to the culture of Phoenix and the former Metrocenter Mall.

Kiewit's work on Valley Metro

The Northwest Extension for Valley Metro is the latest light rail project Kiewit has worked on for the owner. Others include one of the five-line segments of the initial rail line, the Central Mesa Extension, a three-mile extension completed in 2014 and the South Central line, currently under construction.



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EMPOWERING THE FUTURE

A CLOSER LOOK AT KIEWIT'S POWER DELIVERY WORK

Power is one of the most visible markets in the engineering and construction industry. A single power generation source — whether it is a wind farm, solar farm, nuclear power plant, or traditional fossil fuel — creates a large number of economic and regulatory opportunities. How this power reaches individuals, though, is often overlooked.

Kiewit's power delivery projects are collaborative efforts between many different areas of the company. From market strategy to engineering and construction, it takes a coordinated approach to achieve success.

CAREFUL PLANNING

To take a high-voltage transmission line out of service for repairs or improvements, years of advance planning are needed to avoid potential outages.

To mitigate these risks, Kiewit has pioneered the use of advanced construction methodologies that not only accelerate project timelines but also ensure the highest standards of quality. These projects benefit from advanced simulation, incorporating Building Information Modeling (BIM) and Virtual Design and Construction (VDC).

Senior Vice President Paul Conry explained the key difference between Kiewit's past and future in power delivery: "With our self-perform capability, we're able to provide the complete solution for our client in all aspects of construction, from substations to overhead to underground transmission and distribution work."

INTO THE FUTURE

In particular, replacing existing infrastructure presents logistical issues. It's the difference between wiring a brand new home and rewiring a home with an aging electrical system — all with minimal outages.

In Michigan, Kiewit recently replaced two 1950s-era transmission lines, swapping wooden poles with steel poles. Line upgrades are becoming increasingly common across North America to accommodate new power sources.

1. Aging infrastructure using wooden poles is often changed for steel, as in the Hartford, Michigan upgrades. 2. Substation improvements are closer to direct swaps in equipment, but still require collaboration between the engineering and construction teams.



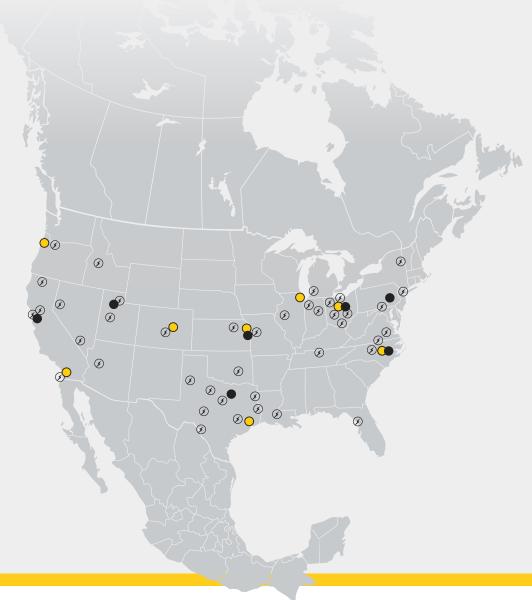


A regional focus

Because of the diversity of projects and their regional clients, the power delivery team is organized into offices spread throughout North America. The map below shows all the different locations where they operate.

"Being a regionally organized business serves two purposes: first, having a local presence enables us to best serve our clients; and second, by extending our geographic footprint, our growth in engineering is accelerated as we attract more design and construction professionals to our company," says Vice President of Engineering Luke Goss.

- O Full-Scale Engineering Office
- Regional Construction Office
- Active Project



Recent Power Delivery Projects



CHAMPLAIN HUDSON
POWER EXPRESS
Astoria HVDC Converter Station and
146-mile 400kV Terrestrial Line



PACIFICORP PMO+
Transmission Line, Distribution
and Substation Improvements



COPPERHEAD SOLAR
34.5kV/138kV Collector Substation

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HOW KIEWIT BUILDS A TRANSMISSION LINE

Kiewit has developed transmission and distribution line designs for thousands of circuit miles of line. However, each project must be approached differently. Geographical and environmental factors, existing transmission lines, ongoing maintenance and outage preparedness can influence a client's needs and the scope of a team's work.

Analyze the Site

When a new or upgraded transmission line is needed, Kiewit assists the client in identifying and analyzing potential routes. This initial phase consists of planning for potential obstacles and opportunities: considering impacts to landowners, presence of existing utilities and number of custom structures for the different route options.

Model the Line

At a project's onset, the transmission engineering team reviews available site information and coordinates to obtain anything needed to begin design. The team then processes the received survey into a 3D model, and the line is modeled and analyzed to ensure all client and industry standards are met.

Model reviews are conducted with stakeholders. This bird'seye view approach is one of the highlights of constructioninformed engineering at Kiewit.

Design the Structures

The design team engages early with the client, construction team and all other stakeholders to select the best

structure type for the project. Loading is then analyzed with dedicated software, and structure specifications are prepared for procurement and construction.

Design engineers stay engaged throughout the entire procurement and construction process to review structure calculations and drawings, and ensure structures are fabricated and installed according to specifications.

Design the Foundation

In addition to structural engineering expertise, Kiewit employs geotechnical engineers with a vast pool of experience. The team coordinates site investigations and geotechnical recommendations for use in foundation design.

Geotechnical and structural engineers remain engaged throughout the construction process and provide real-time technical solutions to any issues that may arise during foundation installation.

Construct the Line

From here, the project progresses into construction. Apart from erecting towers and stringing the transmission lines, there are future-proofing considerations such as fiber optic lines that have increasingly shown up on projects. As the communication needs for utilities increase, the addition of fiber optics on transmission lines provides a reliable form of communication network.





1. Power delivery requires meticulous planning and design, but still has to be carried out in the field by experienced craft workers. 2. Remote locations for transmission lines necessitate specialized equipment, including the occasional use of helicopters.



TRANSMISSION

a series of tall towers.

High-voltage lines efficiently move

electricity from the power plant to

substations. The lines typically span

long distances and are connected by

SUBSTATION

The two key functions of a substation are to transform voltage levels, ensuring the reliable delivery of electrical power, and to control and protect the flow of electricity with switching operations and fault isolation. This maintains the stability

and reliability of the power grid.



DISTRIBUTION

Lower voltage electricity flows through distribution lines that are connected directly to homes and businesses. The lines are connected by poles or buried underground and are often accompanied by transformers that reduce voltage for safe use.

NAVIGATING A CHANGING LANDSCAPE

The power delivery market for Kiewit now represents onethird of its total power market, and has grown over the last three years to 9% of the total company volume.

"It's rapid growth, not just in the demand for our work, but in what we're able to accomplish. Our experience makes it possible to train new employees and give them the tools to succeed on these projects faster and more effectively than any other employer," said President of Kiewit Power Delivery Chad Jessen.

Part of the growth is fueled by a global shift towards renewable energy sources, with the construction and engineering industries actively embracing projects focused on wind, solar and other sustainable solutions. In combination with high-profile natural disasters such as wildfires, the demand for reliable energy infrastructure across North America is steadily increasing.

Notable high-voltage direct current (HVDC) projects, such as Champlain Hudson Power Express, are also expanding Kiewit's experience in developing and implementing renewable energy infrastructure on a large scale. "We're one of the first EPC contractors to build a greenfield HVDC project in the United States in the last ten years, and it's an area where we're prepared to lead the industry," said Jessen. K

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When Ontario Ministry of Transportation leaders were faced with the task of demolishing and replacing 11 outdated bridges across five sites, they knew they needed a solution with minimal disruptions to the city's daily traffic rhythms.

Ultimately, the provincial government chose the strategy known as rapid bridge replacement (RBR). Instead of building the bridges on-site, they are prefabricated off-site close to the final locations, then moved into place. This method exchanges years of lane closures for an 82 hour highway shutdown known as a super weekend.

Kiewit and Dufferin Construction Company, as joint venture Kiewit-Dufferin Midtown Partnership, were awarded the highway project. The project includes replacing the bridges, as well as other improvements like better drainage, new retaining walls, pavement and electrical work. Since 2021, four of the five RBRs have been successfully moved and are in operation. The final RBR on the Preston Street bridge is slated for later this year.

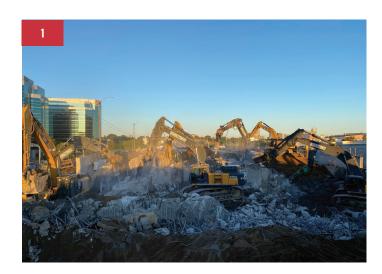
WHAT IT TAKES

Though a shortened highway closure for rapid replacement seems ideal compared to the traffic and staging headaches of traditional replacements, RBR jobs are not always possible because specific requirements need to be met.

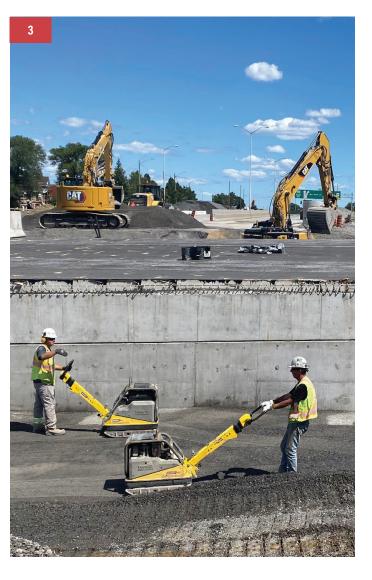
"Visibility is quite daunting at the beginning of RBR projects," said Project Manager Terence Yang. "At the end of the day, if you're in the city and don't have real estate close to the highway, you can't do an RBR."

The furthest travel path the project team experienced was 300 meters, about the size of three football fields. Picking up a bridge and moving it sounds easy, but in practice

1. Demolition of the Percy St. Overpass during the rapid bridge replacement in October 2023 2. An overhead view of HWY 417 & Booth St. Overpass during construction 3. Crews at work during the ongoing paving operations 4. Booth St. Overpass Structure moving into place via self-propelled modular transporter (SPMT) during the rapid bridge replacement in August 2022







there's more to it.

"Those are heavy enforced structures that are stiff — the equipment we fly in from all over the world to move it can only go so far and be moved over manageable terrain. You can't navigate slopes more than 2%," said Yang.

However, when the circumstances are right for the RBR method, as was the case for this project, it becomes an effective construction strategy.

While the super weekend gets most of the attention from the community, the success of this project depends on year-long planning, months of construction and close coordination with the many stakeholders such as the Ministry, city and specialized subcontractors.

"This involves a lot of effort and requires a lot of tenacity from our team, especially the younger team members who are learning on the job," Yang said. "It's a rare and challenging project that the team should be proud of." Bridges can take up to eight months to build in what is called a casting or laydown yard where the bridges can be prefabricated nearby before moving to their final destination.

"What's really special about our project is how we moved the whole bridge. Usually, only the deck is moved on footings and abutments that are already cast in place on final location. But for us, we built the entire bridge and then lifted it into position," Yang said. "This method is called a rigid frame structure, where everything — the footings, abutment and deck are lifted in one go."

THE SUPER WEEKEND TICKING CLOCK

When the super weekend arrives, it is like a high-stakes puzzle. First, the heavy machinery is tested to make sure the massive forms can be lifted. When that box is checked, the whirlwind of demolition and cleanup begins on the closed highway. An minute-by-minute schedule is thoroughly followed to ensure success.



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Once the path is cleared out, this is when the magic — or rather, meticulous planning — becomes evident.

Timelapse videos make the process look almost surreal: a bridge lifted, transported and installed with surgical precision. But in real-time, this job demands precise engineering, exact timing and seamless coordination — all accomplished within the tight timeframe of the super weekend.

The success hasn't come without challenges, including difficult weather conditions.

"We were still able to push through. We were able to stay on track because of coordination and dedicated scheduling." The final bridge swap will happen later this year at Preston Street, and the overall project is expected to be complete in 2025. **K**

"This involves a lot of effort and requires a lot of tenacity from our team, especially the younger team members who are learning on the job. It's a rare and challenging project that the team should be proud of."

TERENCE YANG

Project Manager



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