Perfect technological storm

MAY 31, 2019 BY JERRY DAVICH — LEAVE A COMMENT

Hammond's Digital Crossroads in line to meet rising demand for data storage

Transformational.

Thomas Dakich likes to use this one word to describe the Digital Crossroads Lake Michigan data center in Hammond. Coincidentally—yet symbolically—it is being built on property once housing the coal-fueled State Line Generating Plant, possibly the largest polluter of its time in Northwest Indiana.

The site of the former State Line Generating Plant in Hammond was cleared in 2015 and will be home to the new Digital Crossroads

data center. (Photo provided by the Digital Crossroads Lake Michigan)

"This is part of a technologically transformative effort in Northwest Indiana and also for the state of Indiana," said Dakich, a senior manager for the data center. "It will make use of multiple resources in a new way that's never been seen before in this Region."

Along with CEO Peter Feldman, a New York City-based developer, Dakich and their team are building a 105,000-square-foot data center to potentially serve the increasing demand for data storage. It would help support the countless streaming uses, from music, movies and video games to health care, communications and online services.

Beginning with 10-megawatts of energy capacity, the data center will cater to an evolving digital-age mindset, particularly how businesses store and stream their cloud-based computer needs. It also will help address how tech-friendly consumers are becoming increasingly more dependent on smartphones, tablets and laptops as the blazing-fast 5G service network begins rolling out across the country.

"Indiana is now being mentioned in national conversations about new technology," said Dakich, a Merrillville native who lives and practices law in Indianapolis. "It's now a whole different world for not only Hammond but for our state. Like I said, this will be transformational."

Last year, Dakich and Feldman were searching the Chicago area for a site to build a data center. Then they noticed the city of Hammond's unsuccessful yet impressive bid proposal for Amazon's new "HQ2" corporate headquarters.

"The city's bid proposal really opened our eyes how this data center could work here," Dakich said.

Hammond Mayor Thomas McDermott Jr. admitted his staff's bid proposal for Amazon's HQ2 was a long shot, considering the national competition, but it highlighted what Hammond could offer.

"The Digital Crossroads data center is the right development," McDermott said. "And the former State Line Generating Plant site is an ideal location for it, with the perfect storm of accommodations."

Thomas McDermott Jr. is the mayor of Hammond

These amenities include lower land cost, uninterrupted power sources, an abundance of Lake Michigan cooling water, and a location along the Midwest power grid with close access to underground fiber-optic connectivity from coast to coast, McDermott said.

"It's a great opportunity for our city," he said.

What will initially be a $40 million project could increase to a $100 million or $200 million project if the development expands across the entire 77-acre site, McDermott said.

"Our hope is that the entire campus is someday comprised of data centers," he said.

Dakich said he and his partners are marketing the facility to monster-sized corporations, noting that the center is scheduled to begin operations in the fourth quarter of 2019.

Thomas Dakich is a senior manager for the Digital Crossroads Lake Michigan data center in Hammond.

Dakich and Feldman are building the data center based on reams of promising data, existing regional resources, and on speculation that customers will connect with it, literally and figuratively. In other words, build it and they will … communicate.

Pros and cons

Data center developments tend to accelerate improvements to local and regional infrastructure, with relatively significant demands for water, wastewater, power and fiber connectivity, experts say.

"These demands create opportunities to enhance a community's infrastructure to accommodate a data center development," said John Lenio, executive vice president of CBRE, an economic incentives and advisory firm in Phoenix, Ariz.

"The enhancement of a region's power infrastructure and fiber connectivity can potentially generate interest from other data center developments or technology users," he said. "Technology companies sometimes make location decisions for projects that need access to high-speed fiber infrastructure."

Lenio said CBRE has seen this type of driver for economic growth across the country in numerous metro areas when one big development occurs.

Across the country, some elected officials and community members have taken a negative view of all the data centers popping up in their backyards, he said. This boom, however, is sparked by the monster-sized, cloud-based server farms, or "hyper-scale" users, such as Google, IBM and Microsoft, demanding more data storage capacity.

"While data centers are low on new employment opportunities, relative to office buildings or distribution centers, they do provide relatively significant tax revenues to communities," said Lenio, who authored a study on data center developments.

Additionally, a data center has relatively low impact on the local school system. Fewer jobs generated by a data center compared to the possibly hundreds generated by office buildings or distribution centers equals less impact, he said.

"This means that the marginal cost of services for the schools is low while the influx of new tax revenues can be substantial," Lenio said.

Critics have pointed out that data centers do not create jobs or generate new tax revenues for host communities. McDermott disagrees with the latter claim. He points out that the new data center will replace lost tax revenue from the State Line Generating Plant, which closed in 2012 after paying the city's lion's share of property taxes since 1926.

Lenio said the primary tax revenue generators are real estate taxes on the new data center building, and new personal property taxes on all the mechanical, electrical and IT equipment that will be installed in the data center.

"Communities that (either) have a sales or use tax will have greater tax revenue returns because sales taxes are assessed on equipment that is delivered and installed in a data center," Lenio said. "The sales tax impact could be lower if a state or community provide sales tax incentives."

In January, Digital Crossroads announced it received full financing for the first phase of development from New York City-based Star America Infrastructure Partners.

In February, the Indiana House of Representatives voted 95-1 to incentivize the data center development through House Bill 1405. The next month, the Indiana Senate voted 46-0 for the

bill, which would legally exempt from taxes all data center equipment and most of its electricity, contingent that the center invests up to $150 million within the next five years.

"The city of Hammond and the state of Indiana have done everything to help us make this happen here," Dakich said.

National boom of data centers

Data centers are facilities containing information technology equipment, including servers and networking computers for data processing, data storage and communications. These facilities aren't "passive bystanders" in any community, according to the U.S. Chamber of Commerce. They contribute financial and other resources while collaborating with local organizations to support their communities. Building new data centers creates more demand for expanding and upgrading local roads, power, water and sewage systems. With these improvements, data centers attract other data centers and businesses to communities, the chamber said.

Representatives for the Digital Crossroads Data Center in Hammond were joined by Gov. Eric Holcomb and other Region business and community leaders for the data center's ground breaking on Aug. 15, 2018. (Photo provided by Digital Cross Roads Lake Michigan Data Center)

"The number of internet users and the number of applications has been rising exponentially for decades. Consequently, more data centers are created to meet the demand of the rising amount of data that is created and stored," states a 2017 report by the U.S. Chamber of Commerce.

According to the U.S. Department of Energy, 3 million data centers are scattered across urban and rural areas, housing a majority of servers, which are owned or leased by small- and medium-size businesses. The remaining servers located in massive data centers are owned by major cloud providers and national super computer centers.

Digital Crossroads will be one of the largest high-powered independent wholesale data center complexes in the Midwest, according to its website, at www.digitalcrossroadsdc.com.

"With strong and vested partners, including the state of Indiana and the city of Hammond, Digital Crossroads will be able to expedite permitting and zoning, create tax incentives and offer the most competitive power rates in the Region," the website states.

Dakich confirmed in early April that the center's permitting process was almost completed, and state legislators, led by Indiana Gov. Eric Holcomb, are in strong support of the development. The support comes despite that the most common driver of tax revenue growth is major job creation, which most data centers will not offer.

"For instance, a typical headquarters, manufacturing or shared service operation can have between 200 and 1,000 jobs on site. By comparison, the number of jobs at a typical data center can be anywhere between five and 30," according to a 2015 study by CBRE's Data Center Solutions Group.

A recurring criticism asks, "Why give incentives to a data center that employs only 30 people when a state could be investing in a 500-job headquarters?" That capital investment, however, is another driver of tax revenue growth. While low on employment, data centers are highly capital-intensive, the study states.

Most states across the country also are plugging into the data centers bandwagon. Google alone has invested $13 billion in data centers and related space this year, after investing $9 billion in 2018, with a presence soon in 24 states.

Digital Crossroads officials hope to expand its data center reach to 400,000 square feet in the shadow of other massive data centers in Chicago, such as the monstrous Equinix Data Center on East Cermak Road.

In March, Digital Crossroads announced the hiring of David Hood as its managing director of operations. Hood has worked in the telecommunications and data center industries for 24 years, according to his online biography.

Hood will oversee a data center on State Line property that once generated more than 600-megawatts of power. Plans call for the new center to ultimately support multiple alternative energies, including solar and wind power.

Plans also include building a greenhouse and turning part of the campus into a tech education center for Purdue University Northwest students taking agricultural and technology-related classes.

"Purdue is an important part of this project," Dakich said.

Purdue partnership

"Automation and robotics is one reason why data centers like the one going up in Hammond are about to explode all over the industrialized world," said Mont Handley, entrepreneur-in-residence and associate director of the Commercialization & Manufacturing Excellence Center at Purdue University Northwest in Hammond.

The Digital Crossroads Lake Michigan data center includes plans for a greenhouse and turning part of the campus into a tech education center for Purdue University Northwest students taking agricultural- and technology-related classes. (Photo provided by Digital Cross Roads Lake Michigan Data Center)

For example, in the U.S., "industrial robot orders in 2018 grew 24 percent over the previous year in the life sciences, food and consumer goods, plastics and rubber and electronics industries," according to the Robotics Industries Association and Assembly Magazine.

"This growth in robotics and automation is coming about because of the development of more complex systems called Cyber Physical Systems," Handley said. "These CPS require more complex algorithm calculation-computations to physically command the robotics-automation equipment to grasp a part and install it in a car, for instance, on a fully automated manufacturing line."

Even the robots that Walmart is installing to clean their stores will require fairly large amounts of cloud server-storage space to navigate and clean each store as directed.

Purdue Northwest's College of Technology's Mechanical Engineering Technology & Mechatronics departments is already involved with CPS research and development in regard to manufacturing. There are other applications, too, such as driverless vehicles.

"With the difficulty in finding qualified workers, companies are increasingly turning to CPS-robotics to handle human-predictive labor, like stacking products on pallets or boxing up products for distribution," Handley said.

This high-tech aspect of data centers will be an important part of moving toward the broader concept of the "internet of things," where the manufacturing processes, even for smaller businesses, will be automated with greater complexity. This will require capturing and storing more granular bits of data at a greater number of levels or stages of the manufacturing process, which requires a data storage center of this scale, according to Purdue experts.

Purdue Northwest already is teaching students who will be helping to lead this transformation. Positioning the data center in Northwest Indiana will provide businesses and industries the needed technical resources, and intellectual capital, to drive this 21st century transformation.

"We believe there's going to be enough demand in this Region and beyond," Dakich said.

While McDermott recognized that his city's chances were slim to land Amazon's HQ2, the bid put Hammond in the national spotlight for other projects.

"Only in our wildest dreams did we think our city's Amazon HQ2 bid would get accepted," McDermott said. "But realistically, look what we got out of it … an amazing data center with so much promise and potential."

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Jerry Davich

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Jerry Davich has written about the last days of a woman with terminal cancer, flying in a U.S. Thunderbirds fighter jet at 9.2 G's, witnessing a forensic autopsy, and skydiving out of a plane with a tape recorder in hand. But his passion is for good old-fashioned storytelling through his Chicago Tribune newspaper column, which has garnered him more than 51 state and national awards. He also writes freelance stories, hosts the "Casual Fridays" radio show on Lakeshore Public Media, and serves as a public speaker with presentations on timely issues and three books *Crooked Politics in Northwest Indiana*, *Lost Gary, Indiana* and *Connections: Everyone Happens for a Reason*. Jerry lives in Portage, cruises the Northwest Indiana region on a regular basis, and he never leaves home without his pen, notebook, and curiosity.

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