Winterpock Road Widening

PROJECT LOCATION
Chesterfield County, VA

CLIENT NAME
Chesterfield County

CLIENT LOCATION
9800 Government Center Parkway
Chesterfield, VA 23832

FIRM NAME & LOCATION
A. Morton Thomas and Associates, Inc.
100 Gateway Centre Parkway,
Suite 200, Richmond, VA 23235

JMT
9201 Arboretum Parkway,
Suite 310, Richmond, VA 23236

Winterpock Road is a major arterial roadway in Chesterfield County providing direct access from Route 360 (Hull Street Road) to Beach Road as well as several established neighborhoods, Royal Birkdale Golf Course, and Hancock Village Shopping Center. In the existing condition, this heavily travelled roadway experienced significant congestion throughout the corridor as well as a high crash rate at the existing intersection with McEnnally Road and Ashbrook Parkway. The purpose of this project was to alleviate congestion, increase roadway capacity, and improve intersection safety and operations by widening approximately 1.5 miles of Winterpock Road from two lanes to four lanes with a raised 15-ft median, upgrading existing traffic signalization, adding pedestrian accommodations and signalization, and converting the existing intersection with McEnnally Road to a hybrid roundabout. With construction recently complete, the public has immediately noticed improved traffic flow and enhanced safety throughout the corridor. This region of Chesterfield County continues to experience substantial growth and development and the improvements along this corridor are designed to accommodate future traffic demands for many years to come. Chesterfield County administered this $12 million VDOT LAP project, A. Morton Thomas and Associates, Inc. (AMT) served as the lead designer providing engineering design and support services, and Johnson, Mirmiran, & Thompson (JMT) provided construction management and inspection services.

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Hybrid Roundabout at the intersection of Winterpock Road with Ashbrook Parkway and McEnnally Road.

The northern terminus of Winterpock Road was widened to provide full length receiving lanes for dual lefts from Route 360 as well as add sidewalk along both sides.

Looking south at the recently constructed hybrid roundabout and the realigned intersection of Bethia Road with Winterpock Road.

Final stages of construction of SWM Basin #3, one of three recently constructed wet ponds along Winterpock Road.

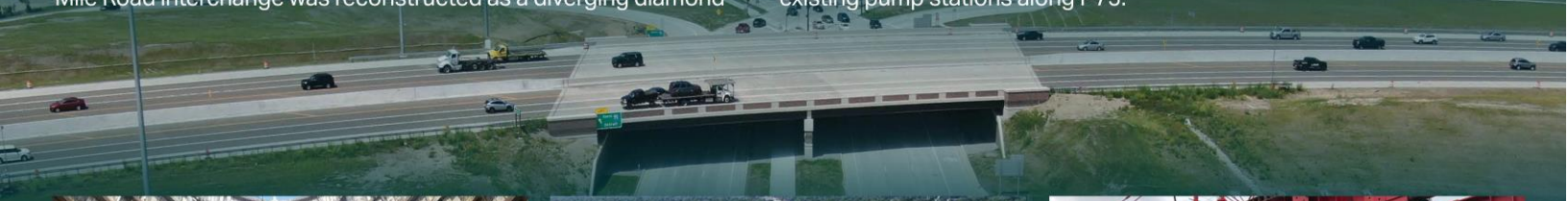
Overview of construction along Winterpock Road looking south from Route 360.

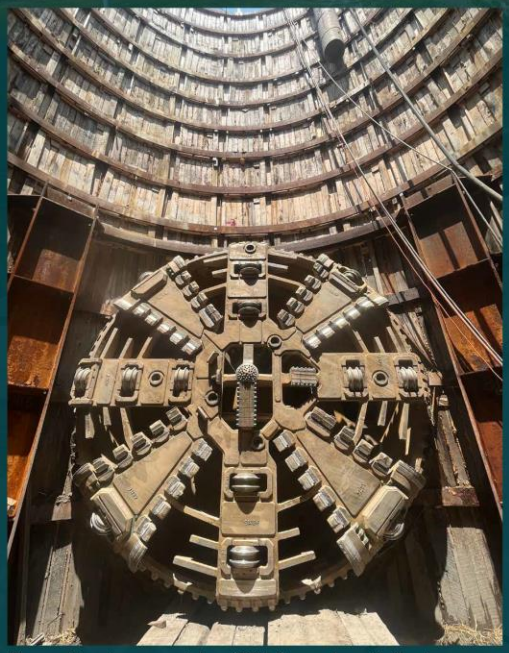
This project included construction of a 10-ft Shared-Use Path along the east side of Winterpock Road from Royal Birkdale Parkway to McEnnally Road.

I-75 Modernization Project (Segment 3)

Connecting Michigan

The $1.45B project was designed and constructed within 5 years of award. This alternative delivery project utilized a design-build-finance-maintain procurement method. The total contract term is 30 years, including 5 years of design and construction, and 25 years of routine and long-term maintenance. The scope of work included the reconstruction and realignment of I-75 from M-102 (8 Mile Road) to north of 13 Mile Road, including the addition of a new lane in both directions. A new braided ramp along northbound I-75 at the exit to 11 Mile Road was constructed to reduce weaving and improve traffic operations. Ramp reconstruction was completed at the M-102, 9 Mile Road, and 11 Mile Road interchanges. The 12 Mile Road interchange was reconstructed as a diverging diamond interchange to improve operations. Over 61,000-feet of soundwall and retaining walls were designed and constructed. The project also included the replacement of 24 bridges and removal of 4 bridges. Service drives were reconstructed, including watermain and sanitary sewer replacement. ITS improvements were incorporated into the permanent works. The most unique design and construction element of the project was a 4-mile-long, 14.5-foot-diameter storage and drainage tunnel, located beneath the northbound I-75 service drive from 8 Mile Road to 12 Mile Road. The tunnel will store the 100-year flood. A new pump station was commissioned to slowly release the stored water. The addition of this storage tunnel eliminated seven existing pump stations along I-75.





Tunnel boring machine (TBM) reaches it final destination and sees daylight.

Construction of the I-75/I-696 braided ramp over 11 Mile Road (370-foot, 2 span bridge, 64-inch continuous steel girders).

TBM being prepared for lowering and launch to begin boring operation.

Construction of I-75 over 12 Mile Road bridge and new diverging diamond interchange.

I-75, Highland Avenue Pedestrian Bridge looking south towards the Harry Avenue Pedestrian Bridge.

ACEC
American Council of Engineering Companies of Michigan

Location: **Oakland County, Michigan**
Client: **MI 75 Constructors, LLC**
Owner: **Michigan Department of Transportation**

Entering Firm: **AECOM Great Lakes, Inc., Grand Rapids, MI**
Subconsultants: **Bergmann Associates, NTH Consultants, Intertek PSI, Advanced Geomatics,** and **First Media Group**

AECOM

Virtual Tool for Innovative Engagement

Pennsylvania Department of Transportation District 6-0, Philadelphia, PA

AECOM in collaboration with PennDOT District 6-0 prepared a set of Virtual Meeting Rooms due to the COVID-19 pandemic, which helped us to envision and reimagine the traditional methods of public engagement. AECOM Virtual Meeting Rooms (aecomviz) can be customized to the specific needs of individual projects, including individualized branding, language access, interactivity, live chat support, and imbedded surveys and multimedia content.

As COVID restrictions have been lifted, communities are now split on how they would like to engage with projects. Many communities want to return to in-person interaction, but there are still many people who cannot get to a specific location at a set time for reasons outside of their control. An equitable approach to engagement requires multiple options for interaction between design teams and communities. The Virtual Meeting Room supports these equity goals by creating an equivalent virtual experience to an in-person meeting. While the virtual room was developed out of necessity to adapt to the changing conditions caused by the pandemic. Out of necessity came innovation which has allowed AECOM to develop a tool that has benefited the communities we plan for and created an essential tool in AECOM's toolkit for public engagement.

CSP Virtual Room: Information table and Focus Area Stations.

CSP Virtual Room: Project Overview video, General Feedback kiosk and Project Information stations.

GIR VIrtual Room: Information table, Project Information stations, and Interactive Project Area map.

GIR Virtual Room: Screen linked to PennDOT website, Information table and Project Information station.

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pennsylvania DEPARTMENT OF TRANSPORTATION

AECOM Philadelphia, PA

McLemore Avenue Streetscape & Green Infrastructure

The McLemore Streetscape and Green Infrastructure project stands out as a remarkable achievement deserving of special acknowledgment due to its multifaceted innovation and positive societal impact. At its core, the initiative introduces a creative approach to stormwater management by integrating bioswales—innovative natural filtration systems that absorb and purify rainwater. This not only showcases cutting-edge engineering but also underscores a commitment to sustainable urban growth.

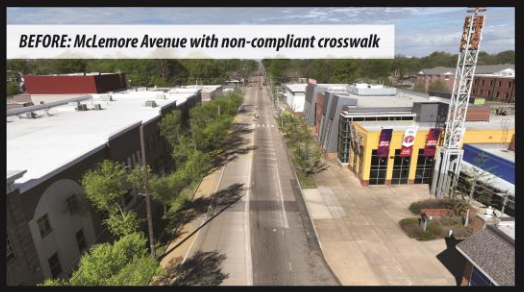
Beyond its engineering feats, the project yields transformative social outcomes. Enhanced pedestrian safety through modern crosswalks and street parking immediately benefits residents and visitors alike. The incorporation of bioswales not only prevents flooding and improves water quality but also showcases sustainable urban possibilities and serves as blueprint for future-proofing urban landscapes.

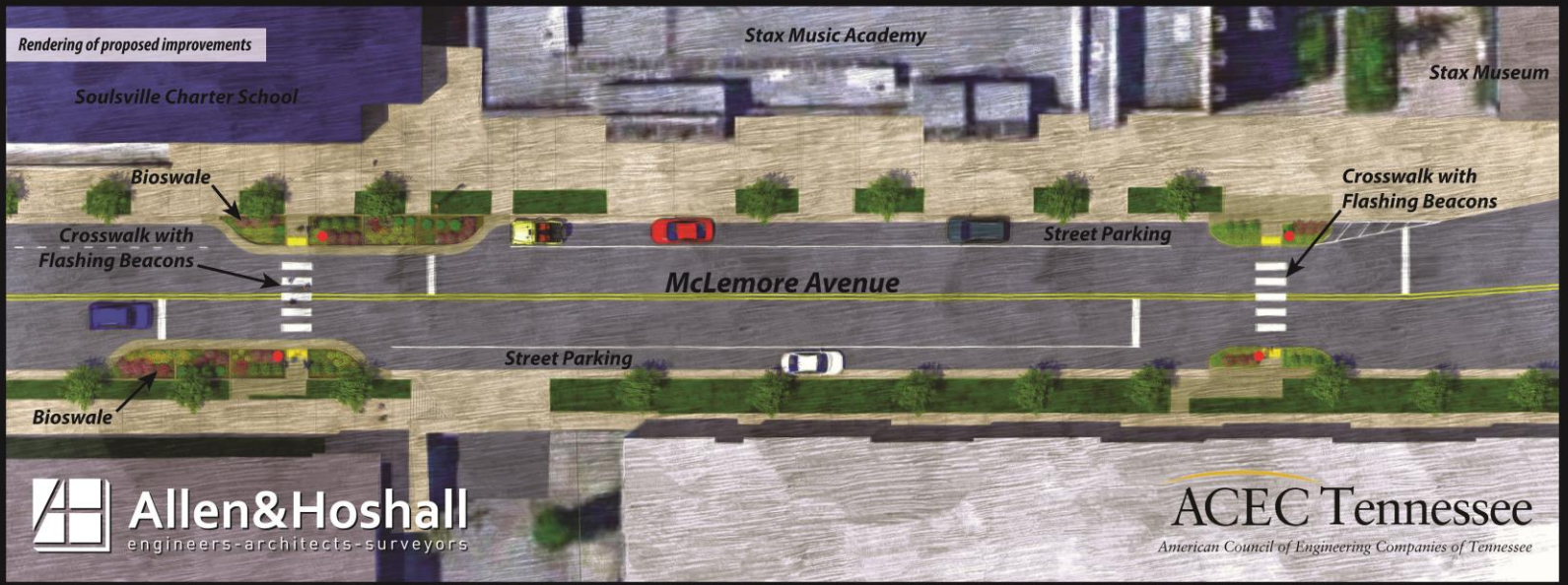
In essence, the McLemore Streetscape and Green Infrastructure project epitomizes visionary urban development. The project's multifaceted benefits, spanning safety enhancements to long-term resilience, all while enriching the City's identity, validate its recognition. Beyond construction, it stands as a testament to the potential of sustainable, community-driven urban metamorphosis.

Project Location: Memphis, Tennessee

Owner/Client: City of Memphis - Memphis, Tennessee

Entrant: Allen & Hoshall - Memphis, Tennessee





ALLISON TRANSMISSION INNOVATION CENTER BLENDS CONTEMPORARY DESIGN WITH HISTORICAL CONTEXT

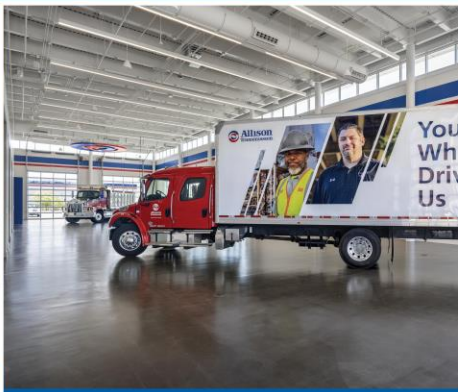
The 96,000-sft, 4-story Allison Transmission Innovation Center provides a collaborative environment for Allison Transmission to bring innovative technology and products to market fast and efficiently to improve the way the world works. The building design communicates the Allison Transmission brand, identity, and aspirations in a sleek, innovative, and cutting-edge environment. A technology-infused first floor guides guests and customers through the history of the company and allows people to interact with Allison's products, while the upper floors provide Allison engineers with collaborative office space. The building connects Allison's industry-leading innovation with the historical tradition of nearby Speedway, Indiana, and the Indianapolis Motor Speedway.

The building's contemporary design blends with Speedway's traditional and historical context. It has glass, brick, and limestone elements resembling the nearby Allison headquarters. The brick columns follow Main Street's rhythm, and tiered overhangs pay homage to the Indianapolis Motor Speedway. The landscaping matches Allison's headquarters. The fourth floor's north side features a terrace with stunning views of Allison's headquarters, Speedway's Main Street and neighborhoods, the Indianapolis Motor Speedway, and the Indianapolis skyline.

Client Name: Allison Transmission, Inc.
Client Location: Indianapolis, Indiana
Entering Firm's Name: American Structurepoint, Inc.
Entering Firm's Location: Indianapolis, Indiana

Exterior shot of completed Innovation Center at dusk.

Completed Innovation Center, view from the employee parking lot.



Vehicle display area on the center's first floor.

Construction photo of pile caps linked together to help resist the lateral loads.

Construction photo depicting most of the erected steel, including braced frames and the brace-free vehicle bay.

ACEC Engineering Excellence Awards

ACEC

American Structurepoint Inc.

Allison Transmission

TRANSFORMING RANGE LINE ROAD IN CARMEL, INDIANA

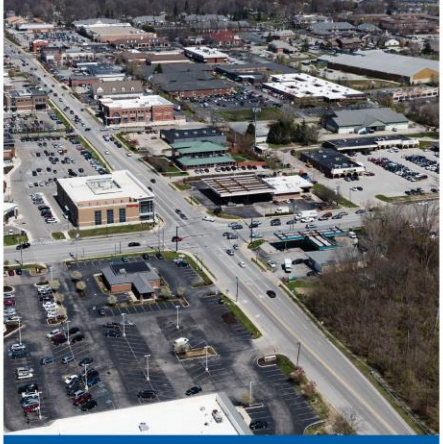
The multi-phased Range Line Road Corridor project transformed 1.5 miles of Range Line Road, one of Carmel, Indiana's busiest roadways, from a 5-lane roadway to a pedestrian-friendly, tree-lined, multimodal complete streets corridor.

A landscaped center median along the corridor eliminated left-hand turns. Six corridor intersections were enhanced by removing traffic signals and building six roundabouts which allow for safe and easy u-turns. Parallel bicycle and pedestrian pathways were added along the corridor, as well as a cycle track buffered from vehicular traffic by heavy-duty planters that provide protection for bikers as well as seasonal color to the corridor. The six roundabout intersections were designed to accommodate the future placement of intersection-defining sculptures. The design team included public gathering spaces along the corridor to create an engaging, vibrant environment.

Redesigned intersection and mid-block crosswalks incorporate decorative brick paving to increase visibility. These crosswalks were raised higher than the road to slow traffic and enhance the safety of crossing pedestrians and cyclists. Corridor enhancements improved the safety and efficiency of all transportation types along Range Line Road while creating a more defining sense of place.

The transformation of Range Line Road replaced a 1950s-era, automobile-centric, relinquished state road corridor into an inviting, aesthetically pleasing boulevard. The new roadway provides improved public safety and efficient traffic flow for all forms of transportations and travelers.

Client Name: City of Carmel, Indiana
Client Location: Carmel, Indiana
Entering Firm's Name: American Structurepoint, Inc.
Entering Firm's Location: Indianapolis, Indiana

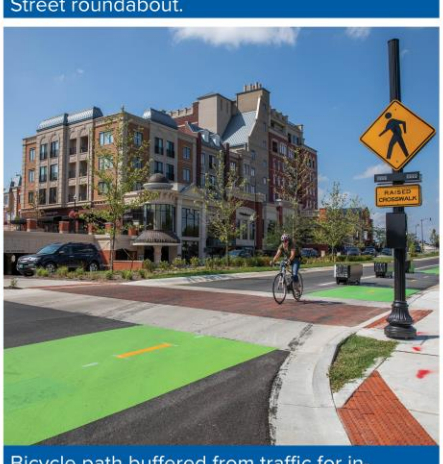


Range Line Road corridor before construction began.

Rendering of Range Line Road corridor.

Construction of Range Line Road and 116th Street roundabout.

Completed Range Line Road and 116th Street roundabout intersection and corridor.



Bicycle path buffered from traffic for increased safety along the completed corridor.

Completed Range Line Road and Executive Drive roundabout intersection.

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ACEC

American Structurepoint Inc.

City of Carmel A Partnership for Tomorrow Indiana

ANCHOR QEA

ACEC Engineering Excellence Awards

Meadowdale Beach Park and Estuary Restoration

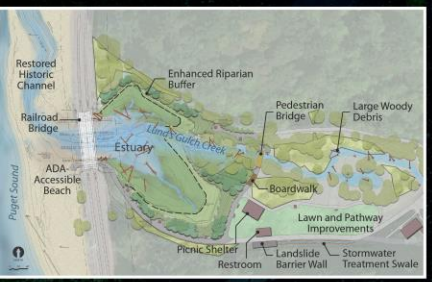
EDMONDS, WASHINGTON

CATEGORY E: ENVIRONMENTAL

Client/Owner
Snohomish County Parks & Recreation
Edmonds, Washington

Firm
Anchor QEA
Seattle, Washington

The first of its kind in the Pacific Northwest, Meadowdale Beach Park and Estuary Restoration strategically reconnects historical estuaries and creeks to Puget Sound. A new 130-foot-long, five-span railroad bridge replaces an undersized box culvert, enabling construction of a large estuary that connects Lund's Gulch Creek to the sound. The project mitigates flooding and improves sustainable rearing habitat for juvenile salmon, crucial for endangered Southern Resident orcas. An accessible walkway permits visitors' safe passage to the beach.



The restored estuary comes to life with myriad native plants and animals, including endangered salmon species.

A new pedestrian bridge and boardwalk provide visitors with views of fish making their way up Lund's Gulch Creek.

The original BNSF railroad embankment was removed prior to setting the new five-span bridge and realigned channel.

Reclaiming history in Charleston at the International African American Museum

After 20 years of planning, a highly anticipated African American museum has opened in Charleston, South Carolina to commemorate one of the country's most sacred sites.

1. This 42,000ft² museum features nine exhibition galleries on Gadsden's Wharf, the disembarkation point of up to 40% of all American enslaved people.
2. Situated on sacred ground, the museum is elevated to honor the site's history and to strengthen the resilience of the building given its proximity to the waterfront.
3. Exhibition highlighting the influences and movements of people of African descent over time.
4. Arup's lighting designers helped balance the transition from the atrium flooded with natural light to the exhibition spaces in the galleries.
5. Memorial garden with a quote from Maya Angelo's *And Still I Rise,* "Bringing the gifts that my ancestors gave, I am the dream and the hope of the slave. I rise I rise I rise."

The new International African American Museum (IAAM) is devoted to revealing the journeys of millions of African slaves to the Americas, and to exploring their ensuing culture, influence and struggle toward justice and equality. Arup collaborated with Pei Cobb Freed & Partners and Moody Nolan, the museum's designers, to incorporate engineering services that uphold the design's elegant and gracious aesthetic amidst the challenging environmental and programmatic constraints. As base building engineer and technical consultant of the museum, Arup provided mechanical, electrical, and plumbing engineering, daylight analysis, fire engineering, interior and exterior lighting design, telecommunications, security, and acoustic consulting services.

Project
International African American Museum
Charleston, SC

Owner
City of Charleston

Architects
Pei Cobb Freed & Partners and Moody Nolan

Entrant
Arup

ACEC ENGINEERING Excellence AWARDS

In the works for a quarter of a century

The WMATA Potomac Yard Metrorail Station provides an important link for commuters within the Washington DC metropolitan area.

1. The new station is expected to shift 6,700 daily vehicle trips to transit, reducing road traffic along the Route 1 corridor and lowering greenhouse gas emissions.
2. The station is operated by the Washington Metropolitan Area Transit Authority (WMATA) serving both Blue and Yellow Lines.
3. The new North Pavilion entrance building serving Virginia Tech Innovation campus and communities north of the station.
4. The new South Pavilion entrance building serving the National Industries for the Blind and communities south of the station.
5. The scope of design included a bridge to provide pedestrian and bicycle access over adjacent freight rail corridor.

The City of Alexandria, Virginia, worked closely with WMATA to build a new infill Washington Metro rail station on the site of what was once the largest railyard on the eastern seaboard. Aiming to improve mobility and promote economic development, the new station includes a pair of entry pavilions connected by a pedestrian and bicycle bridge running over an adjacent freight rail corridor. Arup provided project management, structural, civil, geotechnical, MEP, communications, and fire/life-safety engineering, as well as wayfinding, communications and security consulting. The station opened in May 2023 and is targeting LEED for Transit Stations pilot Gold level certification.

Project
WMATA Potomac Yard Metrorail Station, Alexandria, VA

Owner
WMATA in Partnership with the City of Alexandria

Client
Potomac Yard Constructors
Joint Venture of Halmar International LLC
Schiavone Construction Co. LLC

Entrant
Arup

ACEC Engineering Excellence Awards

ATCS
ENGINEERING INNOVATIVE SOLUTIONS

VDOT
I-95 Southbound Auxiliary Lane Widening between Route 123 and Route 294

Prince William County, VA
Category H: Transportation

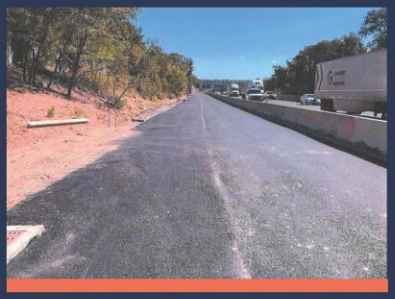
The Southbound I-95 Auxiliary Lane Widening project addressed persistent traffic congestion spanning a 1.5-mile stretch from Virginia Route 123 (Gordon Boulevard) to Route 294 (Prince William Parkway). With a dual mission to enhance traffic flow and elevate community safety, the project hinged on a multifaceted approach that combined innovative engineering solutions, advanced project planning, and a comprehensive scope of work.

A hyper-accelerated 16-month design timeline significantly reduced the typical project development duration and allowed for quicker implementation. This acceleration, combined with practical design solutions such as narrowing shoulder width and strategically using retaining walls to eliminate culvert extensions and minimize right-of-way impacts, not only preserved the surrounding environment but also resulted in a budget reduction. The project employed innovative techniques incorporating virtual traffic simulations and modeling to provide community members the opportunity to "drive" the planned improvements and share their insights.

On this heavily utilized section of the I-95 corridor, commuters now experience quicker and safer journeys, reducing time spent on the road and enhancing their daily lives. By combining technological advancements with a focus on community well-being, the outcomes resulted in a tangible and positive impact on users and the surrounding community.

Birdseye rendering of the new auxiliary lane on southbound I-95 between Prince William Parkway and Gordon Boulevard; see rightmost lane. This lane relieves congestion and reduces merging and diverging conflicts.

Construction of a new combination retaining wall and sound barrier along I-95 (looking south). The combination retaining wall and sound barrier reduced the overall project footprint while providing noise abatement for the nearby residences.



Asphalt base course in place awaiting final surface course on new I-95 auxiliary lane and shoulder (looking north).

The completed auxiliary lane, shoulder, retaining wall, and sound barrier on I-95 southbound (looking south). Note the concrete barrier and light pole integration within the retaining wall/sound barrier due to the proximity of site constraints adjacent to the project.

View of the new auxiliary lane (rightmost lane) from the main lanes (looking south). The new lane allows drivers who will exit onto Prince William Parkway to begin merging one mile earlier than in the previous condition, which will reduce congestion.

Aerial view of the I-95 southbound auxiliary lane under construction.

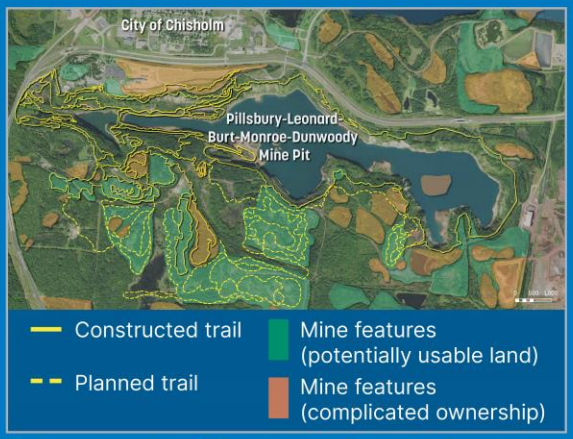
ACEC ENGINEERING Excellence AWARDS

VDOT
I-95 Southbound Auxiliary Lane Widening between Route 123 and Route 294
Prince William County, VA

CLIENT'S NAME
Virginia Department of Transportation / Virginia

ENTRANT'S NAME
ATCS, PLC / Herndon, Virginia

Redhead Mountain Bike Park



Barr's design of all 35.9 trail miles. Each mine feature was evaluated for its usefulness to future mining. The trail was designed to avoid potentially usable features.

By the time the idea for Redhead was conceived, multiple idled mines had been reclaimed by nature, like this one near Chisholm, creating a uniquely beautiful landscape with an abundance of trail and water recreation opportunities.

To minimize disturbance, trail construction involved little more than small excavators, compactors, and powered wheelbarrows. All materials were sourced on site.

Entering Firm:
Barr Engineering Co.
Minneapolis, MN

Project Owner:
City of Chisholm
Chisholm, MN

Project Location:
Chisholm, MN

For over four decades, an iron-mine complex in northern Minnesota lay idle. This land was unusable until the City of Chisholm and the Minnesota Department of Iron Range Resources & Rehabilitation (IRRR) partnered with the mining industry, local volunteers, and Barr to create a world-class mountain bike park in this uniquely complex terrain.

Redhead is the state's first experiment in the temporary use of inactive mines for recreation. Barr worked with the IRRR and the City to apply an innovative, cooperative land-use strategy. The relocatable trail network avoids stockpiles of iron ore and other usable mine features so they remain accessible.

Barr designed 35 miles of trails that accounted for historic mine features, scenic views, sensitive plant species, slope stability, and drainage while providing bikers an exhilarating and safe experience. Barr helped field-fit the design, conducted environmental review and permitting, provided construction and inspection support, and created as-built maps. The first phase, consisting of 25 miles of trails, was completed in fall 2022.

The economic and social impact of Redhead is already being felt. New businesses supporting Redhead visitors are springing up in downtown Chisholm, and championship youth races are held at the park, injecting an estimated $4 million into the local economy.

Barr helped make Redhead a success by exercising its understanding of mining operations and designing for the needs of both the mining industry and the public. This project demonstrates that engineers have a prominent role in helping future mine reclamation projects evolve into mine repurposing.

ACEC Engineering Excellence Awards

Photo courtesy of the Minnesota Discovery Center Reclaimed Film Shoot

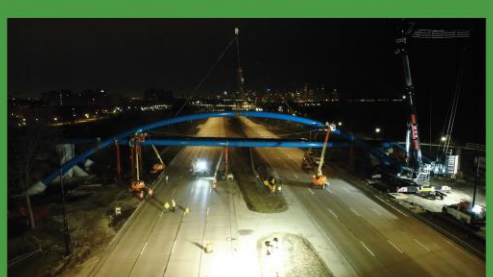
BARR

43rd Street Pedestrian Bridge over LSD/Metra/CNRR

Chicago, Illinois

The 43rd Street Pedestrian Bridge stands as a truly one-of-a-kind project. The project team overcame numerous obstacles to create this distinctive structure within remarkably unique circumstances. Challenges arose during material procurement and staging due to limited availability, necessitating the team to employ innovative thinking and creative execution. Moreover, the construction process posed additional complexities, requiring the team to adopt sophisticated strategies uncommon for conventional highway bridges. Despite these hurdles, the project not only established a new connection to the lakefront for another Chicago neighborhood but also managed to deliver an iconic structure while remaining mindful of budget constraints and societal impact.

Tight space constraints on the west side



Night assembly of the arch over Lake Shore Drive

CHICAGO

Chicago Department of Transportation
Chicago, IL

ACEC Engineering Excellence Awards

Benesch
Chicago, IL

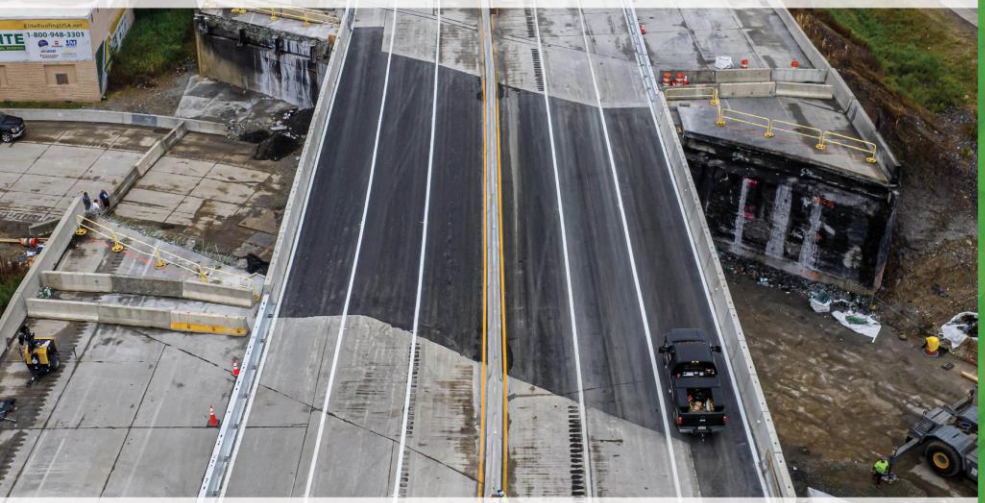
benesch

I-95 Bridge Collapse Emergency Repairs

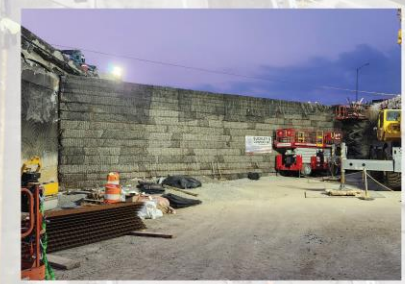
Philadelphia, Pennsylvania

On June 11, 2023, a critical East Coast transportation link, I-95, partially collapsed. A tanker truck carrying gasoline lost control on the Cottman Avenue off-ramp in Philadelphia leading to a devastating fire that engulfed the northbound mainline bridge of I-95. The steel superstructure of the I-95 northbound bridge yielded and collapsed within minutes and the southbound bridge was compromised, leaving the bustling corridor severed.

As the prime consultant on the contract that included the original bridge design approximately 10 years ago, Benesch worked alongside PennDOT and Buckley, the contractor, to develop a plan to quickly restore traffic along this corridor that accommodates 160,000 vehicles daily. The team implemented a temporary roadway plan utilizing ultra-lightweight foamed glass aggregate fill, precast barriers, and a temporary geogrid wire wall retaining system to support the temporary roadway. In just 12 days, three lanes of traffic in each direction were restored. The I-95 solution was a true testament to collaboration, expertise and resilience.



Ultra-lightweight fill



Geogrid retaining wall

JUNE 2023

June 11 Collapsed bridge

12 13 14

June 15 Benesch's conceptual rendering

16 17 18 19 20 21 22

June 23 Temporary roadway ready to open to traffic

24 25 26 27 28 29 30

pennsylvania DEPARTMENT OF TRANSPORTATION

PennDOT District 6-0
King of Prussia, PA

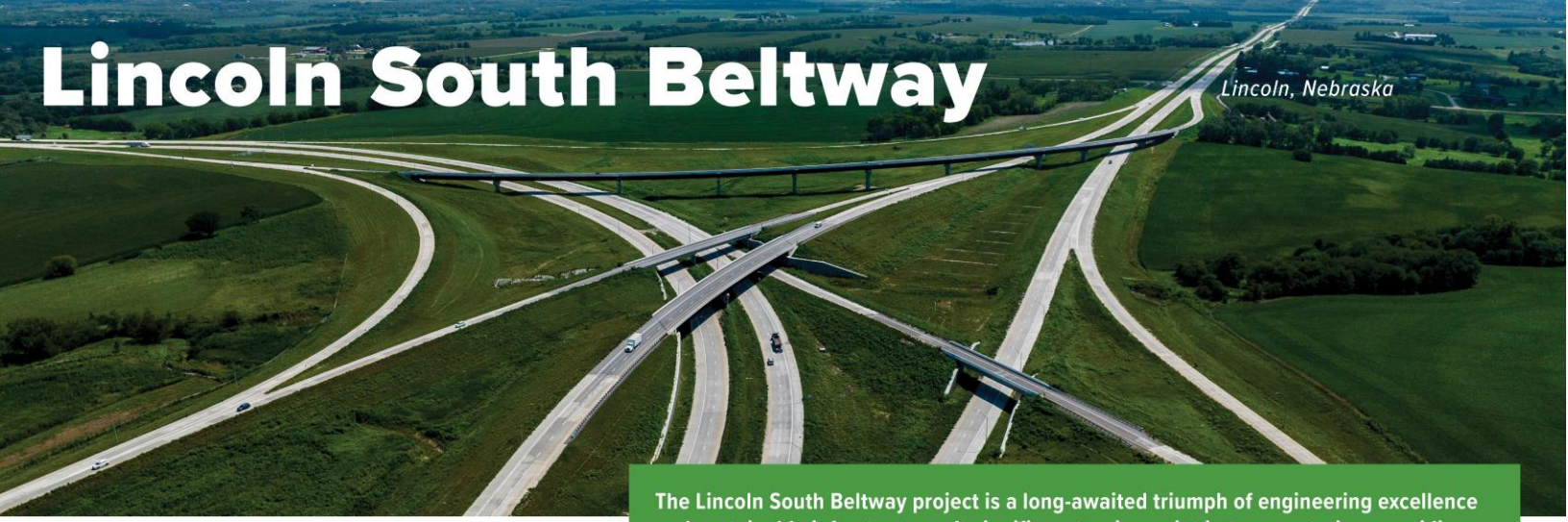
ACEC Engineering Excellence Awards

Benesch
Allentown & Pottsville, PA

benesch

Lincoln South Beltway

Lincoln, Nebraska



The Lincoln South Beltway project is a long-awaited triumph of engineering excellence and sustainable infrastructure. It signifies a turning point in transportation, providing a safer, more efficient, and environmentally responsible future for Nebraska and the greater region.

With an investment of nearly $350 million, the Lincoln South Beltway project stands as Nebraska's largest, and possibly most significant, transportation endeavor in the state's capital city. Its benefits extend well beyond city limits, improving regional interstate commerce infrastructure. An innovative approach was employed to expedite safety improvements, enhance mobility, and provide predictable projects costs without compromising NDOT's ability to effectively manage their overall program.

This project boasts impressive features, including 2 system interchanges, 3 service interchanges, the construction of 43 lane miles of road, 23 bridges, 11 roundabouts and the movement of over 7 million cubic yards of soil. Local road connections strategically set the stage for a more robust modernization of the local transportation network by reducing congestion and improving overall road safety.

Environmental stewardship was at the core of this initiative. Nearly two decades of planning went into avoiding and minimizing impacts, incorporating valuable MS4 strategies, and protecting, developing, or revitalizing wetlands and streams to ensure environmental sustainability. The project's success is a testament to the planning, relentless collaboration, and shared accountability essential in navigating its intricacies.

This commitment to all goals and objectives during planning, design and construction by all parties created a partnership whose efforts will benefit Nebraska and the traveling public for decades to come.

Roundabout at the S 68th Street Interchange

Concrete Pour on the Flyover Bridge

Saltillo Roundabouts Within the West Interchange

Bridges of the West Interchange, Including the Flyover Bridge

NEBRASKA
Good Life. Great Journey.
DEPARTMENT OF TRANSPORTATION

Nebraska DOT
Lincoln, NE

ACEC Engineering Excellence Awards

Benesch
Lincoln, NE
Omaha, NE

benesch

Weber Road at I-55 Diverging Diamond Interchange

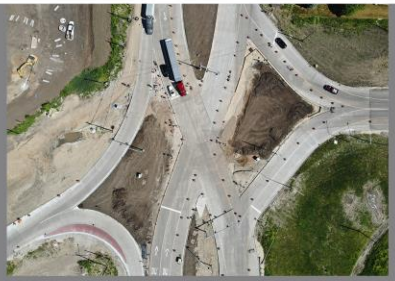
Villages of Bolingbrook and Romeoville, Illinois

The Weber Road / I-55 interchange project in Will County transformed the existing interchange into a Diverging Diamond Interchange (DDI) to tackle surging traffic and safety issues. Innovative solutions included intelligent transportation systems, signal synchronization and sustainable practices like LED lighting. This DDI design exemplifies engineering excellence, increasing safety, capacity and traffic flow while reducing conflict points. Collaboration with IDOT and local agencies was vital. The project now minimizes congestion, improving efficiency, mobility and sustainability.

INNOVATIVE SYSTEM

The project tackled surging traffic and commercial demand with unique solutions. It introduced monitoring cameras, signal adjustments and an intelligent transportation system for safety and efficiency. Overcoming DDI design challenges, it synchronized traffic signals for improved performance.

REDEFINING ENGINEERING



DDIs are redefining interchange efficiency. This project enhances safety, reduces conflicts and boosts capacity. Its success contributes to reshaping engineering practices and public perception and serves as a testament to innovative engineering, reinforcing a positive image of excellence.

SUSTAINABLE FEATURES

This project fosters sustainability, economic growth and community connectivity. Active transportation facilities now support industrial areas and feature a shared-use path for pedestrians and cyclists. Energy-efficient practices reduce power consumption, promoting sustainability.

COMPLEX STAGING

The project tackled complex traffic staging during its transition to a DDI. Overcoming these challenges, an intensive detour plan was executed, facilitating smooth traffic flow despite the complexities. The innovative DDI design enhanced safety and traffic efficiency.

A CLIENT SUCCESS

Initially met with skepticism, the project quickly gained public acceptance. This success stemmed from effective collaboration, minimizing congestion and improving efficiency. Cost-effective asset management was prioritized, meeting transportation goals within budget.

Illinois Department of Transportation **Illinois DOT** Schaumburg, IL

ACEC Engineering Excellence Awards

Benesch Chicago, IL **WSP** Chicago, IL

WSP benesch

C-51 RESERVOIR PHASE 1

Loxahatchee, FL | Category G: Water Resources

The C-51 Reservoir Phase 1 Project, situated within the Palm Beach Aggregates property in central Palm Beach County, is a South Florida regional water supply solution that utilizes excess surface water to augment water supply through aquifer recharge and provides for environmental protection by limiting nutrient-laden stormwater discharges to the region's estuaries. By reducing excess freshwater discharged to the brackish Lake Worth Lagoon, the project improves water quality and supports flood control and Everglades restoration efforts. This new water reservoir was designed and constructed to capture and store water to recharge the surficial aquifer in Southeast Florida for the benefit of eight participating water utilities across three counties.

This project created a resilient, sustainable and affordable alternative water supply through standout engineering, partnerships with local water utilities and an innovative public-private partnership structure.

Photo1: Aerial view of C-51 Reservoir during the initial construction phase. The reservoir occupies 450 acres and creates an alternative water supply in Palm Beach County that provides water to 8 utilities in South Florida.

Photo 4: Micro-tunneling was employed to build C-51 Reservoir's conveyance infrastructure, which included twin 8-ft diameter tunnels.

Photo 2: Construction team monitors upstream RCC slope protection on the existing L-8 Reservoir for post-blasting effects from adjecent construction of the new conveyance channel,

Photo 5: Shown here is a section of the full Roller Compacted Concrete (RCC) embankment section.

Photo 3: Completed C-51 Reservoir now stores up to 14,000 acre feet and allows for partnering water utilities to withdraw up to 35 MGD of raw water.

Photo 6: The project used pre-blasting/trenching for 48-ft deep, four-mile long, soil bentonite cut off wall to control water seepage.

ACEC Engineering Excellence Awards

C-51 Reservoir Phase 1
Loxahatchee, FL

Client's Name:
Palm Beach Aggregates, LLC

Entrant's Name:
Black & Veatch Corporation

City of Anoka
ANOKA REAL. CLASSIC. HIGHWAY 10/169 IMPROVEMENTS

The City of Anoka (northern suburb of the Twin Cities, population 18,000) delivered the largest city-led highway project in the state of Minnesota. The city was bisected by US Highway 10/169 in the early 1960's. At that time, Anoka was nearly fully developed. In that project's wake was a community divided by a major highway which inhibited the movement of all modes of travel. Since then, this roadway remained unchanged carrying more than 60,000 vehicles-per-day on a 4-lane expressway.

For decades, the corridor was severely congested, experienced high crash rates, and served as a barrier to pedestrians and bicyclists. In the previous 10 years, more than 1,100 crashes were recorded on this one-mile stretch of road, with more than 325 people injured, including 2 fatalities. Pedestrians and bicyclists had a limited network of accommodations and their exposure to traffic was extremely high, creating unsafe conditions for all.

The City of Anoka led and developed their vision with the support of MnDOT and Anoka County. The project includes conversion to a freeway including an interchange at Thurston Avenue, an overpass at Fairoak Avenue, and interchange reconstruction at Main Street. Equally important was a new series of frontage roads which allows the community to move without having to access the major highway (which was the only option prior to this project). This project has transformed the community, increasing the corridor's safety and reliability, providing mobility options for all, and reconnecting the community.

ACEC Engineering Excellence Awards

Project: Highway 10/169 Improvements | Client: City of Anoka, Minnesota | Consulting Engineer: Bolton & Menk, Inc., Burnsville, MN

BOLTON & MENK
Real People. Real Solutions.

Mile Long Bridge

Willow Springs, Illinois

4-Year Construction
600 Beams
150,000 Vehicles/Day
30+ Agencies
$500M Improvement

Entrants:
Bowman Consulting Group Ltd., Lisle, IL
H.W. Lochner, Inc., Chicago, IL
HDR Engineering, Inc., Rosemont, IL
Quigg Engineering, Inc., Springfield, IL

Owner:
Illinois Tollway, Downers Grove, IL

100-Year Bridge Design – Delivered On Time and Under Budget – Exceeded Owner's Goals & Expectations

Uniqueness and Innovation

Reduced number of spans by combining different beam types (new beam type) and lengths to reduce overall bridge footprint. Adapted new project management and worker safety protocols to keep work moving during worldwide pandemic. Developed stainless steel reinforcement plans and details to extend service life of deck to match beams, piers and abutments.

Complexity

Resolved utility conflicts with jet fuel line, overhead ComEd transmission lines, and utility service lines for 5 municipalities; used multiple construction techniques to set beams including largest precast beam in Illinois; and coordinated work over navigable waterways, busiest railyard in the country and UPS distribution center accommodating pandemic-level activity.

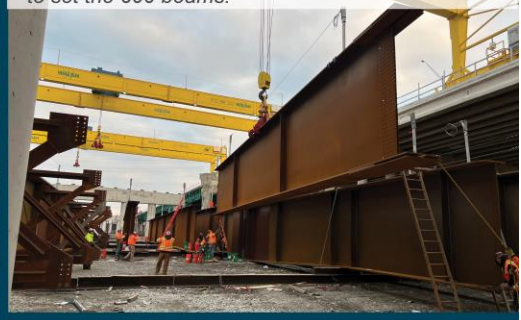
Social, Economic and Sustainable Development

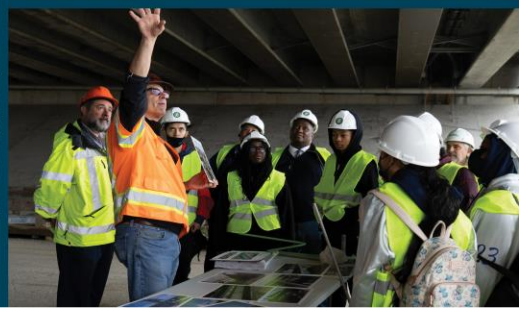
Recycled/reused all existing materials, design included water quality improvements and flood mitigation, conducted tours with underrepresented high school students, and entered into mentor protégé arrangements with four DBE engineering firms.

Value to Engineering Profession

Engineers embraced this opportunity and provided many project tours to students and local officials. Engaged and impressed public with magnitude and complexity of the work and built widespread support by letting them experience it up close.

Multiple construction techniques: building from the ground, from a barge and using a traveling gantry to set the 600 beams!





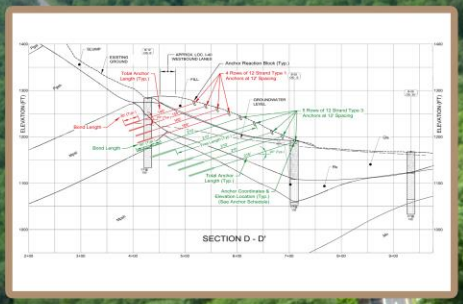
I-40 WB Near MM 343 Slope Stabilization
Roane County, Tennessee

Client: Richard Goettle, Inc.

GOETTLE

Burns Cooley Dennis, Inc.

Geotechnical and Materials Engineering Consultants



ACEC Engineering Excellence Awards

Burns Cooley Dennis, Inc. of Ridgeland, Mississippi, and **Richard Goettle, Inc.** (Goettle) of Cincinnati, Ohio, were a Design-Build team who developed a Value Engineering (VE) design for stabilizing a slope along an approximately 0.4-mile stretch of I-40 that crosses over Rockwood Mountain in Roane County, Tennessee. The VE design used 605 relatively large 12-strand tieback anchors to stabilize a deep-seated landslide that was causing imminent safety concerns due to the potential for catastrophic loss of life upon further failure of the compromised slope.

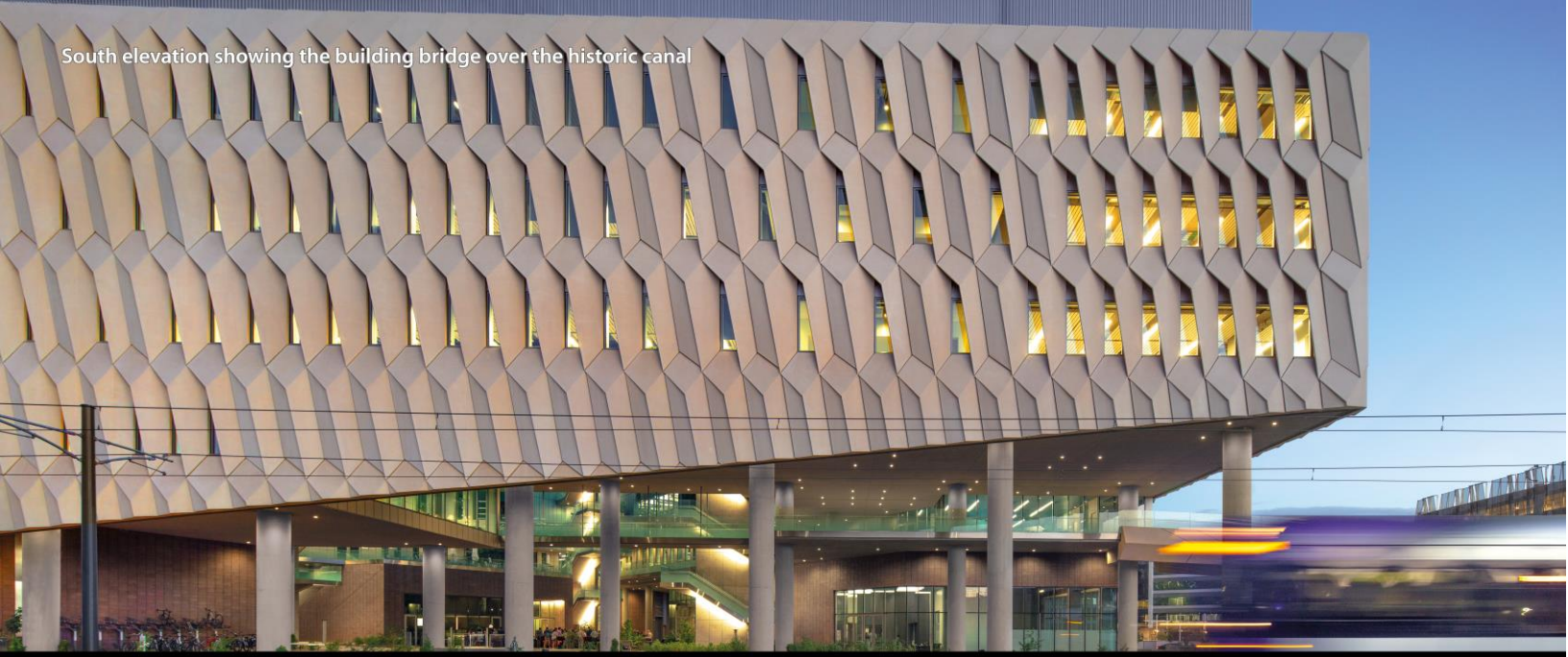
The installation of the tieback anchors through as much as 200 ft of boulder-strewn colluvium to reach competent bedrock below the slide surface presented significant construction challenges. Limited construction space and access to the site added complexity and additional challenges to the project.

The VE design was accepted by the Tennessee Department of Transportation in June 2021. Construction began soon after and was substantially completed in December 2022. This was approximately 1.5 years ahead of the original contract design schedule for this project.

Construction of the slope stabilization system provided safety measures to protect the lives of the thousands of travelers who use the I-40 corridor daily.

Owner: Tennessee Department of Transportation

TN TDOT Department of Transportation


South elevation showing the building bridge over the historic canal

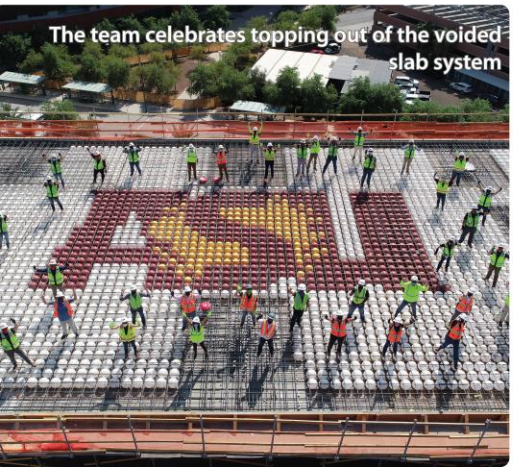
ARIZONA STATE UNIVERSITY, ROB & MELANI WALTON CENTER FOR PLANETARY HEALTH | TEMPE, AZ

The Rob and Melani Walton Center for Planetary Health, formerly known as the Interdisciplinary Science and Technology Building VII (ISTB7), is a new 281,000ft^2 research facility and comprehensive addition to Arizona State University's (ASU) growing research district on the Tempe campus. Situated on a triangular site, the building wraps around a central open-air courtyard enabling a tempered, shaded outdoor space with elevated terraces, connected by exterior stairs. The structural design was central to many of these key design elements, with much of the structural feature elements being left exposed. The design includes three unique feature stairs, which cantilever impressively from each corner of the triangular courtyard and a floating shade canopy structure: both of which invite the building users to enjoy this special space. Central to the structural design was an ambition to reduce its embodied carbon footprint. The concrete structure uses a 'voided slab' system, which was the first of its kind in Arizona.

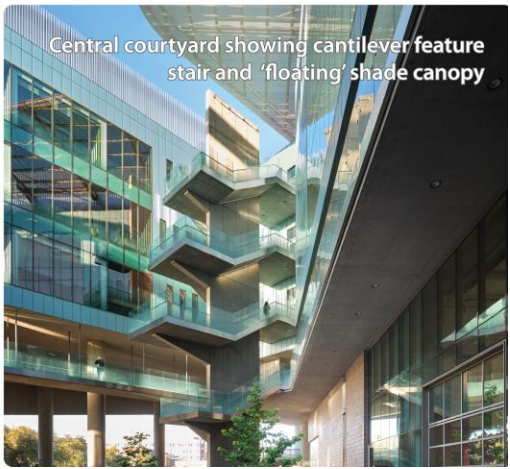
ACEC Engineering Excellence Awards

CLIENT
Arizona State University | Tempe, AZ

FIRM
Buro Happold | New York, NY


The team celebrates topping out of the voided slab system


Pedestrian bridge and sunshade structure


Central courtyard showing cantilever feature stair and 'floating' shade canopy

SHELBYVILLE DOWNTOWN REDEVELOPMENT

SHELBYVILLE, IN | CATEGORY I: SPECIAL PROJECTS

Green spaces in each quadrant provide an inviting atmosphere

Piecing together varying cross slopes and connecting different elevations

Curb-less design enhanced pedestrian experience

Upon relinquishment, Shelbyville wasted no time in transforming their downtown into an Indiana attraction and an example for other communities. Maintaining their goals to stir development, promote community connection, enhance historical significance, and prioritize pedestrian usage, a strong vision was established and budget set. The unique Build-Operate-Transfer (BOT) delivery method was used, promoting the collaboration of many professional disciplines toward optimizing the final design in less than a year.

The once gray square has become an Indiana destination and example of what can be done in other developed downtown districts

Phased maintenance of traffic

55 semi-loads of limestone and 70,000 square feet of pavers used

Through total reconstruction from storefront to storefront, the Public Square and approaching blocks were modernized. Traffic patterns were reimagined to enhance pedestrian use, infrastructure was replaced to current standards, overall parking was increased, historical features were given center stage, and attractive public spaces were maximized to enhance use and promote commerce.

ACEC Engineering Excellence Awards

ENTERING FIRM:
Butler, Fairman & Seufert (BF&S)
Indianapolis, Indiana

CLIENT:
City of Shelbyville

BF&S CIVIL ENGINEERS

SHELBYVILLE PRIDE IN PROGRESS

ACEC ENGINEERING Excellence AWARDS

PROJECT
Duchesne Valley Water Treatment Plant Process Improvement Project, Orem, Utah

CLIENT
Central Utah Water Conservancy District (CUWCD), Orem, Utah

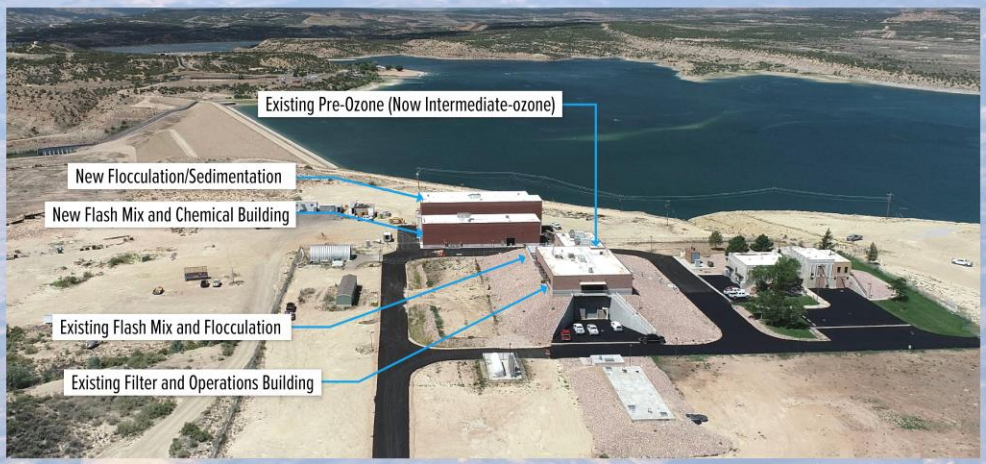
FIRM
Carollo Engineers, Inc.
Salt Lake City, Utah

DUCHESNE VALLEY WATER TREATMENT PLANT PROCESS IMPROVEMENT PROJECT

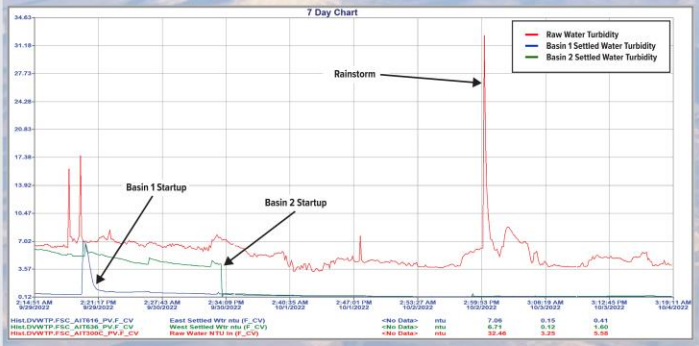
These water treatment plant improvements help Duchesne Valley Water Treatment Plant keep pace with an ever-changing watershed. This project provides a successful case study for how a wildfire in a watershed could impact raw water quality and initial plant operations, and identifies useful tools to address those impacts. This is increasingly important to **create resilient water supplies in the face of climate change,** particularly in the arid west.

The Duchesne Valley Water Treatment Plant (DVWTP) is the primary source of water for Duchesne City, the local oil and gas industry, and the surrounding area. It plays a critical role in community health and economic development. When the Dollar Ridge fire started, our project team was at the 90% design stage for a much smaller ($3 million) project targeted at algae control—the only process challenge the plant had previously experienced in its 40 year history. **The fire and subsequent rainstorm changed the universe for this facility.**

Our team worked with CUWCD to understand the magnitude of the wildfire impact, make the difficult decision to cancel the original project, and embark on this much larger project ($25 million) to address high turbidity and high organic loading—the new reality for the DVWTP.



In 2018, the Dollar Ridge Fire burned approximately 69,000 acres of land near Duchesne City. Two subsequent rainstorms moved sediments and organic matter into Starvation Reservoir, ultimately reaching and impacting the DVWTP.



The project was tested immediately after startup when a severe rainstorm sent high turbidity raw water—greater than 30 NTU—to the plant. Prior to the project, the plant would have shut down, disrupting the local residents and the oil and gas industry. Instead, the new flocculation and sedimentation processes exceeded expectations, allowing the DVWTP to **continue operations at its required capacity despite more challenging water quality conditions than it experienced after the Dollar Ridge Fire**.

The innovative solution to place the new flocculation and sedimentation process upstream of the existing pre-ozone facility **saved millions by eliminating the need to expand the ozone facility.**

carollo

PITCH PERFECT

Sweet Briar College Scores with New Hockey Field

The Sweet Briar College Athletic Complex was built with a commitment to athlete safety and the latest technology, including state-of-the-art turf. The complex includes a new water-based field for field hockey and lacrosse and a natural grass field for women's soccer. The water-based field includes a stormwater harvesting system to utilize stormwater to wet the hockey pitch, which has received International Hockey Federation (FIH) certification, awarded only to the best fields in the world. New scoreboards, state-of-the-art LED field lighting systems, and improved access for athletes and spectators were all part of this project.

1. Soccer field – The new natural grass field hosts the women's soccer games
2. & 3. Hockey pitch – FIH certified hockey pitch
4. Stormwater harvesting system – Stormwater from the field is used to keep the hockey pitch wet
5. New scoreboard and lights – The complex is framed by a new scoreboard and modern LED lighting

ACEC ENGINEERING Excellence AWARDS

Sweet Briar College Athletic Complex – Sweet Briar, VA

Client: Sweet Briar College – Sweet Briar, VA

Firm: CHA Consulting, Inc. – Richmond, VA

EAST WASTEWATER TREATMENT PLANT EXPANSION

CLIENT › Evansville Water and Sewer Utility

LOCATION › Evansville, Indiana

ACEC Engineering Excellence Awards

EWSU East Plant

BAF Pipe Gallery Observation Area

Biological Aerated Filter (BAF)
Concrete Construction

EWSU Administration
Office Space Construction

Primary Sludge Degritting Building
Basement Construction

Primary Sludge
Degritting Building

As commissioned by the Evansville Water and Sewer Utility (EWSU), the expansion of the East Wastewater Treatment Plant in Evansville, Indiana boosted the plant's capacity from 22.5 MGD to 40 MGD, incorporating essential upgrades such as a UV disinfection system, sludge degritting process, site-wide electrical and communications improvements, and a pioneering Biological Aeration Filter (BAF) featuring adjoining office facilities.

The BAF, a central element in the expansion, offered a sustainable and cost-efficient solution for augmenting wastewater treatment capacity. Noteworthy for its innovative design, the BAF structure includes a viewing area from the public space to the process pipe gallery, enhancing educational opportunities within the facility.

This upgraded East Wastewater Treatment Plant now stands as a reliable and efficient treatment system, effectively meeting the community's needs in Evansville. The project embraced three cutting-edge technologies: the BAF, primary sludge degritting, and a Mixed Liquor Suspended Solids (MLSS) distribution channel, each previously unutilized at the East Plant.

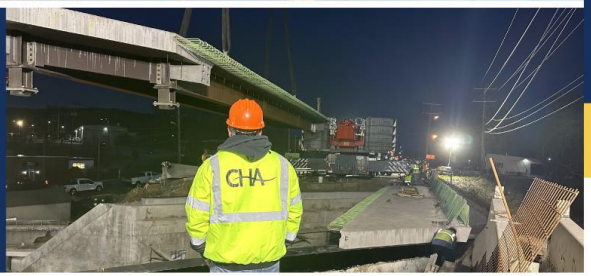
The compact BAF process combines biological treatment and filtering, ideal for the limited space at the East plant, boosting the total capacity to 40 MGD. The primary sludge degritting process enhances solids content in digesters, improving solids destruction and reducing digester cleaning costs. The MLSS channel optimizes clarifier performance, allowing flexibility during varying flow scenarios and maintaining optimal clarification system rates.

These integrated systems collectively ensure the East Wastewater Treatment Plant minimizes the number of combined sewer overflow events and discharges the highest quality treated water to the Ohio River, demonstrating a commitment to advanced engineering practices and environmental responsibility.

Windham Bridge No. 00488 spans the Providence & Worcester Railroad.

Windham Bridge No. 00489 involved a full superstructure replacement.

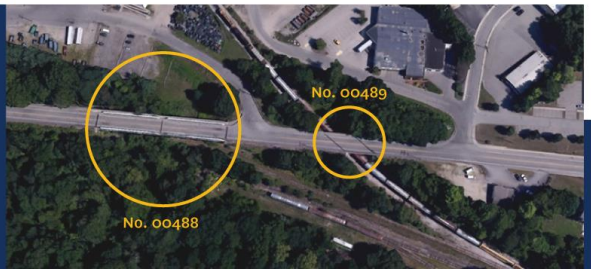
The superstructure replacement of Bridge No. 00489 used prefabricated bridge units installed over a single weekend.



The numerous layers of paint on older steel bridges hide deterioration, so bridge inspection continued during construction.

The design of Bridge No. 00488 included fully supporting the truss bridge during construction in order to keep it in service.

Windham Bridges No. 00488 and No. 00489 sit just 200 yards apart on busy Route 66.



ACEC ENGINEERING Excellence AWARDS 2024

WINDHAM BRIDGES

WINDHAM, CT

CONNECTICUT DEPARTMENT OF TRANSPORTATION

TWO HUNDRED FEET. TWO AGING BRIDGES. TWO SUCCESSFUL APPROACHES.

Route 66 in Windham, CT, was home to two aging bridges, 200 feet apart near the intersection of Recycle Way, both carrying a major arterial route over the active Providence & Worcester Railroad (P&W). This project involved the rehabilitation of Bridge No. 00488, a structurally deficient steel pony truss originally built in the late 1930s spanning a spur line of the P&W, and a superstructure replacement for Bridge No. 00489 over the P&W mainline using accelerated bridge construction (ABC) techniques to keep closure time to a minimum on this busy road.

The original scope called for a full replacement of Bridge No. 00488, a 200-foot, 2-span non-redundant structure, but due to the sharp skew complicating the replacement options, concerns over coordinating with the railroad, and expiring project funding, the decision was made to rehabilitate and stregthen the existing structure while remaining in service. The second Windham bridge involved a full superstructure replacement using ABC techniques with prefabricated bridge units (PBUs) resulting in reduced closure time from an estimated 10 months to one weekend.

CLOUGH HARBOUR & ASSOCIATES/CHA, ROCKY HILL, CT

Crafton Tull

ACEC Engineering Excellence Awards

CENTRAL ARKANSAS REGIONAL GREENWAYS PLAN

PULASKI, SALINE, FAULKNER AND LONOKE COUNTIES

CLIENT: METROPLAN - LITTLE ROCK, AR
FIRM: CRAFTON TULL - LITTLE ROCK, AR

LEGEND

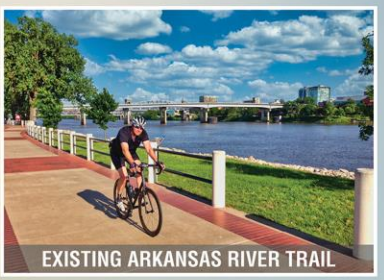
- PREFERRED REGIONAL ROUTE
- EXISTING LOCAL ROUTE
- MAJOR CONNECTOR

ALIGNMENT TO BE DETERMINED FOLLOWING FURTHER STUDY


REGIONAL STAKEHOLDER WORKSHOPS


WALK AUDITS


POWERLINE TRAIL IMPLEMENTATION


EXISTING ARKANSAS RIVER TRAIL

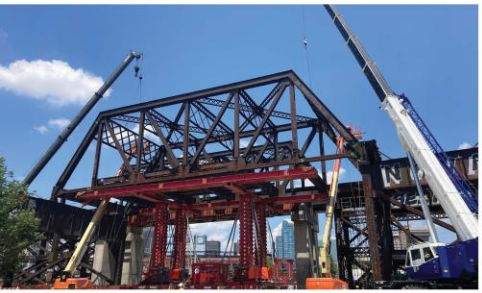
Metroplan announced in 2020 a substantial investment in a regional pathway network to connect Central Arkansas communities within its four-county jurisdiction. The announcement represented a shift in traditional transportation thinking. Local leaders embraced active transportation not as a luxury, but as a critical pillar of thriving communities.

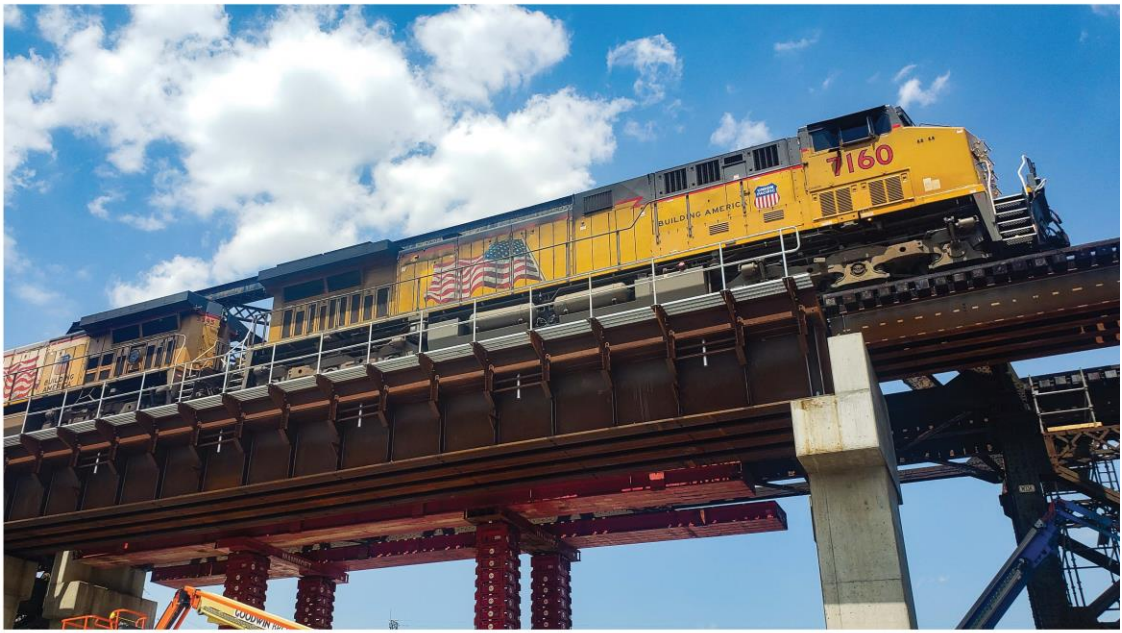
Crafton Tull was selected in 2021 to lead an 18-month process to create the master plan for the network, which connects the region's center to its fringes along six corridors. The Central Arkansas Regional Greenways Plan maps approximately 222 miles of trail network at an estimated cost of nearly $280 million. Crafton Tull, along with Toole Design, led the effort to identify routes, establish design criteria, prepare estimates of probable cost, and prioritize investments based on public input. Metroplan officially adopted the 279-page final report in May 2023. What started as an ambitious vision is becoming reality, with several planned segments in design and some in construction.

Each of the 19 communities within the study area is unique, with varying levels of political and financial support. Metroplan and the Crafton Tull team navigated these differences and facilitated a collaborative process to create a unified vision for the Central Arkansas Regional Greenways Plan.

A CRITICAL LINK

TRANSFORMING INFRASTRUCTURE & CONNECTING COMMUNITIES





SUBMITTING FIRM:

CMT

CLIENT NAME: Terminal Railroad Association of St. Louis
PROJECT NAME: MacArthur Bridge West Approach Span Replacement
LOCATION: St. Louis, MO
FIRM LOCATION: St. Louis, MO

ACEC
American Council of Engineering Companies

ACEC Engineering Excellence Awards

The MacArthur Bridge in St. Louis is a critical link in the national freight and passenger rail transportation network. The replacement of the 100-year-old structure allows wide-load rail cars carrying critical cargo to cross the Mississippi River and avoid a 300-mile detour. The design-build span replacement was carried out in under 10 days in a dense urban environment, with only 32 hours of accumulative time used for total rail closures throughout the entire construction period. The existing bridge was supported in part by an old highway truss, adding significant complexity during demolition and the subsequent rail span change-out.

- Replaced 125-ft open-deck-through-truss structure with a three-span, ballast deck, deck plate girder and steel beam span bridge.
- Bridge carries six Class I railroads, Amtrak and various shortline carriers.
- First known use of helical piles to support a bridge foundation.
- Creative solutions led to 38% savings on budgeted cost.
- Saving directed towards value-added improvements for the neighborhood and community.

A FIRST IN FLORIDA

SR 212 AND SR 115 INTERSECTION IMPROVEMENTS

SUBMITTING FIRM:

CMT

CLIENT NAME: Florida Department of Transportation (FDOT)
PROJECT NAME: SR 212 (Beach Blvd) & SR 115 (Southside Blvd) Interchange Improvements
LOCATION: Jacksonville, FL
FIRM LOCATION: Jacksonville, FL

ACEC
American Council of Engineering Companies

ACEC Engineering Excellence Awards

This project features the first double Median U-Turn (MUT) in the state of Florida. This innovative solution greatly reduces congestion and improves safety in a heavily-traveled corridor in Jacksonville. Because standards for implementing an MUT did not exist, the engineers and client called upon their insights and expertise to take it from concept to reality. Modifications to signage and markings continued to be made after construction based on observations of motorist behavior. The design was completed on a fast-track in just seven months, so that the client could qualify for a $7 million federal safety grant. This project serves as a model for improving mobility and safety in a densely developed urban environment with no additional right-of-way to build improvements.

- First double Median U-Turn in Florida
- Improves safety and mobility along a vital corridor in downtown Jacksonville
- Reduction in traffic control conflict points from 32 to 16
- Reduction in signal phases from 20-50%
- Project accommodates future expansion of regional state trail network

NEWTON AVENUE BUS GARAGE ELECTRIC BUS

CHARGING SYSTEM INFRASTRUCTURE

ENTRY CATEGORY
I – SPECIAL PROJECTS

PROJECT LOCATION
CAMDEN, NJ

CLIENT
NJ TRANSIT, NEWARK, NJ

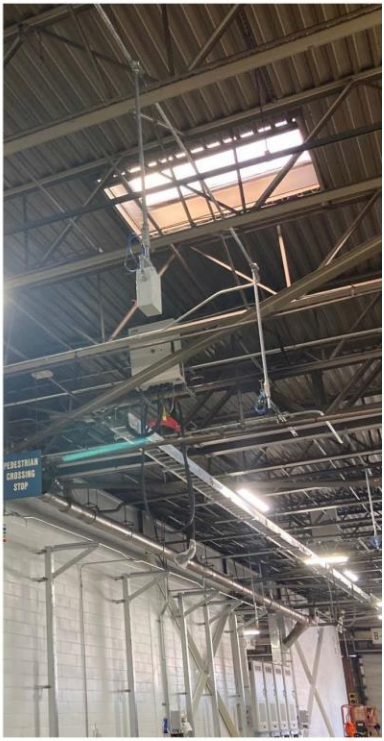
ENTRANT
DEWBERRY, PARSIPPANY, NJ

The transportation sector accounts for 41 percent of the NJ's greenhouse gas emissions. NJ TRANSIT is committed to transitioning to a clean bus fleet to reduce emissions and improve air quality across the state and locally, particularly in low income, urban, and environmental justice communities. The electric bus infrastructure project at Camden's Newton Avenue Bus Garage is the first step in NJ TRANSIT's Zero-Emissions Bus Program, aligning with the State of New Jersey's Energy Master Plan to achieve 100 percent clean energy by 2050.

NJ TRANSIT engaged the team to plan and design this first-of-its-kind electric bus infrastructure project, with a focus on establishing a model for electrifying a fleet of more than 2,000 buses. Preliminary analyses and site layout activities were performed to develop a suite of electric vehicle charging (EVC) infrastructure recommendations. The project includes eight ground-mounted 150 kW charging cabinets and 10 ceiling-hung dispensers, an inside 13.2 kV electrical substation, and a wireless identification and communication system. Engagement with the Public Service Electric and Gas Company was essential to verify the functionality and compliance of the EVC infrastructure design.

To meet the expedited schedule, long-lead electrical equipment items were identified and procured early. Extensive communication and outreach was necessary with NJ TRANSIT, City of Camden, and other stakeholders to complete the project. The Newton Avenue Bus Garage's EVC infrastructure is toward minimizing NJ TRANSIT's reliance on fossil fuels and promoting a cleaner environment.

This EVC infrastructure project is NJ TRANSIT's first step to reduce greenhouse gas emissions, improve air quality, and promote a cleaner environment.



Electric buses connect to the overhead retractable charging cord to fully charge overnight in preparation for next morning routes.

The new 13.2 kV electrical substation provides power to the Newton Avenue Bus Garage electric bus charging system and designed to accommodate future expansion to NJ TRANSIT's electric bus fleet.

ACEC Engineering Excellence Awards

Dewberry

MANASQUAN AREA CHANNELS MAINTENANCE DREDGING

ENTRY CATEGORY
G – WATER RESOURCES

PROJECT LOCATION
Monmouth County, NJ

CLIENT
New Jersey Department of Transportation
Office of Maritime Resources, Trenton, NJ

ENTRANT
Dewberry, Parsippany, NJ

Manasquan Area Channels serve some of the many Jersey Shore communities whose navigational channels were impacted by sediment blockage. Traditional dredged material management is conducted on beaches or confined disposal facilities in nearby marshes. However, given space constraints and cost considerations, this project required a strategy to find a location to stage and dewater the dredged material before transporting it to its final placement while minimizing the disruption to the community's peak summer vacation season.

To address this, beach placement of beach-quality sand and the usage of geotextile dewatering technology were the chosen methods for this project. The project involved the maintenance dredging of 88,000 cubic yards of material and improvements to the eight channels. A total of 45,000 cubic yards of beach-quality sand was placed on the Manasquan Dog Beach located in the Fisherman's Cove Conservation Area. A total of 43,000 cubic yards of fine grain material was placed and dewatered in the geotextile tubes, which was the largest application in a densely populated area for the client.

A geotextile tube laydown area was constructed accommodating twenty-one geotextile tubes stacked in four layers. The dredged material was treated with a polymer before entering the geotextile tubes as part of the dredged material management process. The team completed the dredging effort in one off-season, excavating and trucking the dewatered dredged material. The dewatered dredged material was transported for use as landfill cover at the Monmouth County Reclamation Center and the laydown area was converted to a community parking lot.

The replenished Manasquan Dog Beach

Dredging being performed in the Manasquan Area Channels

Use of geotextile tubes in the laydown area

Manasquan Dog Beach and geotextile tube laydown area

Completed community parking lot

Completed Manasquan Dog Beach occupied by community

ACEC Engineering Excellence Awards

Dewberry

SOMERVILLE STATION TRANSIT-ORIENTED DEVELOPMENT

ENTRY CATEGORY
I – SPECIAL PROJECTS

PROJECT LOCATION
SOMERVILLE, NJ

CLIENT
INSPIRED BY SOMERSET DEVELOPMENT, HOLMDEL, NJ

ENTRANT
DEWBERRY, PARSIPPANY, NJ

The Somerville Station Transit-Oriented Development (TOD) is the realization of a 10-year planning process by master developer Inspired by Somerset Development with AvalonBay Communities, PulteGroup, the Borough of Somerville, NJ TRANSIT, and the design team, including Dewberry as site engineer. This project transformed a 31-acre parking lot and landfill property into a new community with:

- 374 apartments
- 156 townhomes
- Two parking garages including a shared NJ TRANSIT commuter and residential parking garage
- Retail and community spaces, and
- A new road connecting to State Highway Route 206

While there were many complexities to designing the site, the project's engineering feat is its innovative stormwater management strategy. Using a deep understanding of the state's environmental regulations and objectives, we developed an approach that works with nature rather than against it. Stormwaters from the new development flow into the borough's adjacent 17.5-acre open space "Green Seam." As a result, the TOD's stormwater runoff sustains the Green Seam's ecology. Today, the amount of flood storage volume available for the TOD property is greater than it was before the development.

We were responsible for site planning, surveying, environmental services, site/civil and geotechnical engineering, and landscape architectural design, as well as obtaining local and state regulatory approvals.

By engineering with nature, the designers directed stormwater runoff from the TOD into the neighboring "Green Seam" — the borough's 17.5-acre open space network comprised of wetlands, a restored stream corridor, and active and passive recreation.

New apartment buildings frame the new community plaza. The archway leads to NJ TRANSIT's Raritan Valley Line rail station.

The stormwater solution maximized the developable land and eliminated the need for costly underground stormwater detention basins, making way for this new community with easy access to Somerville's downtown, parks, and NJ TRANSIT.

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ACEC ENGINEERING Excellence AWARDS

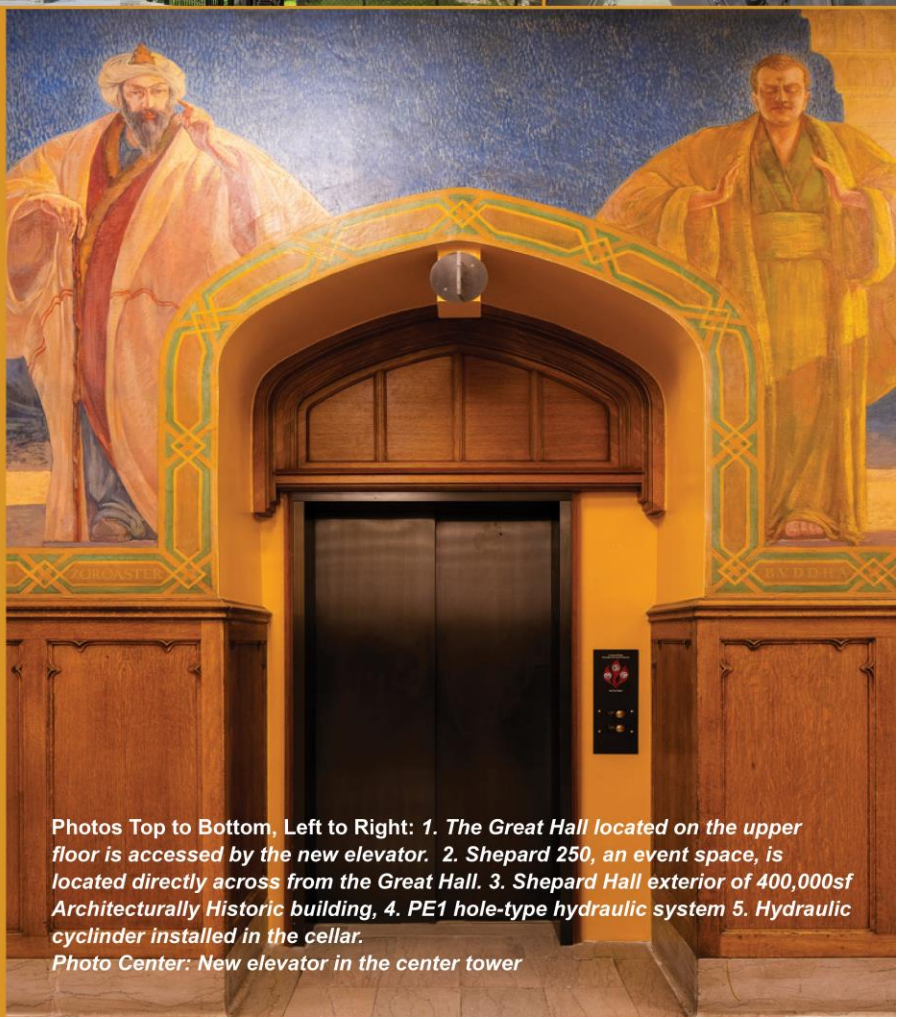
City College of New York Shepard Hall

New Elevator and Modernization of Existing Elevators, New York, NY

Shepard Hall was built at the turn of the 20th Century and is a NYC Landmarks Preservation Commission Designated Building. It is the first building built for public higher education in the United States. The primary focus of the project was to design a new elevator at the center tower of Shepard Hall. This improved accessibility to the upper floors and served the needs of the growing student population and faculty members. The project provided ADA accessibility to the center tower, an energy efficient hydraulic elevator system and a design that offered the least disturbance to the interior of the building.

Working within a historic landmark building caused a myriad of issues. The team utilized a shaft from an unused dumbwaiter which offered options as well as challenges. Highlights:

- Selection of a hole-type hydraulic elevator system installed in the cellar.
- Specialized design concept of hydraulic system equipment due to space constraints in the shaft and the need for a more powerful system with a vertical range for up to 6 floors.
- Relocation of utilities located in the shaft servicing the entire building.
- Drilling of 83ft into the bedrock below the cellar to install the hydraulic elevator-operating cylinder piston system.



Photos Top to Bottom, Left to Right: *1. The Great Hall located on the upper floor is accessed by the new elevator. 2. Shepard 250, an event space, is located directly across from the Great Hall. 3. Shepard Hall exterior of 400,000sf Architecturally Historic building, 4. PE1 hole-type hydraulic system 5. Hydraulic cyclinder installed in the cellar.*
Photo Center: New elevator in the center tower

Dewberry New York, NY

Client: DASNY, Albany, NY

Missoula COUNTY

MISSOULA

DJ&A

ACEC

ACEC Engineering Excellence Awards

Project Name & Location: Mullan BUILD (Missoula, MT)
Client/Owner: Missoula County (Missoula, MT)
Entering Firm: DJ&A (Missoula, MT)

In 2020, Missoula County secured a $13 million federal grant through the BUILD program for the Mullan BUILD project, focusing on comprehensive transportation infrastructure in the rapidly growing Mullan area. Despite significant funding constraints, tight timelines, and intricate design challenges, this project was efficiently completed under budget and ahead of schedule in July 2023, even amid the unique economic, workforce, and supply-chain challenges posed by an unprecedented global pandemic.

This initiative introduces Missoula's inaugural complete streets network, addressing diverse transportation needs and safety considerations while aligning with the City of Missoula's growth policy. It serves as a model for the efficient delivery of federal aid projects in local Montana communities, demonstrating the effectiveness of innovative delivery strategies, such as the Construction Manager/General Contractor (CM/GC) method, in streamlining complex transportation infrastructure projects. The project's success was greatly facilitated by the close collaboration of Missoula County, the City of Missoula, DJ&A (the prime consultant), and numerous federal, state, and local stakeholders.

MULLAN BUILD

Project enables access to 1,500 acres of developable land and supports roughly 7,000 job opportunities (before construction)

Partnership with Missoula County, City of Missoula, MDT, FHWA, and dozens of other stakeholders led to project success

Design included complete streets, roundabouts, pedestrian infrastructure intersections, utilities, drainage, and trails

franklin county james a. karnes **corrections center**

Columbus, Ohio

Franklin County Board of Commissioners > Columbus, Ohio

Considered a "Center for Innovation", the Franklin County Corrections Center has redefined how to address inmate needs. DLZ developed a design that is considered the premier facility in the United States to address mental health, medical, behavioral management, and addiction issues.

The Franklin County Ohio Board of Commissioners have a vision to create a model facility for today's detention needs. The DLZ Team combines a strong staff of talented leadership and experienced designers who are at the forefront of their respective discipline. The DLZ Team united our passions to redefine detention rehabilitation and mental health, while developing an environmentally friendly sustainable and energy efficient.

The Scope of Work was the development of a new correction facility. The Jail will replace Franklin County Jail I. With a Hard Construction Cost budget totaling approximately $300 million, 1,285 total rated beds in direct supervision detention are provided in Phase I and II. At approximately $250M, Phase III will add approximately 1,200 rated beds in a direct supervision observation. As Phase II was designed specifically for female responsive housing, Phase III will be specifically for male responsive housing. The facility is designed to be expandable to 2,800 rated beds, upon consolidation of all Franklin County Jail operations. The Owner provided draft Program of Requirements notes a total build-out of approximately 1,000,000 GSF.

The project is certified LEED BD+C, V.2009 Silver rating. Project was featured at the American Jail Association (AJA) April 2021 Annual Conference in Columbus, Ohio.

DLZ
Columbus, Ohio

ACEC
American Council of Engineering Companies

CITY OF BOWIE

CIPP LINING OF WATER MAINS – A COST-EFFECTIVE SOLUTION

BOWIE, MD

Entrant: EBA Engineering, Inc. | Laurel, Maryland

The City of Bowie's aging water and sewer systems provide services to roughly 8,000 customers. Tuberculation in the City's 90 miles of 60-year-old cast iron pipes—both concrete-lined and unlined—has led to reduced hydraulic capacity, water discoloration, and failure to meet fire flow requirements in some locations.

After evaluating three rehabilitation options—open cut replacement, pipe bursting, and structural lining—EBA recommended Class IV cured-in-place pipe lining for its cost and schedule effectiveness and minimal impacts. Because this lining is generally limited to gravity sewer pipes, this approach is a first of its kind in the local area for water main rehabilitation.

EBA's innovative and cost-effective trenchless pipe repair solution saved 50+ trees and over $800,000 in construction costs while enabling the City to provide safe, reliable, clear, and odorless water to residents through pipes in nearly new condition and with a life expectancy of 50 years.

EBA ENGINEERING

ACEC ENGINEERING Excellence AWARDS

STH 35 TREMPEALEAU RIVER
EAST AND WEST CHANNEL BRIDGES

TREMPEALEAU COUNTY, WI

Structure Replacements in an Environmentally Unique Location

The STH 35 corridor is located within the USFWS Trempealeau National Wildlife Refuge and Trempealeau River floodplain which is subject to frequent high-water conditions

Proactive Stakeholder Involvement to Reduce Impacts

EMCS successfully modernized the STH 35 bridges by partnering with project stakeholders to protect the natural environment and wildlife while addressing the needs of the public and river users during and after construction

Extraordinary Planning to Address Construction Conditions

Proactive resource agency coordination, construction scheduling, erosion control design, and permitting to accommodate causeways reduced the risk of delays on this multi-year contract while safely maintaining traffic on a temporary alignment

Environmentally Sensitive Design

EMCS' sustainable design provides for pre-stressed concrete girder bridges while reducing risk of future flooding and minimizing turtle and small animal crossing fatalities with fencing – the project resulted in zero impacts to protected USFWS lands

Forward Thinking Design Meets Cost-Effective Solutions

Our team delivered a successful design balancing environmental conditions with project costs to improve the Trempealeau River crossing for all travelers, tourists along the Great River Road, and river users for generations to come

Client:
Wisconsin Department of Transportation
(Northwest Region)
Eau Claire, WI

Submitting Firm:
EMCS, Inc.
Wausau, WI

emcs

ACEC ENGINEERING EXCELLENCE AWARDS

Capitol Region Watershed District Campus - St. Paul, MN

FIRM: Emmons & Olivier Resources, Inc. - St. Paul, Minnesota / CLIENT: Capitol Region Watershed District - St. Paul, Minnesota

CHALLENGING SITE

Located on a former brownfield site, the project goal was to use innovative stormwater best management practices (BMPs) to create a high-performance landscape that would enhance the local ecosystem while providing opportunities for environmental education. This project also necessitated a unique partnership between the City of St. Paul and the Watershed District to use city Right-of-Way for parking and BMPs to manage public runoff while improving the boulevard with native plantings.

INNOVATIVE PRACTICES

This nearly 2 acre campus, retains, treats, and uses all the water that falls onto its site, through a series of connected stormwater BMPs, these include:

- Raingardens *(7,500 sq.ft.)*
- Permeable Pavers *(1,083 sq.ft.)*
- Underground Filtration *(75,000 gal.)*
- Tree Trenches *(2,460 sq.ft.)*
- Rainwater Harvesting & Reuse *(6,000 gal.)*
- Native Plantings *(50+ species)*

INTEGRATED PLANNING

The campus provides a living demonstration of the client's mission and commitment to the watershed and its communities through the following:

- Public Pocket Park / Wetland Pond
- Educational Outdoor Classroom
- Interactive, Environmental Exhibit
- Extensive, Educational Signage
- Integrated, Water-focused, Public Art
- LEED Gold Certification

Photo: Corey Gaffer

This urban campus exceeds the pre-development stormwater management capacity of the former industrial site, retaining all stormwater up to and including the 50-year, 24-hour storm event (6.34" over 24-hour period) utilizing a treatment train of multiple innovative stormwater practices.

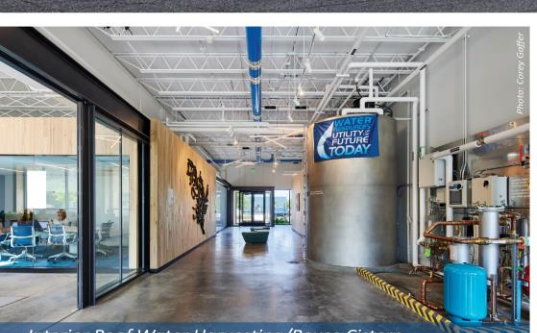
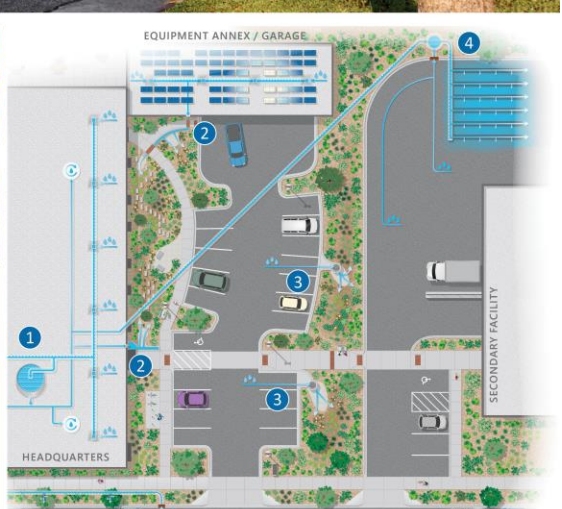


Photo: Corey Gaffer

Interior Roof Water Harvesting/Reuse Cistern

Rain Garden with Sidewalk Trench Drain



Site Illustration - Campus Center

Integrated stormwater management practices

1. Interior cistern collects rainwater from roof
2. Garage roof runoff & cistern overflow directed to rain gardens
3. Parking lot surface runoff filtered via pre-treatment devices
4. Overflow runoff directed to subsurface tank system

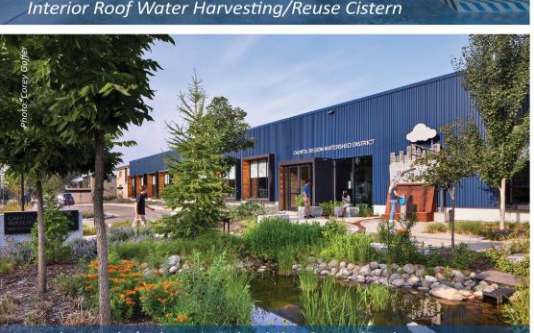


Photo: Corey Gaffer

Pocket Park / Educational Exhibit & Wetland

Interactive Exhibit Teaches About Urban Watersheds

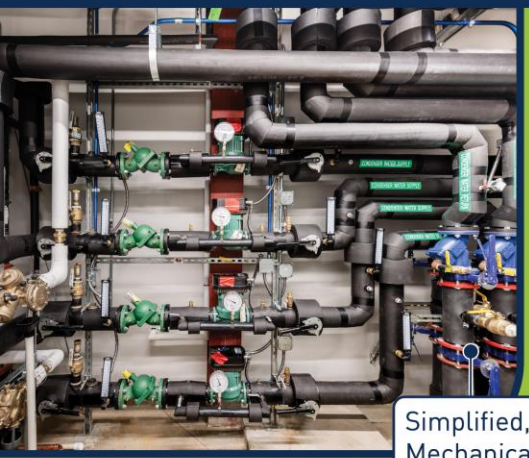
ACEC Engineering Excellence Awards

EOR water ecology community

NET ZERO VERIFIED

1ST ZERO ENERGY VERIFIED HEALTHCARE FACILITY IN THE UNITED STATES!

Pueblo Community Health East Side Clinic (Pueblo, CO) for **Pueblo Community Health Center** (Pueblo, CO)
submitted by **Farnsworth Group** (Colorado Springs)



Simplified, Smaller Mechanical Room

Geoexchange System

> "A physician board member asked the administration if we could use the development of the building to have a positive impact on climate change at a local level. It is a massive, worldwide concern but the sentiment is, think globally, act locally."

Donald Moore
Pueblo Community Health Center, CEO

449,280 kWh/yr (total) PV (photo-voltaic) Arrays

POST-OCCUPANCY ENERGY MEASUREMENT

CUMULATIVE YTD NET kWH

7.8 YEAR PAYBACK

IN 7.8 YEARS, THE ENERGY EFFICIENT SYSTEMS WILL PAY FOR THEMSELVES

$192.7k

SAVINGS OVER THE BUILDING THIS REPLACED

Farnsworth GROUP · ACEC Engineering Excellence AWARDS · RTA ARCHITECTS · BRYAN CONSTRUCTION · Pueblo Community Health Center

Logan Airport Terminal B to C Connector

Boston, MA

The Massachusetts Port Authority (Massport) has long envisioned a continuous post-security connection across all of Logan Airport's terminals to elevate passenger experience and improve efficiency for travelers, tenants, and airport operators alike – the Terminal B to C Connector project was instrumental in achieving this goal. The extensive project also upgraded operational and administrative spaces, added a consolidated security checkpoint, five new gates, and inclusive modern amenities. The Connector faced many constraints, including:

- Executing a complex project on an active airfield, where maintaining uninterrupted operations and unencumbered passenger experience is highly prioritized.
- Combining 87,700SF of new construction with the renovation of 67,800 SF of existing space within one of Logan's oldest terminals, fraught with complex existing conditions and varying structural systems.
- Achieving multiple stakeholder consensus - airlines, vendors, Massport, Logan staff, and the traveling public - each with unique goals.

The project has achieved LEED Gold certification. Notably "green" is the reuse of existing structures and materials rather than simply demolishing and rebuilding a completely new structure. This process added complexity and required careful phasing, but also revealed unique opportunities to elevate the passenger experience.

Airports are congruous with economic vitality. Much of Boston's character derives from its blending of old and new, making the Connector a fitting welcome for its visitors.

Client:
Massport
Boston, MA

Entrant Firm:
Fennick McCredie Architecture | Boston, MA

ACEC Engineering Excellence Awards

Varying floor levels allowed for a variety of seating areas removed from the flow of foot traffic

Five new boarding gates supported by a combination of dedicated and common-use podium designs

A maximum-reuse strategy across nine existing buildings keeps embodied carbon in place

"Composer's Lounge" is a unique passenger micro-environment between new and existing terminals

M-46 Drainage Structure Condition Assessment

Owner Name and Location:
Michigan Department of Transportation (MDOT)
Lansing, Michigan

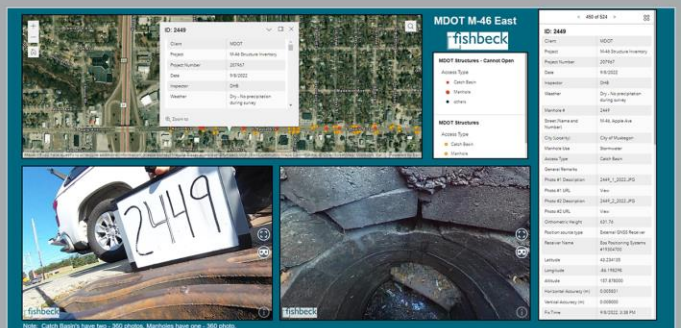
Project Location:
Muskegon, Michigan

Entering Firm:
Fishbeck, Grand Rapids, Michigan

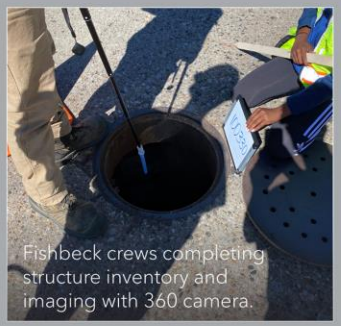
Through MDOT's design survey as-needed statewide contract, Fishbeck was retained to complete mapping and structure inventories along M-46. The westerly portion of the project included two miles of full design survey from US-31 to Muskegon Avenue. The easterly portion was structure inventories only from US-31 to Maple Island Road, totaling seven miles. The project goal consisted of resurfacing and concrete inlay and underground utilities were to remain, but MDOT wanted to know if any structures needed to be addressed before resurfacing. MDOT was looking for an innovative solution to document existing rim and structure conditions for the 775 structures throughout the project limits. MDOT requested two photo data sets at each structure – a straightforward photo of the structure rim and images of the interior structure, which is not conventionally as easy. To eliminate a separate mobilization by MDOT crews to evaluate structure conditions, Fishbeck proposed using a 360-degree camera to document existing conditions and organize the data in a free GIS viewer. While completing structure inventory data with pipe depths, Fishbeck crews took multiple 360-degree photos to document each structure. The data was compiled in the GIS viewer, allowing engineers to look at structure information with photos and metadata. The project eliminated MDOT mobilizations and concerns about structure integrity, saving time and money for everyone involved. Mobile LiDAR was used on the westerly portion of the project to collect all hard surfaces and assets within the project limits.

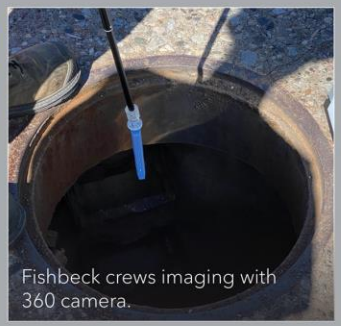
ACEC Engineering Excellence Awards

fishbeck
Engineers | Architects | Scientists | Constructors

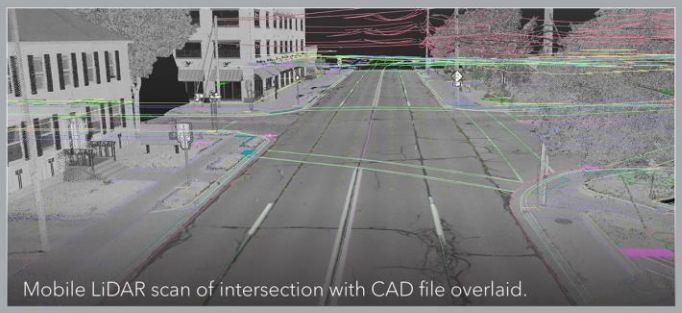


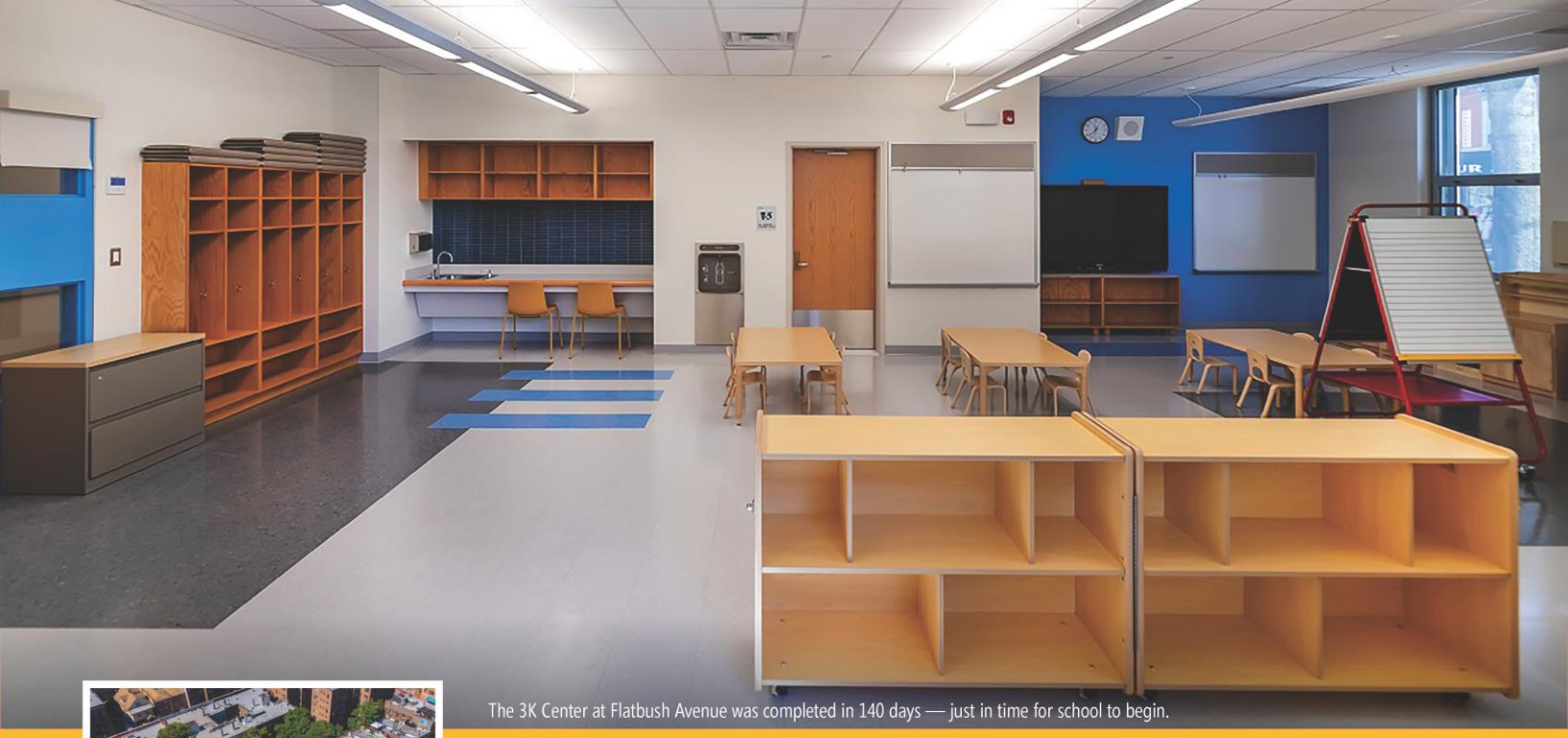
Web viewer showing aerial imagery, structure locations, and metadata as well as 360 photos of rim and inside structures.


Fishbeck crews completing structure inventory and imaging with 360 camera.


Fishbeck crews imaging with 360 camera.


2D layout of storm structure, taken with 360 camera.


Mobile LiDAR scan of intersection with CAD file overlaid.



The 3K Center at Flatbush Avenue was completed in 140 days — just in time for school to begin.

The once blighted street corner now features an inspirational learning center.

Image of new deck: Unforeseen issues with the existing floor, ceiling, and foundation posed many challenges throughout the renovation.

3K CENTER AT FLATBUSH AVENUE

New York City School Construction Authority – 3K Center at Flatbush Avenue | Brooklyn, N.Y.

The 3K Center at Flatbush Avenue, a $15 million preschool for three-year-old children, is part of the New York City School Construction Authority's program to renovate existing city buildings into inspirational learning centers. Under an expedited timeline, five former retail spaces were transformed in time for the 2022-2023 school year.

The new 27,330-square-foot space features seven classrooms, an exercise room, a warming pantry/kitchen, a parent/teacher room, a principal's office and main office, a staff room, a medical suite, a telecommunication room, and utility and storage rooms.

Key Features

- The building features energy-saving building materials, enhancing sustainability and reducing operating costs.
- A 3D laser scan created a useful visualization, addressing mechanical, electrical, and plumbing trade coordination and conflicts before installation.
- Construction management software fast-tracked the submittal and RFI process, providing seamless, cloud-based collaboration and real-time access to documents.

Outcomes

- An equitable space that creates a structured and supportive environment for children to grow socially, emotionally, and intellectually.
- Transformative building renovation reduces carbon emissions, lessens the environmental footprint, and contributes to a more sustainable future.
- Fast-track design-bid-build delivery expedited the project to completion in 140 days despite unforeseen, complex issues with the existing floor, ceiling, and foundation.

ACEC Engineering Excellence Awards

SCA School Construction Authority

NYC Department of Education

GANNETT FLEMING New York, N.Y.

CAPITAL IMPROVEMENTS

Washington Metro Area Transit Authority New Canopies Phase 3 | Washington, D.C.

Metro invests in system safety, reliability, and the region's economy through its 6-year, $14.4 billion Capital Improvement Program. The capital program will improve customer experience and keep the region's infrastructure in a state of good repair by investing in things such as improving stations and platforms. Gannett Fleming was the prime consultant with Lourie Architects as the lead architect of Metro's stainless steel and glass canopy covering the escalators at the Dupont Circle station in Washington, D.C. through its Comprehensive Canopy Program.

These canopies cover open-air escalator wellway entrances to the subway system, provide compliance with current building codes, protect patrons from rain, ice, and snow, and enhance escalator mechanical longevity. As directed by WMATA, the new canopy structures demonstrate design excellence that reflects the dignity and elegance appropriate for an entrance to the Metro system of the Nation's Capital.

Metro's canopy design provides an iconic image that reflects the vaulted elliptical shape with crisscrossing stainless-steel elements suggestive of Metro's famous coffered vaulted ceilings of the original WMATA underground station vaults. It provides uniform shedding of rainwater away from wellway openings, with a minimal footprint, as it rests on existing parapet wall structures. The prototype has been installed across the system and is well-recognized. The design provides users and visitors to the capital with a distinct and aesthetically refined indicator of entrances to the Metrorail system.

ACEC ENGINEERING Excellence AWARDS

metro

GANNETT FLEMING Washington D.C.

ON THE FAST TRACK

Phoenix Sky Harbor International Airport - Sky Train® Stage 2 | Phoenix, Ariz.

A two-mile extension of the PHX Sky Train® connects 14 million travelers annually to the Phoenix Sky Harbor International Airport's consolidated Rental Car Center (RCC) and Ground Transportation Center. Gannett Fleming was the fixed-facilities designer for PHX Sky Train® Stage 2, providing guideway and support structure design.

The Stage 2 guideway serves two new stations and a future station, including the RCC, which was built on the upper level of the existing structure. The project used a CM-at-Risk (CMAR) model to support fast-track delivery, enabling early identification and mitigation of constructability issues and allowing for overlapping design and construction processes.

ACEC Engineering Excellence Awards

City of Phoenix

GANNETT FLEMING Phoenix, Ariz.

DIFFICULT CONDITIONS NECESITATE INNOVATIVE SOLUTIONS

Stark-77 Bridge Replacement and Rehabilitation | Canton, Ohio

Gannett Fleming delivered a first-in-state, innovative solution after a typical Ohio Department of Transportation (ODOT) bridge re-decking project quickly morphed into a complex replacement. Inspection of the STA-77 bridges over Nimshillen Creek unveiled a difficult challenge – the 50-foot-tall wall abutment, on six rows of piles, was sliding laterally atop two highly charged aquifers while supporting two bridges.

To solve this complex issue, Gannett Fleming delivered the first augured cast-in-place (ACIP) pile bridge foundations for ODOT. The use ACIP piles advances bridge engineering in Ohio and helps drive national adoption.

The team conquered many other challenges throughout the project, including extreme skew, north abutment stability during construction, hydraulic no-rise certification, 60-inch sanitary sewer conflict resolution, and maintaining interstate traffic on an existing bridge that was acting as a strut restraining the north abutment movement. To effectively address numerous site constraints, unique details were developed from the foundations to the superstructure and roadway joints. The team successfully replaced two bridges atop the aquifers on failing foundations and rehabilitated three other bridges, advancing final design from concept to bidding in 13 months and expediting substantial completion nine months early.

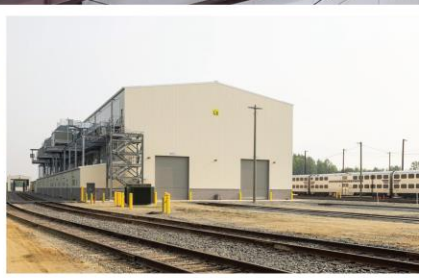
Key Outcomes

- Mitigated foundation problems due to two highly charged aquifers.
- First use of ACIP piles for a bridge foundation in Ohio.
- Replaced two and rehabilitated three bridges.
- Maintained two lanes of traffic throughout construction using innovative methods.
- Advanced acceptance of a unique bridge foundation design.
- Innovative details to deliver a long-span, highly skewed semi-integral structure.

ACEC ENGINEERING Excellence AWARDS

Ohio Department of Transportation, District 4
Akron, Ohio

GANNETT FLEMING Columbus, Ohio.



MODERN MAINTENANCE FACILITY

Lifecycle Overhaul and Upgrade (LOU) Facility
Fredericksburg, Va.

The Virginia Railway Express (VRE) Lifecycle Overhaul and Upgrade (LOU) Facility, located in Fredericksburg, Virginia, is a 35,000-square-foot train overhaul and repair facility designed to perform expanded commuter railcar and locomotive maintenance and overhauls on-site. This $49.9 million facility is VRE's single largest investment in a project since its inception. Gannett Fleming's construction management services helped ensure the project was completed $2.2 million under budget and two months ahead of schedule.

Key Features

- The new LOU Facility is equipped with a drop table designed for the removal of locomotive railcar trucks and wheelsets.
- A new wheel truing machine extends the useful life of wheel sets and keeps vehicles running safely and efficiently.
- A new overhead bridge crane features two lift points: one with a 5-ton capacity and another with a 30-ton capacity.
- Additional train storage tracks were constructed on-site, all while maintaining full operations in the yard and current maintenance facility.

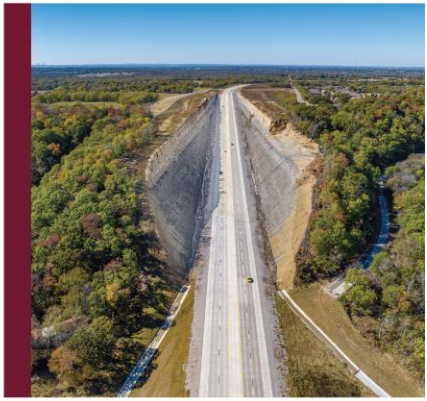
Outcomes

- VRE can now perform on-site maintenance and overhauls on railcars and locomotives, providing significant savings by eliminating the cost of transporting rolling stock to other repair sites.
- The new facility increases safety, efficiency, productivity, and reliability throughout the life cycle by reducing out-of-service time.

ACEC Engineering Excellence Awards

VRE Alexandria, Va.

GANNETT FLEMING Camp Hill, Pa.



State Highway 20 **Location:** Rogers County, OK

The SH-20 Corridor from near US-169 and extending eastward to SH-66 serves as an important connection between the growing communities of Owasso and Claremore Oklahoma and has been a focus of improvements over the years.

This section of original highway had several deficiencies which contributed to a higher-than-average collision rate and congested traffic flow. Some deficiencies included having no shoulders, numerous and sharp curves, and inadequate number of lanes. There was also an increased maintenance cost incurred by the Oklahoma Department of Transportation due to rock and hill slides that happened along the face of Keetonville Hill. These also resulted in temporary roadway closures, causing the traveling public significant delays due to detours.

The final design included the realignment of the highway away from the face of Keetonville Hill to reduce the potential for rockslides and improve geometry. Traffic capacity was increased with the construction of a five-lane roadway section (two through lanes and a shared center turn lane) helping to increase travel time reliability. This five-lane section also results in a safer facility by allowing left-turning vehicles an area to stop outside of the through traffic lanes. In addition to roadway improvements a new 625' long steel bridge was constructed over the Verdigris River replacing the existing 'at-risk' structure.

This SH-20 Keetonville Hill realignment project is the next step in providing a safe and efficient transportation system for the Northeast part of Oklahoma.

CLIENT Oklahoma Department of Transportation | **Firm** Garver, LLC, **Location** Tulsa, OK

ACEC Engineering Excellence Awards

Oklahoma Transportation

GARVER

GHD

ACEC ENGINEERING Excellence AWARDS

ACEC 2024 Engineering Excellence Award

The scope of work included construction of a roundabout, at-grade rail crossing safety devices, pedestrian crossing safety improvements, and a multi-use pathway segment. The results of the project are improved safety, enhanced multi-modal connectivity, environmental benefits, and a better sense of place and gateway into the downtown Town Green area.

There are substantial environmental benefits from this project. By increasing multi-modal possibilities, 541 Vehicle Miles Traveled are saved by shifting those miles to other modes. The design also prevents delays and idle time at the intersection saving motorists 136,252 hours over the next 20 years and reducing vehicle emissions by 63,804 tons of Carbon Dioxide over the same time period.

The roundabout design creates safer active transportation infrastructure at a complex intersection. The new design is expected to reduce the number of injury collisions by 75%. For pedestrians, crossing safety improvements included new sidewalks, realigned crosswalks, ADA curb ramps, and refuge medians. The project also added a 760-foot connector segment to a regional multi-use pathway. These safety enhancements were in place on schedule to enable Sonoma-Marin Area Rail Transit (SMART) passenger train service to begin in Windsor. As the Windsor Town center develops, the aesthetics of the roundabout identifies the area as a place that is central to the community.

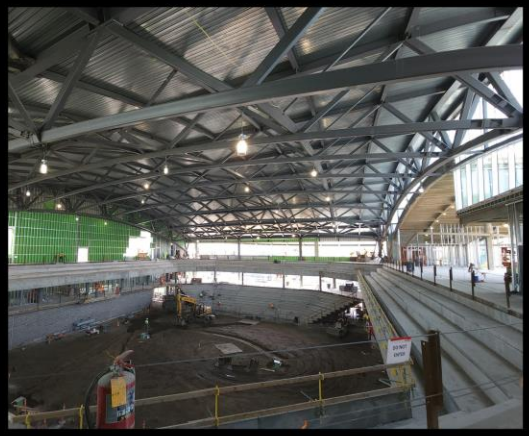
Title of the project
Windsor River Road / Windsor Road Intersection Improvements and Multi-Use Path Connector Project

Project client/owner name
Town of Windsor California

Location
Windsor, California, United States

Entering firm
GHD
Santa Rosa, CA

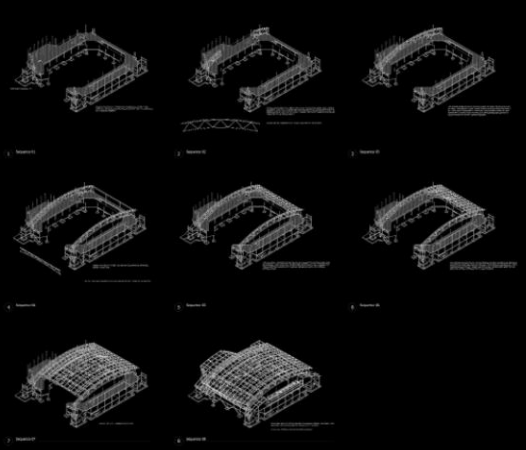
→ **The Power of Commitment**



FAIRFIELD UNIVERSITY – LEO D. MAHONEY ARENA

Fairfield, CT

This new 85,000-sf arena includes a 3,500 seat multi-use space for basketball, volleyball or university events, and concerts. The seating can be reconfigured to allow two practice courts or infilled to create an event or dining space. The venue includes a state-of-the-art broadcast and media center, as well as spaces devoted to the student athletes. The steel trusses span 200 feet in one direction and 150 feet in the other. The entire arched roof is essentially supported on four buttresses at the ends of the two primary arch/trusses. To complete the construction of the arena in an effective manner, we collaborated with the erector to create and execute a meticulous sequence of construction, the rendering of which is pictured below. The arena opened in November 2022 and had a total project cost of approximately $50M.

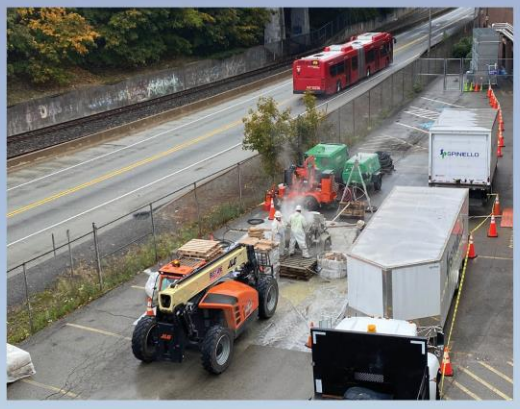


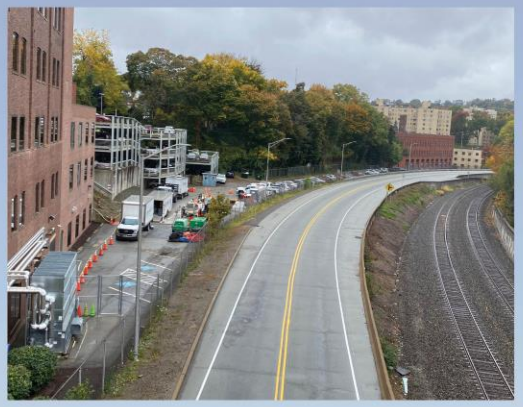
Client: Centerbrook Architects
Centerbrook, CT
Entrant: Gilsanz Murray Steficek
New York, NY

ACEC ENGINEERING Excellence AWARDS

Pittsburgh Water and Sewer Authority (PWSA)

2020 Large Diameter Sewer Rehabilitation Project





PWSA is proactively addressing its aging infrastructure through its Large Diameter Sewer Rehabilitation (LDSR) program. GPD was selected for their flagship 2020 LDSR project, which included over 1500 ft of 48", 60", and 101" brick sewers. GPD's evaluation of available trenchless rehabilitation technologies resulted in the selection of a spray-applied Geopolymer Lining System, which had not been used in the Pittsburgh region. This approach provided a structurally independent, corrosion-resistant new "pipe within a pipe," utilized a small construction footprint, was done with an internal sewage bypass, and did not require excavated entrance or exit pits.

Beneath the Surface: A revitalized sewer ready to serve for generations

Before rehabilitation

In service, post-rehabilitation

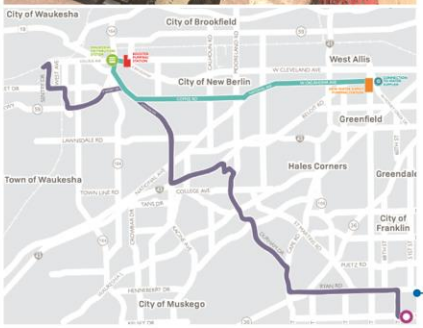
PGH2O
Pittsburgh, Pennsylvania

GPD GROUP
Pittsburgh, Pennsylvania

ACEC Engineering Excellence Awards

The Great Water Alliance Program

WAUKESHA, WISCONSIN



COMMUNITY CELEBRATES SEAMLESS TRANSITION TO LAKE MICHIGAN WATER

With its primary source of drinking water contaminated, the City of Waukesha pursued a long-term, sustainable solution. Working alongside the Waukesha Water Utility, Program Manager Greeley and Hansen, A TYLin Company, led the initiative to plan, design, construct, and commission a resilient water supply infrastructure with a century-long lifespan. In a first-of-its-kind achievement, 100% of residents and businesses seamlessly transitioned to Lake Michigan water under the Great Lakes Compact.

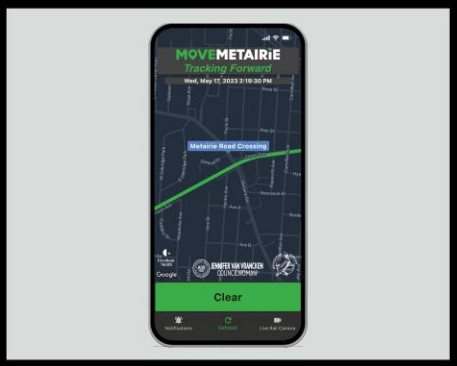
The multi-year, multimillion-dollar program required substantial new infrastructure, including 36 miles of transmission and force mains, water supply and return flow pumping stations, outfall facilities, water supply connections, two ground storage reservoirs, a water tower, chemical feed facilities, and distribution system improvements. The project encompassed route studies, hydraulic modeling, water quality analysis, the timely procurement of over 90 permits, and coordination across seven communities, two counties, and multiple federal agencies.

Greeley and Hansen's innovative approach, cost-sharing initiatives, and highly effective public communications plan kept the project on time and $4 million under budget. At the same time, the design enabled a net-zero water balance with the Lake Michigan watershed.

The project successfully wove 36 miles of transmission and force mains through urban environments already congested with existing utilities.

Client: Waukesha Water Utility | Waukesha, Wisconsin
Firm: Greeley and Hansen, A TYLin Company | Waukesha, Wisconsin

GREELEY AND HANSEN
A TYLin Company



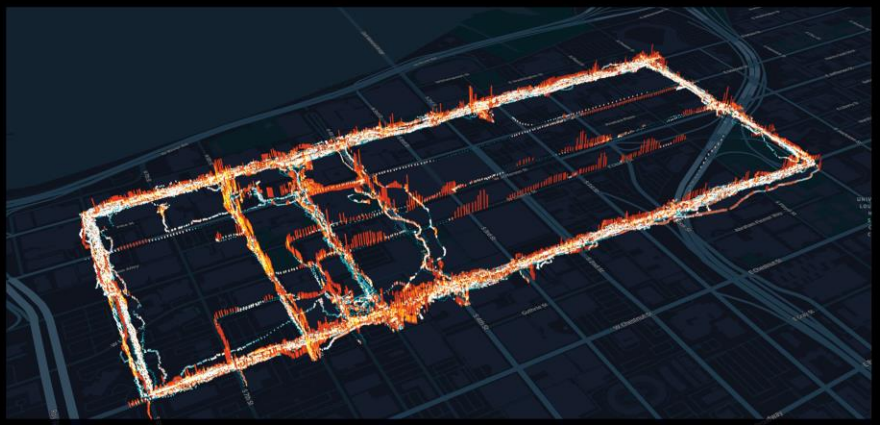
Move Metairie Tracking Forward

Metairie, Louisiana

For years, residents in Metairie, Louisiana, have complained about train traffic and delays at the busy Norfolk Southern railroad crossing on Metairie Road, one of the busiest two-lane highways in the state. To tackle this problem, Gresham Smith teamed with Jefferson Parish Council Member Jennifer Van Vrancken to develop Move Metairie Tracking Forward, a new first-of-its-kind patented technology and free app that residents can download.

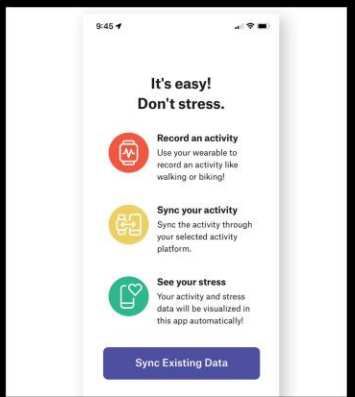
To design the technology, Gresham Smith worked with Jefferson Parish to install detectors and cameras just outside the train's right-of-way. These detectors triangulate the path of a train, continually transmitting its presence and speed, as well as directional information and when it's going to block the crossing. The app collects this information and determines how long the train will block the tracks and that information is shared to the public via an Android or Apple iOS mobile app.

With Move Metairie Tracking Forward, we're bringing new technology to a rather old industry—a user-friendly mobile app that allows motorists to decide on the best route. With a simple approach and innovative technology, our app provides users with quick notice of train traffic to help you plan, avoid delays and enjoy a better quality of life.



A visualization showing the data collected during the study in downtown Louisville.

A handout encouraging residents to participate in the study.

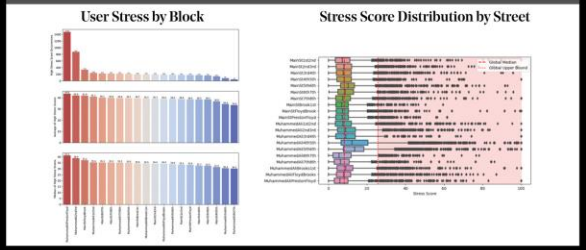


A screenshot from the MPATH app showing the setup process.

A new park entitled the Trager Microforest served as one anchor and baseline for the project.

The medical campus encompasses the LouMed project, which is focused on providing safe and comfortable pedestrian access into the district.

MPATH was able to represent a quantification of how people experienced the different places, yielding us a new data set to make better decisions about how redesign could happen.



MPATH: A New Approach to Measure How Users Experience Downtown Louisville

Louisville, Kentucky

In July 2023, the Christina Lee Brown Envirome Institute at the University of Louisville used Gresham Smith's new technology, MPATH, to carry out a stress study in the city's urban center. The patented MPATH platform collects biometric and geolocation data using modern wearables, to calculate how users experience their environment. The study, which collected over 200,000 stress data points, aimed to understand how our surroundings affect our experiences in different places. The data was correlated to additional data sets, including environmental sensor data focused on urban heat, lighting, crime rates and accidents. The study confirmed that small changes, like adding public art or outdoor seating, can significantly improve people's experiences. Even though this study was only conducted in one city, its findings could be important for the engineering industry.

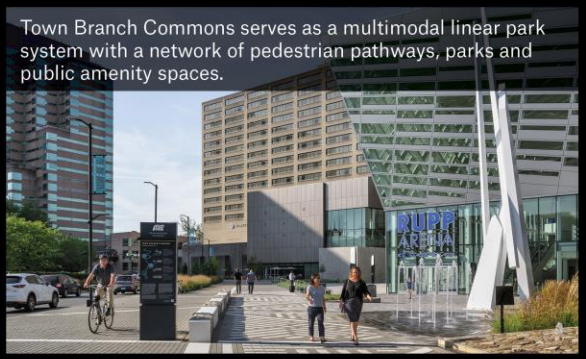
"We were pleased to have the opportunity to test Gresham Smith's new MPATH technology in the City of Louisville, and we were impressed with the professionalism and technical expertise of the team. Gresham Smith's work exceeded our expectations. Our hope is that this planning study can help us learn how to make the urban core a safer place for all users."

– Faisal Aqlan, Ph.D., Associate Professor of Industrial Engineering at University of Louisville's J.B. Speed School of Engineering

Gresham Smith

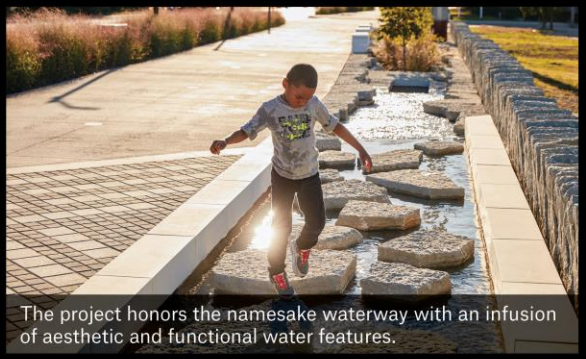
Gresham Smith
Louisville, Kentucky

University of Louisville Christina Lee Brown Envirome Institute
Louisville, Kentucky



Town Branch Commons serves as a multimodal linear park system with a network of pedestrian pathways, parks and public amenity spaces.


Town Branch Commons transformed major arteries of downtown Lexington into Complete Streets to enhance quality of life and encourage economic growth.


The project honors the namesake waterway with an infusion of aesthetic and functional water features.

Town Branch Commons

Lexington, Kentucky

Town Branch Commons is a 1.5-mile multimodal transportation and linear park system in downtown Lexington, Kentucky. The project serves as the centerpiece of the city-wide park system, linking the city's urban core with the Bluegrass countryside. Gresham Smith's design transformed the city's major roadways into Complete Streets, prioritizing the needs of all users by providing safe, accessible transportation options for all users. Through this project, the team implemented transformative improvements to bicycle, pedestrian, transit, and vehicular systems, all while providing a world-class public infrastructure system that connects urban, suburban, and rural parts of the city.

By fully integrating the use of the roadways, this project has energized the heart of downtown and its economy. This revitalization effort has created a vibrant and welcoming atmosphere that draws visitors from near and far, helping to establish Lexington as a model for smart urban planning and community-driven development.

The team worked together with the Lexington-Fayette Urban County Government throughout all project phases.

This project helps to establish Lexington as a model for smart urban planning and community-driven development.

"Not only does it [Town Branch Commons] bring a bit of our Bluegrass region into the heart of the city, but it also helps to connect people. The outcome was better connecting our neighborhoods, our people to each other, and to our business center, and just adding so much vitality to our downtown. Working with Gresham Smith has been a wonderful experience. They worked hand-in-hand with me, the contractor, and all our staff at the city. It wouldn't be a project without Gresham Smith."

– Brandi Peacher, Director of Project Management,
Lexington-Fayette Urban County Government (LFUCG)

KENTUCKY'S FIRST LOCAL GOVERNMENT P3:
Building Brandenburg's New Wastewater Treatment Plant Under Changing Circumstances

PHOTOS: (Left) Peracetic Acid Disinfection chamber with effluent, (Middle) New Influent Pump Station in Riverfront Park, (Right) Submerged Effluent Launder – Beaman Gate in operation, (Bottom) Matthew E. Welsh Memorial Bridge spans over Ohio River, connecting Kentucky and Indiana.

Brandenburg's Wastewater Treatment Plant (WWTP) permit violations resulted in an Agreed Order with the State of Kentucky. During GRW's plant upgrade design Nucor Steel announced a new $1.7 billion facility bringing approximately 400 jobs to Meade County, encompassing nearly 600 acres around the existing facility, including property currently part of the WWTP. Identifying the benefits of Public-Private-Partnerships (P3), Brandenburg hired Frost Brown Todd as its P3 attorneys. GRW formalized a teaming arrangement with W Principles and WP3 Consulting for design and construction of a new WWTP. GRW's role as designer entailed relocating the WWTP plus upgrades for the influent pump station residing in the 100-year floodplain of the Ohio River.

After the announcement, the task became to have the WWTP designed, built, and operational in time for Nucor to begin operation. Therefore, GRW's design and permitting efforts, and the initial phases of construction were occurring simultaneously. GRW's process design resulted from consultation with the city and other partners in the P3 for the best treatment approach. The P3 delivery method helped constrain service costs, an important factor to the officials and residents of Brandenburg and Meade County. Because of the project's success and permit compliance, Kentucky closed the Agreed Order with Brandenburg. The P3 project delivery method raised the level of awareness for the role of engineering in a multi-partnered project of this and potentially larger magnitude.

ACEC ENGINEERING Excellence AWARDS

CITY OF BRANDENBURG
Brandenburg, KY

GRW
engineering | architecture | geospatial

GRW ENGINEERS INC.
Lexington, KY

ACEC ENGINEERING Excellence AWARDS

A. SCOTT EMMONS WATER RECLAMATION FACILITY

NEWTON COUNTY, GA

THE A. SCOTT EMMONS WATER RECLAMATION FACILITY, MASTERFULLY ENGINEERED BY GWES, IS A BEACON OF INNOVATION IN WASTEWATER MANAGEMENT. PROCESSING 1.25 MGD, IT SERVES NEWTON COUNTY AND THE STANTON SPRINGS TECHNOLOGY PARK, FEATURING GEORGIA'S FIRST 2.6-MILLION-GALLON PRECAST CONCRETE TANK SUPERSTRUCTURE USED IN THE MUNICIPAL WASTEWATER INDUSTRY. THIS LANDMARK PROJECT, EMBODYING EFFICIENCY, SUSTAINABILITY, AND COMMUNITY ENGAGEMENT, EXCELLED IN OVERCOMING SIGNIFICANT CHALLENGES, INCLUDING BUDGET CONSTRAINTS AND PANDEMIC-RELATED DISRUPTIONS. COMPLETED $1 MILLION UNDER BUDGET, IT STANDS AS A TESTAMENT TO GWES'S COMMITMENT TO ADVANCED ENGINEERING SOLUTIONS, ENVIRONMENTAL STEWARDSHIP, AND EDUCATIONAL OUTREACH.

1.25 MGD WRF

GEORGIA'S 1ST 2.6-MG PRECAST

CONCRETE TANK SUPERSTRUCTURE

BEFORE CONSTRUCTION

DURING CONSTRUCTION

AFTER CONSTRUCTION

OWNER:

NEWTON COUNTY WATER & SEWERAGE AUTHORITY

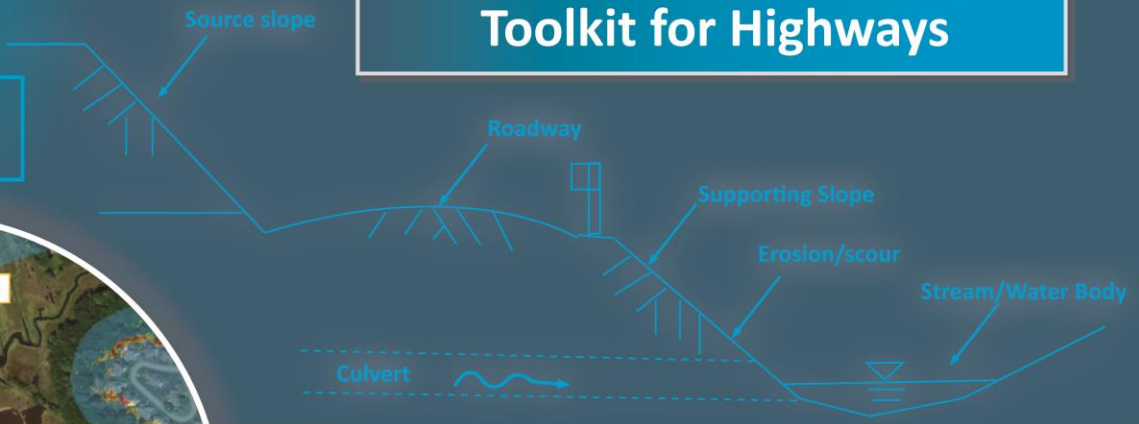
ENGINEER OF RECORD:

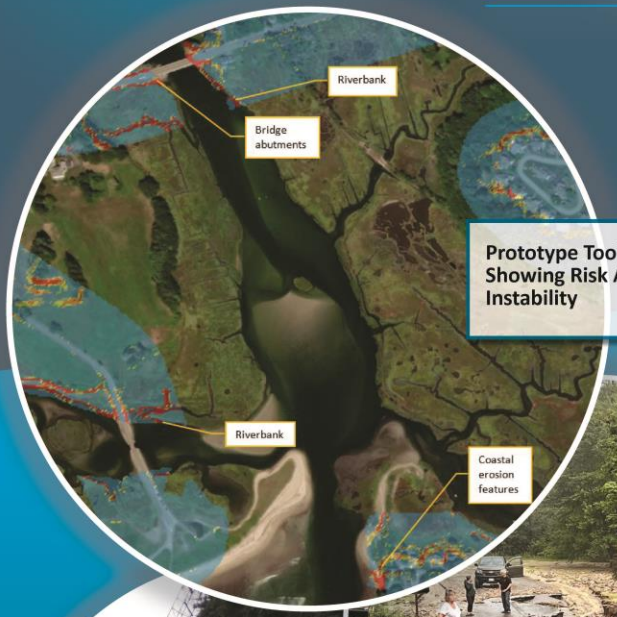
GWES, LLC - PERRY, GA

GZA Known for excellence. Built on trust.

Erosion-Slope Stability Toolkit for Highways

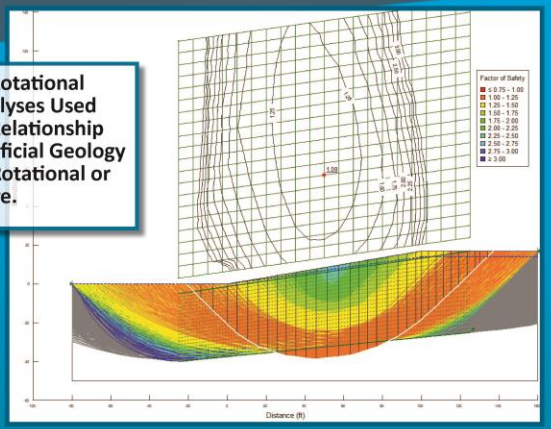
Generalized Slope Model for Risk Assessment (data from available GIS layers).

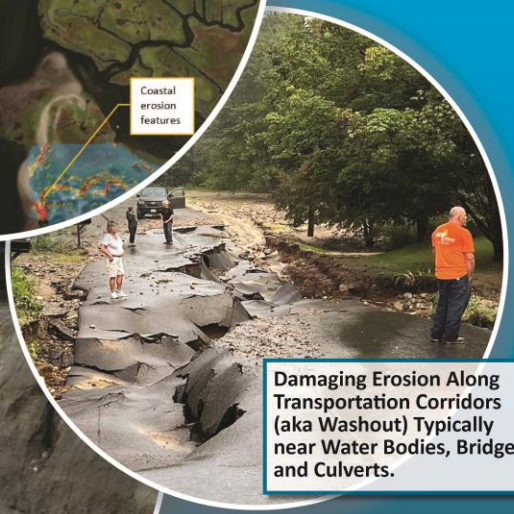




Prototype Toolkit Output Showing Risk Areas for Instability

Parametric Rotational Stability Analyses Used to Develop Relationship Between Surficial Geology and Risk of Rotational or Sliding Failure.





Damaging Erosion Along Transportation Corridors (aka Washout) Typically near Water Bodies, Bridges and Culverts.

Large Rotational Failure Investigated by GZA in 2010 Used to Ground-Truth Prototype.

Key to Mapped Hazard/Risk Results

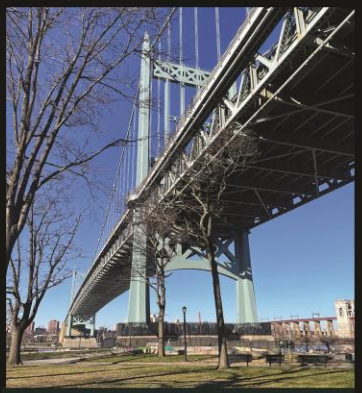
Predicted Stability Zone	Relative Hazard Index Ranking	Estimate Factor of Safety (FoS)	Probable Instability	Possible Influence of Stabilizing or Destabilizing Factors
Unstable	Very High (5)	<0.9	90%	Stabilizing factors required to achieve/ maintain stability
Unstable	High(4)	0.9 – 1.1	>50%	Minor destabilizing factors needed to cause failure
Nominally stable	Moderate (3)	1.1 – 1.3	10%	Minor destabilizing factors needed to cause failure
Moderately stable	Low (2)	1.3 – 1.5	-	Moderate destabilizing factors needed to cause failure
Stable	Very Low (1)	>1.5	-	Significant destabilizing factors to cause failure

Kathleeen Maguire, P.E., MaineDOT
Lead agency for New England Transportation Consortium on this project
State House Station 16, Augusta, ME 04330
207-624-3415
Kate.Maguire@maine.gov

ACEC Engineering Excellence Awards

A Fresh Approach to the RFK Bridge

This $14.7 million project involved construction management for the blast cleaning and painting of all steel members of the RFK Bridge Queens Approach spans and power-tool cleaning and overcoating the exterior steel surfaces of the Suspension Span Towers. This was a complex effort since work was over active roadways, NYC Parks, public areas, and near residential homes. The heavily traveled RFK Bridge has AADT exceeding 150,000 vehicles. Our work included hold point inspections during the cleaning and coating application from suspended work platforms on the Queens Approach and suspended scaffold systems for the Towers at elevations of up to 300 feet. Extensive coordination was required with NYC Parks as the work limits were above several park playgrounds and the 60-acre Astoria Park. Public outreach was key to keep residents and businesses informed. Traffic control was critical both on the bridge deck and on local streets. Environmental control measures included use of Class 1A containments during abrasive blasting, Class 3P containment during power-tool cleaning, high/low air and regulated area monitoring, construction noise monitoring, and continuous daily cleanup of work zones.



Work on the Queens Tower painting was conducted **over the 60-acre Astoria Park**, which remained open to the public for the project duration. Work was also conducted over several NYC Playgrounds. Parks Department coordination was of critical importance.

A three-foot-wide **red-tailed hawk nest** was discovered within the project's containment limits. We set up a motion-detection camera to monitor the nest for two weeks to make sure there was no activity, before relocating it per NYSDEC request.

Coordination was required to **minimize traffic impacts** to local roads adjacent to and passing under the approach (AADT up to 20,000) as well as the bridge itself (AADT 150,000).

A SafeSpan suspended platform was utilized, enabling the contractor to save time in setting up and removing their **Class 1A containments** with minimal impact to property and traffic below the Queens Approach Viaduct spans.

Four air monitoring stations were set up during the project, an ARS Dust Collector and Recycling Machine was utilized to **remove debris from the containment area**, and magnetic sweepers were used to remove any small debris from playgrounds and sidewalks below the work site.

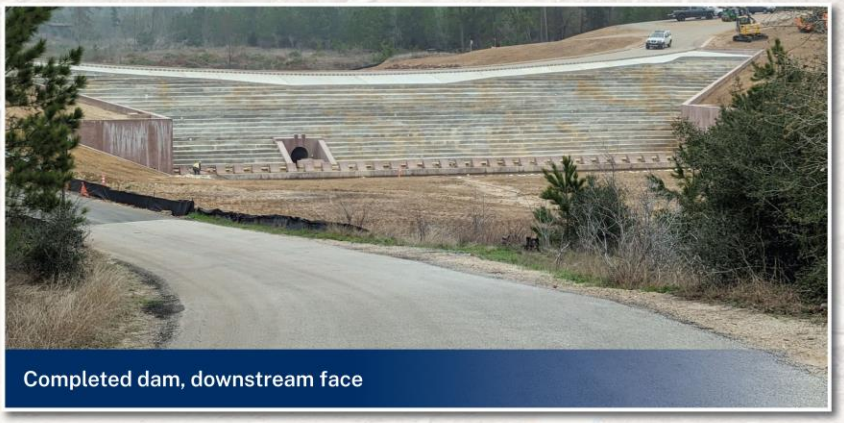
ACEC ENGINEERING AWARDS

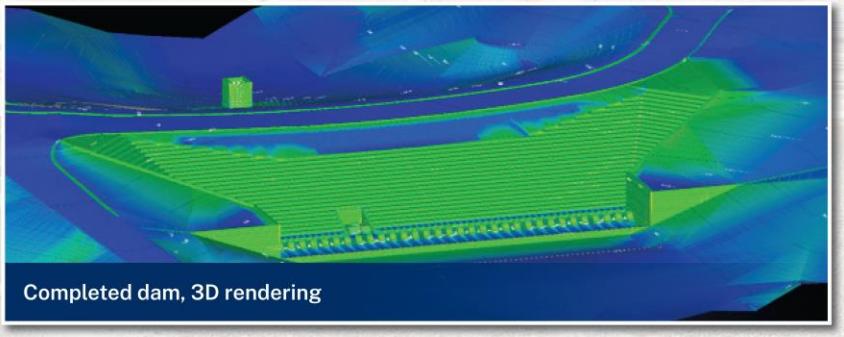
Project: Cleaning and Painting of the RFK Bridge Towers & Queens Approach | Astoria, NY *Client:* MTA C&D | New York, NY *Entrant:* H&H | New York, NY

BASTROP STATE PARK DAM

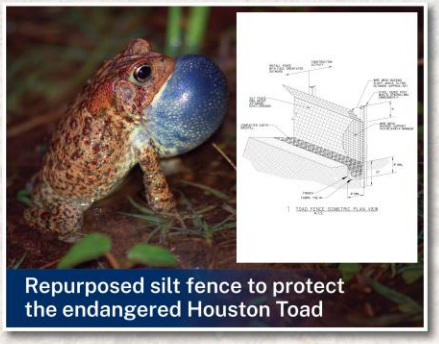

Failed dam embankment in 2015


Crews setting up formwork and tying rebar for training wall


Completed dam, downstream face


Completed dam, 3D rendering


Downstream face of completed dam


Repurposed silt fence to protect the endangered Houston Toad

Originally constructed in 1913, the Bastrop State Park Dam is a prominent feature of a park rich in Texas history. The park was added to the National Historic Landmark registry in 1997. Soil instability and loss of vegetation from a 2011 fire combined with intense rainfall culminated in the dam's failure in 2015.

Following the failure, Halff and the Texas Parks and Wildlife Department began developing conceptual solutions to reconstruct the dam to modern safety standards. Remote sensing was utilized to efficiently collect data for design. 3D visualizations were used to clearly communicate existing and proposed conditions of the project. The final dam design consisted of an earthen embankment with a bentonite slurry cut-off wall to control seepage. The dam was designed to be overtopped and was stabilized on the downstream slope with stepped, roller-compacted concrete. The training walls and stilling basin were designed to dissipate the hydraulic jump and lower velocities for the design storm.

Protecting the Park's many resources was a priority during the project. By repurposing a traditional silt fence detail, Halff developed innovative toad fencing to protect the endangered Houston Toad from the construction activities. This new solution has since been adapted and used by several agencies on subsequent projects.

Construction for the dam started in January 2021. Substantial completion was granted on April 11, 2023, with final completion on May 6, 2023. The Bastrop State Park Lake viewshed has been restored to recreate a popular recreational spot for park visitors interested in fishing and kayaking.

ACEC Engineering Excellence Awards

TEXAS PARKS & WILDLIFE

halff | **Client:** Texas Parks and Wildlife Department | **Entrant:** Halff (Austin, Texas) | **Category:** G – Water Resources

CLOUDBURST

CITYWIDE FEASIBILITY STUDY

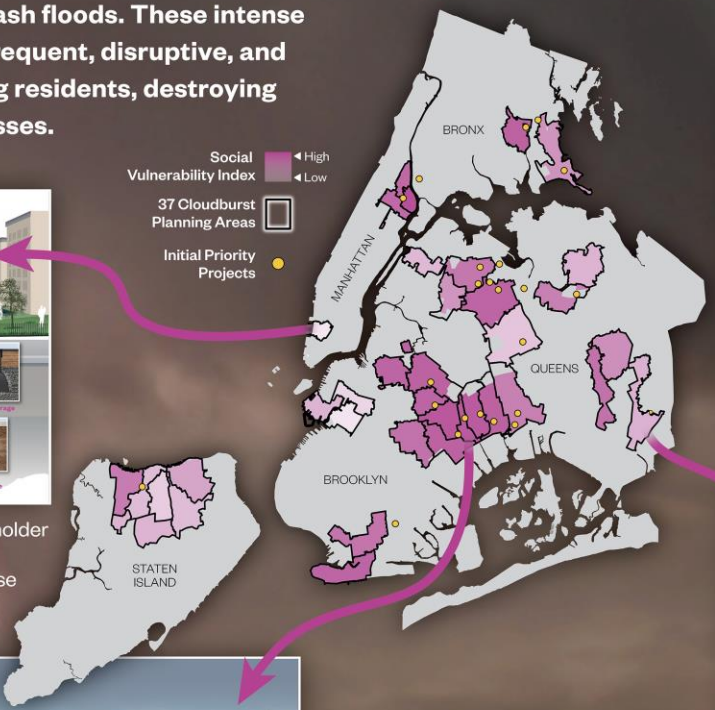
SOCIAL — **Protect Vulnerable Communities**

ECONOMIC — **Mitigate Flood Damages**

ENVIRONMENTAL — **Improve Water Quality**

A "cloudburst" is a sudden, heavy downpour that can overwhelm sewer systems and result in flash floods. These intense rainfalls are becoming more frequent, disruptive, and dangerous in NYC; devastating residents, destroying homes, and disrupting businesses.

Complexity lies in managing multi-stakeholder use of limited public space and siting large-scale cloudburst strategies in a dense urban environment.



1st Large-Scale Innovative application of interconnected green infrastructure for cloudburst management.

Exceeding Client Needs by enabling DEP to quickly respond to the Mayoral Call to Action to protect vulnerable communities.

Positive Public Perception of transforming public spaces into multi-beneficial flood mitigation and recreational community assets.

ACEC Engineering Excellence Awards

Cloudburst Citywide Feasibility Study
New York, NY

New York City Department of Environmental Protection, New York, NY

Hazen and Sawyer, New York, NY

Disinfection Improvements at the Noman Cole Pollution Control Plant

Location: Fairfax, VA | Client: Fairfax County, VA | Entering Firm: Hazen and Sawyer, Fairfax, VA

The new systems and facilities completed as part of this project help protect, restore, and enhance water quality and ensure a safe and secure workplace for Noman Cole Pollution Control Plant staff.

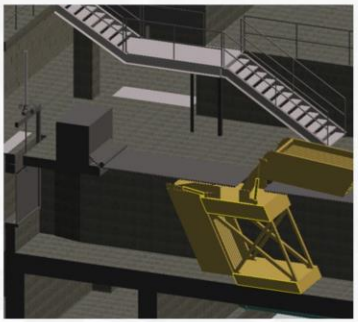
Hazen and Sawyer, Fairfax County, and Ulliman Schutte Construction successfully replaced an aging and obsolete sodium hypochlorite disinfection process at the 67-mgd Noman Cole Pollution Control Plant (NCPCP) with a state-of-the-art ultraviolet disinfection (UV) system.

Technology Selection

After a multi-criteria alternatives evaluation identified UV disinfection as the optimal technology, Hazen conducted pilot testing to verify efficacy, and a competitive equipment pre-selection process was utilized to secure pricing and expedite detailed design of the facility.

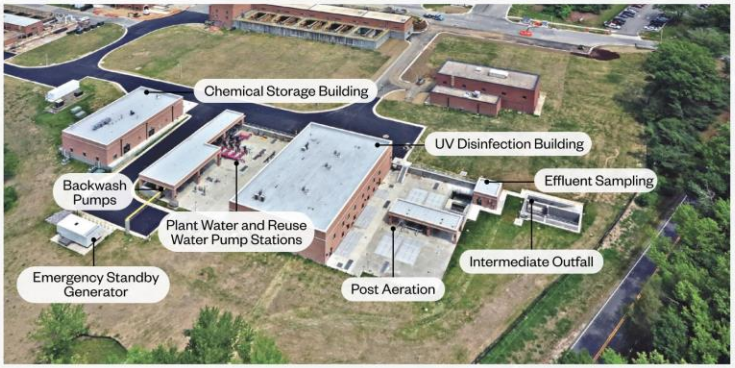
Innovation in Design

3D visualization model and Microsoft HoloLense headset enabled County staff to "enter" the facility before it was constructed and actively engage in the design review process. Innovative safety features include automatic channel covers to mitigate fall risks during maintenance; a first of its kind design.



The NCPCP Disinfection Facility

Leveraging the alternative delivery model Construction Manager At Risk, the County was able to expedite the construction schedule and save capital cost. The end result is an award winning facility that showcases the direct benefits of wastewater treatment, water reclamation, state-of-the-art technology, and sustainability.



Hazen

ACEC Engineering Excellence Awards

Ashtabula Water Treatment Plant Reconstruction

The historic Ashtabula Water Treatment Plant (WTP) has delivered high-quality, reliable drinking water to the City of Ashtabula since 1887. The 10-million-gallon-per-day (MGD) facility has been rebuilt and expanded several times over the past 100+ years, but some of the core process infrastructure had reached the end of its useful life, resulting in deteriorating conditions and operational issues. The facility also had limited operational flexibility and lacked automation.

The $14 million Ashtabula WTP Reconstruction project rehabilitated, repaired, and modernized the facility's existing filtration process with new equipment and a fully integrated automation/control system. Most notably, it also included construction of a new flocculation-sedimentation building with state-of-the-art inclined plate settlers (the first in Ohio), further improving the water quality of an already high-performing WTP and positioning the facility to meet more stringent regulations, potential changes in source (Lake Erie) water quality and future water demands.

The project team encountered significant challenges including a global pandemic (May 2020 start), supply chain issues, century-old structures, maintaining plant operations, and a very tight timeline. A progressive design-build contract structure facilitated effective collaboration between owner, designer and contractor. Together, they worked through these challenges by adapting to change and communicating regularly and openly resulting in a highly successful project. It was delivered on schedule—conceptual design to fully commissioned in only 19 months—and on budget. With modern technology and automation, the rejuvenated Ashtabula WTP will continue to deliver high-quality, reliable water for decades to come.

Project: Ashtabula Water Treatment Plant Reconstruction | Ashtabula, Ohio
Client: Aqua Ohio | Mentor, Ohio
Entrant: HDR | Cleveland, OH

ACEC Engineering Excellence Awards

HDR

BNSF Needles Third Mainline Track Expansion Segments 1 and 2

BNSF's Needles subdivision through inland California is one of the nation's busiest corridors. It links the Port of Los Angeles and the future Barstow International Gateway (BIG) with all major freight hubs to the east; including Phoenix, Fort Worth, Kansas City and Chicago.

The Needles Third Mainline Track Expansion, Segments 1 and 2 Project accounts for nearly two-thirds of a planned $250 million capital expansion investment by BNSF along the southern transcontinental (Transcon) railway corridor. The project adds a new third mainline track along nearly 30 miles of the Transcon between Needles and Goffs, California — an expansion BNSF has been planning and developing for more than a decade.

The project features a 1.5% uphill track grade heading east from Needles. It has historically proven to be a long-term operational bottleneck that led BNSF to select the project location for supply line expansion. Upon selecting the ideal location, BNSF and HDR began designing the 30-mile mainline track expansion to increase operational efficiencies related to both passenger service mobility through this corridor via intercity and regional Amtrak trains and for increased freight mobility to ease train congestion through this critical chokepoint.

As the design and construction management lead, HDR's team is providing overall program management on the collective Needles Program, alongside multiple cross-sector disciplines including freight rail track design, civil and drainage design, hydraulic and hydrological analysis (H&H), geotechnical field analysis, geotechnical engineering, structural design on numerous large culverts and pier protection walls, traffic control design, and roadway engineering for public crossings.

Title: BNSF Needles Third Mainline Track Expansion Segments 1 and 2 | San Bernardino County, California
Client: BNSF Railway | San Bernardino, California
Entrant: HDR | Irvine, California

BNSF RAILWAY

ACEC ENGINEERING Excellence AWARDS

HDR

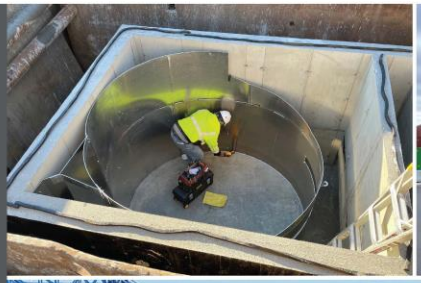
Conley Terminal Berth 11 & 12 Backlands Reconstruction

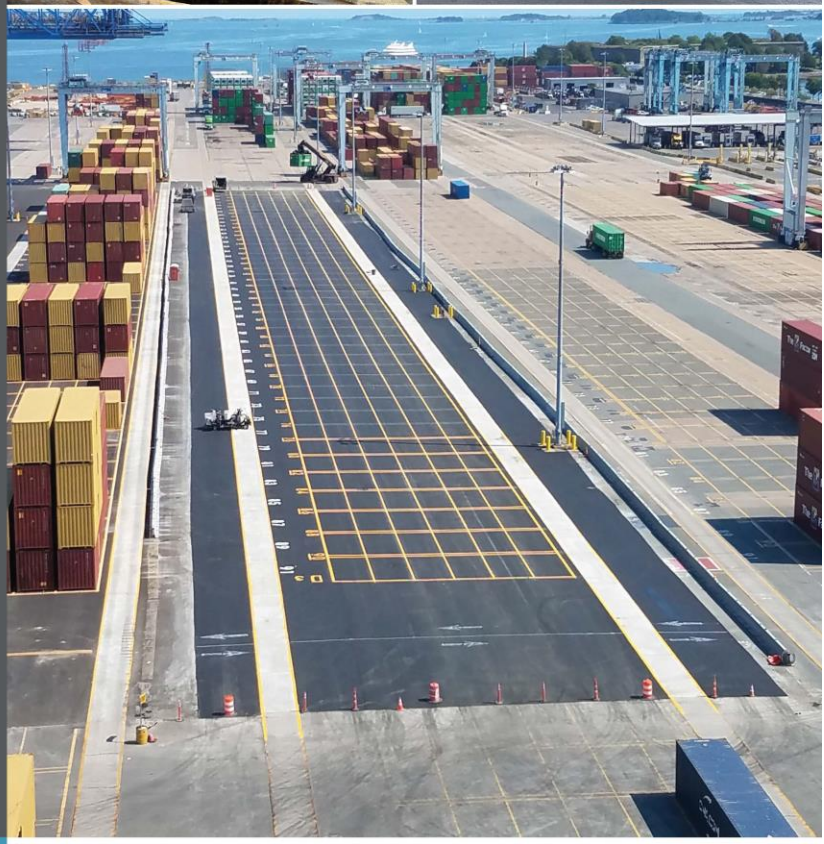
Massport's Paul W. Conley Container Terminal is a vital economic asset for New England, serving more than 2,500 regional businesses, including 700 enterprises in rural areas. As New England's only deep-water, full-service container terminal, this 101-acre facility services an average of five vessels per week.

In 2014 Massport launched the Conley Terminal Modernization Program, an $850 million investment in the Port of Boston's maritime infrastructure including rehabilitation of berths 11 and 12, expansion onto an adjacent site via construction of a new deep-water Berth, construction of additional container yard storage areas, and Boston Harbor deepening project by the US Army Corps of Engineers.

One key project was rehabilitation of the backland container area behind Berths 11 & 12, the most utilized area within the Terminal for the interim storage of thousands of shipping containers prior to their being loaded onto trucks for consumer delivery throughout the region. Constructed in the 1980's, the long-term degradation of the yard pavements and drainage infrastructure under heavy industrial use resulted in sinkholes, differential pavement and concrete crane runways settlement, and water ponding that froze in the winter, causing unsafe and inefficient operations for personnel and cargo-handling equipment.

Completed ahead of schedule and under budget, the Conley Terminal Berth 11 & 12 Backlands Reconstruction Project used an innovative, and sustainable, approach to correct these issues using full-depth pavement reclamation and recycling to reuse the materials in-place which reduced waste, costs and operational down-time by eliminating off-site disposal of existing asphalt, and import of sub-base materials.





Title: Conley Terminal Berth 11 & 12 Backlands Reconstruction | Boston, Massachusetts
Client/Owner: Massachusetts Port Authority | Boston, Massachusetts
Entrant: HDR | Manchester, New Hampshire

ACEC Engineering Excellence Awards

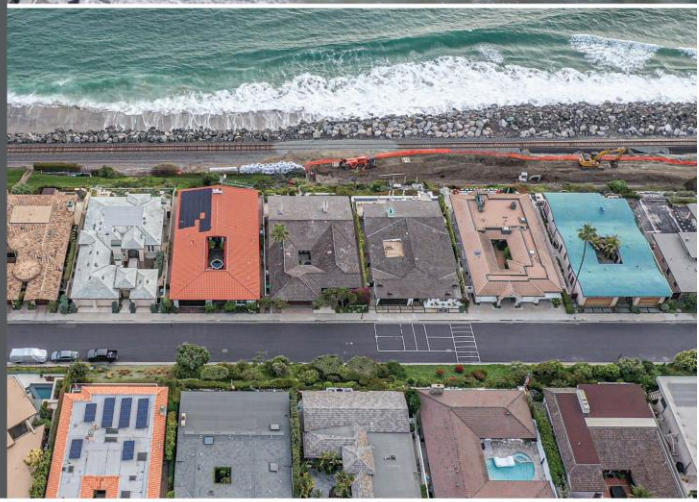
HDR

Cyprus Shores Emergency Stabilization Project

For years, high tides and swells battered the San Clemente, California, shoreline. They've overtopped the coastal rail tracks and hit passing trains. A recent climate study led by the Orange County Transportation Authority (OCTA) identified the 7-mile coastal rail corridor as threatened by sea level rise, storm surge and shoreline erosion. Unfortunately, they could not predict an ancient landslide reactivating.

In September 2021, coastal residents noticed significant earth movement. Below, the Metrolink tracks shifted toward the ocean. This caused Metrolink to immediately stop rail traffic — impacting other carriers that rely on these tracks, Metrolink, BNSF Railway, and Amtrak. Caltrans declared a state transportation emergency, and the California Transportation Commission held a special meeting to allocate funds to stabilize the track. City Officials red-tagged two of the above houses and yellow-tagged two others.

The $21.7 million Cyprus Shores Emergency Stabilization Project identified the cause of the landslide, stabilized the track and houses, and prevents future movement. The project team installed more than 20,000 tons of riprap on the ocean side of the track and 110 concrete grade beams with 220 total 133-foot-long tiebacks into the slope, allowing the rail line — critical to the U.S. economy and national defense — to reopen.



Project: Cyprus Shores Emergency Stabilization Project | San Clemente, California
Entrant: HDR | Irvine, California
Client: Metrolink | Pomona, California
OCTA | Orange, California

ACEC Engineering Excellence Awards

HDR

OCTA

METROLINK

Des Moines Metropolitan Wastewater Reclamation Authority Flood Protection

Located on the banks of the Des Moines River, the Des Moines Metropolitan Wastewater Reclamation Authority's (WRA) Wastewater Reclamation Facility (WRF) is an instrumental treatment facility. Historic river flooding challenged facility operations, which subsequently impacts citizens, businesses, the economy and water quality and could have been devastating to downstream communities.

The Des Moines WRA Flood Protection project adds critical improvements to the WRF. After completing an alternatives study with a risk-based decision-making process, the team prioritized resiliency measures that fit the program's funding. The team utilized a variety of recent assessments, reports, studies, and plans; then performed further site-specific risk-informed flood scenario modeling to determine prevailing flood risks.

The flood improvements include protecting critical facilities at the WRF from flooding resulting from a catastrophic failure of the Des Moines I (DM-I) or Southeast Des Moines (SEDM) levee systems due to a flood overtopping event or a levee breach. The flood resiliency improvements include a gated floodwall system for the WRF's preliminary treatment pump headworks facility that is designed to applicable USACE floodwall design standards. Other improvements include replacing and elevating the electrical transformers that service the pumps, constructing a new elevated building facility for the updated switchgear that controls the WRF's electrical power, and co-locating standby power generation in the new building in the event incoming commercial electrical service is lost during a catastrophic flood event.

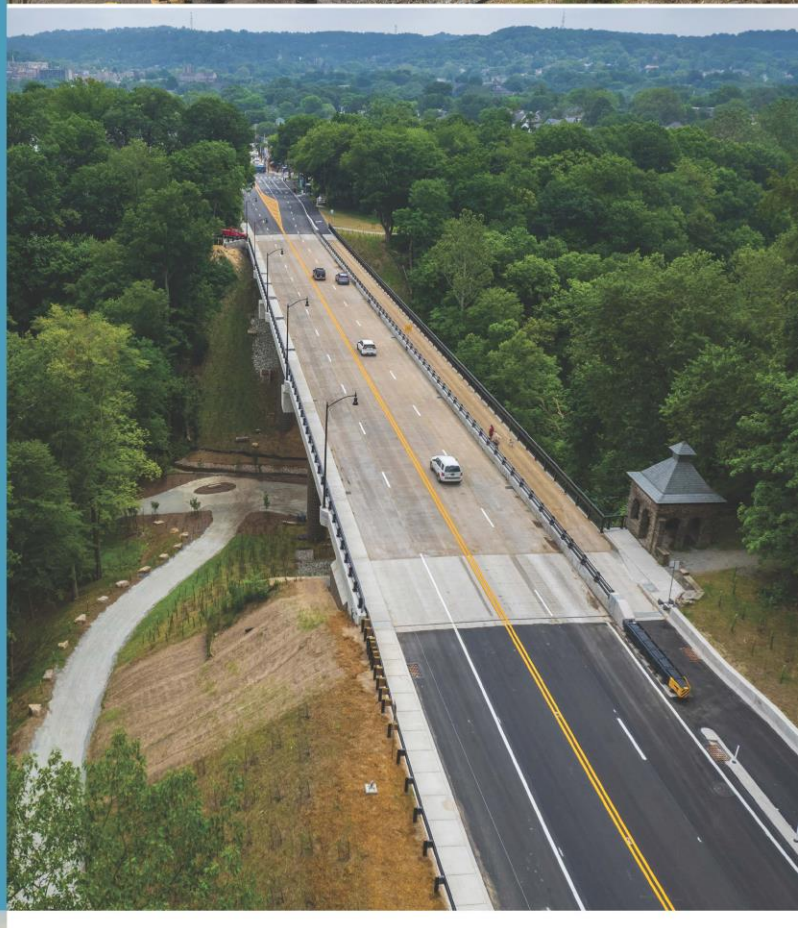
Title: Des Moines Metropolitan Wastewater Reclamation Authority Flood Protection | Des Moines, Iowa
Client/Owner: Des Moines Metropolitan Wastewater Reclamation Authority | Des Moines, Iowa
Entrant: HDR | Omaha, Nebraska

ACEC Engineering Excellence Awards

Fern Hollow Bridge

Emergency Replacement Project

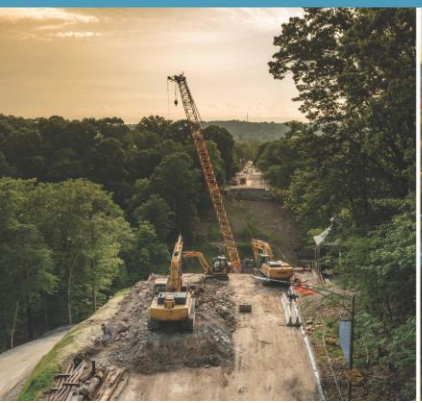
Pittsburgh, Pennsylvania



How teamwork and collaboration can lead to the replacement of a major structure on a vital roadway in under a year

Early on the snowy morning of Friday, January 28, 2022, the 447-foot-long Fern Hollow Bridge in Pittsburgh collapsed nearly 100 feet into a park ravine, carrying with it a mass transit bus and four passenger vehicles. Miraculously, no lives were lost.

Less than a year after its collapse, the permanent structure was open to traffic and Pittsburgh's Fern Hollow Bridge was once again connecting communities. The project transformed a tragic incident into a source of community pride. The team kept the bridge's four vehicular lanes, maintained the existing right of way, expanded multi-modal capacity, increased safety, and integrated public art. The herculean effort required designing critical components simultaneously, using available materials, consolidating reviews, avoiding historic structures, and constructing new abutments, piers, superstructure, and approaches. A public spectacle, community members and news organizations watched and applauded the parade of bridge beams. The historic project is a testament to collaboration, innovation and industry, and community willpower.



Title: Fern Hollow Bridge Emergency Replacement Project | Pittsburgh, Pennsylvania
Client/Owner: Pennsylvania Department of Transportation, District 11-0 | Bridgeville, Pennsylvania / City of Pittsburgh | Pittsburgh, Pennsylvania
Entrant: HDR | Pittsburgh, Pennsylvania

ACEC ENGINEERING Excellence AWARDS

HDR

Greene Street Bridge

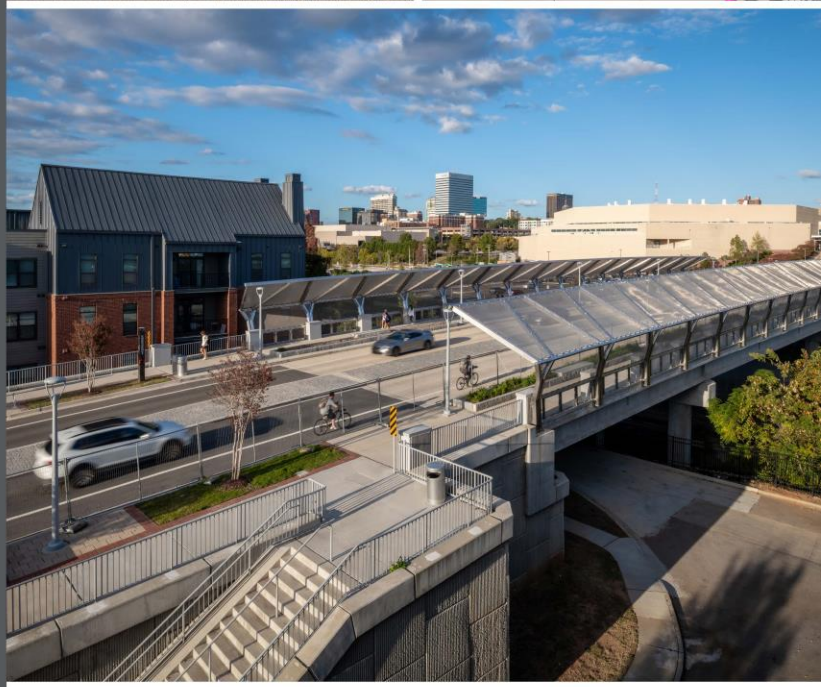
Columbia, SC

In the 1990s, the Columbia, South Carolina, community began planning a connection from downtown Columbia, through the University of South Carolina (USC) campus, to a future Waterfront District with Greene Street serving as the primary spine. The Greene Street Bridge is a major step to bring this vision to life with one more remaining phase to provide riverfront access. The project provides multi-modal connectivity, improves safety and traffic flow, and spurs economic development in the city and region.

The project delivers a 233-foot bridge over Norfolk Southern and CSX railroads, approximately 400 feet of roadway approaches on each side of the bridge bounded by mechanically stabilized earth (MSE) retaining walls, one new and three improved intersections, and closure of two at-grade railroad crossings. The bridge provides a safe, grade-separated crossing of the railroads for vehicles, pedestrians, and cyclists connecting downtown Columbia and USC to student housing and future development. The project incorporates aesthetic details and pedestrian-friendly features with granite cobbled medians, granite benches, irrigated planter boxes, extensive lighting, and a stainless-steel shade structure/railing on the bridge.

Nearly 30 years in the making, the HDR project team overcame significant challenges to bring the project to life. Challenges included satisfying stakeholders with differing interests, navigating complex old railroad agreements, working in a confined corridor, and achieving aesthetic goals resulting in atypical bridge components. An inspirational model of community-driven infrastructure, Columbia is ready for a more promising and well-connected future, while also setting the stage for upcoming river developments.

ACEC Engineering Excellence Awards



Title: Greene Street Bridge | Columbia, South Carolina
Client/Owner: University of South Carolina Development Foundation/ Richland County/City of Columbia | Columbia, South Carolina
Entrant: HDR | Columbia, South Carolina

Higgins Avenue Bridge Rehabilitation

Originally constructed in 1962, the Higgins Avenue Bridge, now dedicated as the Beartracks Bridge, was in an advanced state of deterioration and in need of rehabilitation. The substructure was in need of repair and the concrete deck needed to be replaced. Additionally, the bridge is a vital transportation link across the Clark Fork River that has been identified by the City of Missoula as a priority for improving multimodal transportation. The Montana Department of Transportation (MDT) contracted with HDR in cooperation with the Federal Highway Administration and the City of Missoula to join together to deliver this very prominent project in the heart of downtown Missoula. The solution was to rehabilitate the bridge by repairing/replacing and painting all deteriorated steel bridge components, and replacing the deck with a wider, multimodal typical section to include two vehicle lanes and one shared use path in each direction.

Through innovative engineering, and partnership with MDT and the City, the bridge was successfully refurbished to address structural needs and in a manner that significantly improved accommodations for bicyclists and pedestrians.

Project: Higgins Avenue Bridge Rehabilitation | Missoula, Montana
Entrant: HDR | Missoula, Montana
Client: Montana Department of Transportation | Helena, Montana

ACEC Engineering Excellence Awards

HDR

I-35 Capital Express (CapEx) Central Project Final Environmental Impact Statement (FEIS)

A dedicated pedestrian bridge over Lady Bird Lake improves connectivity and connects to Austin's Boardwalk.

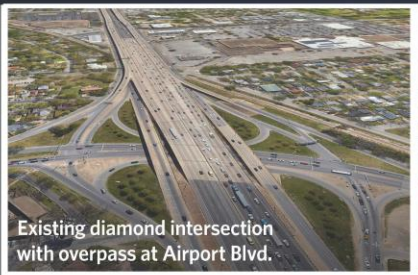
CONGESTION RELIEF FOR I-35.

Since its construction, I-35 has been a visual, auditory, physical, and psychological barrier through Central Austin. Known for its near-constant congestion, the interstate carries 205,000 vehicles per day. Conditions are expected to worsen without an overhaul, as traffic is expected to surpass 300,000 vehicles per day by 2045.

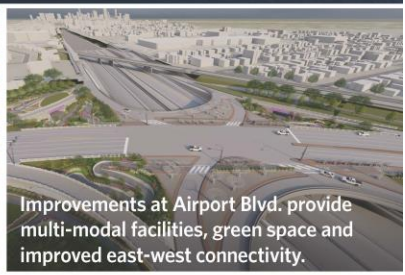
With federal approval in August 2023, the I-35 Capital Express (CapEx) Central Project Final Environmental Impact Statement (FEIS) greenlights the $4.5 billion improvement project. The proposed renovation reduces travel times by 57% and increases the facility's capacity by 149%. Innovative intersections, corridor-wide shared-use paths, "stitch" bridges, a boulevard concept for frontage roads and depressing the roadway through downtown will improve operations for decades to come while reducing the interstate's long-standing impact through Austin's core.

HDR's team, alongside the Texas Department of Transportation (TxDOT), gathered public input and performed extensive outreach to include typically underserved populations, obtaining deeper insight into community concerns. They held CapEx Volunteer Opportunity in Community Engagement (VOICE) meetings every other month throughout the process. The project received more than 3,600 comments, which compelled changes in the project's need and purpose, and to the alternatives evaluation criteria, including air quality impacts, main lane person-carrying capacity, and the annual cost of travel.

Working together seamlessly, they compressed review and revision cycles to deliver the FEIS in just three years. The project minimizes the interstate's historic barrier impact, enhances transit, curtails commute times and crashes, and reduces displacements along the corridor.



Existing diamond intersection with overpass at Airport Blvd.



Improvements at Airport Blvd. provide multi-modal facilities, green space and improved east-west connectivity.

A SPUI at Riverside Drive provides improved traffic flow, enhanced multi-modal connectivity and minimizes conflicts with proposed light rail.

Pedestrian bridge viewing platform over Lady Bird Lake.

"Stitch" bridges provide shade, wide buffers and shared-use paths.

Title: I-35 Capital Express (CapEx) Central Project Final Environmental Impact Statement (FEIS), Austin, Texas
Client/Owner: Texas Department of Transportation, Austin, Texas
Entrant: HDR, Austin, Texas

ACEC Engineering Excellence Awards

HDR

I-80/I-380 System Interchange Reconstruction Project

One of the busiest corridors in the region, the Interstate 80/380 System Interchange serves as a vital link in the transportation system for Iowa and the nation, supporting connectivity, mobility, freight movement and economic vitality.

The I-80/I-380 System Interchange Reconstruction Project is located near Coralville and Iowa City, Iowa, in Johnson County, at the junction of I-80, I-380 and U.S. Highway 218. The original cloverleaf interchange was functionally obsolete and no longer had the capacity to reliably and safely handle increases in traffic and freight growth regionally and nationally.

Construction began in 2017 to reconstruct the I-80/I-380 interchange so it could accommodate the forecast increases in traffic. Reconstruction of the interchange was substantially completed approximately three months ahead of schedule and on budget.

This comprehensive project:

- Increases capacity and improves traffic operations within the region, ultimately benefiting the general public, commuter and freight traffic, including the rural agriculture and manufacturing economy.
- Improves safety and reduces congestion, projected to significantly reduce the number of serious injury and fatal crashes, and save 64 million hours of travel time.
- Improves travel reliability and relieves a major chokepoint on the regional and national freight system.
- Supports regional employment and economic growth. Interstate 380 north of the interchange is the busiest rural portion of interstate in Iowa, and there are nearly 18,000 daily commuters between the Cedar Rapids and Iowa City metro areas.

Title: I-80/I-380 System Interchange Reconstruction Project, Coralville, Iowa
Client/Owner: Iowa Department of Transportation, Ames, Iowa
Entrant: HDR, Omaha, Nebraska

ACEC Engineering Excellence Awards

HDR

Isabella Dam Safety Modification

In 2018, the U.S. Army Corps of Engineers ranked Isabella Dam as its No. 1 dam safety risk in the United States. Located at the edge of the Sierra Nevada and 110 miles north of Los Angeles, the dam has served flood control, agriculture, hydroelectric and recreation needs since 1953.

In 2006, seepage was found at Lake Isabella's auxiliary dam. The finding prompted a safety study to address the leak, seismic concerns and hydrologic issues at both the main and auxiliary dams. Subsequently, engineers developed plans to protect the more than 300,000 people living and working below the dam, primarily in the town of Lake Isabella and the city of Bakersfield.

From the plans, USACE initiated a retrofit project to modify the original earthen dam structures. The design recommended raising the main and auxiliary dams by 16 feet, modifying the service spillway and creating a new emergency spillway — featuring a 28-foot-tall, 1,300-foot-long, arced labyrinth weir, USACE's first project with the innovative structure type.

USACE and HDR oversaw construction and earthwork for the massive volume of rock material, which was mined on-site and formed into earthen dam layers. In early 2023, the area experienced record rainfall and snowmelt. To accommodate increased river flow, USACE returned the lake to its original capacity of 568,000 acre-feet of water, which was made possible because of the new dam.

Project: Isabella Dam Safety Modification | Kern County, California
Entrant: HDR | Omaha, Nebraska
Client: U.S. Army Corps of Engineers Sacramento District

ACEC Engineering Excellence Awards

Mill Plain Bus Rapid Transit

ACEC ENGINEERING Excellence AWARDS

HDR

Mill Plain Boulevard in Vancouver, Washington, is plagued by chronic and worsening auto congestion. It's the second busiest corridor in the Clark County Public Transit Benefit Area Authority's (C-TRAN) network, with buses carrying nearly 775,000 passengers annually.

The $50 million Mill Plain Bus Rapid Transit (BRT) project seeks to remedy the incessant congestion while improving operations, amenities, and features. Spanning 10 miles across the city with 37 new stations, the project links downtown Vancouver to Clark College's Columbia Tech Center campus. Serving more than 3,000 passengers across essential businesses, services, and colleges, it lowers emissions, provides safe and more efficient mobility options, and improves transit speeds.

With buses arriving every 15 minutes, the BRT line offers riders more reliable and faster service. On the east end, a new nine-bay transit center and 950-square-foot driver relief building and customer service office offer state-of-the-art amenities while the west end connects to the Turtle Place Station and existing Vine service.

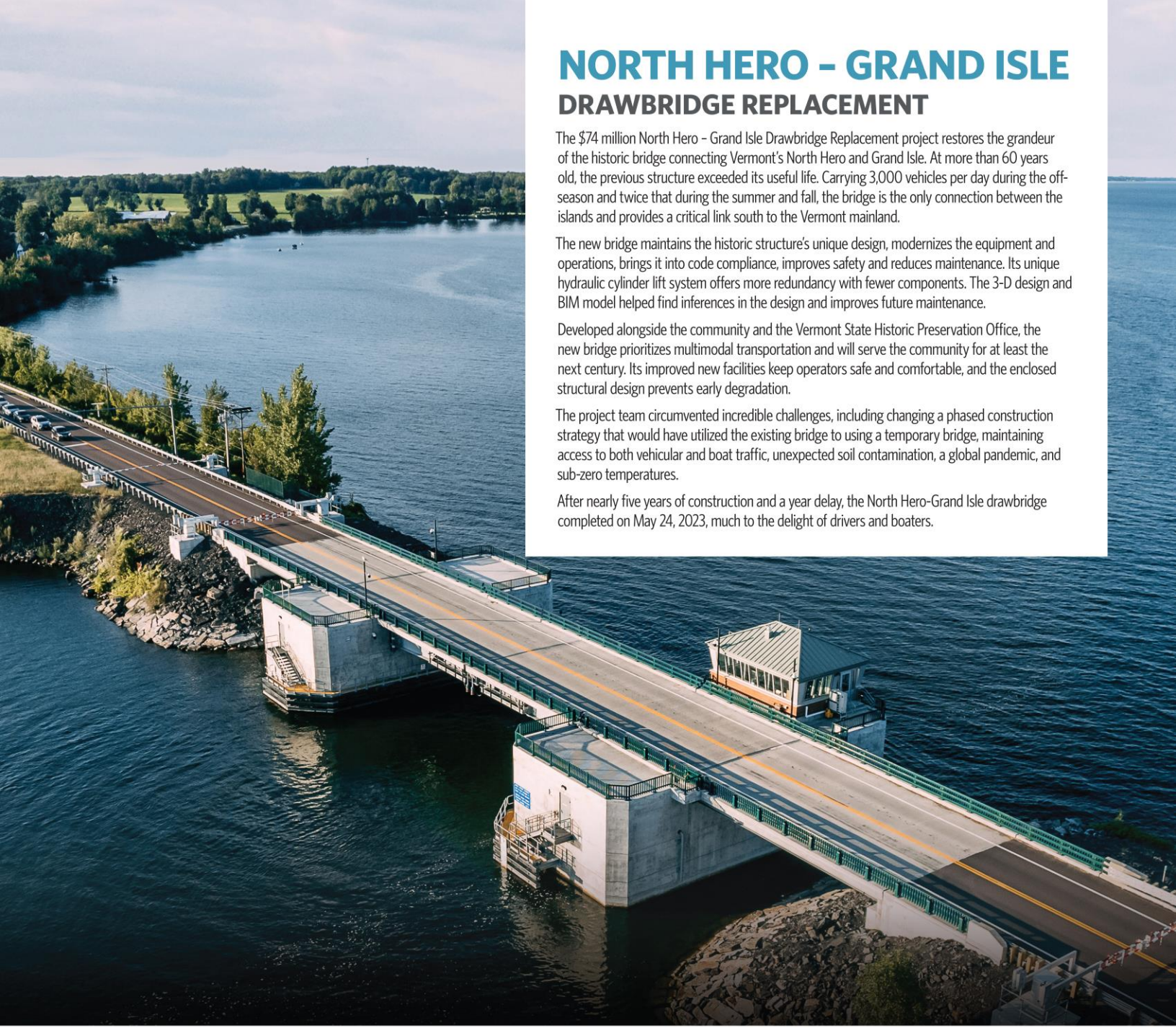
The project balances multimodal transportation and integrates "complete street" platforms and sets the stage for the next two BRT lines in Vancouver. The team leveraged lessons learned from previous projects and let site conditions, public feedback and community outreach influence the design, creating a user-friendly, accessible corridor destined for increased development. They circumvented a global pandemic and phased construction to reduce detrimental impacts to the city.

Complete under budget and ahead of schedule, the project will drive rapid community growth for the next decade.

Project: Mill Plain Bus Rapid Transit | Vancouver, Washington

Entrant: HDR | Portland, Oregon

Client: Clark County Public Transit Benefit Area Authority (C-TRAN) | Vancouver, Washington



NORTH HERO – GRAND ISLE

DRAWBRIDGE REPLACEMENT

The $74 million North Hero – Grand Isle Drawbridge Replacement project restores the grandeur of the historic bridge connecting Vermont's North Hero and Grand Isle. At more than 60 years old, the previous structure exceeded its useful life. Carrying 3,000 vehicles per day during the off-season and twice that during the summer and fall, the bridge is the only connection between the islands and provides a critical link south to the Vermont mainland.

The new bridge maintains the historic structure's unique design, modernizes the equipment and operations, brings it into code compliance, improves safety and reduces maintenance. Its unique hydraulic cylinder lift system offers more redundancy with fewer components. The 3-D design and BIM model helped find inferences in the design and improves future maintenance.

Developed alongside the community and the Vermont State Historic Preservation Office, the new bridge prioritizes multimodal transportation and will serve the community for at least the next century. Its improved new facilities keep operators safe and comfortable, and the enclosed structural design prevents early degradation.

The project team circumvented incredible challenges, including changing a phased construction strategy that would have utilized the existing bridge to using a temporary bridge, maintaining access to both vehicular and boat traffic, unexpected soil contamination, a global pandemic, and sub-zero temperatures.

After nearly five years of construction and a year delay, the North Hero-Grand Isle drawbridge completed on May 24, 2023, much to the delight of drivers and boaters.

Title: North Hero – Grand Isle Drawbridge Replacement | North Hero to Grand Isle, Vermont
Client: Vermont Agency of Transportation | Barre, Vermont
Entrant: HDR | Manchester, New Hampshire

ACEC Engineering Excellence Awards

HDR

NYSCC REIMAGINE THE CANALS FALL FISHING PROGRAM AND SEQRA REVIEW

In western New York, tributaries of Lake Ontario and the Erie Canal create a world-class fishery, as massive, diverse populations of Chinook and Coho salmon, brown trout and rainbow trout surge upstream from Lake Ontario, completing an epic journey to their natal spawning grounds. Tens of thousands of local, national and international anglers travel for prized fish.

Each fall, the New York Power Authority/New York State Canal Corps (NYPA) drains the Erie Canal for annual maintenance. Upstream trout and salmon movement can be stimulated by surges from rainstorms or water releases from the canal.

Past canal water releases were short, leading to undesirable and unpredictable fishing conditions that limit anglers' ability to plan trips. Under lower flow and drought conditions, the fish and anglers become concentrated in isolated pool areas. In 2020, NYPA's "Reimagine the Canals," in collaboration with the New York State Department of Environmental Conservation (NYSDEC) and engaged fisheries stakeholders, launched an innovated Water Release and Fall Fisheries Enhancement Program. HDR was hired to study the effectiveness of scheduled "natural" high-flow releases from the canal triggering fish to run upstream, resulting in enhanced recreational fishing and spurring ecotourism in western New York.

The pilot program ran for two fall seasons, including complex scientific data collection in both the canal and tributaries, complemented with angler fishing surveys and stakeholder interviews. The pilot program was deemed a success and HDR was requested to prepare a State Environmental Quality Review (SEQR) review document to authorize an official, annual program.

Title: NYSCC Reimagine the Canals Fall Fishing Program and SEQRA Review | Niagara, Orleans and Monroe Counties, New York

Client: New York State Canal Corporation | Syracuse, New York

Entrant: New York

ACEC ENGINEERING Excellence AWARDS

Omaha RiverFront Revitalization

For nearly 60 years, three parks in downtown Omaha emphasized leisure and open space. Unfortunately, their disjointed nature, poor access, lack of amenities, and inadequate recreational opportunities left them minimally used.

The RiverFront Revitalization Project transformed these underutilized parks into a unified, amenity-rich open space, anchored by the Missouri River creating a 72-acre, one-of-a-kind park that has unified the Omaha area.

The new design raised a former sunken lagoon; added spacious lawns and performance pavilions, play areas, a skate ribbon, an urban beach, public art and other amenities; improved multimodal transportation; expanded the trail network; reconnected entertainment districts; and restored the park's character. With a unique governance structure, the project was developed by and for the community with flexibility to adapt programming to future needs.

The project is Nebraska's first Envision project, verified Platinum. The team's environmental efforts reduced water use, created and repurposed topsoil, improved habitats, and protected cultural resources. At the same time, it's spurring an economic resurgence across downtown Omaha. Since its planning, more than $500 million in projects have been planned or announced.

The project overcame seemingly insurmountable odds - centuries of buried infrastructure, built atop a superfund site and alongside North America's longest river, more than 75 historic properties located nearby, a global pandemic, and dozens of projects stakeholders.

Completed on schedule and within budget, The RiverFront is a testament to what unique engineering solutions can accomplish. It is a beacon of light for a community and an exemplar for the future of civic design.

Title: Omaha RiverFront Revitalization | Omaha, Nebraska
Client/Owner: MECA Tri-Park Complex, LLC | Omaha, Nebraska
Entrant: HDR | Omaha, Nebraska

ACEC ENGINEERING Excellence AWARDS

Redlands Passenger Rail Project

San Bernardino County Transportation Authority's (SBCTA) $376 million Redlands Passenger Rail/Arrow Project reverses the decades-long mass transit downtrend with 9-mile service between San Bernardino and Redlands. The restored transit method provides thousands of economically disadvantaged residents in San Bernardino County an environmentally sustainable mode of transportation that's safe, easy to use, and offers reliable access to employment, education and healthcare centers, as well as retail, entertainment and cultural enrichment opportunities.

With the county's population expected to grow 25% over the next 20 years, the project eases demand for additional transportation services while reducing greenhouse gas emissions, providing cost-effective, efficient, and sustainable travel. The project offers an alternative travel option for communities along the Redlands Corridor in a way that improves transit mobility, travel times and safety while minimizing environmental impacts. It also extends centralized traffic control (CTC) and positive train control (PTC) coverage to the corridor, which, when combined with new passing and storage sidings, will expand train capacity.

Trains will operate every 30 minutes during peak commute times, and every 60 minutes during off-peak hours. The project included four new stations, replaced and retrofitted bridges and track, safety improvements at 21 at-grade crossings and closing 3 others, and implementation of an FRA-approved "quiet zone" along the 9-mile corridor where trains are not required to routinely sound their horns when approaching the grade crossings. The west end of the project connects to the San Bernardino Transit Center, which connects to other modes of transportation, including cars, buses, and bikes.

Title: Redlands Passenger Rail Project | San Bernardino to Redlands, California
Client/Owner: SBCTA | San Bernardino, California
Entrant: HDR | Riverside, California

ACEC Engineering Excellence Awards

HDR

South Sioux City Wastewater Treatment Facility

The City of South Sioux City has a large industrial sector, and the City needed to identify a new way of treating wastewater that provides necessary infrastructure, self-reliance and continued economic viability. The need for a new treatment plant stemmed from the fact that Sioux City, Iowa, refused to accept high-strength industrial waste from South Sioux City Industries. HDR and the City completed a feasibility study to determine treatment options for a new direct discharge plant that serves industrial and potential domestic wastewater sources from the City. It was determined that the best alternative is covered anaerobic lagoons followed by Aerobic Granular Sludge (AGS), which is a novel treatment approach for high-strength industrial wastes and was the more economical option over other technologies. In addition to improved economics, the proposed technology was selected due to its compact footprint, energy efficiency, capacity for modular expansion to meet future growth, and nutrient removal potential. The 2-million-gallon-per-day facility provides additional treatment solutions to the industry and is the first of its kind of AGS in Nebraska. The facility is flexible and scalable, offering options for future nutrient removal, planned integration, and future industrial growth.

Project: South Sioux City Wastewater Treatment Facility | South Sioux City, Nebraska
Entrant: HDR | Omaha, Nebraska
Client: City of South Sioux City | South Sioux City, Nebraska

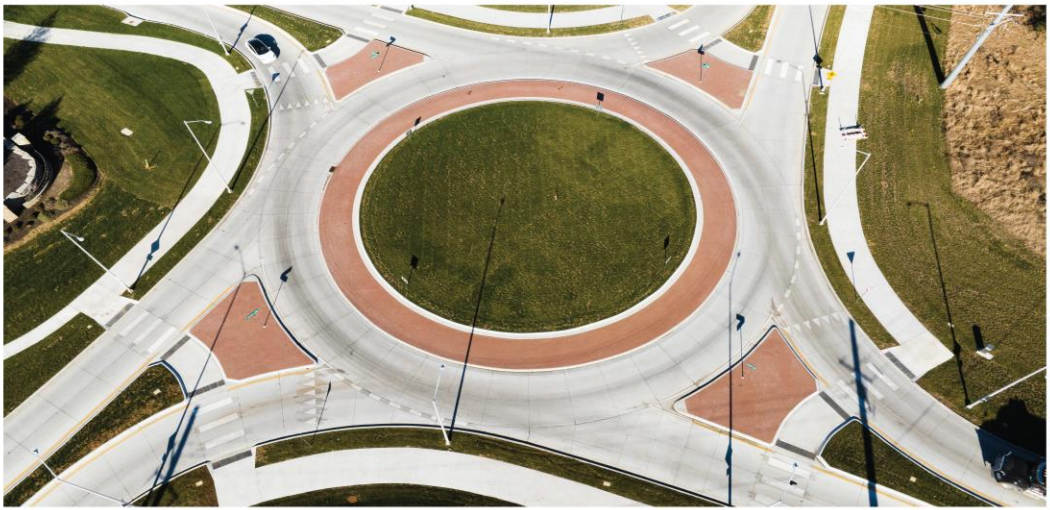
ACEC Engineering Excellence Awards

HDR

Switzer Road - 159th to 167th Street Improvements

ACEC
American Council of Engineering Companies

HDR



In 2019, the City of Overland Park embarked on improving its transportation system in the swiftly growing southern portion of the city. Identified for improvements were the Switzer Road and 167th Street corridor. Switzer Rd and 167th Street within the project area primarily is a main thoroughfare for residential commuters, area schools and parks and recreational destinations. . The continued growth of Overland Park to the south greatly contributed to the need for this project.

The transportation infrastructure enhancements required for this project were two-fold; to modernize the existing 2-lane segment of Switzer Road (159th Street to 167th Street) to city standards, and to improve capacity, safety, and pedestrian connectivity at the intersection of 167th Street and Switzer Road.

During 2019-2020, HDR assisted Overland Park in developing conceptual roundabout and thoroughfare layouts, and ultimately a new approach to modernizing existing thoroughfares was selected. The concept selected was the offset 2-lane upgraded typical section with a single lane roundabout. This concept was designed to be easily upgraded to a typical 4-lane arterial with minimal impacts or 'tear out' to the roadway constructed in 2022-23. .

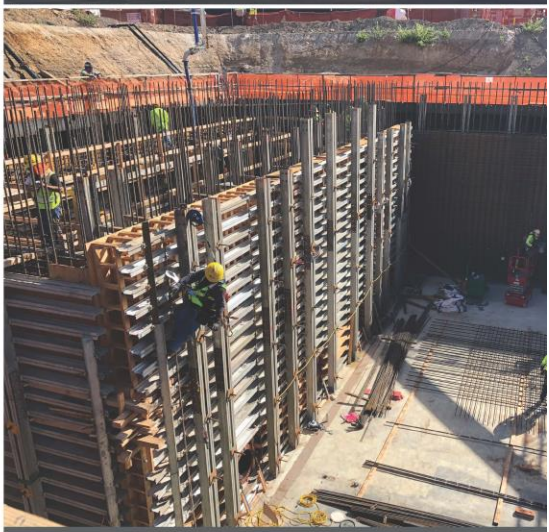
During 2022, the roundabout, Switzer Road and the RCB plans were completed. In the spring of 2022, the project was advertised for construction, and the start of construction began in June 2022. The project was constructed in 2 phases, with the first phase (roundabout) substantially completed and opened to traffic by December 2022. The second phase of the project (167th Street to 159th Street) began in early 2023 and was substantially completed in October 2023, and opened to traffic.

Title:
Switzer Road - 159th to 167th Street Improvements

Client/Owner:
City of Overland Park, Kansas

Entrant:
HDR | Kansas City, Missouri

SY-001 Wastewater Pump Station



Fast-tracked replacement of critical aging wastewater pump station (WWPS) minimizes significant public health and environmental impacts

The SY-001 WWPS at Joint Base Pearl Harbor-Hickam is the Navy's most critical WWPS in Hawaii and among the largest in Hawaii. Constructed in 1971, the original WWPS experienced accelerated deterioration due to harsh environmental operating conditions. A new $67 million, three-story WWPS with a pumping capacity of 24 million gallons per day was successfully designed and constructed within stringent budget and time constraints.

The project design team, including client staff from NAVFAC Hawaii, completed the preparation of bid documents in 13 months. With exceptional collaboration between the Navy, consultants and contractor, the new WWPS was constructed in just 2.3 years and with no major delays and cost increases. Operation of the new pumps began four months ahead of the contract deadline.

The project team overcame significant challenges, including severe site space constraints, extensive and difficult excavation work 40 feet below ground and 25 feet below the water table, and significant soil contamination issues. A carefully planned flow bypassing plan allowed continuous operation of the existing WWPS throughout construction.

The new WWPS utilizes four state-of-the-art, 385-horsepower, horizontal dry-pit submersible pumps to meet challenging, variable operating requirements. The clog-resistant pumps have special "first-of-their-kind" rapid pump access features to quickly clear pump clogging, now a worldwide pandemic aggravated problem from increased use of "flushable" wipes.

Environmental and public health benefits include significantly reduced risk of sewage overflows into the historic waters of Pearl Harbor.

HDR

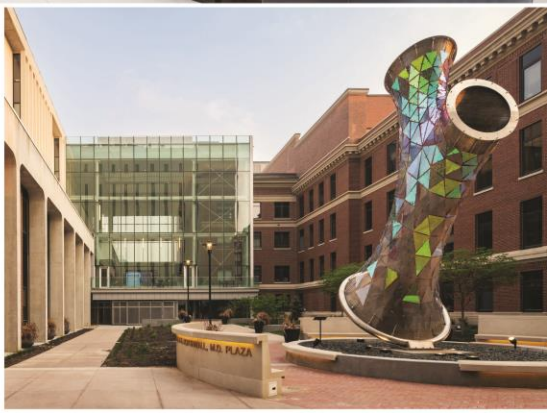
ACEC ENGINEERING Excellence AWARDS

Title: New SY-001 Wastewater Pump Station, Joint Base Pearl Harbor-Hickam, Hawaii

Client/Owner: NAVFAC Hawaii | Honolulu, Hawaii

Entrant: HDR | Honolulu, Hawaii

Wigton Heritage Center



Juxtaposed between the University of Nebraska Medical Center's (UNMC) Original Hospital Tower and Wittson Hall, the Wigton Heritage Center serves as a catalyst for understanding, experiencing, and appreciating UNMC's heritage and future. The steel structure and glass envelope encapsulate the space between the two existing buildings to provide a new atrium. With a limited site, several below-grade obstructions, and varying existing façade conditions, the design and construction of this facility is a testament to teamwork and problem-solving, providing UNMC a space for study, gatherings, lectures, and delegations of visitors to experience the exciting developments of UNMC's research.

Title: Wigton Heritage Center | Omaha, Nebraska
Client/Owner: University of Nebraska Medical Center | Omaha, Nebraska
Entrant: HDR | Omaha, Nebraska

ACEC Engineering Excellence Awards

HDR

Plymouth Community Center

Plymouth, Minnesota

Plymouth Community Center expansion and renovation located in Plymouth, Minnesota transformed recreation for the city. Through creative structural system selection/analysis and close coordination between disciplines, the structural design seamlessly integrates the expansion with the existing facility. An ingenious ribbon design ties the graceful form of the addition to the antiquated (but functional) structure of the existing center. Battened precast panels placed on architecturally battened CIP concrete retaining walls laterally support the fitness wing. Shear wall lengths were optimized to maximize connectedness of gymnasium and upper level of fitness wing. Running track cantilevers beyond fitness rooms then runs along gymnasium length. Finite element analysis models were used to determine vibrations from fitness activities at the suspended track locations. Precise detailing allowed the ribbon feature to connect the exterior of the existing building without sacrificing the sound existing structure already in place. Grade beams cantilever out to the existing building at the interface of new and old to create a spacious entry experience and the vertex of the three wings. Wings were designed and built in phases to allow the center to remain open for a continual place to play and gather during of construction.

Photo 1: Glowing cantilever track wraps fitness wing. Photovoltaic array catches last rays of light at sunset.

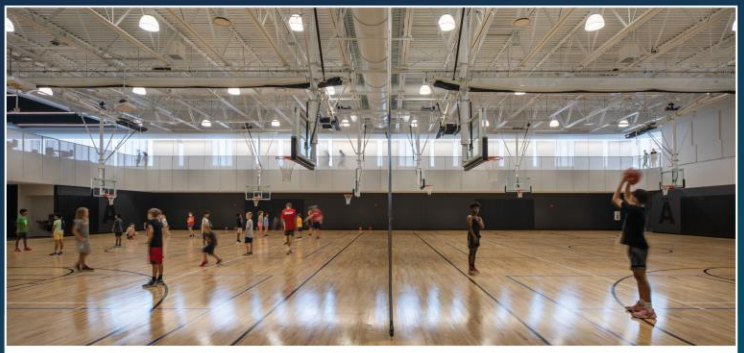


Photo 2: Two-court gymnasium open on upper level to running track. Precast insulated concrete shear walls provide lateral support for the fitness wing.

Photo 4: Structural steel of fitness wing and indoor play. Roof supported from posts at ends of cantilever track. Indoor play volume raised to house giant slide.

Photo 5: Creek Center campus overview showing how site will be transformed with addition of new wings.

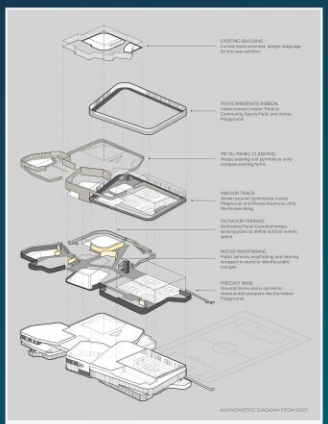


Photo 3: Layers of materials integrated with the structural system seamlessly tie two new wings into the existing building.

Photo 6: Indoor play space with skylights overhead serves as community builder and provides interactive play space for youth.

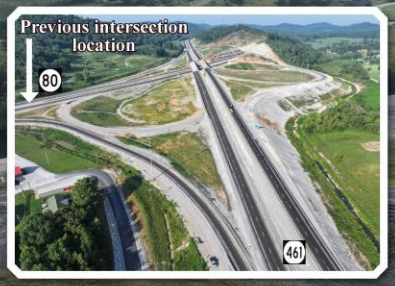
Client Name and Location: Kari Hemp, City of Plymouth
Entering Firm Name and Location: HGA, Minneapolis Office

HGA

ACEC Engineering Excellence Awards

KY 461 & KY 80 - Pulaski County, KY

At the Crossroads of Safety and Economic Development



The Project:

KYTC identified the need to improve safety and mobility through the highly traveled KY 461 & KY 80 corridor while accommodating the future Somerset Northern Bypass. Two grade-separated interchanges replaced two at-grade intersections and three miles of KY 461 were expanded to five lanes.

The Challenge:

BUILD Grant funding accelerated project delivery. Continuous coordination, thoughtful design, and an experienced project team delivered this design-bid-build project without the risk that comes from some alternative delivery methods, but in the same compressed timeframe.

The Solution:

HMB developed a detailed project schedule for all phases. Constant communication and collaboration between disciplines focused on timely execution of critical path activities and empowered our team to provide innovative solutions that reduced cost and maximized efficiency.

ACEC
American Council of Engineering Companies

Client/Owner:
Kentucky Transportation Cabinet
Frankfort, KY

TEAM KENTUCKY
TRANSPORTATION CABINET

Entering Firm:
HMB Professional Engineers
Frankfort, KY

HMB
PROFESSIONAL ENGINEERS

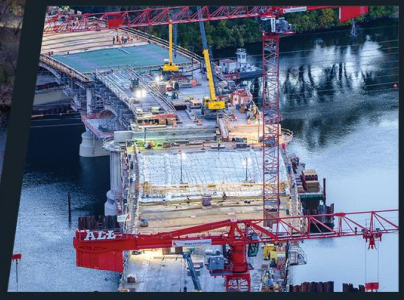
MODERN INGENUITY DELIVERS HISTORIC GLORY

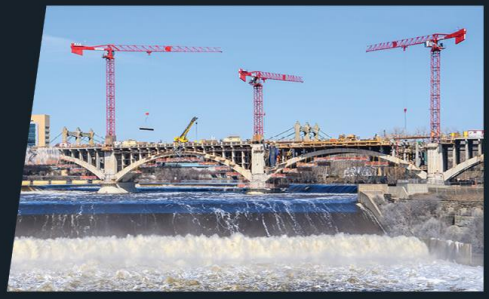
3RD AVENUE BRIDGE REHABILITATION (CMGC DELIVERY)

Minneapolis, MN

CLIENT: Minnesota Department of Transportation (MnDOT)

FIRM: HNTB Corporation | Minneapolis, MN





The 3rd Avenue Bridge Rehabilitation (CMGC delivery) was a multi-phase design, top-down construction project restoring the first Melan truss-concrete arch bridge built in Minneapolis over the Mississippi River. HNTB led the multidisciplinary team responsible for the project to restore the bridge originally opened June 13, 1918. The HNTB team worked closely with MnDOT to reintroduce historic aesthetics and extend the service life of the treasured infrastructure.

The bridge snakes across the Mississippi River with piers in a multi-tiered dam 500 feet upstream from the St. Anthony Falls. A reverse "S" curve was implemented to avoid failures in the limestone bedrock. These are just a few elements complicating geometry and staging for the rehabilitation work. Each discovered challenge provided an opportunity for solutions using new technology, successfully testing products beyond traditional capacities and using equipment in uncommon ways to carefully return the bridge to its original glory.

ACEC Engineering Excellence Awards

HNTB

Haverhill Bridge Replacement

DESIGN-BUILD

The SPS-HNTB Team worked together to successfully deliver the Massachusetts Department of Transportation's Haverhill Bridge Replacement Design-Build (DB). With both northbound and southbound bridges considered structurally deficient, a complete replacement of both was required to provide safe, reliable and improved traffic for the surrounding communities. **Through innovative techniques, a collaborative approach to solving challenges and close coordination with the client and other stakeholders**, the team brought safety, sustainability and a quality final product to MassDOT and the traveling public.

SPS was responsible for managing and delivering all aspects of the project, working closely with the design engineer, HNTB, from project sketch plans through final design. Both firms brought their local expertise and to this complex, challenging project, including innovative approaches to managing traffic, overcoming COVID-19 pandemic limitations, and leveraging technology to maintain consistency and provide flexibility to reduce possible delays.

The team reduced traffic impacts to the traveling public throughout the project, never closing lanes of traffic during construction. This involved holding public information meetings to inform surrounding communities on project details, schedule and impacts. By leveraging recycled construction materials, the team achieved sustainable construction practices and allowed local businesses to remain open, unaffected by road closures that would have had adverse economic impacts on the local community.

Through collaboration and innovation, **the SPS-HNTB Team set a new standard for DB projects in Massachusetts.**

Structural steel erection work, flying splice, three crane pick with a fourth crane to install cross bracing. (Two Ea 275 Ton, One Ea 150 Ton, One Ea 70 ton)

Structural steel installation from a 275-ton crane on a barge.

Trestle access provided over the water, including concrete column placement.

Northbound pier demolition work from barges.

Pier cap reinforcing being lowered into pier cap form following the qualitycontrol check on the ground.

massDOT Massachusetts Department of Transportation Highway Division

Client: Massachusetts Department of Transportation, Boston, MA
Firms: HNTB Corporation, Boston, MA; SPS New England, Inc., Salisbury, MA

HNTB SPS

ACEC Engineering Excellence Awards

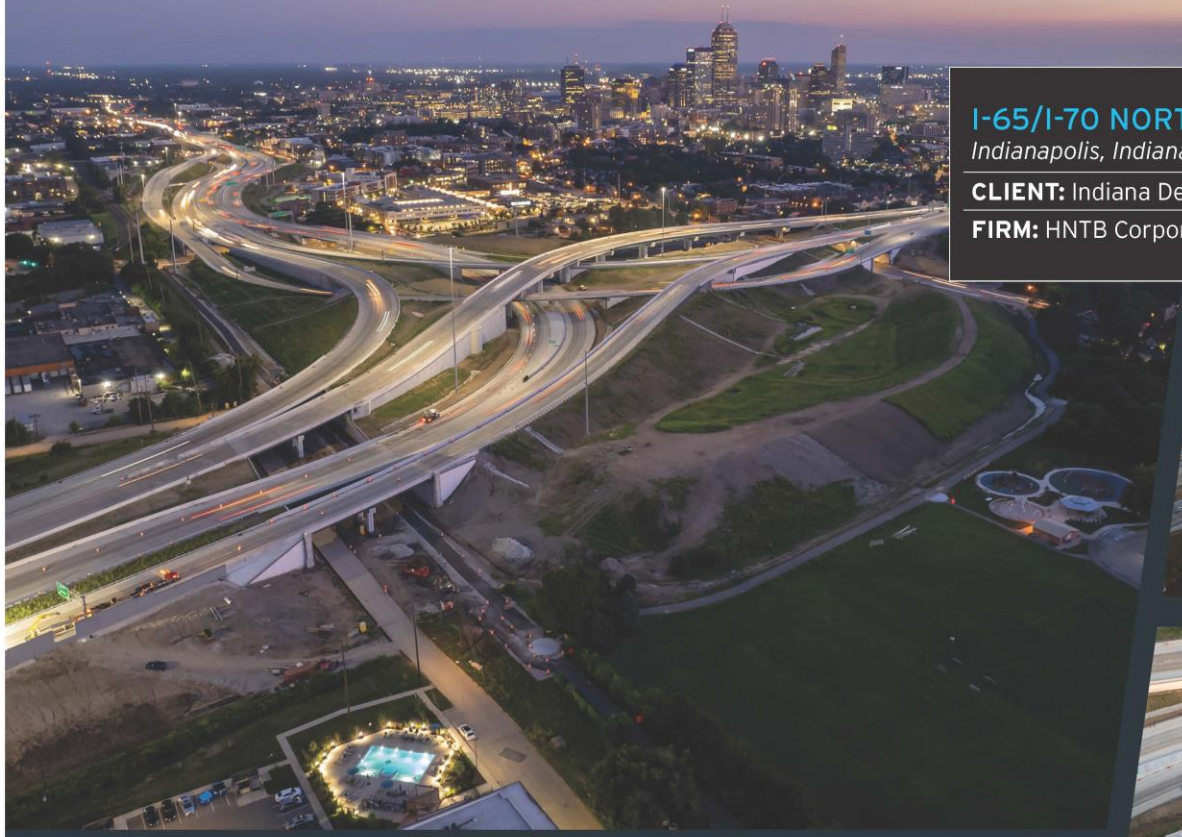
CROSSROADS OF AMERICA

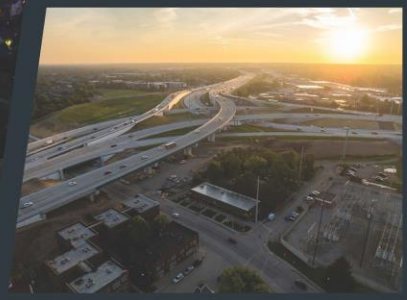
I-65/I-70 NORTH SPLIT PROJECT

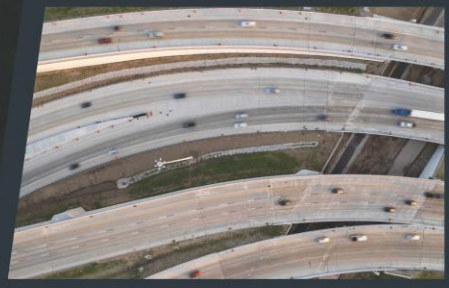
Indianapolis, Indiana

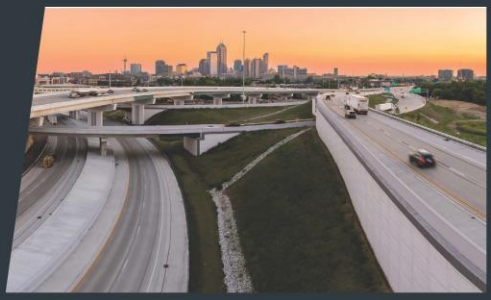
CLIENT: Indiana Department of Transportation

FIRM: HNTB Corporation I Indianapolis, Indiana









Built nearly 50 years ago and located in the heart of downtown Indianapolis, the North Split is the most heavily traveled interchange in Central Indiana, serving 220,000 motorists each day. As part of the "Crossroads of America," the north-south I-65 and east-west I-70 interstate highways are nationally significant corridors. The North Split project encompassed the complete replacement of the I-65/I-70 North Split Interchange, including the construction of 50 new bridges and six miles of interstate highway. The project involved the reconfiguration of several critical entrance and exit ramps, as well as interchange operations improvements. In addition to significant aesthetic improvements, the redesigned interchange reduces congestion and mitigates crashes, providing a safer, more free-flowing travel experience. Completed in a condensed two-year construction schedule, the North Split project transforms travel in Central Indiana.

ACEC Engineering Excellence Awards

HNTB

A SAFER SHAWNEE

MONTICELLO ROAD IMPROVEMENTS PHASES 1 & 2

Shawnee, Kansas

Client: City of Shawnee, Kansas

Firm: HNTB Corporation I Overland Park, Kansas

The $14.8M Monticello Road Improvements Phases 1 & 2 project boasts a newly aligned roadway with increased safety, access and capacity for motorists, pedestrians and bicyclists in southwest Shawnee, Kansas. The project included a new roundabout at the intersection of 75th Street and the realigned Monticello Road, new curbs and gutters, storm sewer, culverts, sidewalks and trails, 3 miles of bike lanes, street lighting, and retaining walls.

This project has made a tremendous impact on the community and will continue to encourage current and future development and growth in southwest Shawnee and achieves the City's Circulation Plan of developing Monticello Road from Shawnee Mission Parkway to 83rd Street as a continuous Minor Arterial Road.

ACEC Engineering Excellence Awards

HNTB

TRANSFORMING TRANSPORTATION IN MAINE

PORTLAND AREA WIDENING & SAFETY IMPROVEMENTS

Portland, Maine

CLIENT: Maine Turnpike Authority

FIRM: HNTB Corporation I South Portland, Maine

After nearly a decade of meticulous planning, design and construction the Maine Turnpike Authority's $205 million Portland Area Widening & Safety Improvements program has transformed travel in the Portland, Maine area.

Maine's largest transportation project in decades, Portland Area Widening reduces congestion, enhances mobility, improves safety and accommodates future growth for the region. The project opened to the public in Fall of 2023 and included six centerline miles of highway widening with associated drainage, median reconstruction with barrier and safety improvements. All told, the team oversaw the design and construction of:

- 16 bridges
- 5 interchanges
- 4 large culvert structures
- 3 electric transmission lines
- 2 toll plazas
- 1 eight-bay vehicle storage garage

The project greatly improves mobility in Maine, standing as a testament to dedication, innovation and excellence in infrastructure engineering.

ACEC Engineering Excellence Awards

HNTB

MAINE TURNPIKE

CONNECTING THE COMMUNITY

WIS 50 RECONSTRUCTION AND MODERNIZATION

City of Kenosha and Village of Pleasant Prairie, WI

CLIENT: Wisconsin Department of Transportation (WisDOT) | Waukesha, WI

FIRM: HNTB Corporation | Milwaukee, WI

The WIS 50 Reconstruction and Modernization project is a 4.7 mile ($92 million) stretch of state highway running west from I-94 between the City of Kenosha and Village of Pleasant Prairie in Kenosha County, Wisconsin. The highway had minimal safe and equitable infrastructure dedicated to multi-modal transportation, failing to support the growing community it connected. Reconstructing WIS 50 helped position the corridor as a future example of safe and equitable multi-modal transportation, strengthening and integrating the connection with surrounding hospitals, schools and businesses. The project comprised the reconstruction and expansion of a four-lane rural road into a six-lane urban state highway, making it one of the largest urban roadway construction projects undertaken by WisDOT. Successful delivery by WisDOT and project team required rigorous collaboration and constant communication between various stakeholders who weighed in throughout the design process. The reconstructed WIS 50 is a safer, more efficient and equitable for the traveling public, providing a contemporary thoroughfare for the surrounding communities in Kenosha County.

ACEC Engineering Excellence Awards

Wisconsin Department of Transportation

HNTB

US-89;
FARMINGTON TO I-84
PROGRESSIVE DESIGN-BUILD

The largest constructed UDOT undertaking in more than a decade and Utah's first-ever Progressive Design-Build (PDB) project, US-89; Farmington to I-84 was a landmark effort that introduced a new and innovative way of delivering construction projects in Utah.

This heavily traveled commuter corridor north of Salt Lake City supports nearly 40,000 vehicles each day and has long been an area of high traffic congestion and frequent accidents at the signalized intersections.

With safety as the driving force, crews widened a 9-mile stretch of highway to create a six-lane, grade-separated expressway featuring four interchanges with on- and off- ramps.

The project's scale necessitated more than 150 miles of utility adjustments, along with hundreds of ROW acquisitions and relocations. Six bridges were installed, numerous road connections were modified, and pedestrian and bike trail access points were added.

This successful project demonstrated the value of stakeholder input, which changed the design to take the highway under the cross streets at each of the six locations. It produced a new and contiguous active transportation corridor for pedestrians and bikers, parallel to US-89. Finally, it serves as a model for future PDB efforts, whereby teamwork, flexibility, and innovation can aid in elevating the standard of engineering and construction in Utah and nationwide.

Project:
US-89; Farmington to I-84 Progressive Design-Build

Category: H

Location: Davis Co., UT

Owner:
Utah Department of Transportation
Salt Lake City, UT

Submitting Firm:
Horrocks, Pleasant Grove, UT

- **Final Design:**
  - Specifications
  - Geotechnical/Pavement
  - Roadway
  - Drainage
  - Structures
  - Bike and Pedestrian Facilities
  - Right-of-Way (ROW) Documents/ Acquisitions
  - Utilities and Agreements
  - Subsurface Utility Engineering (SUE)
  - Survey/Topographic Mapping
  - GIS
  - Contract Documents
- **Construction Management and Inspection**
- **Environmental Analyses/Documentation**
- **Intelligent Transportation Systems (ITS) and Telecommunications**
- **Public Engagement**
- **Traffic Operations**

ACEC
American Council of Engineering Companies
ACEC Engineering Excellence Awards

EAST MILTON SQUARE RECONSTRUCTION

Milton, Massachusetts

Howard Stein Hudson (HSH) partnered with the Town of Milton and the Massachusetts Department of Transportation (MassDOT) to provide design and engineering services for the complete reconstruction of East Milton Square. This project reconstructed and revitalized a bustling business district and park space sitting on top of bridge deck over the southeast expressway (I-93). This complex project includes adaptive signal technology, complete streets improvements, structural repairs to the bridge deck, robust community engagement, roadway design, local and regional traffic management, construction and activation of a new park, plantings, irrigation, landscape features, and traffic control devices – all installed with minimal depth for construction on top of a bridge deck. East Milton Square is an important destination for Milton residents and the neighboring municipalities. The revitalized Manning Park unifies this popular business district. This transportation and parkland project creates a safer, more enjoyable and inviting urban environment, improved multimodal connections, and forms a visually attractive and flexible park space to serve as a resource for events and community engagement.

The construction of the Southeast Expressway in the 1950's bisected this part of East Milton, MA.

Minimal cover between the top of the deck and the surface grade added to the project's complexity.

Adams St during construction; it is now home to a Complete Streets corridor and hardscape area.

Adaptive signal technology helps improve traffic congestion on Granite Avenue.

ACEC ENGINEERING Excellence AWARDS

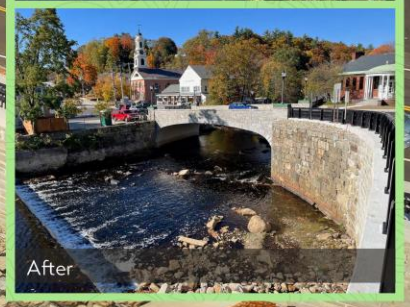
Firm: Howard Stein Hudson, Boston, MA

Client: Town of Milton, MA & MassDOT

MAIN STREET BRIDGE & US 202 RECONSTRUCTION

Peterborough, New Hampshire & New Hampshire Department of Transportation

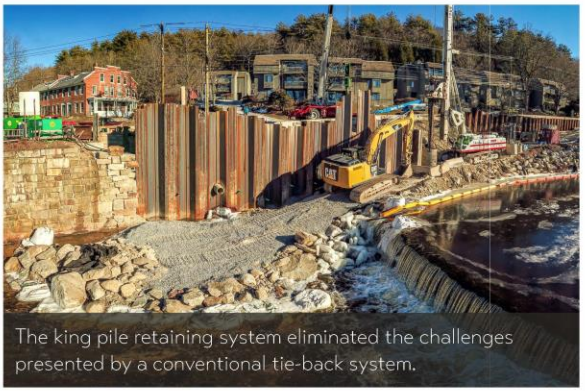

Before


After

Replacement of the historic, structurally-deficient, Main Street Bridge over the Contoocook River in downtown Peterborough was the catalyst for this comprehensive, complex transportation project costing over $16 million and incorporating five distinct elements – bridge replacement, roadway widening, canal slip lining, partial dam reconstruction, and retaining wall construction and stabilization.


The pedestrian bridge (upper left) served as both a vital link to the downtown area and an "observation deck."


Plywood being placed over arching EFCO falsework to achieve the shape of the original structure.


The king pile retaining system eliminated the challenges presented by a conventional tie-back system.

SUSTAINABILITY

Stone reuse was a major element, from the reinstallation of the original bridge facing, to the use of salvaged granite curb for the king pile wall façade.

PUBLIC AWARENESS

Led or participated in over 50 public meetings in the 10 years of planning and design efforts leading up to construction.

INNOVATIVE APPLICATIONS

Maintaining the historic character of the bridge and retaining walls required modernizing existing features such as in-situ boulder wall stabilization with discreet micro piles and grout injection, design of a high-strength concrete core within the stone bridge parapet walls to withstand current vehicular impact loading standards, and a cantilevered rail support slab to keep crash forces independent of the retaining walls.

COMPLEXITY

Outside of the funding sources, the bridge itself is a very complex structure being vertically inclined, on a skew, with a roadway centerline off-center from the bridge geometry, with concrete thickness changing constantly in every direction.

SUCCESS

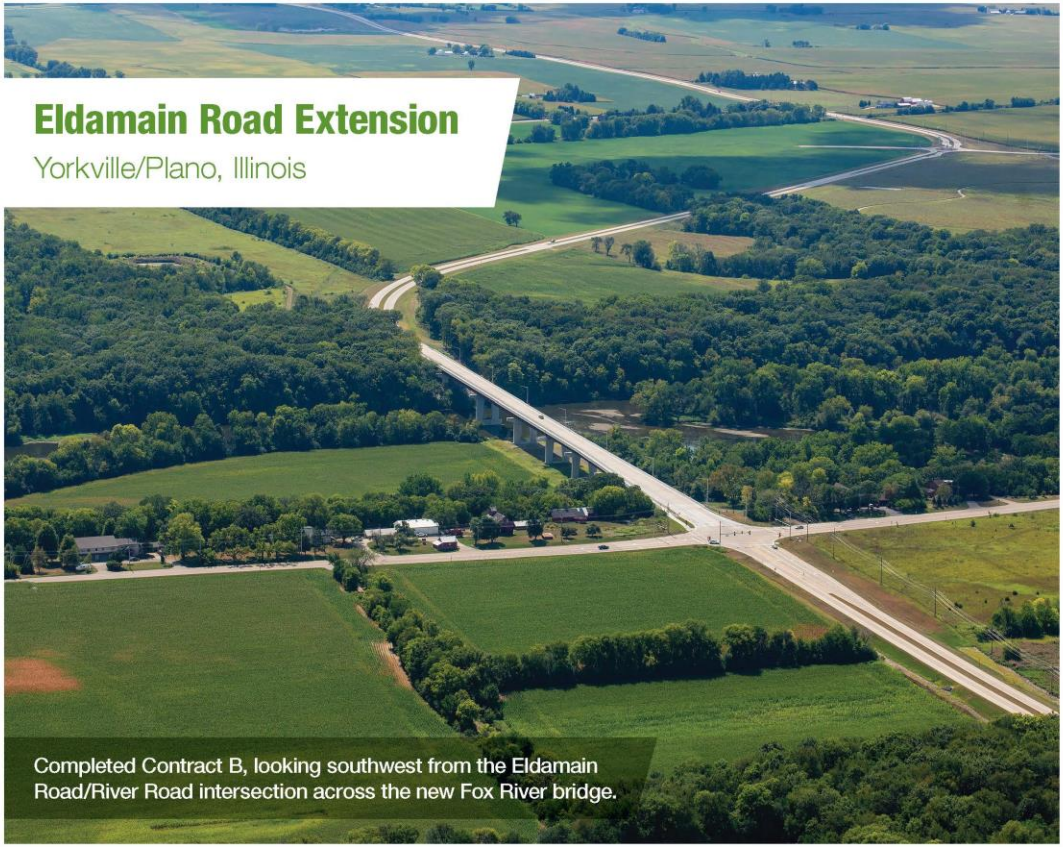
The project successfully replaced the historically sensitive bridge with a geometrically and aesthetically in-kind structure, updated to current design standards, in a timely manner to accommodate the community's multi-modal needs.

HOYLE TANNER

ACEC ENGINEERING Excellence AWARDS

Eldamain Road Extension

Yorkville/Plano, Illinois



Completed Contract B, looking southwest from the Eldamain Road/River Road intersection across the new Fox River bridge.

Completed Contract A, looking southeast from the overall project's northern terminus at the Eldamain Road/US 34 intersection to the Eldamain Road/River Road intersection with a temporary stub to the south. Contract B subsequently extended the pavement south of River Road, over the Fox River.

Roundabout at the realigned Eldamain Road/Fox Road (West) intersection, looking south.

Completed Fox River bridge, looking north towards the Eldamain Road/River Road intersection.

ACEC ENGINEERING Excellence AWARDS

Kendall County's vision of a new Fox River crossing west of IL 47 began in 1991. Growing levels of traffic congestion on the limited number of existing Fox River bridges, especially IL 47 in Yorkville, demonstrated the number and locations of those bridges was insufficient. After 32 years of numerous studies, extensive engineering, and various funding missions, Kendall County's vision became a reality.

On May 31, 2023, Kendall County opened the bridge that carries the new Eldamain Road extension over the Fox River, officially completing the long-awaited project. The overall extension of Eldamain Road (CH 7) stretches from US 34 north of the Fox River to High Point Road (south of IL 71), a distance of nearly five miles. The Fox River bridge was the final segment to be opened to traffic.

The extension of Eldamain Road from US 34 to High Point Road cost over $50 million, including design, construction, and land acquisition. The project was a monumental undertaking and success for a local agency like Kendall County.

The new and improved multi-modal transportation corridor has resulted in more efficient travel for area residents and commuters, improved mobility for commercial traffic, and enhanced safety for all users. It will provide many new development opportunities for the communities of Yorkville and Plano in the years to come.

Kendall County Highway Department | Yorkville, IL

HR Green, Inc. | Aurora, IL

HRGreen.

KENDALL COUNTY HIGHWAY DEPARTMENT

Route 94/Route 364/Muegge Road Interchange
Project Management Consultant (PMC)

City of St. Charles, Missouri

Westbound ramp was heavily wooded, hilly, and had several drainage pathways.

Paving of Ramp 10 westbound under the bridge carrying traffic eastbound.

Final Route 94 included a mix of pavement widening, mill and overlay, and repurposing concrete shoulders.

Presentation at 2022 TEAM conference to share PMC process with other districts withing MoDOT.

HRGreen

MoDOT

ACEC Engineering Excellence Awards

HR Green pioneered a first-of-its-kind concept in which a consultant worked in-house with the Missouri Department of Transportation (MoDOT). The in-house role, known as Project Management Consultant (PMC), entails both designing and managing the project from the beginning through construction.

The construction of the Route 94/Route 364/Muegge Road Interchange was the culmination of years of diligent planning, multiple grant/funding submittals, coordination between city, county, and state agencies, and the tireless efforts of the design and construction team to manage the process – resulting in a completed corridor that met the project's goals of improved capacity, mobility, safety, and maintenance of the system.

While the project solved the primary infrastructure challenges, a secondary benefactor of the project was MoDOT. The St. Louis District was able to maintain their existing infrastructure and enhance it with monetary contributions from their city and county partners, but also demonstrate the PMC delivery method as a viable and efficient way to supplement their internal staff by using consultants to deliver projects on their Statewide Transportation improvement Program (STIP). The success of this initial PMC contract has resulted in MoDOT expanding the use for two other locations where like projects along similar corridors have been bundled together under the PMC model in the St. Louis District.

Missouri Department of Transportation, St. Louis District | Chesterfield, MO

HR Green, Inc. | St. Louis, MO

Water Resource Recovery Facility (WRRF)

Indianola, IA

Peak Flow Treatment Filters -
2 Trains of 5 MGD Each

Aerobic Digester Foundation Concrete Pour.

Drone view of the Secondary Treatment System Facilities at the Indianola WRRF.

Oxidation Ditch at Sunrise.

ACEC Engineering Excellence Awards

The City of Indianola's existing North Wastewater Treatment Facility (NWWTF) was unsuitable for additional nutrient removal requirements proposed by the Iowa Department of Natural Resources (IDNR). With the current facility beyond its useful life, aging infrastructure, and stricter regulations, replacing the existing plant was necessary.

The new Indianola Water Resource Recovery Facility (WRRF) is a $45.6M project for treating the City's municipal wastewater. The 360-acre site in Warren County, Iowa, exceeds all separation distances to any neighbors as required by IDNR regulations. The remaining portion of the site remains agricultural to protect the rural feel of the neighborhood.

The WRRF was designed with innovative technologies to meet the stringent nutrient removal requirements. The plant also uses Peak Flow Treatment as a new approach to handling the dilute peak flows during wet weather periods. Peak Flow Treatment also helps to avoid oversizing the secondary treatment system to handle normal wastewater flows.

The City's new WRRF uses some of the highest processing standards in Iowa and is widely considered a best-in-class example of environmental stewardship in water management. The new facility will meet existing needs and position the community extremely well for commercial, industrial, and residential growth for generations to come.

City of Indianola | Indianola, IA

HR Green, Inc. | Des Moines, IA

HRGreen

City of Indianola Est. 1849

DISTRICT GATEWAY IMPROVEMENTS

FUTURE VALUE TO ENGINEERING PROFESSION:
The District Gateway Improvements Project pioneers community engagement, regulatory efficiency, and advanced construction management. It sets a standard for transparency, accountability, and innovative technology application. Its success foretells a future where engineering seamlessly integrates community needs, environmental considerations, and cutting-edge practices.

COMPLEXITY:
Adapting to supply chain disruptions and preserving swallow bird nests showcased the project's resilience. Proactive communication and collaborative solutions mitigated delays, demonstrating adept handling of unforeseen challenges and emphasizing adaptability in intricate site conditions.

SUCCESSFUL FULFILLMENT OF CLIENT/OWNER NEEDS:
The project's close client consultation, construction management, and adherence to schedule showcased commitment to efficiency. Its cost-effectiveness, aligned with the budget estimate, exceeded client expectations, transforming neglected areas and positioning it as a model for community revitalization.

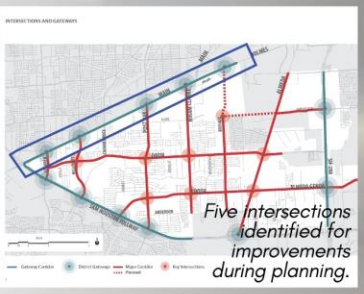
UNIQUE AND INNOVATIVE:
Innovations include extensive community engagement, burying conduits underground, and programmable lighting. These redefine engineering excellence by incorporating technology, fostering community identity, and transforming neglected spaces, culminating in an award-worthy project recognized by Texas Town & City magazine.

SOCIAL, ECONOMIC, AND SUSTAINABLE DEVELOPMENT CONSIDERATIONS:
Prioritizing public well-being, the project introduced sustainable LED lighting, reducing energy consumption and waste. Community relation strategies and revitalization efforts fostered pride and safety. The introduction of programmable lighting added aesthetic and economic value, celebrated through a community event. This holistic approach exemplifies social, economic, and sustainable development, marking a paradigm shift in engineering practices.

The gateways create a visual statement inspiring community spirit and pride throughout the district.

Homeless activity at the underpasses which was previously an issue has now been minimized.

Lighting can be changed for special events, like Astros games shown here, and holidays.



Five intersections identified for improvements during planning.

No impacts to traffic or land closures occurred during construction.

Sustainable LED lighting was installed which improved safety and added to the area's aesthetic appeal.

HIRAM CLARKE FORT BEND REDEVELOPMENT AUTHORITY

HUITT ZOLLARS

CLIENT & LOCATION:
Hiram Clarke/Ft Bend RDA; TIRZ 25 (Houston, TX)

ENTERING FIRM:
Huitt-Zollars, Inc. (Dallas, TX)

ACEC ENGINEERING Excellence AWARDS

BEST IN CLASS

NSCSD KWS BEAR ROAD ELEMENTARY

With the **mission** to create a highly effective learning environment, the use of acoustically engineered panels limit noise transmission while the combination of daylighting controls and solar tubes deliver a plethora of natural light to students and staff.

Digging Deep: the design team's 360-degree approach produced one exceptionally creative solution: Excavating walkways in the crawlspace down as much as 2 feet to provide safer access for maintenance personnel, while also increasing the mechanical equipment's longevity by keeping it out of the elements.

The district's goal of becoming a **Net Zero** campus is supported by the use of solar collectors to minimize dependence on natural gas.

The design team's **resourceful application** of displacement ventilation technology paired with the practical application of custom diffusers delivers quiet, temperate, and low contaminant air to occupants for best in class air quality.

ACEC Engineering Excellence Awards

Project: North Syracuse CSD - KWS Bear Road Elementary
Syracuse, NY

Client: North Syracuse CSD
Syracuse, NY

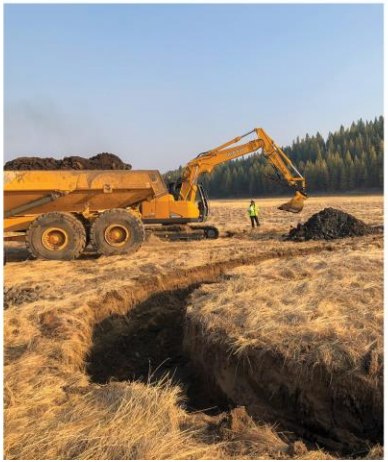
Entrant: IBC Engineering, P.C.
Rochester, NY

This might look like a natural scene...

...but it is actually the result of decades of collaboration between the Confederated Tribes of the Warm Springs Indian Reservation of Oregon, the US Bureau of Reclamation, and a team of consulting engineers and scientists. Previously, the Middle Fork John Day River was confined between the roadway on the far right of this picture and an unused railroad prism. This ditching completely cut the river off from its floodplain and greatly diminished the amount of habitat. Hydraulic modeling informed the sculpting of thermally-varied channels, spawning beds, and woody debris structures across 55 acres of dynamically engaged floodplain to provide excellent spawning and rearing habitat for threatened steelhead trout, Chinook salmon, bull trout, and other species.

Notably, these fish represent a way of life for the Confederated Tribes of the Warm Springs and other indigenous peoples of the Northwest. In addition to providing habitat for endangered species, this massive engineering project also helps to preserve a culture that has existed in the John Day Basin since time immemorial. Guided by traditional knowledge and technical analysis alike, the team launched this ecosystem on a path towards renewal.

VINEGAR TO VINCENT HABITAT RESTORATION



inter·fluve

Confederated Tribes of the Warm Springs Indian Reservation of Oregon

BUREAU OF RECLAMATION

ACEC Engineering Excellence Awards

Entrant: Inter-Fluve (Hood River, OR)
Client: US Bureau of Reclamation (Boise, ID)
Owner: Confederated Tribes of the Warm Springs Indian Reservation of Oregon
Location: Grant County, OR

PennDOT District 6-0

New Regional Traffic Management Center

The RTMC is a 24/7 facility monitoring freeway and major arterial operations in the Philadelphia region.

The second floor main conference room and situation room that has a view of the entire RTMC Operations floor

The Southeastern RTMC, serving Bucks, Chester, Delaware, Montgomery, and Philadelphia counties, manages the busiest and largest transportation network in Pennsylvania.

The new Southeastern RTMC expands the District's capabilities by providing a larger and more modern facility for the management of PennDOT's Intelligent Transportation Systems (ITS).

The RTMC allows PennDOT District 6-0 to optimize their operational strategies and technologies and continue their commitment to manage a safe transportation network and help motorists move freely throughout the Southeastern region, including the Philadelphia Tri-state area.

Project name:

PennDOT District 6-0 New Regional Traffic Management Center

Location:

7000 Geerdes Blvd, King of Prussia, PA 19406

Client:

PennDOT District 6-0

Pennsylvania Department of General Services

FHWA

Entrant Firm

Jacobs, 2001 Market Street, Suite 900
Philadelphia, PA 19103

ACEC Engineering Excellence Awards

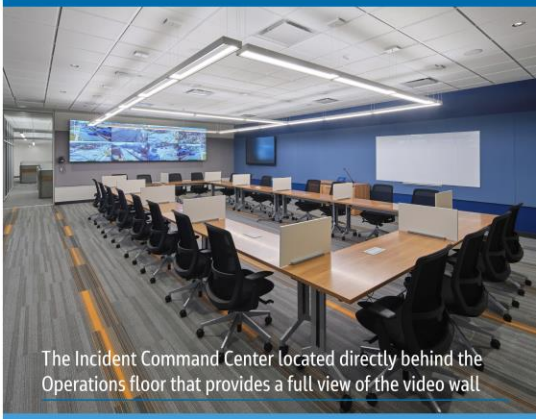
pennsylvania Department of Transportation

pennsylvania Department of General Services

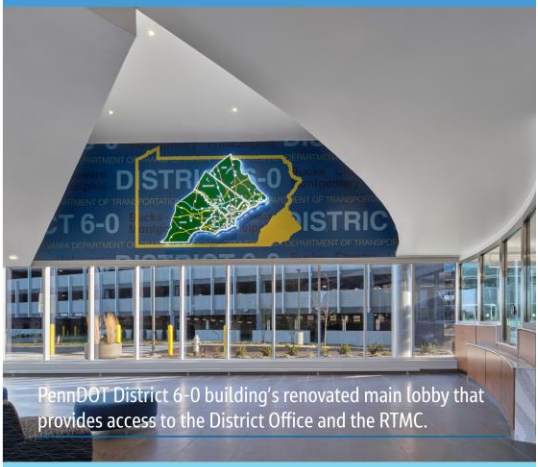
U.S. Department of Transportation Federal Highway Administration

Jacobs Philadelphia, PA

A view of the RTMC Operations floor and surrounding offices and conference rooms.



The Incident Command Center located directly behind the Operations floor that provides a full view of the video wall



PennDOT District 6-0 building's renovated main lobby that provides access to the District Office and the RTMC.

Cumberland CID Autonomous Vehicle Shuttle Deployment Study | Atlanta, Georgia

Since the pilot operation began in July 2023, it has proven popular among passengers with more than 4,100 riders to date.

One of the Hopper's two routes within Cumberland is on the I-285 Transit & Pedestrian Bridge, which was built with a dedicated lane to accommodate transit vehicles.

The Cumberland CID AV shuttle pilot program launched on July 25, 2023.

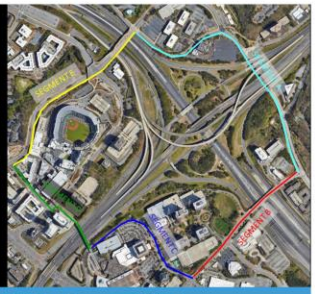
Summary of Ridership Analysis for Cumberland Sweep

July 2023

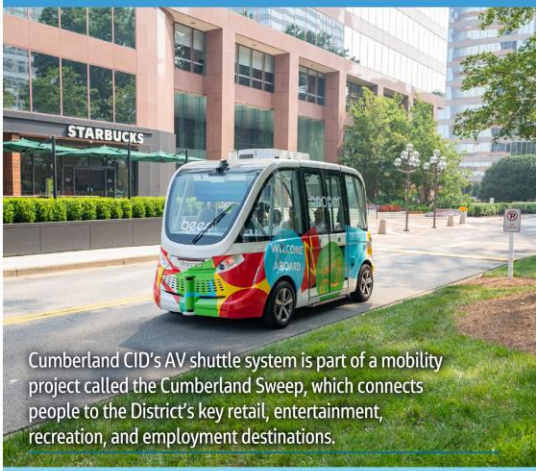
Jacobs completed an AV Ridership Analysis, which assessed potential rider travel patterns and demands and aided in planning route alignment and AV operations.

Alignment Alternative Summary

- Contains major and minor alignment alternatives
- Assumptions
  - AV Shuttle run both directions
  - AV Shuttle future generation has speeds up to 35 mph
  - Priority is to have dedicated lane(s) and use existing lane where opportunity presents
- Potential Stops



Jacobs completed an AV Deployment Study, including an AV shuttle route alignment evaluation and alternative development.



Cumberland CID's AV shuttle system is part of a mobility project called the Cumberland Sweep, which connects people to the District's key retail, entertainment, recreation, and employment destinations.

The Cumberland Community Improvement District (CID) and Jacobs collaborated closely to deliver the Autonomous Vehicle (AV) Shuttle Deployment Study and pilot project for the Cumberland Sweep. The Sweep is a planned 3+ mile multimodal corridor with dedicated walking and biking lanes and an AV shuttle system that will make travel easier, more reliable, and safer. This project is designed to connect people to jobs and key recreation, entertainment, retail, and other destinations within Cumberland CID.

To support the Cumberland CID's plan to deploy the AV shuttle program as a viable mobility option, Jacobs conducted an AV deployment study that fully assessed the latest state of practice of AV shuttle deployment, challenges and risks, and closely evaluated potential operational concepts. This study also included an AV shuttle ridership analysis that assessed AV shuttle rider travel patterns and demands around the Cumberland Sweep and provided insights that can be used in planning route alignment and operations. Based on the results of this study, Cumberland CID successfully launched an 8-month AV pilot program along selected segments of the Sweep in July 2023.

CUMBERLAND COMMUNITY IMPROVEMENT DISTRICT

Client:
Cumberland Community Improvement District
Atlanta, Georgia

Entering Firm:
Jacobs
Atlanta, Georgia

Jacobs
Atlanta, Georgia

ACEC Engineering Excellence Awards

East Side Access / Grand Central Madison

A Grand Vision: Grand Central Madison

West bound train arriving on the lower platform in one of the twin caverns of the recently completed Grand Central Madison terminal, the project was known as East Side Access during construction.

Reconfiguration of Harold Interlocking

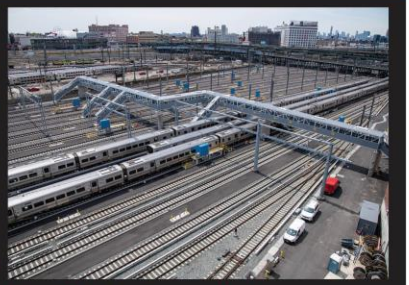
Due to physical constraints of Harold Interlocking, new Hybrid Moveable Point Frogs were developed. 170 new turnouts were installed throughout the interlocking to support the new movements and train storage yard.

Early Excavation and Tunneling

8 miles of tunnels and two twin caverns were excavated under Park Avenue and the historic Grand Central Terminal connecting Manhattan with Queens.

Largest Traction Power Substation in the U.S.

The largest traction power substation in the U.S. was delivered in 22 modular pieces and assembled by a hydraulic crane within the confines of a tight jobsite. Modular assembly provided significant improvements to manufacturing productivity, schedule, cost certainty, sustainability, safety logistics and functional integrated testing of this vital asset.



New Mid-day Storage Yard

A new 33-acre rail yard and maintenance facility was built adjacent to Harold Interlocking to accommodate the new rolling stock for Grand Central Madison service.

Communications Connect the Program

One of 65 communications rooms that services power, fire, life and safety across the program.

The completion of MTA Construction and Development's $11.2B East Side Access (ESA) program, now know as Grand Central Madison (GCM), marks the first expansion of the LIRR in over 100 years. Direct train service to the east side of Manhattan has reduced crowding in and around Penn Station as well as on the subway lines that serve the East Midtown business district. The approximately 160,000 commuters using this new service save as much as 40 minutes on their daily commutes. An alternative route into and out of Manhattan not only supports job growth both around East Midtown and on Long Island, it also the MTA to complete the necessary repairs to the East River tunnels that were damaged during Super Storm Sandy.

The Contract Construction Manager (CCM) managed 16 complex, multimillion dollar contracts including excavating and tunneling in Queens, building ventilation structures in Manhattan, powering the entirety of the project, and connecting all the systems necessary to run train service into the new terminal. The CCM also established the Program Management Office to oversee the coordination between contracts, created an integrated schedule and rebaselined the budget and completion date.

ACEC Engineering Excellence Awards

East Side Access/ Grand Central Madison

New York, NY

MTA Construction & Development

Jacobs | New York, NY

ACEC Engineering Excellence Awards | Washington State Department of Transportation | ATKINSON CONSTRUCTION | Jacobs

I-5, STEILACOOM-DUPONT ROAD TO THORNE LANE CORRIDOR IMPROVEMENTS

Pierce County, Washington

Jacobs/Atkinson Design-Build team designed and constructed 4.5 miles of mainline I-5 widening, which incorporated an additional lane in each direction and reconstructed two existing diamond interchanges: Berkeley Street and Thorne Lane.

Innovative Engineering. The team developed an Alternative Technical Concept (ATC) that enhanced the conceptual plan by implementing a two-bridge design connected by an at grade roundabout. This ATC simplified structural design, minimized future widening, improved traffic staging, maintained local access during construction, preserved forested wetland areas, and provided more direct access to the interchange. The ATC also included redesign of the Berkeley Street interchange from a "dog bone" roundabout interchange to a traditional diamond interchange, ultimately eliminating an auxiliary lane on I-5.

Strategic traffic control was imperative to project success as the corridor was completed across an operating Sound Transit commuter rail line and comprised significant safety and security measures to ensure maintained flow of traffic to Joint-Base Lewis McChord (JBLM) and the Tillicum community.

Collaborative partnerships with JBLM, Camp Murray, Sound Transit, and the City of Lakewood were a result of true project-first philosophy. The team superseded commitments to stakeholders by engaging early and often, ensuring safety, security, and maintenance of access concerns remained at the forefront of each project decision.

This project exemplifies Jacobs' continued and unwavering dedication to being a strong design partner to Atkinson, a partnership critical in developing innovative, long-lasting solutions that result in positive impacts to our region's economy, environment, and commuter and military operations; improved traveler safety and access; and forward compatibility.

Jacobs HDR King County ACEC Engineering Excellence Awards

KING COUNTY WASTEWATER TREATMENT DIVISION

WA - KING COUNTY GEORGETOWN WET WEATHER TREATMENT STATION

Seattle, Washington

The Georgetown Wet Weather Treatment Station design balances the cost of equalization volume and treatment process capacity to provide the optimized, least-cost solution for control of two CSO basins. The Station was awarded the Envision(r) Platinum certification in 2018 and will treat 69 million gallons of combined sewer overflow annually before it reaches the Duwamish River.

Odor control systems ensure no odors at the property line and the facility hosts extensive onsite stormwater solutions including permeable paving, bioretention and a green roof.

The Theater of a Storm illuminates facilities during wet weather events so passers by can see that the facility is operating.

Treated effluent is monitored as it leaves the facility. At peak flows, water moves through treatment and to the Duwamish River in less than 20 minutes.

Looking over the effluent of the high rate clarification solids removal process where more than half of the suspended solids are removed, prior to disinfection.

The Georgetown Wet Weather Treatment Station controls overflows from the Brandon and Michigan basins. Flows into the facility can be over 130MGD.

From the bottom of a 1.2MG equalization basin, six pumps provide up to 70MGD of raw water to the treatment process. Treated water flows by gravity to the outfall.

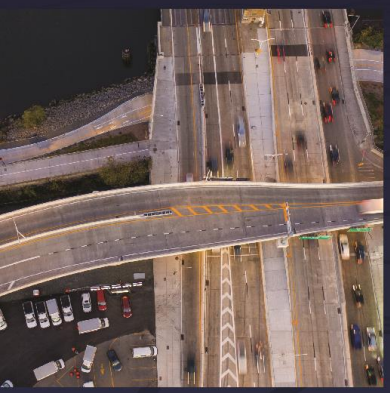
Hunts Point Interstate Access

IMPROVEMENT PROJECT - CONTRACT 1
SOUTH BRONX, NY

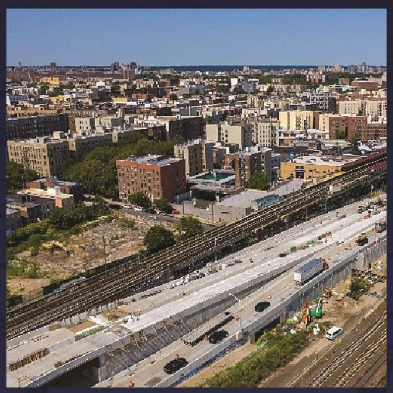
The $460 million Hunts Point Interstate Access Improvement Project – Contract 1 is a high-profile, design-build project that included the construction of a new interchange to improve access to the Hunts Point peninsula in South Bronx, New York.

6 New Bridges over Amtrak

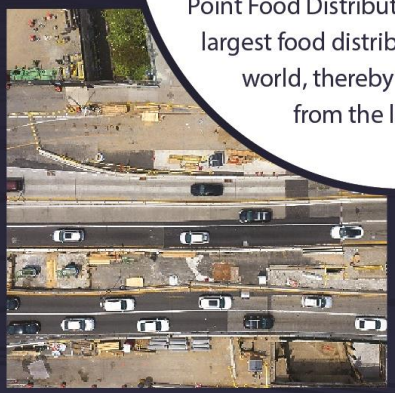
This project significantly upgraded and improved access and safety for the traveling public while addressing structural and operational deficiencies in this area. The new interchange benefits the local community by improving truck access from Sheridan Boulevard and Bruckner Expressway/Boulevard to the Hunts Point Food Distribution Center, one of the largest food distribution facilities in the world, thereby removing trucks from the local streets.



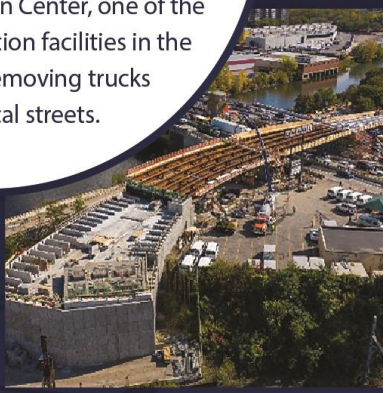
Ramp ES over Bruckner Expressway/ Boulevard with the Shared-Use Path along the Bronx River



22 Retaining Walls, T-Wall & Tie Back Walls



Maintenance and Protection of Traffic



Crane Assembly/Platform

JMT

Hunts Point Interstate Access Improvement Project - Contract 1
New York State Department of Transportation (NYSDOT)
JMT of New York, Inc

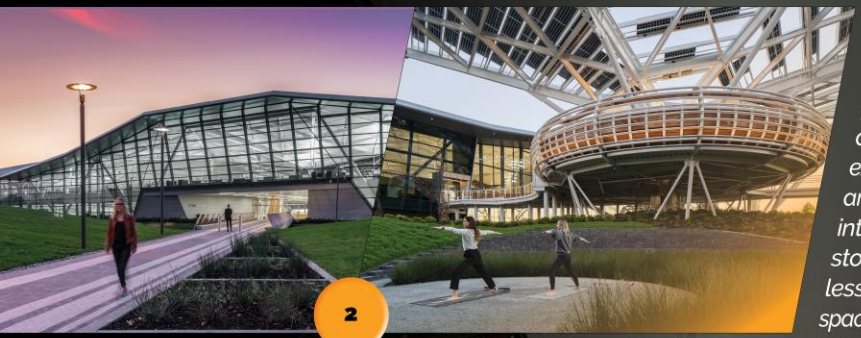
ACEC ENGINEERING Excellence AWARDS

"a gleaming new facet of the Silicon Valley Landscape — a campus where interactions spur revolutionary ideas"

NVIDIA

CORPORATE HEADQUARTERS Santa Clara, CA

1



2

3 | 4

It's all about the people!

*The LEED Gold NVIDIA campus **(1)** covers 35.6 acres, providing more than one million sqft of office space for NVIDIA's 26,000+ employees, promotes safety and casual connections—highlighting the human experience. To create natural, healing connective outdoor areas, unobtrusive stormwater treatment was integrated into the meditation and yoga Atrium **(2)** while the stormwater flows underneath into retention ponds in less-visible areas. The campus design creates unique spaces **(5)** for random, cross-functioal interactions that spur revolutionary ideas. Located on a major expressway, pedestrian and vehicular safety were primary concerns. Lifesaving design innovations include underground parking garages connected to traffic thoroughfares while avoiding pedestrian areas and two bridging pedestrian walkways as seen in **(1+3)**. Challenged with NVIDIA's need to maintain a mission-critical fiber optic connection along the existing buildings seen at left of **(4)**, the design team's complex phasing and future planning approach successfully addressed resiliency and safety concerns, while minimizing rework in subsequent phases.*

5

NVIDIA Client • Santa Clara, CA

Kier + Wright Entering Firm | Civil Engineer + Land Surveyor • Santa Clara, CA

Devcon General Contractor • **Sares Regis** Developer • **Gensler** Architect

KDS Plumbing MEP Engineer • **Biggs Cardosa** Site Structural Engineer

Hood Design Studio Landscape Architect • **Hexagon** Traffic Engineer

ACEC ENGINEERING Excellence AWARDS

KIER+WRIGHT

CAROLINAS REHABILITATION HOSPITAL AT CAROLINAS MEDICAL CENTER MAIN CAMPUS

Charlotte, North Carolina

Located southeast of Uptown Charlotte, the roughly 8-acre project site is the first phase of Atrium Health's 62-acre, flagship hospital campus redevelopment project at Carolinas Medical Center. Kimley-Horn partnered with Atrium Health's project team to lead early site planning strategies focused on improving campus infrastructure and building proximity to improve the patient experience. Following a collaborative design and permit process, Atrium Health has a facility matching the level of patient care being provided by their staff.

ACEC ENGINEERING Excellence AWARDS

CLIENTS:

Atrium Health
Charlotte, North Carolina

nbbj
Columbus, Ohio

ENTERING FIRM:

Kimley»Horn
Charlotte, North Carolina

Firefly Bridge Over Trail Creek

Athens, GA
Athens-Clarke County Unified Government, Athens, GA
Kimley-Horn, Atlanta, GA

Spanning a corridor in downtown Athens, Georgia and a critical addition to the Firefly Trail, the Firefly Bridge over Trail Creek signifies a finale to a longtime incomplete structure while connecting a recreational network. Made famous on the cover of R.E.M.'s 1983 debut studio album, *Murmur,* the bridge was a disused railway trestle falling off at its near-halfway point. The trestle's future remained in limbo for more than twenty years following Athens-Clarke County's acquisition of the structure. Plans eventually were realized through community engagement, a distinctive design that honors the preceding structure while unifying the Firefly Trail, and the incorporation of stakeholders' visions.

Viewed from the southwest, the 500-foot-long trestle spans Trail Creek and South Poplar Street in Downtown Athens. Part of the 39-mile Firefly Trail network, the trestle incorporates a harmonious blend of new and old through a rebuild of the original portion of the bridge—seen above in the new trestle's center between the two arches—the inclusion of weathering steel for the arches and handrails, and treating the timber with an oil-based emulsion treatment to achieve the aesthetic of the original bridge without the environmental risks of creosote treatment.

What became the third design concept proved to be well received by a significant majority of the Athens community.

The public engagement for this project involved three phases of interaction over six months to gain community opinions and build consensus regarding the new bridge concepts.

Following structural evaluation of the existing timber trestle bridge to determine its viability for reuse, several concept alternatives to replace the bridge were developed from extensive planning, community engagement, and design.

Kimley-Horn, ASTRA Group (the bridge's general contractor), and the fabricator for the project held multiple meetings to verify shop drawings, as-built geometry, and help ensure proper fit of the components during construction of the complex arches.

The project team overcame numerous challenges during construction of the bridge, including utilizing pressure injected grout below and around the pilot holes within an unforeseen rock lens to achieve required lateral stability for the bridge foundations.

I-264 Witchduck Road
Interchange and Ramp Extension

Kimley-Horn and Associates, Inc.,
Virginia Beach, VA

Virginia Beach and Norfolk, VA

I-264 is the most heavily used interstate in the Hampton Roads region, serving as the primary east-west highway through the South Hampton Roads region and connecting the central business districts and downtown areas of Portsmouth, Norfolk, and Virginia Beach. As the most heavily used interstate and as the primary entry for tourists visiting Virginia Beach, the interstate had a long-standing history of congestion and accidents.

Kimley-Horn provided professional services for the design of improvements to I-264 in the eastbound direction and at each interchange between the Newtown Road and Witchduck Road interchange. This project addressed the operational and safety issues ranking highest within the Hampton Roads region. The improvements included the design of a two- and three-lane collector-distributor (C-D) road along eastbound I-264 from the I-64/I-264 interchange through the Witchduck Road interchange. In addition to the C-D road, the mainline of I-264 was widened.

The I-264 Witchduck Road Interchange and Ramp Extension project was the latest piece of the puzzle seamlessly tying multiple projects along the corridor together capped off with the signature Greenwich Road flyover bridge. This project served to increase capacity, reduce congestion, improve safety, and create a welcoming gateway to the City of Virginia Beach supporting economic growth and redevelopment along the project corridor.

Hybrid roundabout (foreground) tying Greenwich Road and Newtown Road to the new I-264 Eastbound C-D Road (background).

Flyover bridge linking Cleveland Street to Greenwich Road crossing mainline I-264 eastbound widening (facing west).

Curved steel girder bridge crossing I-264 and lake linking Newtown and Pembroke Strategic Growth Areas (facing east).

Backlit “Welcome” sign entering the City of Virginia Beach along eastbound I-264 at the base of the Greenwich Road flyover bridge.

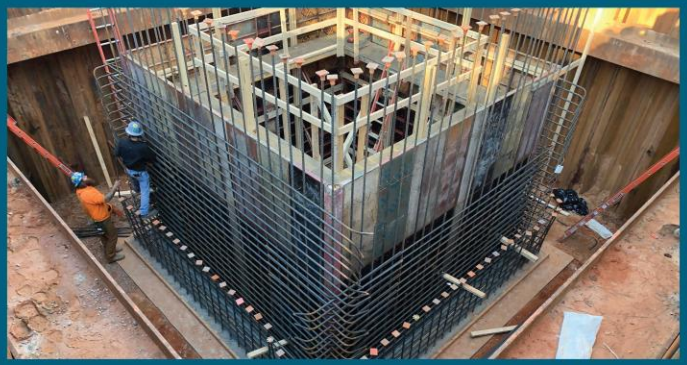
Decorative steel wave pattern on the Greenwich Road flyover bridge girders backlit with color-changing LED aesthetic lighting.

ACEC Engineering Excellence Awards

VDOT

Tucker Road Pump Station 6

Ocean Springs, MS | **Category G: Water Resources**



Kimley-Horn assisted Jackson County Utility Authority (JCUA) with the preparation of a facilities plan for a state revolving fund project to evaluate alternatives to improve the operating conditions of the 24-inch diameter force main. Implementation of this project will help to alleviate the high-pressure events and improve pumping conditions at the respective pump stations connected to the force main system.

The design of the improvements included demolition of the existing Pump Station 6, approximately 1,500 LF of new 24-inch diameter force main, 1,000 LF of 24-inch horizontal directional drill, 1,000 LF of 8-inch diameter force main installed via sliplining, an above-grade inline triplex PRS utilizing 120 Hp dri-pit submersible pumps, a new triplex submersible pump station with 140 Hp pumps, onsite generator, bypass connections for diesel bypass pump (temporary or permanent), pigging connections, controls, and odor control. Pump Station 6 and the PRS station are operated utilizing variable frequency drives and remotely monitored via SCADA. Kimley-Horn assisted the JCUA with construction-phase services throughout the life of the project.

Kimley»Horn

ACEC Engineering Excellence Awards

Tucker Road Pump Station 6
Ocean Springs, MS

Client Name
Jackson County Utility Authority
Pascagoula, MS

Entrant's Name
Kimley-Horn
Mobile, AL

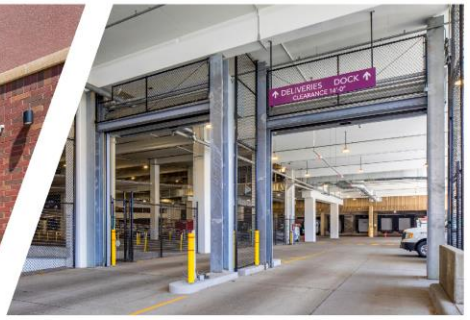
ABBOTT NORTHWESTERN HOSPITAL PURPLE RAMP

Minneapolis, MN

Abbott Northwestern Hospital's 10-year Facility Master Plan created a framework to support anticipated growth. Increased parking capacity was needed to allow for that growth. This project provided:

- A horizontal and vertical expansion of the parking ramp at the south end of the hospital campus
- Accommodations for cars, bicycles, pedestrians, and transit
- Connections to the Midtown Greenway
- A welcoming "front door" to the campus

The Purple Ramp consists of an 8-level parking structure, 2,000 square feet of retail/office space, a 2-level vertical expansion of existing Ramp 6, and storage for 200 bicycles. Allina Health also incorporated a community solar garden, community promenade, and 10 dual-port electric vehicle charging stations with infrastructure to allow for 90 additional chargers in the future.



ACEC ENGINEERING *Excellence* AWARDS

CLIENT:

Allina Health

Minneapolis, MN

ENTERING FIRM:

Kimley»Horn

St. Paul, MN

GRTC Downtown Transfer Station, Richmond, VA

Owner Name and Location: GRTC Transit System, Richmond, VA | **Entering Firm's Name and Location:** Kimley-Horn, Richmond, VA

GRTC Transit System's previous downtown transfer center, which served as a hub for 20 routes in Richmond's downtown, occupied the sidewalk on two blocks of 9th Street. It contained limited route information, lacked adequate passenger amenities, and often required a lengthy walk to transfer between routes. When an imminent redevelopment of the adjacent building required the transfer operations to be relocated, this provided an opportunity for improvement.

Relocating to a new transfer station within the adjacent parking lot allowed GRTC to create a simpler, more streamlined, and more comfortable experience for transferring passengers. The new transfer station's location allows operations to remain in its central location, where it improves connectivity to jobs, education, and healthcare.

Kimley-Horn led GRTC through an expedited site development process to limit impacts to GRTC's previous operations, navigating reviews by City departments and review boards. When global supply-chain issues affected material availability, Kimley-Horn recommended and assisted GRTC with early procurement of long-lead-time site amenities to ensure timely delivery. When an urgent stakeholder request jeopardized the project at the start of construction, Kimley-Horn developed a new phasing plan that could be implemented over one weekend to accommodate the request and avoid any parking impacts for John Marshall Courts Building key staff who park on the site.

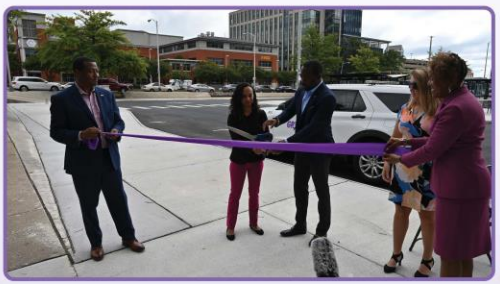
The Downtown Transfer Station is the first off-street home for transit in downtown Richmond and includes features such as 24-hour lighting, USB charging ports in improved shelters, live bus tracking information, and island platforms for quicker and easier transfers.

The existing site, used exclusively for surface parking, had poor drainge, aging lighting, and failing pavement.

Kimley-Horn developed a conceptual design that met GRTC's goal of having 12 bus bays in a sawtooth pattern. The design included accommodations for future larger vehicles, in the same footprint, improving upon the 10-bay concept provided to Kimley-Horn when the project started.

Construction was fully contained within the existing surface parking lot and maintained much of the existing asphalt as a base to help reduce construction cost and the duration associated with demolishing the existing asphalt surface.

New and enhanced amenities, including real-time signage using a new site communications system, allow for quicker and easier transfers between buses and a more comfortable and simpler rider experience.



The Downtown Transfer Station officially opened with a ribbon-cutting ceremony on September 11, 2023. Pictured (left to right): GRTC Board Chairman Tyrone Nelson, GRTC Chief of Staff Adrienne Torres, City of Richmond Mayor Levar Stoney, Virginia DRPT Director Jennifer DeBruhl, GRTC CEO Sheryl Adams.

The Downtown Transfer Station has been met with widespread acclaim from riders, GRTC staff, regional stakeholders, and transit advocates.

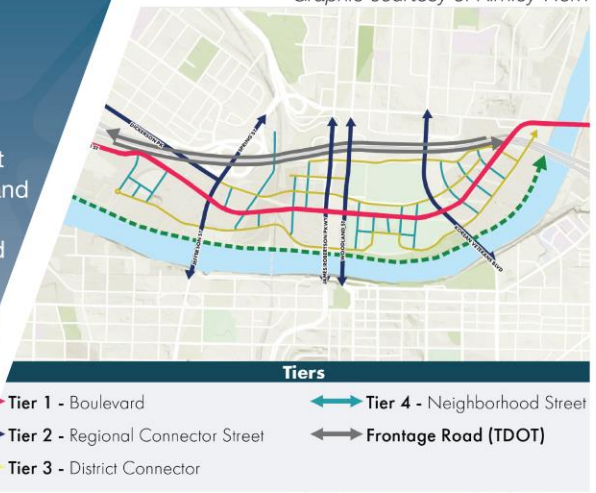
Kimley»Horn ACEC Engineering Excellence Awards GRTC Transit System

IMAGINE EAST BANK VISION PLAN AND MOBILITY STUDY

Nashville, TN

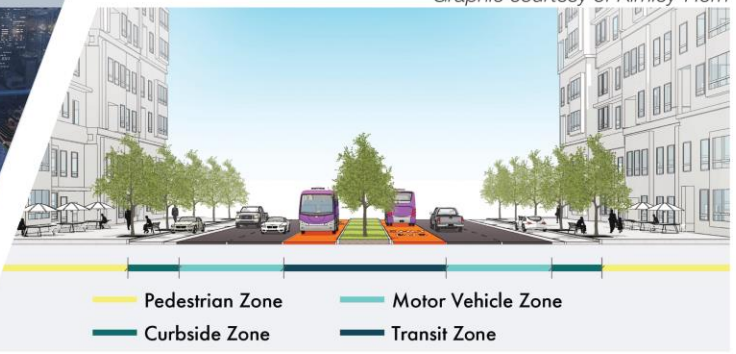
The Imagine East Bank Vision Plan and Mobility Study encompasses the Metropolitan Government of Nashville and Davidson County (Metro Nashville)'s vision for Nashville's East Bank while also providing Metro Nashville and the Nashville Department of Transportation and Multimodal Infrastructure (NDOT) with the steps to implement such a complex and impactful development that connects the heart of downtown Nashville to East Nashville and beyond. Perkins Eastman provided renderings that envision the final aerial view of a fully developed East Bank and a street view of the Boulevard that runs through the middle of the East Bank. The Perkins Eastman team also developed a diagram overview that zooms out, illustrating the size of the Imagine East Bank development located along the Cumberland River. Kimley-Horn's three graphics map out the street typology, multimodal hub development, and Boulevard section breakdown to reflect the Mobility Study's plans, such as multimodal accessibility that runs throughout the East Bank development.

Graphic courtesy of Kimley-Horn



Graphic courtesy of Kimley-Horn

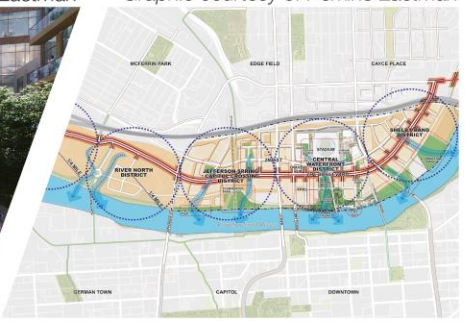
Rendering courtesy of Perkins Eastman



Graphic courtesy of Kimley-Horn

Rendering courtesy of Perkins Eastman

Graphic courtesy of Perkins Eastman



ACEC Engineering Excellence Awards

CLIENT:

Nashville Department of Transportation and Multimodal Infrastructure
750 S 5th St
Nashville, TN 37206

Metro Nashville Planning Department
800 President Ronald Reagan Way, 2nd Floor,
Nashville, TN 37210

ENTERING FIRMS:

Kimley»Horn
10 Lea Avenue, Suite 400, Nashville, TN 37210

PERKINS EASTMAN
115 Fifth Avenue New York, NY 10003

CATEGORY I:
Special Projects - Recreational Facilities

Graham Swamp Trail and Pedestrian Bridge over SR 100, Flagler County, FL

The Graham Swamp Trail project created a high-quality recreational amenity within conservation lands to benefit the local community and visitors to Flagler County, Florida. As part of a larger future trail system including extension to Bulow Plantation and an Eco-Discovery Visitor Center, this project provides users the ability to experience natural Florida while paying tribute to the local community's history. The alignment of the Graham Swamp Trail connects SR 100 to the existing Lehigh Trail, 1.6 miles to the north. The project also includes a shared-use path along the south side of SR 100 for 0.6 miles connecting with sidewalks along Old Kings Road. The multi-use trail includes a bridge spanning SR 100 with an A-Frame styled safety enclosure detailed to simulate the nearby historic Flagler Beach Pier. The multi-use trail connecting to the Lehigh Trail passes through sensitive conservation lands owned by Flagler County and FDOT. The design team concentrated on establishing a trail corridor that avoided old growth trees over 18 inches in diameter. The alignment passed over three wetland areas requiring design of elevated walkways. Each walkway was detailed with limited size prefabricated components, which could be delivered and installed using small equipment, minimizing impacts within a 25-foot-wide trail corridor. Walkway components were comprised of steel piling and concrete superstructure elements, which will last several decades with little or no maintenance when compared to timber structures.

Successfully constructed elevated walkway No. 3

OUR SERVICES

-Trail Design
-Structural Design
-Lighting Design
-Permitting
-Construction Support

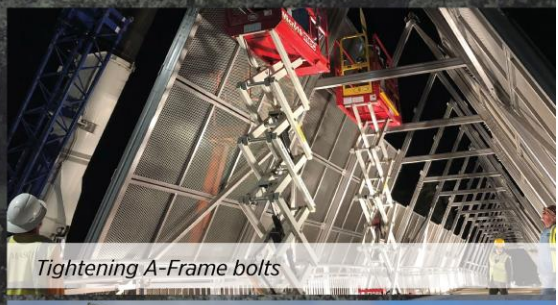
Graham Swamp Trail and Pedestrian Bridge over SR 100, Flagler County, FL

Client's Name:
Flagler County, FL

Entrant's Name:
Kisinger Campo & Associates, Corp. (KCA) | Orlando, FL

KCA
KISINGER CAMPO & ASSOCIATES

ACEC Engineering Excellence Awards



Tightening A-Frame bolts

The A-Frame bridge design was modeled after the historic Flagler Beach Pier

Installing elevated walkway piling

Final aerial image

Safety enclosure (which mimics the historic Flagler Beach Pier) at sunset

WIS Interchange 26

Janesville, Wisconsin | Category H: Transportation

Wisconsin's WIS 26 and I-39/90 have historically been lifelines that unite communities, facilitate commerce, and foster tourism. However, having endured 30 years of heavy traffic, WIS 26's pavement was worn. After more than fifty years, the section of I-39/90 from US 14 to Kennedy Road was crumbling and included an outdated rural cloverleaf at the WIS 26 interchange. Traffic flow was impaired, congested, and plagued with safety problems, and the roadways lacked accommodations for bicyclists and pedestrians.

The WIS 26 Interchange project reimagined and revitalized these corridors by doubling I-39/90's traffic capacity from US 14 to Kennedy Road, enhancing traffic flow, increasing safety, bridging mobility and accessibility gaps, increasing connectivity, and accommodating the region's rapid growth. The outmoded cloverleaf was replaced with Wisconsin's third Diverging Diamond Interchange (DDI), expanding WIS 26 to 6 lanes with bicycle and pedestrian provisions. I-39/90 was expanded to 12 lanes, increasing the original 4 lanes to 8 lanes and adding two 2-lane collector-distributor (C/D) roadways complemented by 10 bridges, 15 mechanically stabilized earth (MSE) retaining walls, 1 modular block retaining wall, 4 noise walls, and 14 overhead sign supports. Notably, this extensive reconstruction occurred with minimal disruption, maintaining two lanes of traffic in each direction during construction, and avoiding displacements of residents and businesses.

This transformational project rejuvenated the City of Janesville by making a substantial and enduring investment in its future, significantly enhancing residents' quality of life. It solidifies WIS 26 and I-39/90 as enduring lifelines of connectivity and prosperity for future generations.

The WIS 26 Interchange project replaced a rural cloverleaf with Wisconsin's 3rd Diverging Diamond Interchange (DDI) and the state's 2nd urban DDI.

An extensive and comprehensive traffic control plan maintained a safe construction area with two open lanes each way.

Temporary wire face mechanically stabilized earth (MSE) walls were constructed allowing traffic to be nearby without disrupting construction activities.

I-39/90 was raised to extend Ryan Road underneath, facilitating access for cyclists, pedestrians, businesses, the hospital, and residents.

After extensive coordination with Janesville and the DNR, a 6-infiltration basin system using native soils was designed to provide over 70% TSS reduction.

The finished project is visually pleasing, sustainable, and provides valuable enhancements that benefit motorists, cyclists, pedestrians, businesses, and the environment.

Client's Name:
Wisconsin Department of Transportation (WisDOT) SW Region
Madison, Wisconsin

Entrant's Name:
KL Engineering, Inc.
Madison, Wisconsin

KL Engineering
[A] Better Experience

ACEC Engineering Excellence Awards

KLEINFELDER
Bright People. Right Solutions.

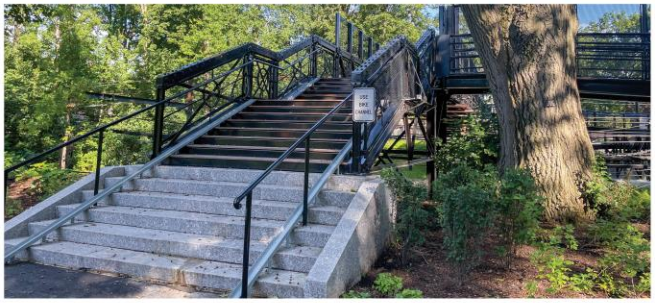
PROJECT CATEGORY
C: Structural Systems - Bridges

LOCATION OF PROJECT
Brookline, Massachusetts

ENTERING FIRM
Kleinfelder
1 Beacon Street, Suite 8100
Boston, MA 02108

CLIENT
Town of Brookline
333 Washington Street
Brookline, MA 02445

Carlton Street Footbridge Restoration



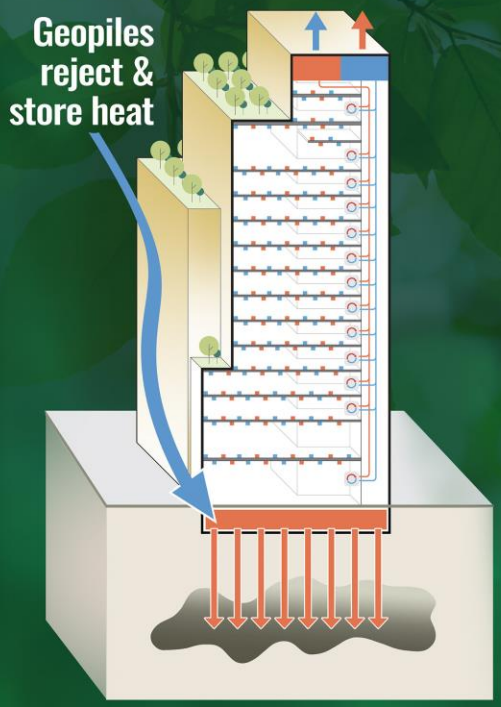
Project Overview

The historic Carlton Street Footbridge in Brookline, Massachusetts, was constructed in 1894 and subsequently closed in 1976 due to poor structural condition and safety issues. It was a safety hazard to the Massachusetts Bay Transportation Authority's (MBTA) Green Line tracks below, and a potential liability to the Town of Brookline. In order to restore the footbridge and make it universally accessible, Kleinfelder consulted with the Town of Brookline and the Massachusetts Department of Transportation, crafting a plan to remove the bridge, restore it off-site, and reintroduce the bridge with pedestrian upgrades, bike runnels, and additional clearance for the MBTA lines. The renovated structure was placed safely back into position, restoring a vital connection between the eastern Brookline neighborhoods and Fenway area. Additional improvements included site lighting and sustainably sourced decking. A community group of more than 200 individuals followed the restoration process and applauded Kleinfelder's efforts when the bridge reopened to pedestrian traffic on August 11, 2023.

KLEINFELDER
Bright People. Right Solutions.

ACEC ENGINEERING Excellence AWARDS

Going Green on Greenwich Street



555 Greenwich is an energy-efficient 270,000-square-foot, 16-story office building, located in the emerging Hudson Square neighborhood of Manhattan. This project transformed a heavily contaminated site occupied by an aging industrial lot into a highly sustainable Class A office building with the most advanced building energy systems available. The building systems will reduce emissions by 45% over NYC's 2030 climate targets and become carbon neutral by 2032.

Project: 555 Greenwich Street, New York, NY

Client: Trinity Church Wall Street/Hines/Norges Bank JV, New York, NY

Entrant: LANGAN, New York, NY

ACEC Engineering Excellence Awards

UNIQUE SOLUTIONS FOR A **ONE OF ITS KIND** BUILDING

John A. Paulson Center, New York University

NYU

New York University's John A. Paulson Center is a one of its kind multi-purpose building, consisting of 735,000 SF of classrooms, student and faculty housing, theaters, studios, cafes, community space, and athletic facilities. Proposed below-grade levels required lot-line excavations up to 50-feet deep next to the East Village historic district, landmarked 30-story towers, and an active NYC subway. Highly varying depth to top of bedrock, high groundwater, environmentally-impacted soils, utilities running through the site, and adjacent circa 150-year-old landmarked structures were challenges that were addressed with unique, versatile excavation support and foundation designs that were implemented for the first time in New York City next to subways and historic buildings.

Surrounding properties requiring unique construction methods for protection

Foundation, soil-mixing, and bracing construction to cut-off water and support historic buildings and streets

ACEC ENGINEERING Excellence AWARDS

Project: John A. Paulson Center, NYU, New York, NY
Client: New York University, New York, NY
Entrant: LANGAN, New York, NY

Taking the dred out of dredging

Sediment remediation within the Pledger Creek System in Salem, New Jersey consisted of dredging and subsequent subaqueous capping. Dredged material was placed at the on-site landfill to support future closure. Langan leveraged various real-time data visualization and analysis tools to manage the remedy implementation, and to evaluate the effectiveness of dredging and capping to ensure success. The remedy costs, schedule and overall project success were attributable to use of field controls, contract framework, and owner, contractor, and engineer collaboration. In the end, Pledger Creek has been restored to a prestine estuary.

Restoration *- An egret is perched along Southern Pledger Creek after site restoration.*

Dredging *- Steel sheet piles were installed to support deep shoreline dredge cuts adjacent to vital infrastructure. Treated weep water was returned to the same creek reach to maintain water depth for floating equipment.*

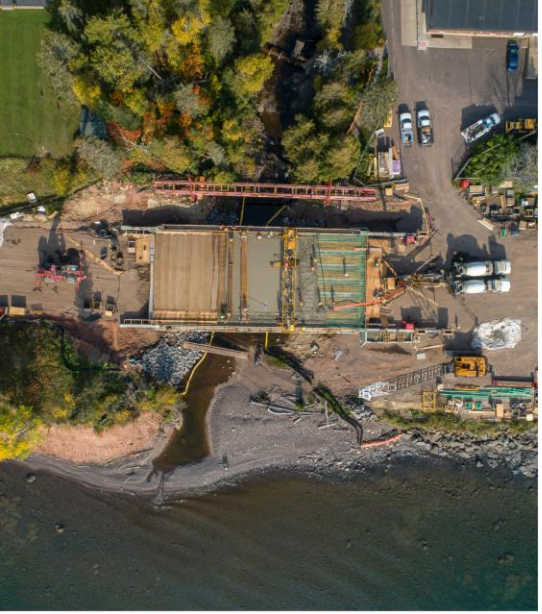
Capping *- Subaqueous capping materials were loaded in floating scows and placed mechanically.*

Water Treatment *- Weep water from the geotextile dewatering tubes was captured, treated, and returned to Pledger Creek.*

Sediment Sampling *- Langan collected post-dredge sediment samples to verify and demonstrate that remedial action objectives were achieved.*

Landfill Sediment Dewatering *- The hydraulic dredge slurry was pumped into geotextile tubes staged on the inactive on-site landfill.*

Project: Pledger Creek Sediment Remediation, Salem, NJ **Client:** Mannington Mills, Salem, NJ **Entrant:** LANGAN Parsippany, NJ ACEC ENGINEERING EXCELLENCE AWARDS



FRENCH RIVER BRIDGE RECONSTRUCTION, Duluth, MN

CLIENT: St. Louis County
CLIENT LOCATION: Duluth, MN
FIRM: LHB
FIRM LOCATION: Duluth, MN

For nearly a century, the open-spandrel arches of the French River Bridge just north of Duluth attracted photographers and nature lovers.

So, when LHB drew up plans to replace the 99-year-old span, aesthetics were a key consideration. The replacement, a single-span pre-stressed concrete beam structure, pays homage to the original bridge with a single sleek arc, and an ADA-accessible interpretive installation showcases the history of local fisheries. Along with the bridge replacement, a cast-in-place concrete retaining wall was built along the shore of Lake Superior to allow for improvements to the old wayside facility, and sanitary and storm sewer upgrades were made to protect Lake Superior's water quality.

The $5.1M, nearly 900-foot-long urban design bridge and grading project was completed at the end of 2022.

ACEC ENGINEERING Excellence AWARDS

LHB

METRO TRANSIT NORTH LOOP GARAGE, Minneapolis, MN

CLIENT: Metro Transit
CLIENT LOCATION: Minneapolis, MN
FIRM: LHB
FIRM LOCATION: Duluth, MN

The North Loop Garage sets a new benchmark for transit facilities. The tight site comfortably fits 500,000 SF of functionality, resilience, energy conservation, and social equity. With 220 buses, it's one of the nation's largest transit facilities and includes multiple sustainability innovations. This pedestrian-scale treatment of a large-scale building offsets a recent shift in this neighborhood toward multifamily residential, creating hundreds of living wage jobs.

A passive solar facade preheats fresh air intakes, while structural piles integrate a geothermal system within the concrete. Harvested rainwater washes the fleet, and the thermal envelope has just two sets of entry/exit doors for the entire fleet, minimizing heat loss through openings. A future 2 MW solar array with battery storage will fuel an expanding fleet of electric buses.

ACEC ENGINEERING Excellence AWARDS

LHB

Pymatuning Spillway Trail/Messerall Truss Project

CRAWFORD COUNTY, PA

This project consisted of the design of the Pymatuning Spillway Trail extension in Pymatuning State Park, and the adaptive reuse of the historic Messerall Road bowstring tied arch truss bridge. To provide a safe and reliable crossing for the new portion of the trail over Linesville Creek, the truss was relocated from its original abandoned location over Pine Creek outside of Titusville, PA and rehabilitated. The condition and historic nature of the 1876 bridge presented many design and construction challenges. McCormick Taylor managed the trail design and provided preliminary engineering, final design, and construction consultation services for the rehabilitation, relocation and reassembly of the Messerall Truss Bridge. Design services included: environmental clearance and permitting; hands-on structural inspection; identification of appropriate restoration techniques for deteriorated/damaged truss members; truss analysis and rating; design/detailing of new timber deck, pedestrian railing system, and concrete abutments; development of truss rehabilitation plans including conceptual erection and disassembly plans, and specifications and construction estimate. The project increased the length of the trail from just over one mile to more than three miles.

Finished Trail Extension

Original & Refabricated Builder's Plaques

Original Truss Location

Overall, the project demonstrates a great spirit of cooperation and partnering between PennDOT, PA DCNR and Crawford County to save a historic resource while providing a valuable recreation asset in Pennsylvania's second most visited state park with over **400,000 annual visitors**.

ACEC Engineering Excellence Awards

McCORMICK TAYLOR
Pittsburgh, PA

pennsylvania
DEPARTMENT OF TRANSPORTATION
District 1-0

pennsylvania
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

FISH BAYOU
CONTROL STRUCTURES

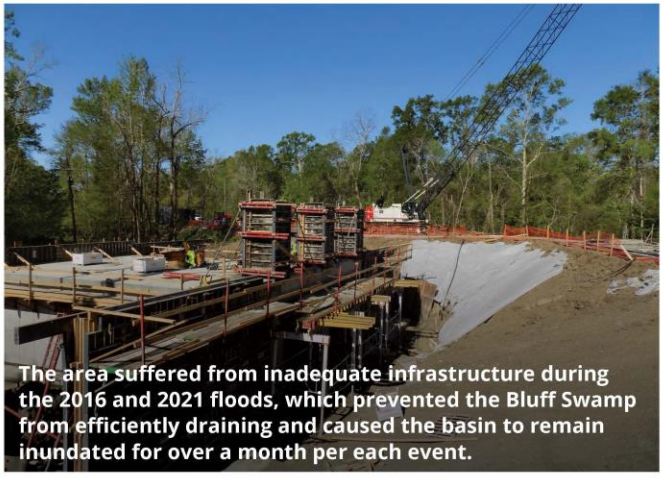
HIGHLIGHTS

- **Restores** Fish Bayou Channel conveyance
- **Reduces** flood duration for residents
- **Minimizes** erosion to Bayou Manchac
- **Provide**s flexibility to close remotely as needed
- **Allows** water retention at Bluff Swamp
- **Supports** local ecosystem

The Fish Bayou Control Structures project aimed to reduce flood risk within the Bluff Swamp area through joint efforts between the Pontchartrain Levee District and Ascension Parish. The project involved constructing two 12x12-foot gated control structures that are SCADA-controlled to restore the conveyance of Fish Bayou into Bayou Manchac. The project positively impacted the community and environment by reducing flood risk/duration and promoting the ecological health of the wetlands. The area suffered from inadequate infrastructure during the 2016 and 2021 floods, which prevented the Bluff Swamp from efficiently draining and caused the basin to remain inundated for over a month per each event. This new infrastructure will help prevent such issues in the future and promote the local community's well-being. The project also utilized sluice gates to prevent backwater flooding from Manchac during high-water events and allow for swamp drainage once the high-water levels in Bayou Manchac reside. The new control structures remain open during low-water events and close once Bayou Manchac reaches an elevation of 4', protecting both Iberville and Ascension Parishes from backwater flooding along Bayou Manchac.

In order to drain Bluff Swamp/Spanish Lake in May of 2021 (prior to construction start), Parish crews were required to deploy temporary pumps and cut the roadway.

McKim & Creed worked closely with both Ascension Parish and Pontchartrain Levee District to alleviate area flooding while protecting the surrounding natural environment.



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ACEC ENGINEERING Excellence AWARDS

McKIM&CREED ENGINEERS SURVEYORS PLANNERS

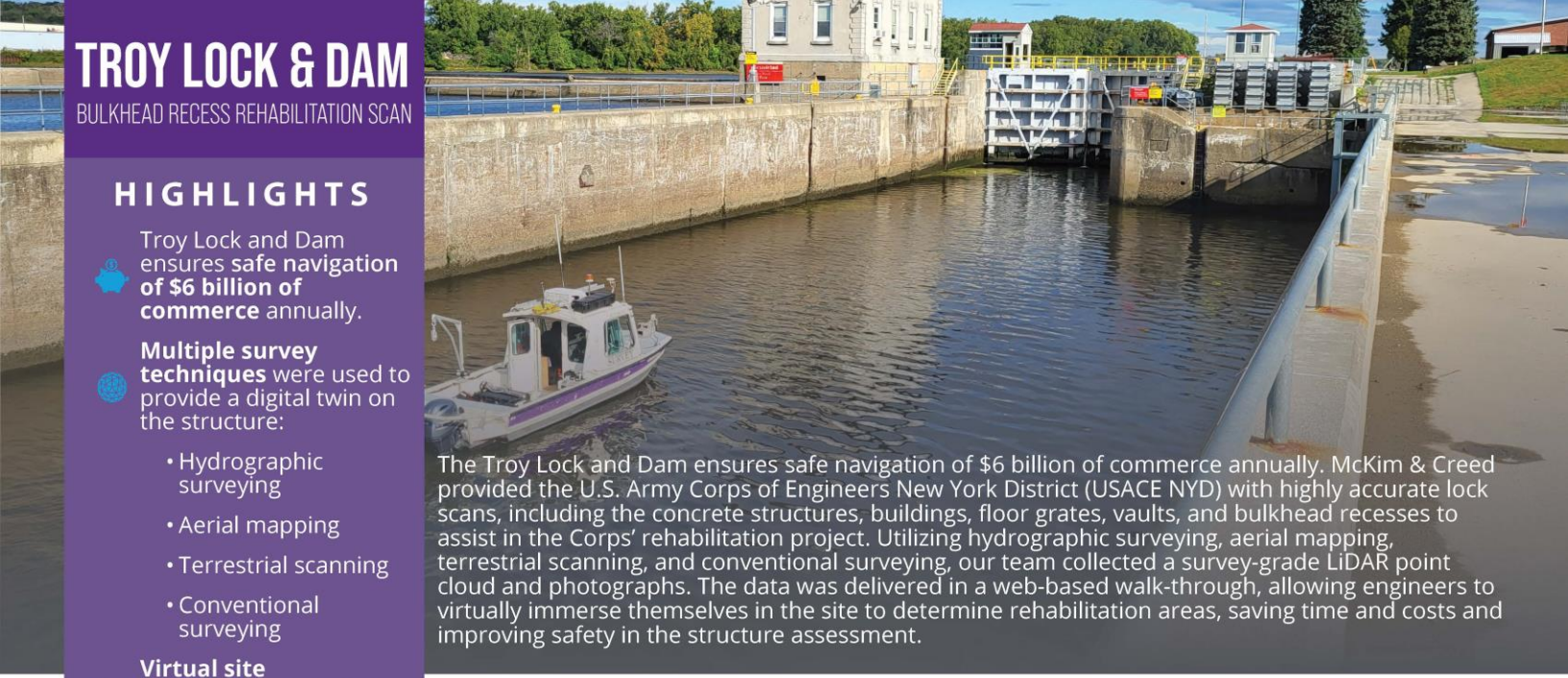
LOCATION: Pontchartrain Levee District, Lutcher, LA
CLIENT: Ascension Parish, Gonzales, LA
ENTRANT: McKim & Creed, Gonzales, LA

TROY LOCK & DAM

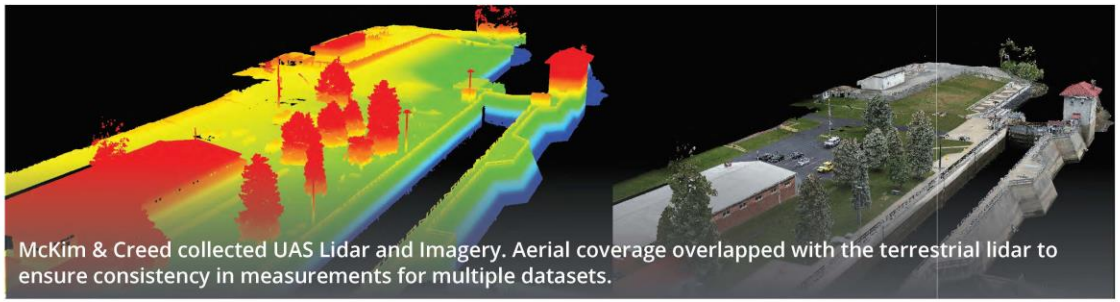
BULKHEAD RECESS REHABILITATION SCAN

HIGHLIGHTS

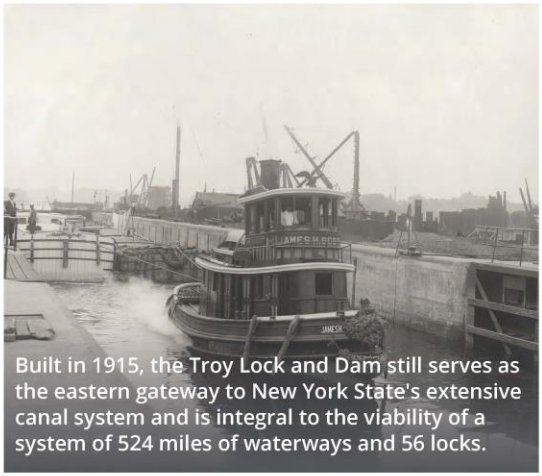
- Troy Lock and Dam ensures **safe navigation of $6 billion of commerce** annually.
- **Multiple survey techniques** were used to provide a digital twin on the structure:
  - Hydrographic surveying
  - Aerial mapping
  - Terrestrial scanning
  - Conventional surveying
- **Virtual site walk-through** allowed engineers to immerse themselves to better:
  - Determine areas of rehabilitation
  - Save time and costs
- Comprehensive data **improves safety** in structure assessment



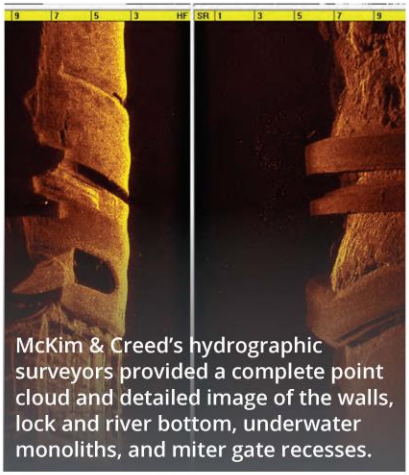
The Troy Lock and Dam ensures safe navigation of $6 billion of commerce annually. McKim & Creed provided the U.S. Army Corps of Engineers New York District (USACE NYD) with highly accurate lock scans, including the concrete structures, buildings, floor grates, vaults, and bulkhead recesses to assist in the Corps' rehabilitation project. Utilizing hydrographic surveying, aerial mapping, terrestrial scanning, and conventional surveying, our team collected a survey-grade LiDAR point cloud and photographs. The data was delivered in a web-based walk-through, allowing engineers to virtually immerse themselves in the site to determine rehabilitation areas, saving time and costs and improving safety in the structure assessment.



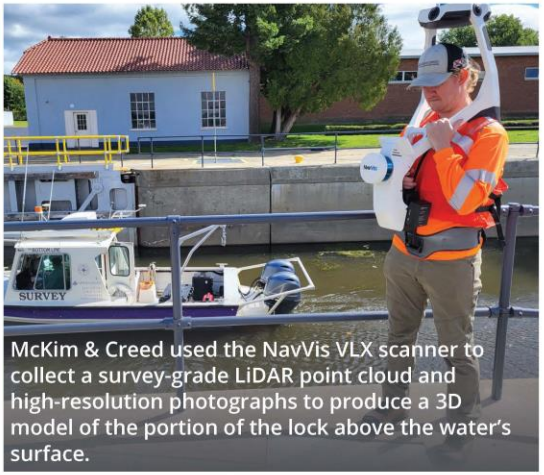
McKim & Creed collected UAS Lidar and Imagery. Aerial coverage overlapped with the terrestrial lidar to ensure consistency in measurements for multiple datasets.



Built in 1915, the Troy Lock and Dam still serves as the eastern gateway to New York State's extensive canal system and is integral to the viability of a system of 524 miles of waterways and 56 locks.



McKim & Creed's hydrographic surveyors provided a complete point cloud and detailed image of the walls, lock and river bottom, underwater monoliths, and miter gate recesses.



McKim & Creed used the NavVis VLX scanner to collect a survey-grade LiDAR point cloud and high-resolution photographs to produce a 3D model of the portion of the lock above the water's surface.

ACEC ENGINEERING Excellence AWARDS

McKIM&CREED
ENGINEERS SURVEYORS PLANNERS

LOCATION: Troy, NY
CLIENT: United States Army Corps of Engineers – New York District
ENTRANT: McKim & Creed, Inc., Wilmington, NC

MOO-VE OVER GREENHOUSE GAS EMISSIONS

NORTHWEST IOWA RNG SITE DESIGN

PROJECT Northwest Iowa RNG Site Design
Northwest Iowa

FIRM Merrick & Company
Greenwood Village

CO CLIENT Gevo
Englewood, CO

The Northwest Iowa Renewable Natural Gas (RNG) Plant creates RNG at three sites in Iowa using something the area has in abundance: manure from dairy farms. The project was conceived by **Gevo**, a renewable chemicals and advanced biofuels company, as a source for low-carbon intensity (CI) thermal energy. The RNG thermal energy from the plant will fuel the fermentation process for alcohol-to-jet and other advanced-renewable-fuel pathways at Gevo's fuels production facilities.

The **Merrick & Company** team provided Front End Loading-3 (FEL-3), detailed engineering, and total project integration for three separate dairy sites and one common biogas upgrading site. The team blended agricultural and industrial best practices to create individualized solutions for each dairy site that minimized land use and impact on existing operations. The project began injecting RNG into the natural gas pipeline in 2022 and, with a facility upgrade recently completed in 2023, is expected to produce more than 400,000 MMBtu of RNG annually.

The project seamlessly incorporated numerous environmental, social, and economic benefits, including reducing methane emissions; providing an economic boost to the dairy owners through compensation for the manure and potential increased profits for sustainably sourced products; minimizing valuable agricultural land use; and creating a cost-effective template for future multi-site agricultural RNG projects and easily scalable blueprint for adding future dairy sites. **Sustainability starts from the ground up—and everyone from the dairy owners in Iowa to RNG users in different states will reap the rewards of this unique RNG cluster project.**

MERRICK® gevo ACEC EEA

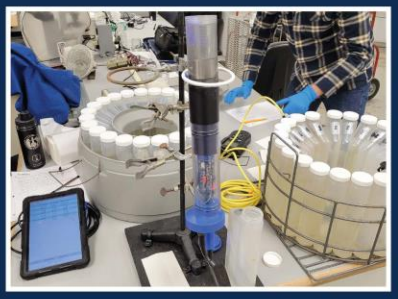
Gas upgrading vessels

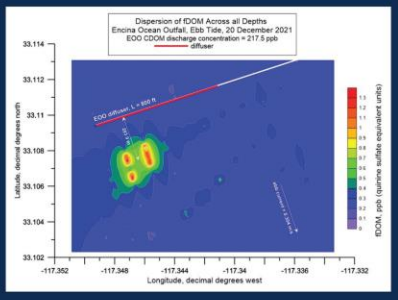
Dairy sites leading to one RNG upgrading site

Gas upgrading system

AUV PLUME TRANSPORT ASSESSMENTS OF THE SAN ELIJO AND ENCINA OCEAN OUTFALLS

San Elijo and Encina, California





For the AUV Plume Transport Assessments of the San Elijo and Encina Ocean Outfalls project, Michael Baker was contracted by San Elijo and Encina to design and implement Plume Tracking Monitoring Plans (PTMP) using autonomous underwater vehicles (AUVs) at the San Elijo, Encina, Oceanside, San Juan Creek and Aliso Creek ocean outfalls. The Michael Baker team developed and executed the work plan, analyzed all data and prepared the corresponding reports.

The San Diego Regional Water Quality Control Board requires outfall operators to develop and implement Plume Tracking Monitoring Plans (PTMP) to monitor for ocean acidification and hypoxia, which can introduce excess concentrations of nitrates and ammonia hazardous to humans and lethal to certain marine life. For their PTMP, the communities of San Elijo and Encina partnered with Michael Baker International to perform the required studies using AUVs that would dive into the plumes and surrounding waters and bring back data.

The study measured concentrations of salinity, colored dissolved organic matter, fluorescing dissolved organic matter, conductivity, temperature and current. The data confirmed that the San Elijo and Encina plumes showed no greater nitrate and ammonia levels than are present naturally in oceanic waters not near outfalls.

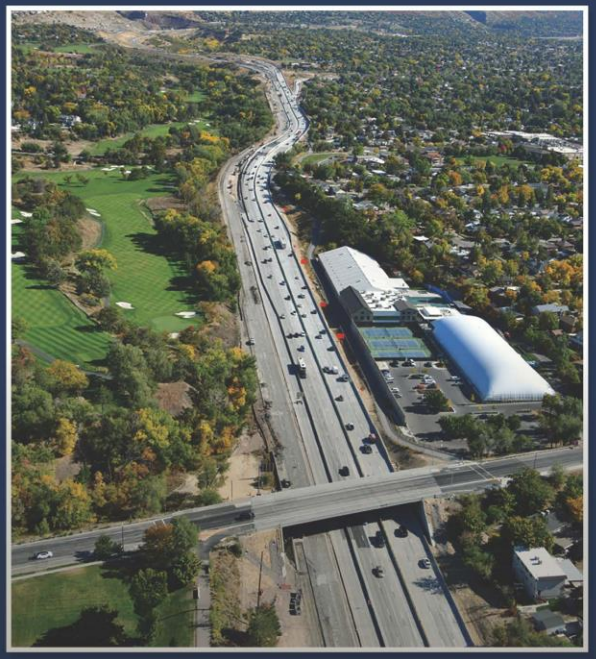
ACEC Engineering Excellence Awards

ENTERING FIRM
Michael Baker International
San Diego, California

OWNER
San Elijo Joint Powers Authority
Cardiff by the Sea, California

I-80 & I-215 RENEWED DESIGN-BUILD

Salt Lake City, Utah



Interstate 80 (I-80) and Interstate 215 (I-215) are two major highways in Utah's Salt Lake Valley. Encompassing stretches of these thoroughfares that run primarily through rapidly growing suburbs, the I-80 & I-215 Renewed Design-Build project was initiated to address significant wear on the roadway surfaces and improve the condition of the freeways.

Partnering with owner Utah Department of Transportation (UDOT) and contractor Ralph L. Wadsworth Construction Company LLC., Michael Baker International served as the project's lead designer. This $148 million project utilized Design-Build delivery.

The extensive project revitalized the I-80 corridor from 1300 East to 2300 East and the I-215 segment between 3300 South and 4500 South. Covering a distance of 4.5 miles, the multifaceted project encompassed the design and engineering of roadways, bridges and drainage systems, as well as enhancements for cyclists and pedestrians and utility relocation. The project included lighting, signage and the management of traffic flow.

The project notably employed accelerated bridge construction (ABC) techniques for two of the bridges. The new bridges were constructed next to the existing structures. Over the course of separate weekends, crews demolished the existing bridges and slid the new bridges into place. The innovative design and construction of the 1300 East bridge replacement is the largest bridge slide performed in Utah to-date.

The finished project replaced aging infrastructure and improved both traffic flow and safety for motorists traveling along this important stretch of highway.

ACEC Engineering Excellence Awards

ENTERING FIRM
Michael Baker International
Salt Lake City, Utah

OWNER
Utah Department of Transportation
Salt Lake City, Utah

I-85 WIDENING DESIGN-BUILD MM 98 - MM 106

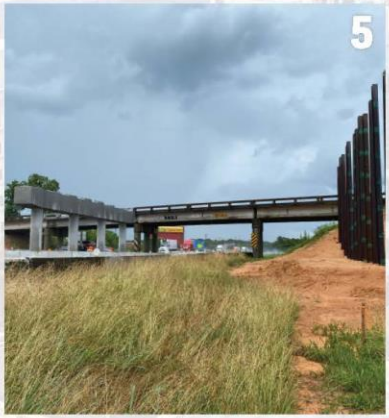
IN CHEROKEE COUNTY, SOUTH CAROLINA

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION ▪ COLUMBIA, SOUTH CAROLINA

ACEC Engineering Excellence Awards

SCDOT

1. Completed Railroad Bridge Ballast.
2. Exit 104 Interchange.
3. Completed Railroad Bridge.
4. Exit 106 Interchange under Construction.
5. Exit 104 Bridge under Construction.
6. Looking North at MM 102.



SCDOT contracted with Lane Construction and their lead engineer, Michael Baker, to widen the interstate from four lanes to six lanes from MM 98 to the state line at MM 106 (Phase 3). The project also included the reconstruction of interchanges at exits 100, 102, 104 & 106 and the reconstruction of the Norfolk Southern bridge over I-85 that has significant commercial impact to a local quarry. This widening increased traffic capacity and reduced delays for the traveling public. Furthermore, this project improved safety by eliminating non-standard interchange and ramp geometry. Additionally, the project provided a financial boost to the local economy of the upstate by removing significant vertical clearance restrictions of substandard overpass bridges along the heavily traveled corridor between the commerce centers of Atlanta and Charlotte. Michael Baker International's design employed several innovations that added significant value to the project including: realigning all four interchanges to minimize property impacts both commercial and residential; reducing long-term maintenance efforts for SCDOT via the implementation of a "rooftop" cross-section that removed significant drainage facilities from the median; reducing wetland and stream impacts by approximately 16%; and the use of innovative traffic control shifts to minimize disruption to the traveling public during construction. The I-85 Widening Phase 3 was completed on-time and on budget. Even though this project was started 1.5 years after the adjacent Phase 2 widening project, the innovation brought by the Lane and Michael Baker Team ensured the Phase 3 widening project was completed prior to Phase 2.

lane

Michael Baker INTERNATIONAL

Entering Firm:
Michael Baker International, Inc. ▪ Columbia, SC

OLD NEW YORK ROAD OVER NACOTE CREEK BRIDGE

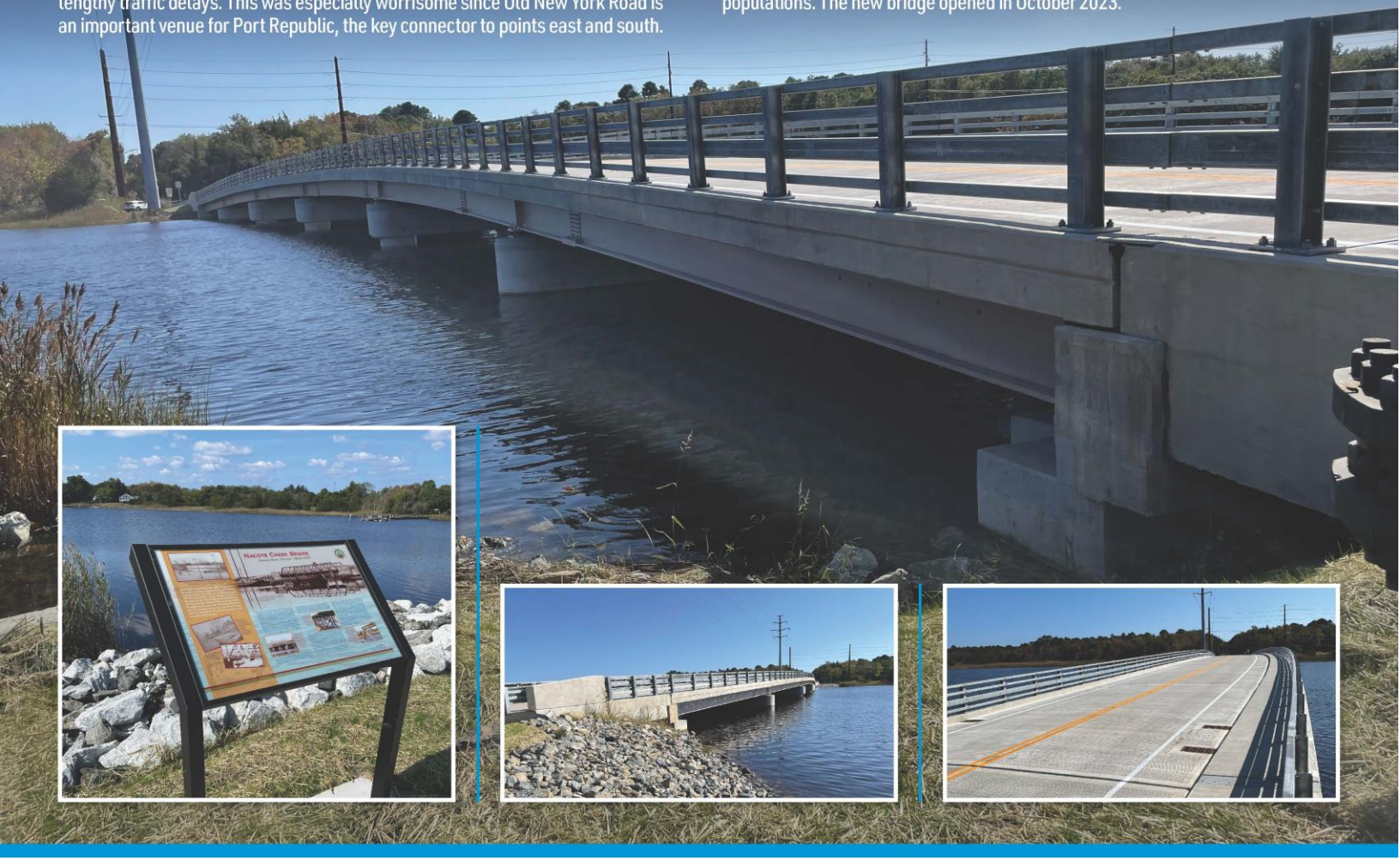
Port Republic, Atlantic County, New Jersey

The town of Port Republic in Atlantic County, a jewel along New Jersey's coast, is both memorable and historic. During the Revolutionary War, it was the site of the Battle of Chestnut Neck. More recently, Port Republic was named New Jersey's "Best Beach Town" by nj.com.

Yet Port Republic had an infrastructure problem. The bridge that carries Old New York Road across Nacote Creek, introduced in 1904 as a swing span, was structurally deficient, its deck width restricted with temporary barriers and was only wide enough to accommodate one lane of traffic at a time, resulting in lengthy traffic delays. This was especially worrisome since Old New York Road is an important venue for Port Republic, the key connector to points east and south.

The bridge also lacked a pedestrian lane. Not only did that frustrate the possibility of multimodal uses, but it also created a hazardous situation, as pedestrians often tried to cross – even fish from – the vehicular lanes.

Atlantic County recognized the situation as urgent and engaged Michael Baker International to devise and implement a solution. The Michael Baker team provided both design and construction management services for the project, which included razing the old bridge; design/construction of a wider new bridge; preservation of the historic old bridge and protection of sensitive marine populations. The new bridge opened in October 2023.



ACEC Engineering Excellence Awards

Michael Baker INTERNATIONAL

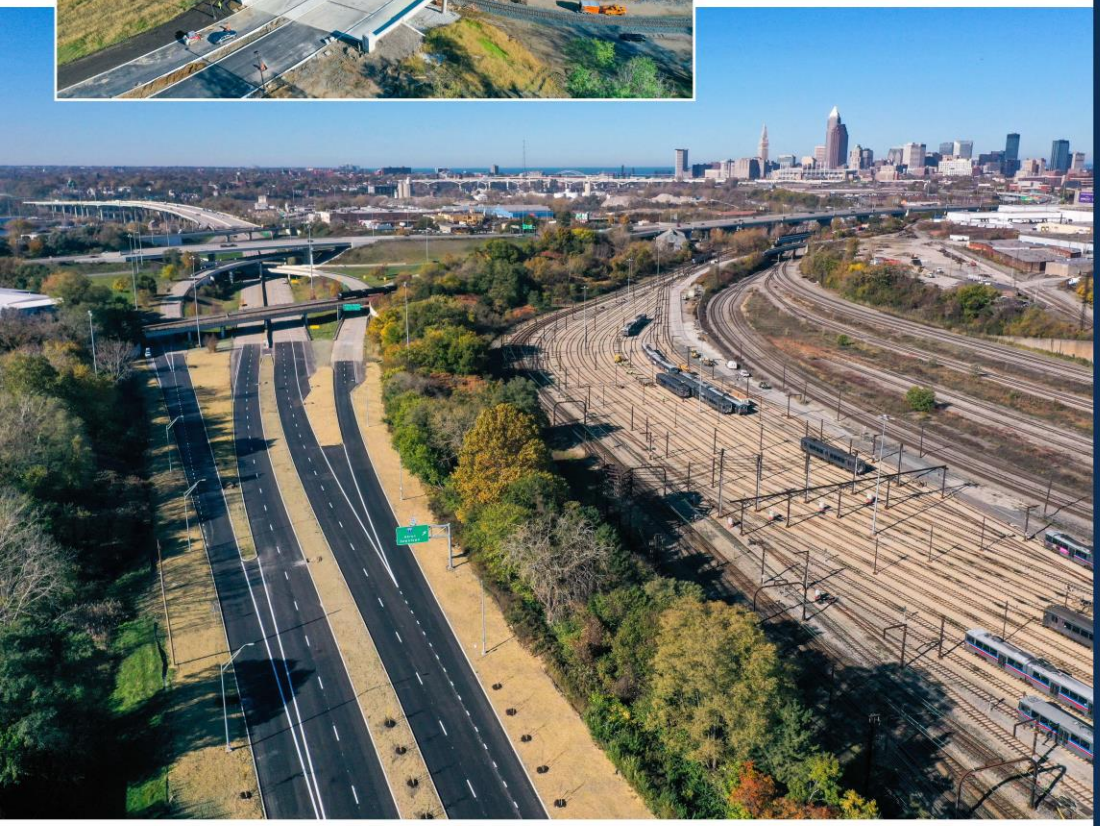
ENTERING FIRM
Michael Baker International
Hamilton, New Jersey

OWNER
Atlantic County
Atlantic County, New Jersey

ACEC ENGINEERING Excellence AWARDS

OPPORTUNITY CORRIDOR SECTION 3

Cleveland, Ohio



The area between the terminus of Interstate 490 and University Circle in Cleveland, Ohio, had become known as the"Forgotten Triangle" due to a lack of economic activity and investment. The long-awaited Opportunity Corridor, a new 3-mile roadway that runs from East 55th Street at Interstate 490 to East 105th Street, not only brings enhanced transportation, mobility and connectivity benefits to this area of Cleveland,it is also spurring new economic development, new jobs and a new identity for the community. Additionally, it enhances access to Cleveland's cultural hub,healthcare and educational facilities. The 35-mph boulevard also includes a median, crosswalks, pedestrian and traffic signals, a multi-use path, tree lawns and vehicular, pedestrian and rail bridges.

Michael Baker International served as the lead designer on the Opportunity Corridor Section 3 project. The firm partnered with lead contractor Kokosing Construction Company on the new five-lane, urban boulevard that has improved the roadway network within this historically underserved area of Cleveland. As lead designer, Michael Baker designed two miles of new roadway, including seven new bridges, maintenance of traffic challenges, underground utility infrastructure, roadway and pedestrian lighting, geotechnical design, drainage and environmental coordination.

The project was managed by the Ohio Department of Transportation and the City of Cleveland. It encompasses nearly 1,000 acres on Cleveland's southeast side and is anchored by University Circle and the Cleveland Clinic.

Michael Baker INTERNATIONAL

Entering Firm:
Michael Baker International
Cleveland, Ohio

Owner:
Ohio Department of Transportation
Cleveland, Ohio

PAWTUCKET-CENTRAL FALLS TRANSIT CENTER

Pawtucket, Rhode Island

Rhode Island's Pawtucket and neighboring Central Falls are uniquely positioned on the Rhode Island/ Massachusetts border. While the area saw 72 commercial and freight trains pass through each day via Amtrak, residents did not have access to commenter rail transit options and had to rely on other forms of transportation to/from Boston to the north and Providence to the south.

The new Pawtucket-Central Falls Transit Center provides a robust combination of commuter rail and bus service in an emerging area of transit-oriented economic. It allows riders to switch modes of transportation easily between commuter rail operated by the Massachusetts Bay Transportation Authority (MBTA) and the Rhode Island Public Transit Authority's (RIPTA) statewide bus network – making it easier and more convenient for many Rhode Islanders traveling to and from Boston and other destinations in Massachusetts.

The rail hub includes dedicated platforms for northbound and southbound service, a glass-enclosed pedestrian bridge, elevators, ramps and stairs. The design utilizes state-of-the-art composite panels with covered waiting areas. The train station also has a separate drop off area and set of stairs and ramps to the platform. The bus hub includes five berths with covered shelters for passengers. The hub connects to a transit emphasis corridor, which includes dedicated bus lanes and bike lanes, which link the facility to the heart of downtown Pawtucket. The facility also includes a 200-car parking lot.

The $63 million Design-Build project was led by contactor Barletta Heavy Division and designer of record Michael Baker International.

ACEC Engineering Excellence Awards

Michael Baker INTERNATIONAL

ENTERING FIRM
Michael Baker International
Rocky Hill, Connecticut

OWNER
Rhode Island Department of Transportation
Providence, Rhode Island

ATL RUNWAY 9L END-AROUND TAXIWAY

Atlanta, Georgia

ATL is the busiest airport in the world, which means delays have a huge impact on the economy and environment of not only Atlanta and Georgia, but also the nation's flying public. The Runway 9L End-Around Taxiway allows planes to taxi around the end of an active runway while other planes are taking off. This speeds up taxi times from the runway to the terminal, reducing the time waiting and the fuel wasted at idle. It also improves the overall safety of the airport as well as the customer experience with shorter times from landing to gate.

The Runway 9L End-Around Taxiway project took nearly two years of construction to complete and involved multiple aspects of engineering design, including civil, structural, electrical and environmental.

Michael Baker, Pond and Company, and Corporate Environmental Risk Management, LLC (CERM)incorporate the Joint Venture team of Aviation Infrastructure Solutions with the following contributing roles:

- Michael Baker: Civil design and project management
- Pond: Civil, electrical and utility design and relocation
- CERM: Civil design, geotechnical and survey

Utilities, including gas, power, fiber and a 30-inch water line (one of the main feeds to the airport), were relocated as part of this project. The design and construction involved 35,000 square yards of new 20-inch concrete pavement,24,000 tons of asphalt, 3,000 feet of 18-foot-tall blast wall, 350,000 cubic yards of new embankment and more than 12,000 feet of new stormwater pipe.

ACEC Engineering Excellence Awards

AIS
POND Michael Baker International CERM
AVIATION INFRASTRUCTURE SOLUTIONS

ENTERING FIRM
Michael Baker International
Norcross, Georgia

Hartsfield-Jackson Atlanta International Airport

OWNER
Hartsfield-Jackson Atlanta International Airport (ATL)
Atlanta, Georgia

Sunport Emergency Power System Improvements

In 2019, the Albuquerque International Sunport experienced multiple high-profile power outages, the largest of which lasted five hours, impacted more than 4,000 passengers, and forced the cancellation of over 30 flights. As a result, the City of Albuquerque's Aviation Department hired Molzen Corbin engineers to assess and improve the Sunport's emergency power system. The project was carried out in four phases: assessing the current system, evaluating emerging technologies, designing a new system, and overseeing construction. The team delivered a system that not only provides a stable, continuous power supply during emergencies, but also enhances public safety and provides the capacity for airport growth. Key components include:

- **Four 750kW Diesel Generators:** These generators provide approximately twice the capacity of the original system (capable of powering the entire terminal), carry their full load within 10 seconds, and can operate 100% on Hydrotreated Vegetable Oil (HVO), which eliminates up to 90% of net CO_2 greenhouse emissions and is renewable and biodegradable.
- **Four 500kW Flywheel Uninterruptible Power Supply (UPS) Systems:** The battery-free UPS provides continuous power for the airport's emergency circuits from the time an outage occurs until the time the generators start up and deliver power. The flywheel has 10 times less embedded and 40% less operational carbon emissions than traditional lead-acid battery UPS systems.

As the largest airport in the state, the Sunport serves as a Gateway to New Mexico, hosting more than 5 million passengers annually and 8 major carriers.

ACEC Engineering Excellence Awards

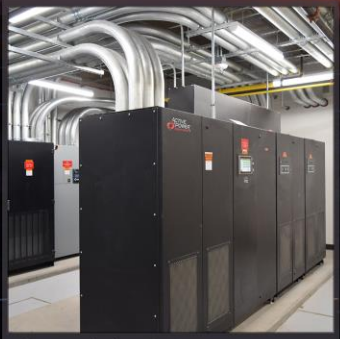
Location: Albuquerque, New Mexico

Client: Aviation Department, City of Albuquerque

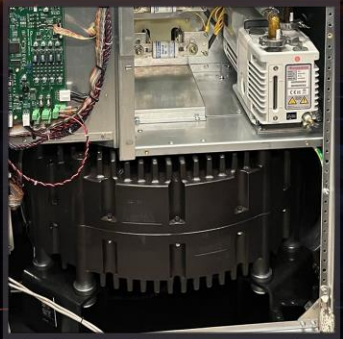
Entrant: Molzen Corbin Albuquerque, New Mexico

MOLZENCORBIN
ENGINEERS | ARCHITECTS | PLANNERS

In an emergency, the selected generators can operate on jet fuel, which is readily available at the airport.



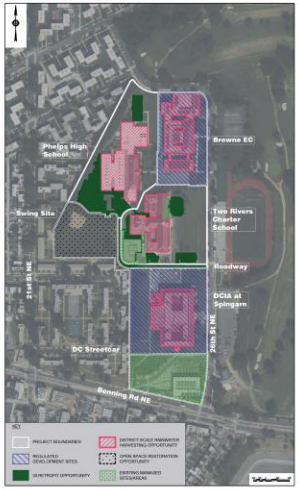
The modular UPS system eliminates single-point contingency failure, protects against power disturbances, and improves power quality.



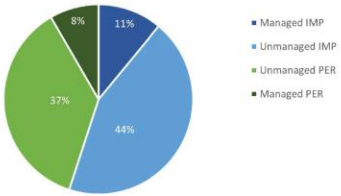
The flywheel UPS is 12 times less likely to fail than a legacy UPS and provides a lower total cost of ownership.

Hilltop Campus Stormwater Management Master Plan

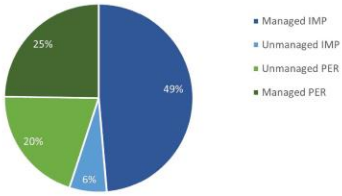
Washington, DC



EXISTING STORMWATER CONDITIONS: MANAGED VS. UNMANAGED LAND (CAMPUS-WIDE SUMMARY)



PROPOSED STORMWATER CONDITIONS: MANAGED VS. UNMANAGED LAND (CAMPUS-WIDE SUMMARY)



Images, clockwise from top left:

A. Graphic showing existing stormwater management
B. Graphic showing Stormwater Master Plan opportunities
C. Pie chart showing existing stormwater conditions: managed versus unmanaged land
D. Pie chart showing proposed stormwater conditions: managed versus unmanaged land

The Hilltop Campus is a 28-acre campus owned by the D.C. Department of General Services (DGS) and includes a number of academic and community training facilities. For a project procured by D.C. Public Schools and DGS to renovate Spingarn High School on campus as part of the D.C. Infrastructure Academy (DCIA) initiative, DGS recognized an additional opportunity to address stormwater management at a campus scale rather than a site/project scale. As a subconsultant to VMDO and Bell Architects, Nitsch Engineering provided civil engineering and planning services to develop the Hilltop Campus Stormwater Management Master Plan to support the DCIA Spingarn High School renovation project.

The Hilltop Campus Stormwater Management Master Plan provides a holistic vision and long-term goals for managing stormwater on campus and identifies opportunities for considering stormwater improvements campuswide. It recommends a phased approach and strategies for treating and managing stormwater on campus incrementally through capital improvements projects, stormwater retrofit projects, and partnering opportunities with adjacent landowners.

The Plan also develops guidelines for obtaining Stormwater Retention Credits (SRCs). It highlights project opportunities for DGS to generate SRCs and how they can be reused and/or traded through D.C.'s Stormwater Retention Credit Trading Program. The Plan also supports DCIA's academic mission by recommending a number of educational programs, partnerships, and learning/training options for those on campus.

The Hilltop Campus Stormwater Management Master Plan creates a vision of a campus that holistically manages stormwater and provides a more sustainable, beneficial environment.

ACEC
American Council of Engineering Companies

Submitted by:

Nitsch Engineering

Washington, DC

Owner:

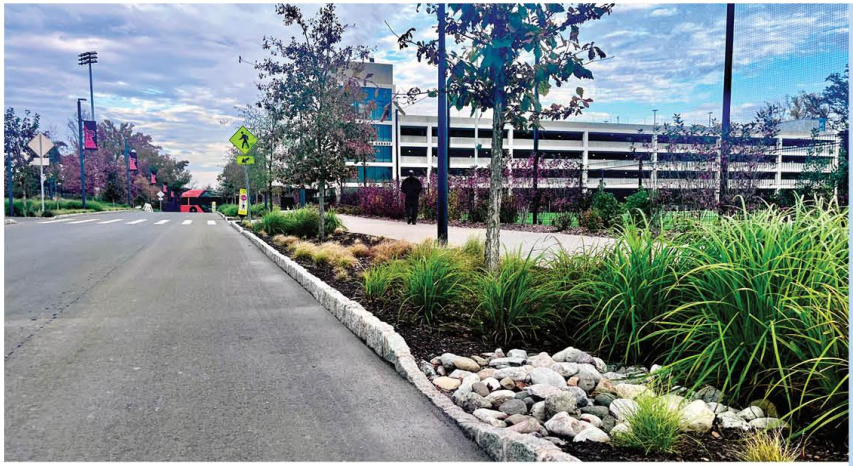
D.C. Department of General Services (DGS)

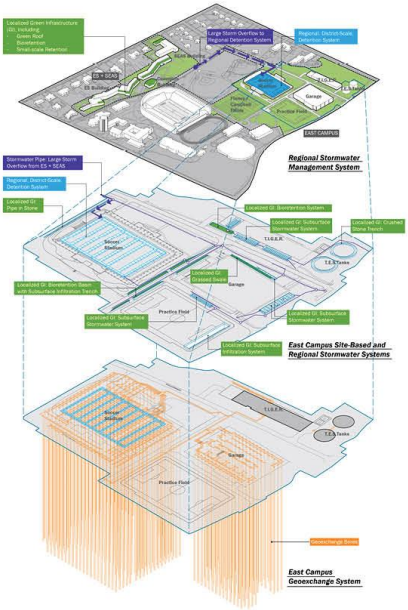
Washington, DC

ACEC Engineering Excellence Awards

Princeton East Campus Stormwater Facilities

Princeton, NJ





Images, clockwise from top:

A. Localized green infrastructure (bioretention basin with subsurface infiltration trench) along Stadium Drive
B. Construction of the regional stormwater detention system beneath the soccer stadium, co-located with geo-exchange system
C. Graphic showing the localized and regional stormwater elements, and how they stack with the geo-exchange system

Princeton University has been at the forefront of sustainability in higher education, using their campus as a test bed for innovative approaches. As part of campus-wide planning efforts, Princeton – working with Nitsch Engineering – developed a comprehensive approach for managing stormwater that combines localized green infrastructure with regional flood mitigation strategies to build a campus resilient to climate change impacts.

Nitsch provided stormwater planning and engineering services to support the redevelopment of the 22-acre East Campus, which changed a parking lot into a soccer stadium, soccer practice field, parking garage, and the "T.I.G.E.R." (Thermally-Integrated Geo-Exchange Resource) central utility building. Stormwater is managed using localized green infrastructure combined with regional flood storage beneath the soccer stadium. This additional capacity allows Princeton to address water quality and peak rate mitigation for the East Campus *as well as* future development projects within the watershed.

The soccer stadium is also the site of an innovative geo-exchange system. Co-locating two major resilient infrastructure systems in one location with limited space meant "stacking" the systems – a complex design approach that required an intensely collaborative process between Nitsch and the geothermal and M/E/P engineers.

The East Campus stormwater facilities, and the soccer stadium in particular, are a testament to the project team's commitment to going above and beyond "engineering as usual." The solutions harness the power of each project, leverage open space as high-performance areas that support Princeton's resilience goals, and bring Princeton closer to their goal of achieving net zero carbon emissions.

ACEC
American Council of Engineering Companies

Submitted by:
Nitsch Engineering
Boston, Massachusetts

Owner:
Princeton University
Princeton, New Jersey

ACEC Engineering Excellence Awards

INSTALLATION OF
COMBINED & STORM SEWERS IN 229TH STREET
QUEENS, NY

New 9'x5' Storm Sewer Installation on a Residential Street

This $85 million capital infrastructure project was located in Lower Brookville, Southeast Queens - an area that was heavily impacted by Hurricane Sandy. As a central component of the South Queens Initiative, this project sought to address flooding issues in the area and features the installation of a combined sewer, which will become a major drainage artery for the entire borough of Queens. Additionally, high-level storm sewers were installed to address the severe drainage issues in the neighborhood. To accommodate these large sewers, extensive relocation efforts of the existing underground utilities were needed. Distribution water mains and sanitary sewer lines were relocated beside the combined sewer lane.

First Day – Double Barrel Combined Box Sewer

Regulator Chamber – Under Construction

Inside the Tide Gate Chamber

Constrained Clearances

Tide Gate Chamber – Under Construction

ACEC ENGINEERING Excellence AWARDS

Project Title:
Installation of Combined & Storm Sewers in 229th Street, Queens, NY

Client:
NYC Department of Design + Construction
Long Island City, NY

Entrant:
NV5-ZOFS Joint Venture
32 Old Slip, Suite 401
New York, NY 10005

olsson

ACEC Engineering Excellence Awards

PROJECT: BOWERSOCK DAM REHABILITATION

CLIENT: CITY OF LAWRENCE, KANSAS
6 E 6TH ST, LAWRENCE, KS 66044

FIRM: OLSSON
7301 W. 133RD STREET, SUITE 200
OVERLAND PARK, KANSAS 66213

BOWERSOCK DAM REHABILITATION

This dam rehabilitation project stands out for its innovative approach to completing repairs to the dam and power plant while minimizing environmental impacts through a unique collaboration between the USACE, City of Lawrence, and Bowersock Mills and Power Company. The river had eroded the exposed bedrock on the downstream face of the dam, undermined the walls for the turbine outfalls, as well as created a large scour hole downstream. The project filled in the scour holes and fortified the dam and building's foundation against future scour using tried-and-true construction techniques that consisted of concrete armoring secured to the bedrock with rock anchors.

Building within a riverbed demanded safe and reliable engineering solutions due to fluctuating water levels. The watershed extended over nearly 52,000 square miles and included three Corps-regulated dams nearby. A collaborative approach was undertaken, where weekly calls were held with the project stakeholders and USACE to ensure weather conditions, scheduled releases from the dams, and metering ability with Bowersock's dams were coordinated so the Contractor could ensure the safety of their workers and equipment operating behind the temporary causeways.

Ensuring the dam's stability secures the community's water supply, averting potential disasters and safeguarding lives and property downstream. Eco-conscious methods, like replacing lost natural habitats with artificial ones, highlighted a commitment to preserving local ecosystems.

The project faced immense challenges—maintaining engineering precision in a dynamic river setting, ensuring worker safety, and upholding environmental sustainability. Overcoming these hurdles showcased the project's complexity and the team's expertise.

The downstream face of the Bowersock Dam (before repairs)

Project area and south power plant

Removals and installation of grouted rock anchors

Placement of new concrete apron and wall armoring

Kansas River showing dam, North and South Power Plants

Finished armoring that integrated with previous repairs.

STATE HIGHWAY 211

Bexar County, TX

UNIQUE AND INNOVATIVE APPROACH

- Creation of a pass-through financing agreement between Bexar County, Texas Department of Transportation (TxDOT), and landowners organized under a Public Improvement District (PID) to acquire ROW, fund design, and donate land for crticial habitat preserves
- Incorporation of safe wildlife crossings vertically separated from vehicles at creek crossings to support free movement of wildlife with minimal impact to budget

SOCIAL, ECONOMIC, AND SUSTAINABLE DEVELOPMENT CONSIDERATIONS

- Design of a lighted pedestrian grade separated crossing beneath the roadway to satisfy safety concerns and provided added mobility to nearby residents
- Construction on earth fill to avoid karst formations in the most environmentally sensitive areas of the project
- Establishment of a 40-acre preserve to offset impacts to critical habitat and contribute towards recovery potential of karst invertebrates

COMPLEXITY

- Coordination with various agencies and community members to develop a publicly-accepted alignment with minimal noise, visual, and environmental impacts
- Acquisition of funding to purchase ROW necessary for the completion of the project

SUCCESSFUL FULFILLMENT OF CLIENT NEEDS

- Organization of private landowners under a PID to secure decades-long financing obstacles
- Delivery of critical connector for traffic with added elements to support the mobility and safety of residents and wildlife

FUTURE VALUE TO ENGINEERING PROFESSION

- Set an example of how teamwork and community can solve problems
- Coordination with residents through public hearings and meetings to ensure their voices were heard to develop a design that met infrastructure needs and also addressed the community's concerns

PAPE-DAWSON ENGINEERS

ENTERING FIRM:
PAPE-DAWSON ENGINEERS
San Antonio, TX

CLIENT:
BEXAR COUNTY
San Antonio, TX

ACEC ENGINEERING EXCELLENCE AWARDS

East Lake Sammamish Trail

REDMOND, SAMMAMISH, AND ISSAQUAH, WASHINGTON

The East Lake Sammamish Trail is a rail to trail project more than 25 years in the making. The 11-mile trail completes a 44-mile regional trail corridor, providing a nonmotorized choice for people of all abilities to walk, ride, roll, and bike.

Initially an interim use trail with a gravel surface was opened to public use in 2006. The permanent trail was constructed in five segments, the final segment completed in 2023. The trail features a 12-foot-wide asphalt surface with 2-foot-wide gravel shoulders on each side, plus rest areas and driveway and road intersections.

The corridor presented a number of challenges including 300 adjacent private properties, 78 wetlands and 46 streams, cultural resources, and 4 watersheds and 9 basins draining to the lake. The design incorporates 132 walls that minimize the trail footprint as well as impacts to adjacent natural and built environments. Around 4,700 trees and 98,000 sustainable native shrubs were planted, 10 acres of wetland mitigation provided, and 11 fish passage culverts constructed. Over 65 driveway and roadway crossings and 60 stairs adjacent to the corridor were reconstructed.

Today, a once dilapidating railway corridor is a busy, active, recreational opportunity for all to enjoy.

King County
Seattle, Washington

Parametrix
Seattle, Washington

ACEC Engineering Excellence Awards

Client: District Department of Transportation (DDOT), Washington, DC
Firm: Precision Systems, Inc. (PSI), Washington, DC

Traffic Safety Input (TSI) Prioritization Model (Washington, DC)

Overview:

The District Department of Transportation (DDOT) launched Traffic Safety Investigation (TSI 1.0) program in the Fall of 2021. The program allowed residents and the public to identify traffic safety concerns across the District and request that DDOT traffic safety engineers review the location for small scale safety treatments.

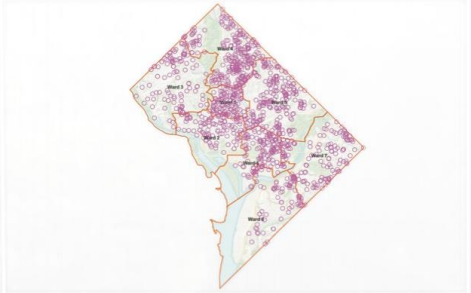


Figure 1 – Outstading TSIs

Problem:

The TSI 1.0 program requests were handled on a first-come, first-serve basis. This results in a substantial backlog of thousands of TSIs, as many of these requests are complex and require review, data collection, and other potential investigations. The delivery of services was inequitably distributed across the District with the most vocal and connected residents getting program focus and that safety engineers were not able to focus and prioritize locations with higher risk or crash history.

Innovative Application:

DDOT staff and consultants developed the new Traffic Safety Input (TSI 2.0) program to utilize a quarterly prioritization model that considers objective factors such as roadway characteristics, crash patterns, race and social equity, proximity to Vision Zero High Injury Network corridors, and locations with vulnerable road users near schools, community centers, Metrorail stations, and bus stops.

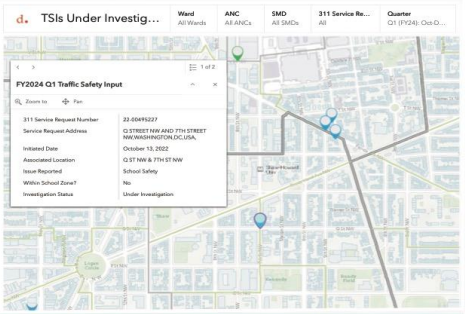


Figure 2 – Current TSIs under Investigation this Quarter

Social, Economic, and Sustainable Design Considerations:

The model considered the DC Equity Area Study's Race and Ethnicity Index, and Disability Index, for every Census Block in DC, as well as US Census Bureau American Community Survey (ACS) data on Income for every Census Tract in DC. The team used this data to develop scores for every intersection and assigned those scores to each TSI request location. The program used a scored and weighted formula to automatically award higher scores to intersections associated with a TSI 2.0 request, when located in areas with higher Race and Ethnicity and Disability Index scores, as well as in areas with lower median household incomes, to ensure that the TSI 2.0 prioritization method advanced transportation equity and helped address historically underserved populations and neighborhoods.

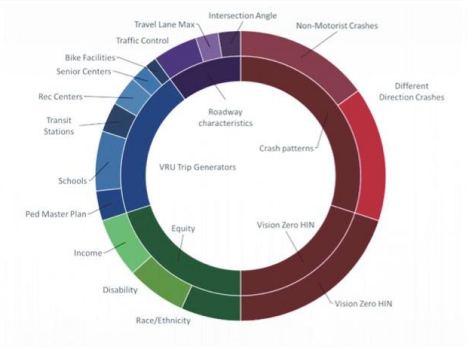


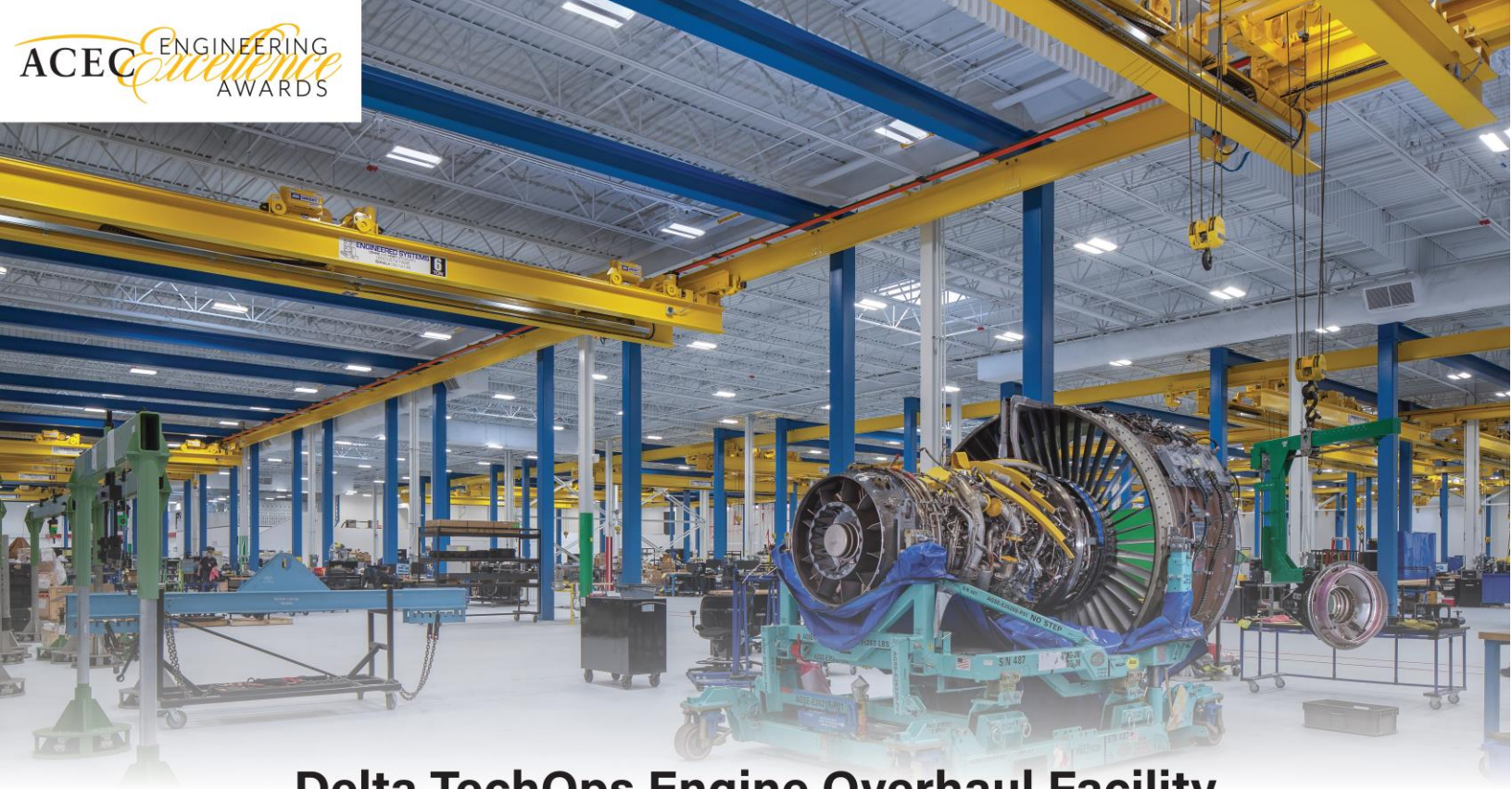
Figure 3 – Factors Considered in the TSI Prioritization Model

Succesful Fullfilment of Client Needs:

Under TSI 2.0, each TSI request will run through the prioritization model. Each quarter, 200 priority locations will advance for study, data collection, and safety interventions design and construction on a rolling basis. This "data-driven" approach to planning and engineering of a request-based program is advantageous because, when properly executed, it is reproducible, consistent, fast, more equitable, safety-focused, and fiscally responsible way to allow detailed consideration of large amounts of information.

Figure 4 – Intersection Scores (Vulnerable Road User & Equity Components)

ACEC ENGINEERING Excellence AWARDS



Delta TechOps Engine Overhaul Facility

Project Location: Atlanta | **Entering Firm:** Prime Engineering, Inc. - Atlanta | **Client:** Delta Air Lines, Inc. - Atlanta

Our Role

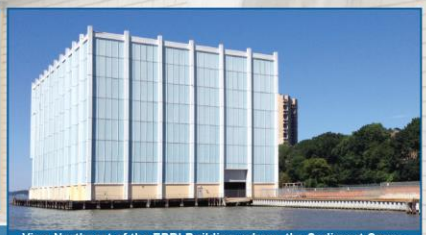
PRIME
A Stratus Team Company

Delta Air Lines Inc. faced a dilemma: cramped quarters for servicing their vital Pratt & Whitney GTF engines at their bustling Technical Operations Center, headquartered at Hartsfield-Jackson International Airport in Atlanta. Enter Prime Engineering, Inc., who orchestrated a masterful upgrade, transforming the existing Cargo facility into a modern, efficient haven for the GTF Engine and Fan Case Shops. Beyond brick and mortar, Prime infused innovation with energy-saving features, sustainable materials, and seamless collaboration with Delta, exceeding expectations in both functionality and aesthetics.

This project wasn't just a build, it was a boost – streamlining operations and prioritizing employee safety. Prime Engineering proved complex challenges can be elegantly solved through collaboration, innovation, and a commitment to sustainability, propelling Delta, and the aviation industry, to new heights.

Former BICC Cables Site
City of Yonkers
Yonkers, New York

Design, Permitting, Construction and Long Term Monitoring In Perpetuity of a Sediment Cap Remediation under a Building in the Hudson River



View Northeast of the EPRI Building; where, the Sediment Cover System is beneath the building

View North of the delivery of the Multi-Layer Sediment Cover System

View South under the EPRI Building

View West of the EPRI Building and Stacked Ice Sheets

View Northwest of the Robotic Excavator for Sediment Dredge Operations under the EPRI Building

Uncontrolled discharges from the past manufacturing operations resulted in contaminated soil, sediment, and groundwater at the Site.

Polychlorinated biphenyls (PCBs) and lead concentrations were observed in the Hudson River contaminated sediment, which required a joint NYSDEC and USEPA remedial action (RA). Dredge activities removed the contaminated sediment in the Hudson River open water areas; however, 25,000 square feet (or 4,000 cubic yards) of contaminated sediment located under the EPRI Building could not be removed. The EPRI Building is supported by H-pile clusters over the Hudson River.

Multi-Layer Sediment Cover System As-Built

Six dredge efforts were attempted to remove the PCB and Lead impacted sediments; however, access constraints, an extensive debris field, and safety concerns necessitated that the dredge attempts be aborted and the RA change to active treatment and containment.

An engineering control (EC), a 24,500-square-foot area Multi-Layer Sediment Cover System (SCS) was constructed under the EPRI Building. The SCS included:

1. Cushion sand fill layer;
2. Overlapping layers of an SCS Active Treatment and Containment Layer (CETCO Reactive Core MatR, RCMR);
3. SCS Scour Protection Layer (sand filled TenCate GT 500 geotextile);
4. SCS Armor Protection and Habitat Layer (Cobble and Revetment Stone); and,
5. SCS Load Tests and SCS Remote Sensing System (fiber optic cables installed on the top of the SCS).

The approved Site Management Plan (SMP) requires that the protectiveness of this SCS be monitored in perpetuity. Since 2016, we have performed the annual monitoring and reporting of the SCS integrity to both the NYSDEC and the USEPA.

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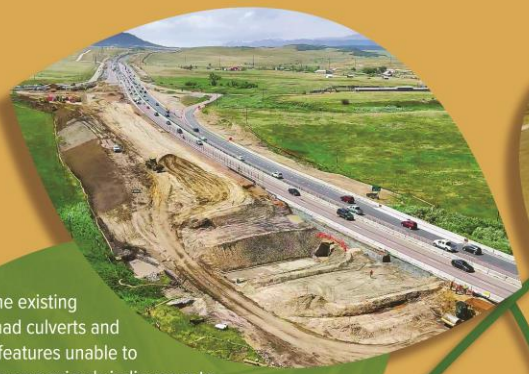
Design, Permitting, Construction & Long Term Monitoring In Perpetuity of a Sediment Cap Remediation under a Building in the Hudson River
Yonkers, NY
Client: Extell Hudson Development, LLC; Yonkers, NY
Firm: Paulus, Sokolowski & Sartor Engineering PC; Yonkers, New York

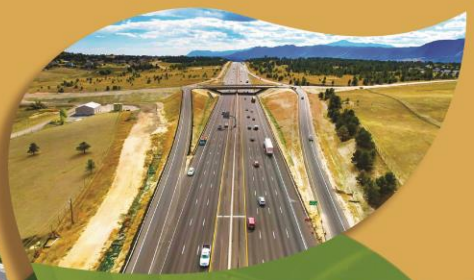
Mind the Gap

I-25 South Gap, Monument to Castle Rock

Douglas and El Paso Counties, Colorado



The existing corridor had culverts and drainage features unable to accommodate larger animals indigenous to the area, including elk and bears. To prevent the "tunneling effect" small openings had on these larger species, the project designed four new larger and wider underpasses.



The RockSol Environmental team worked with Kraemer to meet over **50** environmental commitments.

14 Beaver Dam Analogs

Unique Aspect:
Reclaimed Wood Posts Woven with Live Willow Stakes Harvested Onsite

14,665 New Plants

3,095 Live Willow Stakes Harvested

15 New Planting Zones

28 Miles of Wildlife Fencing

63 Escape Ramps

4 New Wildlife Underpasses

1 Refurbished Wildlife Underpass

New Brush Windrow Habitat Features for Small Animals

One of the Largest Wildlife Mitigation Systems in North America

The South Gap project expanded 18-miles of I-25 between Monument and Castle Rock Colorado to improve travel reliability, safety, and mobility.

Final Project Cost: $415,000,000
Final Project Completion: 5/31/2023

The project's budget included an allocation of $20 million to provide an updated and effective wildlife mitigation system for the corridor, including wildlife underpasses with brush windrows, wildlife fencing, escape ramps, beaver dam analogs, and other features.

RockSol provided both design and construction management services under separate contracts. Under the design contract, RockSol provided geotechnical engineering, pavement design, and some structural design, including a pair of bridges for one of the wildlife underpasses. RockSol was the Prime consultant for CMGC support services and construction management. This team included our environmental team, who was instrumental in ensuring all environmental commitments were met.

The project is a great success, with early data indicating a 40% reduction in animal-vehicle collisions even before construction was complete. We anticipate the post construction data will meet or exceed the project's goal of 90% reduction in these types of accidents.

Entrant: RockSol Consulting Group, Inc. Thornton, Colorado

Owner: Colorado Department of Transportation Denver, Colorado

ACEC ENGINEERING AWARDS

Early project construction shows the existing dam, dry riverbeds, and initial site access road.

S&ME field-engineered a creative solution for tensile/pull tests to verify rock-to-bond strength. Bond strength was critical to bridge the new structure to the existing rock, or old dam.

Interim construction of concrete-poured slabs for site and equipment access.

View of the safe boater access and diversion dam.

Completed project construction with running rapids. The Great Falls location, within a live river system, presented complex site challenges, from underwater construction to site accessibility.

World-class whitewater channels promote outdoor recreation and bring visitors to boost the local Great Falls economy.

GREAT FALLS-DEARBORN DAM DIVERSION BYPASSES

Great Falls, South Carolina

Transforming a Dry River Channel into a Community Destination

"It's just amazing to see people going down these channels. It's a great community resource that does nothing but forecast a bright future for this town." - Tim Huffman, Duke Energy

S&ME provided Geotechnical, Environmental Permitting, and Construction Materials Testing and Support for Duke Energy Carolina's Great Falls-Dearborn Dam Diversion Bypass Project.

- **Uniqueness:** The project site was unique as it included a blend of old and new structures nestled within the active flow of a river. Great Falls boasts a complex geology ranging from rolling waves of granite to 40-foot rock bluffs that is typically unexpected for the region.
- **Complexity:** The site required complex accessibility and innovative workarounds, creating logistical challenges. The remote accessibility challenges required the construction of access roads and ramps to move heavy equipment across rocky and wet terrain. The project's complexity required the use of marine tugboats and a tower crane, enabling access to nearly unreachable areas within the site.
- **Innovation:** S&ME field-engineered a creative solution to test the anchoring systems. The solution verified rock to bond strengths of the new dowel into the existing dam to ensure the design criteria were met.
- **Social Impact:** After 120 years of dry riverbeds, the community now enjoys a thriving river ecosystem, enhanced tourism, community interaction, and renewable power generation.

Project by:
S&ME
Spartanburg, South Carolina

ACEC Engineering Awards

Client/Owner:
Duke Energy Carolinas, LLC
Charlotte, North Carolina

DUKE ENERGY.

WILL BUECHNER PARKWAY

LEE COUNTY, ALABAMA

THE CITY OF AUBURN
AUBURN, ALABAMA

SAIN ASSOCIATES
BIRMINGHAM, ALABAMA

ACEC ENGINEERING Excellence AWARDS

ACEC
American Council of Engineering Companies
of Alabama

SAIN ASSOCIATES, INC. WAS CONTRACTED BY THE CITY OF AUBURN TO PROVIDE DESIGN SERVICES FOR A NEW ROADWAY NOW KNOWN AS WILL BUECHNER PARKWAY. THE NEW 1.5-MILE ROADWAY ENHANCES VEHICULAR AND PEDESTRIAN CONNECTIVITY AND ACCOMMODATES THE SURGING GROWTH ON THE NORTHWEST SIDE OF TOWN. SAIN'S ROLE INCLUDED ENGINEERING DESIGN, UTILITY DESIGN, SURVEYING, AND COORDINATION AND PERMITTING SERVICES. SAIN SERVED AS A TRUSTED CIVIL ENGINEERING CONSULTANT TO THE CITY FOR THIS AMBITIOUS UNDERTAKING.

TEXAS DEPARTMENT OF TRANSPORTATION BRIDGE CLEARANCE PROGRAM

Supporting the inspection of Texas bridges for the safety of the public

PROJECT OVERVIEW AND COMPLEXITY:

- TxDOT Highway Bridge Program strives to increase safety of highway bridges statewide
- Bridge inspection is a continuous 2-year cycle that yields bridge condition as a classification and rating
- SAM completed a bridge clearance program that required inspection of clearance values for 4,448 bridges statewide

INNOVATIVE PROJECT APPROACH:

- State-of-the-art mobile mapping system to capture physical attributes of bridges and fully support 3D-visualization and measurement
- Real-time project tracking for SAM's technical management and TxDOT through secure online dashboard built with ArcGIS
- Custom software tools and workflows to maximize efficiency of technical staff for extraction of 150,000+ features

SOCIAL AND ECONOMIC CONSIDERATIONS:

- Increases safety of highway bridges statewide
- Worker exposure is reduced when collecting data, creating safer roadway for public
- Accuracy and detail of Mobile LiDAR allows end-users to extract data in various ways, allowing agencies to use dataset for multiple purposes

FUTURE VALUE:

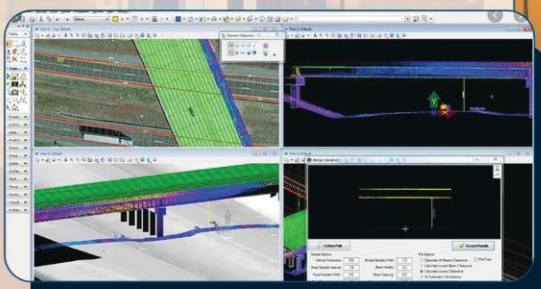
- SAM's innovative customized technical approach will continue to reduce risk, labor costs, and time for bridge inspection
- Computing power, accessibility to cloud data and better software development structures, enabling specific user applications for a better level of data interchange
- SAM's data extraction capabilities and experience have grown in parallel to allow for deeper software integration with our state-of-the-art mobile mapping systems collecting exponentially more data

EXCEEDING CLIENT NEEDS:

- Delivery of point-clouds and bridge approach and departure imagery yields latest ASPRS standards/formats
- Consistent execution of workflows and quality assurance for coverage and data quality validation produced consistent data and high-quality deliverables

Services
»Mobile LiDAR
»Mapping Bridge Clearances
»Feature Extraction (+150,000)
»GIS Asset Inventory

SAM's Innovative Project Approach



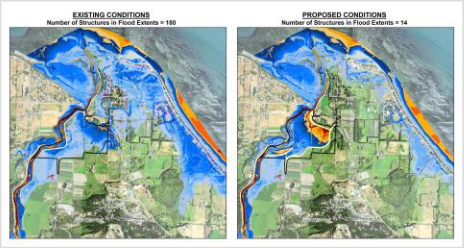
Workflow Overview on the LiDAR Point Cloud & Color Image in the MicroStation Environment

ENTERING FIRM: SAM COMPANIES | AUSTIN, TX
CLIENT & LOCATION: TXDOT BRIDGE DIVISION | AUSTIN, TX

ACEC ENGINEERING Excellence AWARDS

LOWER DUNGENESS RIVER FLOODPLAIN RESTORATION AND LEVEE REALIGNMENT

Client/Owner: Clallam County **Location:** Clallam County, Washington **Entrant:** Shannon & Wilson ▲ Photograph by John Gussman



Inundation for the 100 Year Flood Event

The area has experienced flooding in the past. Early project stages modeled the benefits of setting back the levee and opening the floodplain. The levee would be designed to retain the 500-year flood event and reduce the flood extents of the creek behind the levee. The project would reduce the flood risk to 166 neighboring structures and help keep roadways open.

Located along the Lower Dungeness River in Clallam County, Washington, the river is home to nine salmonoid species, including Chinook, Chum, Steelhead, and Bull Trout, which are listed as threatened under the Endangered Species Act.

The project balances the benefits of improving local flood protection and interior drainage with the enhancement of fish and wildlife habitat.

Construction of the setback levee.

❶ Geogrid for stability and construction. ❷ Levee fill. ❸ Riprap for erosion and scour protection. ❹ Geotextile for filter and separation. ❺ Return channel location. ❻ Woody material for installation.

A unique benefit of the levee is that it was designed to accommodate a two-lane, 20-foot-wide county road should traffic studies dictate the need. Until that time, it is open to and enjoyed by the public.

The project reconnects 110 acres of floodplain by removing 4,430 feet of existing levee, 2,950 feet of roadway, and 6,785 tons of contaminated material. It includes a return channel with woody materials to slow water velocity and provide habitat for fish spawning and rearing. Revegetation provides shade, cooling the river temperatures for fish, and captures sediment to increase the downstream water quality for bay shellfish.

CLALLAM COUNTY Washington

SHANNON & WILSON

ACEC ENGINEERING Excellence AWARDS

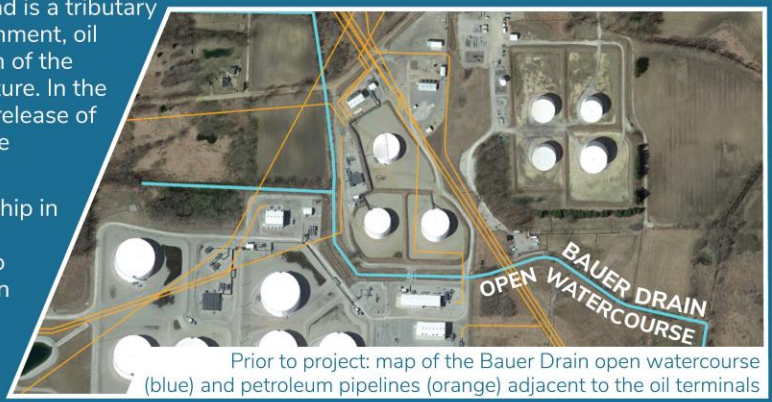
BAUER DRAIN RELOCATION AND IMPROVEMENT PROJECT

LOCATION: Ingham County, Michigan
FIRM: Spicer Group | Saginaw, Michigan
OWNER: Ingham County Drain Commissioner

The Bauer Drain is an open-channel County Drain established in 1946 in Stockbridge and White Oak Townships and is a tributary of the Red Cedar and Grand Rivers. Since establishment, oil company development has occurred near a portion of the Drain by building product terminals and infrastructure. In the early 2010's, incidents occurred that resulted in a release of product directly impacting the Drain, prompting the decision to relocate the Bauer Drain.

Following a petition received by White Oak Township in 2018, Spicer Group was retained by the Ingham County Drain Commissioner to design a solution to separate the incompatible uses of the County Drain and surrounding oil and gas infrastructure. The relocation project involved deep construction following Michigan EGLE and U.S. EPA approval.

Prior to project: open channel Bauer Drain through the petroleum terminal



Prior to project: map of the Bauer Drain open watercourse (blue) and petroleum pipelines (orange) adjacent to the oil terminals

Constructing the relocated Bauer Drain along Grimes Road

Welded steel pipe crossing of pipelines, installed in auger bore operation

The 4,400-foot relocation project included constructing a 48-inch storm sewer through 25-foot-deep excavations that needed significant dewatering. Nearly 300 feet of storm sewer was installed as auger-bored welded steel to cross 10 economically valuable live pipelines, serving southern lower Michigan with gas products and transmitting crude oil to the Midwest and Canada.

A public-private partnership was maintained with the oil companies throughout the design and construction with agreements executed with the companies for pipeline crossings and financing the $10.5 million project. Construction administration, inspection, survey, and material testing were all provided by Spicer Group to ensure a quality project was constructed nearly $2 million under budget. Continuous coordination with project stakeholders through the conclusion of construction resulted in a successful project.

Operations and maintenance training with client staff on-site after completion of project

Member of the public enjoying the constructed riffle within the Sycamore Creek as part of the project's stream mitigation

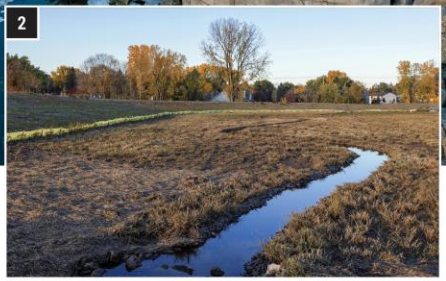
Stantec

THOMPSON OAKS TRANSFORMATION

West Saint Paul, Minnesota

Dakota County

When an underutilized golf course closed, Dakota County saw an opportunity to improve water quality and create recreational amenities.



1. The project managed and screened debris from 10,000 truckloads of environmentally impacted soils onsite, and resulted in hauling 200 truckloads of regulated soils off-site.
2. Meandering through the filtration basin, the river rock cobble-lined stormwater creek has a continuous low flow from the tiered stormwater ponds. The filtration basin's native vegetation filters stormwater above ground and aids infiltration through the soil media during large storm events.
3. Educational signage helps people learn about the history of the site and describes how the new regional stormwater treatment system featuring settling ponds, a filtration basin, wetland, and stormwater creek mimics natural filtration processes to improve water quality.
4. The newly completed trail provides convenient access to surrounding community businesses and resources, as well as active living open spaces, restored natural areas, and improved stormwater amenities.

The former golf course along the River-to-River Greenway Trail in West Saint Paul had been used as a dumping ground for construction debris, creating a brownfield site. Dakota County selected Stantec to evaluate concepts to manage the impacted soil. Cleaning up the site was critical to improve stormwater management, enhance natural areas, create a new trail segment, and unlock future development opportunities.

Our team developed a remediation plan and design concepts for stormwater management, water quality, and accessible trails for pedestrians and cyclists. Construction debris and impacted soils were removed, and the wetlands and portion of the creek have been restored.

The site manages runoff from 25% of the City, preventing 93 lbs of phosphorus from reaching the Mississippi River annually. A new boardwalk bridge is an iconic landmark for the trail, providing opportunities to enjoy wildlife, wetland, and waterfall views.

ACEC Engineering Excellence Awards

Stantec

US 60 SMITHLAND BRIDGE REPLACEMENT

OVER CUMBERLAND RIVER

Livingston County, Kentucky

Kentucky Transportation Cabinet
Stantec | Lexington, Kentucky

Built in 1931, the Smithland Bridge struggled to keep up with modern-day needs. The bridge's location in an S-curve made navigation challenging for barge traffic to navigate along the Cumberland River below, and narrow lanes and shoulders provided insufficient width for local farm equipment to cross without encroaching on the opposing lane.

These issues, coupled with the wear and tear of nearly 100 years of weather exposure, left the bridge structurally deficient and functionally obsolete. As the Cumberland River bifurcated Livingston County into respective northern and southern halves, and US 60 was the only river crossing in the county, the entire community relied on the bridge.

Stantec embraced a modern truss design philosophy for the new bridge to improve efficiency and reduce life-cycle costs. The design honors the previous bridge while providing an airy geometric aesthetic. A wider bridge deck accommodates farm equipment and promotes safer travel. Lengthening the main span to 700 feet enabled navigational clearance to accommodate the river traffic. Now, travelers on and below the bridge can experience a more modern, safer ride to their destinations. The structure includes two 12-foot travel lanes and 8-foot shoulders.

The third longest simple-span truss in North America was erected 15 miles downstream and floated upriver – one of the longest known bridge floats. Off-site construction at a river port facility avoided river traffic disruptions and provided a perfect setup for building the truss.

The bridge, memorialized after Jim Smith Contracting founder Jim R. Smith, was opened to traffic on May 15, 2023.

ACEC Engineering Excellence Awards

Microtunneling Mitigates Historic Flooding in Dubuque

Client Name: City of Dubuque / Dubuque, Iowa

Entrant Name: Strand Associates, Inc.® / Madison, Wisconsin

Project Name: Bee Branch Creek Railroad Culvert and Pedestrian Tunnel Project

Historic Flooding Combined with Stringent Railroad Requirements Made for Complex Rail Yard Crossing

Because of its topography and proximity to the Mississippi River, the City of Dubuque has a history of localized flash flooding. Over a 12-year period starting in 1999, the city experienced six Presidential disaster declarations.

With tens of millions of dollars in both public and private property damage over the years, in 2011 the City began the multi-phase Bee Branch Watershed Flood Mitigation Project. The third phase, completed in 2022, involved improvements to pass stormwater and connect pedestrians from the Upper Bee Branch Creek through an active rail yard to the Lower Bee Branch Creek.

Creative Engineering Met Railroad Requirements While Exceeding City's Expectations for Attractive, Sustainable Infrastructure

Following extensive geotechnical investigations, structural evaluations, and hydraulic analyses, six, **101-inch-diameter steel stormwater culverts** with a **120-foot-wide level control gate system** were designed to convey the 500-year storm event beneath the Canadian Pacific and Kansas City Southern (CPKC) rail yard. With five active rail lines, stringent track settlement tolerances, and a utility-crowded rail yard, microtunnelling was employed as the construction method to install the culvert system. Use of interlocking mechanical joints to connect individual sections of pipe reduced tunnel construction time to just 4 months. The project also included the conversion of the existing concrete, stormwater box culverts to a pedestrian tunnel, providing a grade-separated rail crossing that connects the 30-mile Heritage Trail system to the Mississippi River Trail network.

Aerial view of the outlet structure at the Lower Bee Branch Creek, showing the stormwater pumping station, pedestrian overlook, and hinge crest level control gate downstream of the CPKC railyard.

Leak testing of the 120 foot-wide hinge crest level control gate during construction.

The existing concrete box culverts, originally constructed in 1929, were rehabilitated to serve as a two-way pedestrian underpass.

Microtunneling was utilized to install six 101-inch-diameter steel culverts beneath CPKC rail yard with no impacts to railroad operations.

MDOT MTA MARC RIVERSIDE HEAVY MAINTENANCE BUILDING

The Maryland Area Regional Commuter (MARC) rail system serves approximately 38,000 weekday commuters across Maryland, West Virginia, and Washington, D.C. The new MARC Riverside Heavy Maintenance Building was designed to increase the Maryland Department of Transportation Maryland Transit Administration's (MDOT MTA) ability to maintain and overhaul the MARC fleet. Complete with the latest industrial technology, the facility optimizes maintenance efficiency and overall train performance.

The building's design was tailored to accommodate the maintenance requirements of MARC's new Siemens Chargers by incorporating high spatial clearance and specialized industrial equipment not previously available within the Riverside Rail Yard in Baltimore, MD. By hosting the infrastructure to conduct continuous 24/7 heavy industrial operations, the new 32,113-square-foot facility provides significant time and budget savings for the MDOT MTA.

STV served as the lead designer for the construction management-at-risk (CMAR) project, providing design and construction administration; architecture; site/civil; utility relocation; stormwater management; structural; industrial; mechanical, electrical, and plumbing (MEP); communications; landscape architecture; geotechnical; and hazardous waste removal. The modern design, characterized by its structural steel framing, strategic daylighting, and sustainable features, sets a new standard for functional, people-oriented spaces in the industrial sector.

ACEC Engineering Excellence Awards

MDOT MTA MARC Riverside Heavy Maintenance Building
Baltimore, MD

Maryland Department of Transportation Maryland Transit Administration (MDOT MTA)
Baltimore, MD

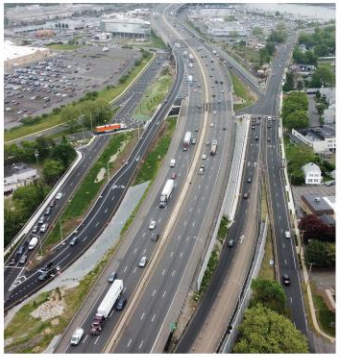
STV
Owings Mills, MD

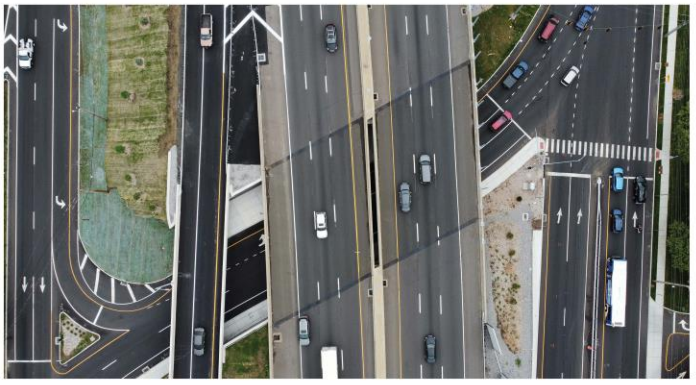
RECONSTRUCTION OF I-95 INTERCHANGE 33

Interstate 95 connects the entire East Coast, stretching north-to-south from Maine to Florida. In the 1950s, the highway's Interchange 33 in Stratford, CT, was constructed as a partial diamond interchange to prevent drivers from bypassing the Stratford toll plaza. By the 1980s, the Connecticut Department of Transportation (CTDOT) removed all toll plazas in the state, including the Stratford plaza.

To support CTDOT's efforts to enhance mobility and alleviate traffic congestion at the Stratford interchange, STV served as the prime design consultant for the reconstruction of Interchange 33, transforming it into a "full diamond" interchange. A new 1,500-foot-long northbound on ramp along with a 1,400-foot-long southbound off ramp provide a crucial connection point with U.S. Route 1. The project also included construction of a new bridge, widening of an existing bridge, installation of noise barrier walls, and an updated closed drainage system to prevent runoff.

The completed full "diamond" interchange opened in May 2022 and has effectively reduced congestion, enhanced safety and mobility, and opened opportunities for economic development in Stratford. The project team faced several challenges at the project site, including a high level of contaminated materials, prompting STV to employ an innovative design approach to minimize disruption to the community.





ACEC ENGINEERING Excellence AWARDS

Reconstruction of I-95 Interchange 33
Stratford, CT

Connecticut Department of Transportation,
Newington, CT

STV,
Hartford, CT

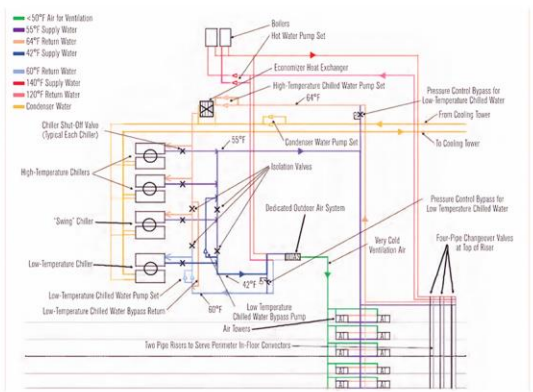
BlackRock Headquarters, 50 Hudson Yards

Anyone who visits BlackRock's offices at 50 Hudson Yards sees a beautiful, state-of-the art headquarters.

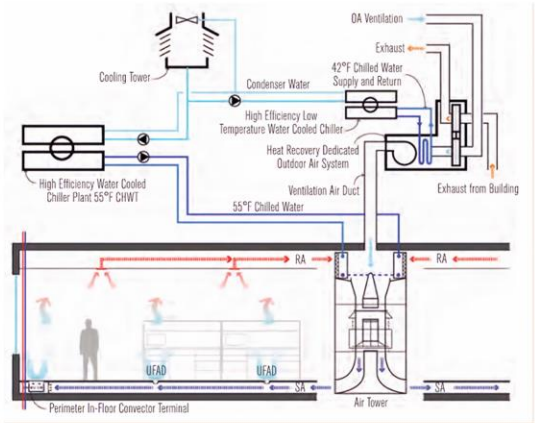
When BlackRock, the world's leading investment management firm, embarked on a journey to find a new headquarters building, they established some tough criteria: The new headquarters had to meet high standards of quality, employee comfort, and functionality while achieving exceptional levels of energy-efficiency, modularity, and resiliency. After several intense months of touring New York City's building stock and development sites, the team found the right fit – a new development by the Related Companies that was under construction at 50 Hudson Yards.

The complex project involved BlackRock occupying the lower third of the 2.8-million-square-foot, 58-floor building. The interior fit-out encompasses a 400-person auditorium, full cooking cafeteria, a client conferencing center, two trading floors, and eleven floors of office space for over 4,000 employees. Additionally, the 967,000-square-foot headquarters was designed to achieve LEED Platinum. To overcome a variety of challenges at the new building, BlackRock partnered with us to develop several innovative strategies to achieve peak energy efficiency, while also promoting flexibility and resiliency.

The vision is striking – Designed to achieve LEED Platinum, the 967,000 sf new headquarters occupy the lower third of a new 2.8M sf, 58-floor building.

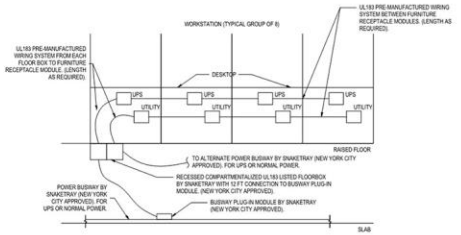


The team settled on an unusual solution — a dual temperature chilled water plant, which would allow the DOAS to be fed by low-temperature chilled water. This strategy, while deployed in laboratory and industrial type facilities, had never been implemented in a commercial office space.



Air towers discharge supply air to an underfloor air plenum serving both interior and exterior loads. At the perimeter, chilled/heating beams heat or cool the air to compensate for the additional skin loads when necessary.

The mechanical design pioneered by the team is being replicated in many skyscrapers worldwide and has become standard for peak energy efficiency, decarbonization, and comfort in offices.



The modular underfloor power distribution from the floor box to the furniture system became the first installation of its kind and allows for true plug-and-play rapid configuration of furniture.

ACEC ENGINEERING Excellence AWARDS

BlackRock Headquarters, 50 Hudson Yards, New York, NY

BlackRock, New York, NY (CLIENT NAME)

Syska Hennessy Group, New York, NY (ENTRANT NAME)

T. BAKER SMITH
A CENTURY OF SOLUTIONS

Thibodaux Regional Wellness Center and Sports Complex

Engineering a better future through community centered wellness.

CHALLENGE - Improve the health and wellbeing of the community while maximizing quality of life.

SOLUTION - Diversify the existing Thibodaux Regional Health System campus with a state-of-the-art Wellness Center and outdoor Sports Complex that encourages community involvement and wellness.

INNOVATION - Enhance specialized healthcare, wellness, and sports performance programs while providing opportunities to work with community partners in hosting youth and NCAA tournaments, increasing the economic impact to the region while providing local access to physician care.

COMPLEXITY - Meet and maintain NCAA design criteria by controlling field of play grades and standards. Located adjacent to Bayou Lafourche, the site is on fat brown clays. Meticulous collaboration was required between the geotechnical engineer, structural engineer, civil engineer, and landscape architect to assure all aspects of the design functioned symbiotically. The complex stormwater management system consisted of reverse flow pipe, interconnected ponds, 30" French drains, and impervious field membrane to keep ground water from penetrating field subgrade. The soils, stormwater, courts, and field function as a single mechanism.

UNIQUE ASPECT - Promote health and wellbeing with a first of its kind Wellness Center that attracted physicians from around the world, providing local, easy access to specialized healthcare. The Wellness Center's Sports Complex is an NCAA compliant sports facility for tournament play but is also accessible to the community through a simple wellness membership. Nowhere else in the nation can the public obtain daily access to an NCAA compliant sport fields and courts for daily exercise and use.

Location: Thibodaux, LA
Client: Thibodaux Regional Health System
Entering Firm: T. Baker Smith, LLC (Thibodaux, LA)

ACEC
American Council of Engineering Companies

ACEC Engineering Excellence Awards

Peoria, Illinois | **Category A: Studies, Research and Consulting Engineering Services**

ACEC Engineering Excellence Awards

Client: **City of Peoria, Illinois**
Entrant: **TERRA Engineering, Ltd.**
Peoria, Illinois

Peoria Riverfront Master Plan

TERRA ENGINEERING LTD.

TERRA is privileged to serve the City of Peoria throughout the development of the city's Riverfront Masterplan–a critical first step towards revitalizing Peoria. The plan's vision and guiding principles reflect the communities' desire to create a more vibrant riverfront and develop a greater connection with the river. The plan will provide more than 18 acres of green space, four miles of trails, and over 500 trees to cool urban heat for riverfront users. These design features will demonstrate how green infrastructure and resilient design can support and enhance city operations.

The master plan development process was a unique initiative that required comprehensive consideration of the riverfront's complex features, such as riverfront business operations, annual flooding, social/recreational/civic programing, event space, and riverfront accessibility. Reconciling these features during the design was imperative, and the city's diverse publics provided insight for effective and efficient execution. By implementing public engagement activities, the team was able to truly hold the city's residents, business owners, and key stakeholders central throughout the design, giving them agency over their new riverfront space.

The City of Peoria riverfront redevelopment plan will serve as a catalyst for the rebirth of the heart of the communities' business district. Celebrating the rich history of Peoria's working river businesses and industrial leadership along with its rich cultural heritage, the riverfront plan envisions a new standard for riverfront open space. Space that is resilient in its operational model, a respite for many, and a destination for the region.

Restored Clock Tower plaza for gathering


Barge park along riverfront with trail and seating


Interchangable parking lot, plaza, and farmer's market


Fountain amenity and Clock Tower Plaza view


River's edge for social and environmental interaction

Second Avenue Network Tied Arch Bridge

over INTERSTATE MICHIGAN 94

Detroit, MI

Second Avenue Bridge – First Skewed Network Tied Arch in the United States

Moving the Bridge

The signature Second Avenue Bridge over I-94 is the first skewed network tied arch bridge in the United States. The project required innovative construction methods that included building the bridge skeleton off-site and moving the 245-foot-long span into place using self-propelled modular transporters (SPMTs). MDOT, along with key stakeholders including the City of Detroit and Wayne State University, desired a signature bridge as the centerpiece of the I-94 Modernization Project to act as a community connector—essentially a park-like structure that promotes safe transportation for students walking or using bicycles.

Traffic volumes on the depressed freeway approach 175,000 vehicles per day, while limited vertical clearance and complex geometry prevented safe and suitable means of building the bridge in place. The team developed a unique approach to constructing a durable, signature bridge efficiently while prioritizing safety and reducing public impacts.

Three-dimensional renderings and animation videos were used to keep stakeholders informed of appearance, geometry, and staging during the design development.

The steel-concrete hybrid bridge skeleton was assembled in a staging area approximately 500 feet from the final bridge location and located nearly 20 feet above the depressed I-94 roadway. Specialized SPMTs lifted the 5,250,000-pound bridge skeleton, then transported it to the final location and rolled it across the freeway in July 2022 during a one-week closure of I-94.

Opened to traffic in December 2022, this impressive structure is a testament to the teamwork required to make it a success.

ACEC Engineering Excellence Awards

Client: Michigan Department of Transportation - Metro Region, Detroit TSC
Firms: Tetra Tech, Brighton, MI and HDR, Ann Arbor, MI
Subconsultant: SME, Inc.

TETRA TECH

HDR

Smyrna/Rutherford County Airport Authority

Hangar 692

Smyrna/Rutherford County Airport Authority | Thomas & Hutton | Smyrna, Tennessee

1 Hangar Construction

Construction is progressing with erecting a steel frame to support the 200-foot clear span to accommodate a plane as large as a Boeing 737-800 to fit in the hangar space. The wall system installation is underway. In the background, the room for fire suppression equipment is created out of concrete blocks and has a tall ceiling to hold a 1,200-gallon foam tank.

2 Storage Tank

Due to the need for more available fire flow, a 276,500-gallon ground tank is used for storage. The concrete slab with the starter ring is in place at this stage. The uppermost panel section is being prepared for the roof system assembly. The system to construct the tank utilizes a drive shaft to raise the tank and bolt each subsequent row of glass-fused steel panels together.

3 Fire Suppression System

Before issuing a Certificate of Occupancy from the Town of Smyrna, the foam suppression system was tested for compliance with the National Fire Protection Association Code. The design requirements required the low-foam cannons to provide full foam coverage of the entire hangar space within an allotted time.

4 Contour Aviation Operations

Contour Aviation immediately occupied the hangar upon issuance of the Certificate of Occupancy. The open sliding hangar doors show a clear door opening of 136 feet. In the background, an airplane tug can use the 12-foot wide by 14-foot tall roll-up door to exit the building when pulling a 737-800 airliner into the hangar for maintenance.

5 Hangar 692 Aerial View

From an aerial view, Hangar 692's design includes notable features like the lean-to office space and freshly paved asphalt parking lot. The newly installed 276,500-gallon fire storage tank is equipped with insulated panels to prevent freezing, and a mixer inside the tank keeps the water from stratifying. The recapture pit has a geomembrane lining and a drain box for releasing stormwater and to allow floodwater backup.

6 Hangar 692 In Action

This photo highlights the active use of the completed interior space for airplane maintenance by Contour Airlines. The tall concrete block room along the left wall depicts the size of the fire suppression room housing the fire suppression equipment. Finally, suspended from the roof is an 8,000 lb. capacity crane incorporated directly into the structural design of the prefabricated metal building to assist with engine removal and installation. The crane can track across the entire long span of the building.

THOMAS & HUTTON

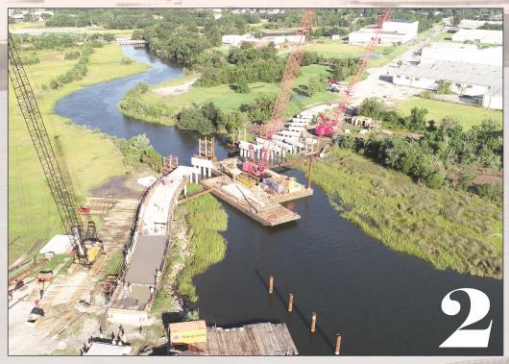
ACEC Engineering Excellence Awards

Noisette Creek Pedestrian Bridge

City of North Charleston | Thomas & Hutton | Charleston, SC

The Making of The Arch

Massive towers were constructed to temporarily support the arch segments while crews positioned and welded them together.



Three's a Crowd

In order to meet the schedule, the bridge was constructed with 3 cranes and 3 crews, located north, south and center, all of whom worked concurrently.

The Bones Beneath the Beauty

The curved girders were part of a composite deck system to make the long span at the creek crossing.

Enter the Arch

Almost close enough to touch, walking between the magnificent arches is an indelible experience.

Under the Neon Lights

The powerful lights illuminating the undersides of the arches attract attention from miles away, with the colors changing to match the season or event.

Oh the Stories She Will Tell

From opening day, the bridge has been a destination for locals and tourists, a place where memories are being made.

THOMAS & HUTTON

ACEC ENGINEERING Excellence AWARDS

ACEC ENGINEERING Excellence AWARDS

317 Main is a not-for-profit, community-based music education center that serves more than 500 individuals each week. This 9,000 square foot addition will allow the center to offer additional music instruction and provide a 200-seat multipurpose performance space creating a vibrant community resource. The project is designed using CLT (cross laminated timber) for the main performance space, Founders Hall. Thoughtful consideration of the context of downtown Yarmouth and the existing building has been integral to the design process; the addition blends with the existing building by using similar exterior materials and details taken from the barn that once stood on the property.

317 Main Community Music Center, Yarmouth, ME

Project: **317 Main Community Music Center**
Yarmouth, ME

Client: **Paul Designs Project**
Portland, ME

Entrant: **Thornton Tomasetti**
Portland, ME

ACEC Engineering Excellence Awards | TKDA

Chestnut Street Plaza

Stillwater, Minnesota

City of Stillwater, Owner
TKDA, Engineering/Architecture

The City of Stillwater has redeveloped Chestnut Street between Main Street and the Stillwater Lift Bridge, transforming it from a typical street section of shared space between pedestrians, bicycles, vehicles, and trucks into a comfortable plaza exclusively for pedestrians and bicycles. TKDA's integrated design team of landscape architects and engineers worked with the City of Stillwater, the Minnesota Department of Transportation, and Washington County on the plaza design. The newly reconstructed Chestnut Street Plaza successfully combines a unique blend of urban design and innovative engineering techniques with a focus on community, creating a space that honors and preserves the City of Stillwater's historic character while changing how the community utilizes the area to accommodate non-vehicular modes of travel, seating areas, and events.

The multi-modal street was converted to a space designed for pedestrians and bicyclists that supports downtown businesses and events

The plaza maintains the look of the street grid of the City's historic commercial district while accommodating pedestrians

The iconic Stillwater Lift Bridge is connected to the newly constructed plaza, blending urban design, engineering innovation, and community focus

TKDA's outdoor open house on the plaza with specialized protocols for attendees to provide feedback

ACEC Engineering Excellence Awards | TKDA

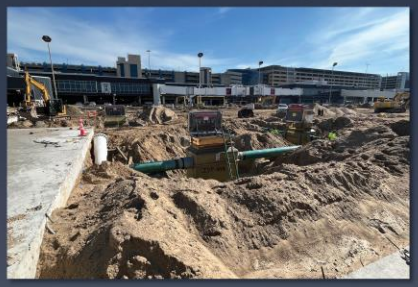
Terminal 1 Concourse G Apron Reconstruction

Minneapolis/Saint Paul, Minnesota

Metropolitan Airports Commission, Owner
TKDA, Engineering/Architecture

When the existing concrete pavement deteriorated due to its age and heavy use between Gates G9 and G12, the Metropolitan Airports Commission required an apron and taxiway reconstruction, along with new passenger boarding bridges for three gates. TKDA's integrated design and construction team provided engineering and construction administration/observation services to replace 28,000 SY of concrete pavement and install new taxiway centerline and apron lighting, deicing and fueling systems, and storm sewer. To ensure passengers could access customs and immigration facilities during construction, TKDA repurposed two old boarding bridges to form a link. Overall, extensive teamwork and coordination, precise design, and diligent construction management made it possible to maintain ongoing airport operations and complete this complex project on time, within budget, and with no safety incidents.

Aircraft pushback maneuvers were designed and coordinated with airline ground handling teams so aircraft gates adjacent to the work areas could continue to safely operate during construction



A dedicated glycol sewer system was installed to capture aircraft deicing fluid and separate it from the stormwater system, where it could cause harmful effects to aquatic species

Two old passenger boarding bridges were diverted from the waste stream and modified to provide a necessary link from the work area to customs and immigration facilities during construction

TKDA installed electrical duct banks to support new electrical charging stations for airport ground equipment which provide significant reductions in power consumption

A concrete pavement section was assessed and designed for the taxiway and aircraft apron areas to support new and future aircraft

TRANSYSTEMS

ACEC Engineering Excellence Awards

Rehabilitation Brings Improved Reliability and Efficiency to Loxahatchee River Bridge

Rehabilitation of the existing 583-foot-long, 100-year-old structure crossing over a popular navigation channel in Palm Beach County was necessary to address significant deterioration and restore the bridge to double track service that would accommodate increased train traffic associated with Brightline passenger rail service. TranSystems served as designer for the fixed and movable span design of the structural, mechanical and electrical systems. The bridge superstructure and approach span piers were replaced, incorporating a through plate girder span to provide improved vertical clearance for small watercraft to pass during bridge operations. The existing abutments, bascule pier and rest pier were retained to ensure continuous service during construction. The project ensures the bridge will service freight and passenger rail operations with enhanced reliability well into the future.

Loxahatchee Movable Bridge Rehabilitation

LOCATION Jupiter, FL

CLIENT/OWNER'S NAME Brightline

ENTERING FIRM'S NAME TranSystems

ENTERING FIRM'S LOCATION Ft. Lauderdale, FL

TRANSYSTEMS

ACEC ENGINEERING Excellence AWARDS

O'Hare's Multi-Modal Facility Improves Passenger Convenience and Experience

The O'Hare International Airport's 2.5 million-square-foot Multi-Modal Facility (MMF) provides a central access point for rental cars, busing operations, and parking at the airport, all accessed by a new station on an extension of the Airport Transit System. TranSystems served as the engineer and architect of record for the MMF which includes rental car ready/return floors, offices, a lobby, public parking, bus loop with sawtooth berths, quick turnaround (QTA) vehicle servicing and maintenance building, and a highway interchange. The facility provides flexibility, a memorable and time-saving passenger experience, achieves operating efficiencies for the airport and tenants, provides an interface between multiple modes of transportation, and can be expanded. The project improves passenger convenience at O'Hare, facilitated construction of Runway 9C-27C, and enables the O'Hare 21 program by reducing traffic in the central terminal area.

Chicago O'Hare International Airport Multi-Modal Facility

LOCATION Chicago, IL

CLIENT/OWNER'S NAME Chicago Department of Aviation

ENTERING FIRM'S NAME TranSystems

ENTERING FIRM'S LOCATION Chicago, IL

ACEC Engineering Excellence Awards

TRANSYSTEMS

Skyway Wave Attenuation Design Build

Skyway Wave Attenuation Design Build

LOCATION Tampa, FL
CLIENT/OWNER'S NAME FDOT, District 1
ENTERING FIRM'S NAME TranSystems
ENTERING FIRM'S LOCATION Tampa, FL

The Florida Department of Transportation, District 1 (FDOT) was faced with an urgent need to protect the existing seawalls running along the Skyway's South Fishing Pier's access road. Additionally, the specific threats of sea-level rise in the project area could adversely affect foundation scour and wave attack on upland infrastructure.

FDOT selected TranSystems to serve as prime designer and engineer of record to contractor Vecellio & Grogan, Inc., for the Skyway Wave Attenuation design-build project.

The team decided to use Wave Attenuating Devices (WADs) in lieu of traditional breakwaters – a first for FDOT. This solution proved to be a faster, better, and cheaper method of constructing breakwaters while exceeding the wave attenuation requirements for the project. By promoting marine growth, an additional benefit of the WAD system is that it creates an area where residents and visitors alike will be able to snorkel and see all the fish and marine life for years to come.

ACEC Engineering Excellence AWARDS

TRANSYSTEMS

Houbolt Road DDI and Extension Improves Safety and Congestion Concerns

Houbolt Road DDI and Extension

LOCATION Joliet, IL
CLIENT/OWNER'S NAME City of Joliet
ENTERING FIRM'S NAME TranSystems
ENTERING FIRM'S LOCATION Schaumburg, IL

The Houbolt Road project aimed to address community concerns with regards to safety, traffic congestion, and environmental impacts of the truck traffic on local roadways. TranSystems served as the Design Engineer for the DDI conversion project and as the Independent Engineer for the Houbolt Road extension. The 2.5-mile project is Illinois' first privately built user-based-fee bridge over the Des Plaines River along with the construction of a modern Diverging Diamond Interchange (DDI) with I-80. The direct connection provides a faster route, saving up to 20 minutes, and safer route for trucks and other vehicles to access the intermodal yards and reduces regional traffic congestion while providing economic development opportunities for the region. The project successfully addressed safety and congestion concerns by providing better and more direct access to I-80 via Houbolt Road.

Distribution Manhole Inspection Program

Owner: Evergy | Kansas City, MO

Engineers: TREKK Design Group | Kansas City, MO

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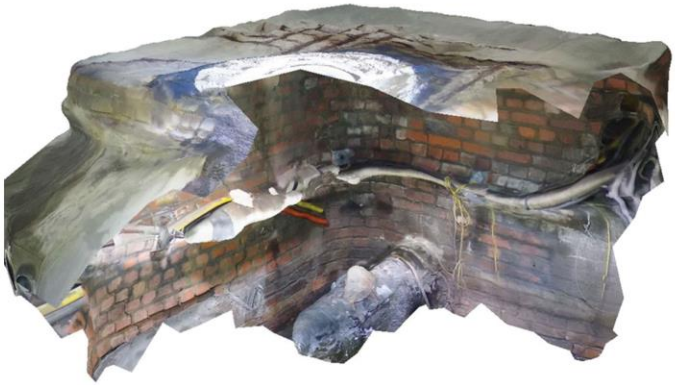
American Council of Engineering Companies

ACEC Engineering Excellence Awards

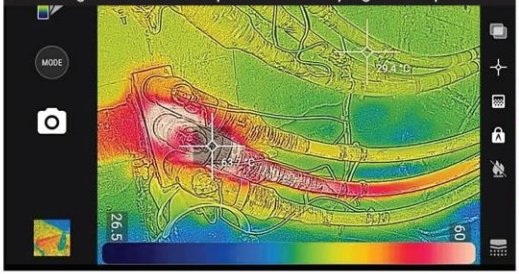


360-degree flattened image projection of a typical distribution manhole, confirming structural condition and routing.

360-degree flattened image projection of a smaller distribution manhole, immediately adjacent to wires, preventing confined space entry.

Components/brackets found within a distribution manhole, visually confirming presence or absence of corrosion.

Remote-operated and captured imaging from a 360-degree infrared inspection identifying a hot spot.



High resolution and zoom capabilities of 360-degree viewing platform allow asset tag data to be recorded.

Evergy established its Distribution Manhole Inspection Program to identify electrical, structural, and maintenance issues within the distribution system to comply with mandatory statewide inspections, make proactive repairs, and improve long term capital planning. Manhole structure inspections typically required confined space, often in a wet or harsh environment.

Evergy made it a priority to identify a safer and more efficient method to complete the inspections and refine the overall Distribution Manhole Inspection Program. They selected TREKK to help meet this goal. As an expert in infrastructure investigations, TREKK developed an unmanned entry technology, the TREKK360 camera, with safety in mind. TREKK used the TREKK360 and infrared camera technology to safely complete the inspections from the surface and transfer data.

The Distribution Manhole Inspection Program using the TREKK360 and infrared camera technology provided a safer, cost-effective way to access and maintain Evergy's complex subsurface infrastructure. This customized approach identifies maintenance issues and allows Evergy to make proactive decisions based on more complete data, providing safer, more efficient service to its 1.7 million customers.

TREKK DESIGN GROUP, LLC

ACEC ENGINEERING Excellence AWARDS

Missouri Route 100 (Manchester Road) Rehabilitation

St. Louis County, Missouri | Category H: Transportation

Streetscape concepts increased the functionality and aesthetics of this corridor

INFRASTRUCTURE ENHANCEMENTS ALONG A MAJOR ARTERIAL ROADWAY

Known locally as Manchester Road, Route 100 is a major arterial roadway in the St. Louis Metropolitan Area. 4.7 miles of rehabilitation was needed between N. Kirkwood Road to Big Bend Boulevard. TWM partnered with the Missouri Department of Transportation (MoDOT) to resolve a variety of critical traffic and pedestrian issues along this corridor that traverses six communities. TWM engineers developed a robust public outreach program and attended public meetings to present design elements and interact with businesses and residents to keep them informed on design progress. Subsequently, the TWM design team crafted comprehensive plans for the roadway, bridge, and bike/pedestrian facilities. Throughout this process, regular communication was maintained with key stakeholders, local agencies, and utility providers, fostering an inclusive project that optimized the collective investment of all involved entities.

The combination of agency participation, coupled with the engineering expertise of the entire project development team, demonstrated to the public how collective innovation could be achieved through the problems that were solved – both in minimizing impacts and maximizing results.

Missouri Route 100 (Manchester Road) Rehabilitation
St. Louis County, Missouri
CLIENT | Missouri Department of Transportation
ENTRANT | TWM, Inc., St. Louis, Missouri

A pedestrian underpass offers a safe crossing for trail users

A bridge with new lighting replaced aging infrastructure

Bike lanes improve safety for both cyclists and motorists

TWM
ENGINEERING & GEOSPATIAL SERVICES

West Mission Bay Drive Bridge Replacement

SAN DIEGO, CALIFORNIA

The new West Mission Bay Drive Bridge over the San Diego River in the City of San Diego, California opened to great acclaim in April 2023 after over 25 years of planning, design, and construction efforts. The City of San Diego collaborated with Caltrans District 11 to gain approvals and to construct these long-needed improvements in the heart of San Diego.

The $148 million project, which includes $80 million from President Biden's bipartisan infrastructure law, replaced the existing structurally deficient bridge with a new bridge consisting of parallel 1,300-foot-long structures over the San Diego River. This new bridge carries three lanes of traffic with standard shoulders and 12-foot-wide barrier separated multi-use paths in each direction. In addition, the approach roadways were widened to accommodate an additional lane of traffic in each direction including modifications to the interchange with Interstate 8. Architectural features include curved girders, overlooks, colored concrete, and custom railings and lights resulting in a beautiful bridge from all vantage points.

The new West Mission Bay Drive Bridge is a gateway to the City of San Diego, providing safe and efficient access to the beach communities and coastal recreational resources of Mission Bay Park.

Photos courtesy of: Pablo Mason

TYLin

Client Name: City of San Diego | San Diego, California
Firm Name: TYLin | San Diego, California

TYLin.com

SALT LAKE CITY CONVENTION CENTER HOTEL

Hyatt Regency - Salt Lake City, Utah

Client: Portman Architects | Atlanta, Georgia

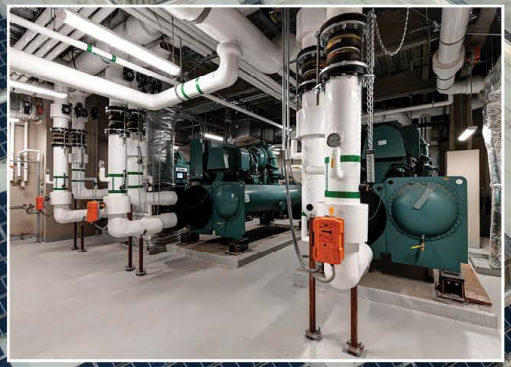
Submitting Firm: VBFA Engineers | Murray, Utah

A project more than a decade in the making, the Salt Lake Convention Center Hotel is a new addition to the downtown skyline and a vital piece in Utah's economic puzzle. With the hotel being directly connected to another VBFA project, the Salt Palace Convention Center, the VBFA team's knowledge of the existing buildings and location were key to the success of the project.

VBFA provided Mechanical, Plumbing, and Fire Protection engineering design for the hotel, including considerations for energy efficiency, meeting the environmental requirements of the project, and providing innovative solutions to tie-in to the Salt Palace.

The level of complexity is increased for high-rise buildings compared to other facilities, and the VBFA team worked together with the client to meet the requirements of this specific building and site while not detracting from its architectural beauty.

ACEC ENGINEERING Excellence AWARDS



Transforming Shorefront Park:
New York's Largest Permitted Living Shoreline

REIMAGINING RESILIENCE | ENHANCING ECOSYSTEMS | BUILDING A THRIVING COMMUNITY

The shoreline's resilient, nature-based design:

- Combats Coastal Erosion and Storm Surges
- Elevates Water Quality
- Increases Biodiversity
- Mitigates Wave Energy
- Reduces Flooding

Reconnecting the tidal creek to the bay ushers in environmental benefits:

- Cooler Water Temperatures
- Restores Tidal Flushing
- Increases Stream Flows & Capacity

Community members now enjoy access to a promenade, kayak launch, and beach.

Breathing vibrant life into a once-eroded and flood-prone waterfront park, this more than 1,300-foot living shoreline harmoniously combines natural and structural elements in a strategic design. The innovative combination of rock sills, salt marshes, and bio-retention basins transformed a once sterile bulkhead into a thriving habitat with enhanced waterfront aesthetics.

Numerous complexities, including regulatory approval, elevation disparities, high groundwater levels, and a six-month construction time frame didn't stop the project team from exceeding client expectations.

A net benefit approach and technological advances have resulted in 53K+ square feet of salt marsh habitat creation on-site.

This project sets a crucial precedent for permitting living shoreline projects in New York State, making it easier for future projects to navigate permitting complexities.

ACEC ENGINEERING *Excellence* AWARDS

Project: Shorefront Park, The Village of Patchogue, NY

Client: The Village of Patchogue, NY

Entrant: VHB, Hauppauge, NY

Coachella's Entertainment Hub

Stability Among Nature's Forces

Acrisure Arena dynamically transformed year-round indoor entertainment options for residents and visitors to California's Coachella Valley. The facility includes a versatile, mid-sized hockey arena and concert venue with industry-leading capabilities. It opened on budget and two weeks early in December 2022.

The structural engineer used creativity and expertise to ensure safety under extreme environmental loading, including hurricane force winds and seismic forces that are among California's most powerful due to the San Andreas Fault just three miles away. In the process, the engineer developed an innovative new application for buckling restrained braces (BRBs) as horizontal seismic struts.

Key Elements and Accomplishments:

- Safe against hurricane winds and California's most powerful earthquakes
- Sophisticated roof-suspended rigging grid attracts top touring acts
- New horizontal application of buckling restrained braces as seismic shock absorbers
- Offers residents much-needed year-round indoor entertainment options
- Hosts the region's first and much-loved professional sports team
- Main event level depressed 26 feet, keeping building profile low to preserve mountain views
- Opened early and on budget to rave reviews and enthusiastic community support

Project:
Acrisure Arena
Thousand Palms, California

Client/Owner:
Oak View Group
Los Angeles, California

Submitting Firm:
Walter P Moore
San Diego, California

ACEC
American Council of Engineering Companies

ACEC Engineering Excellence Awards

Composite Creativity

Reconnecting Houston's Landmark Park

In the heart of Houston's 1,500-acre Memorial Park, the Kinder Land Bridge provides safe crossing for people and wildlife over a high speed six-lane commuter thoroughfare. It enabled restoration of endangered native prairie species and supported environmentally friendly improvements that reduce the risk of local flooding.

The land bridge is built atop two pairs of cylindrical precast concrete tunnels covered with landscaped soil backfill. The structural engineer creatively combined multiple techniques to create the 69-foot-long cantilevering headwalls, keeping the project on budget and on schedule throughout the pandemic.

The project achieved every goal and offers a feat of engineering seen by thousands of Houstonians daily.

Key Elements and Accomplishments:

- Solved 70 years of unsafe conditions in Memorial Park which is twice as large as New York's Central Park
- Provides new amenities for park users as well as restoring wildlife migration routes
- 45 acres of restored native habitat including endangered species
- Two pairs of buried precast concrete tunnels with cantilevered entrance headwalls
- Creative engineering created a composite system of both precast and cast concrete
- Performed state-of-the-art fire analysis and design to comply with NFPA 502 Standard for Road Tunnels
- Supported passive flood enhancements aimed at mitigating the impact of Braes Bayou, which drains through downtown Houston
- On time, on budget opening, despite the pandemic

Project:
Kinder Land Bridge
at Memorial Park
Houston, Texas

Client/Owner:
Memorial Park Conservancy
Houston, Texas

Submitting Firm:
Walter P Moore
Houston, Texas

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Forward Leaning

Steelhouse Omaha "Steels" the Show

Steelhouse Omaha is a rocking new mid-size performance hall in Omaha's Entertainment District that attracts performance artists to a venue with a capacity of up to 3,000 patrons. The architectural design and structural engineering harmoniously pay homage to the region's industrial roots. The venue's high-performance black galvanized aluminum panel façade creates a rhythmic and gravity-defying slanted exterior, while a monumental interior staircase enhances the venue's heavy metal industrial spirit to provide in-concert full venue access. The project was completed on time and on budget, opening with a sellout performance by The Killers.

Instrumental Engineering:

- Canted aluminum façade engineered to protect the structure by ensuring that condensation and air leakage are minimized while guarding air quality
- Structural steel guardrail and soffit plate connections for the monumental staircase were creatively concealed to maintain sleek, industrial aesthetic
- The entire façade was engineered to be soundproof to prevent sound leakage and ensure a peaceful environment to nearby residences
- Seemingly floating in air, exterior and interior walls canted at 65-degrees demanded structural engineering expertise and creativity.

Project:
Steelhouse Omaha
Omaha, Nebraska

Client/Owner:
Omaha Performing Arts
Omaha, Nebraska

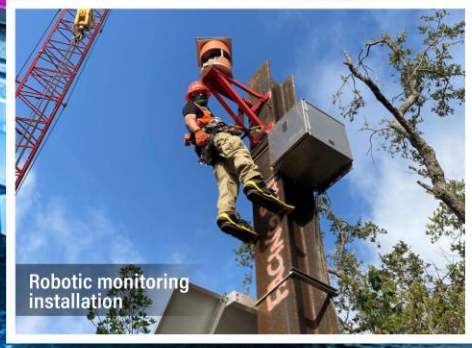
Submitting Firm:
Walter P Moore
Houston, Texas

ACEC
American Council of Engineering Companies

ACEC Engineering Excellence Awards

BUILDING A HIGH-SPEED RAILROAD *In Paradise*

Category D: Surveying and Mapping Technology


Robotic monitoring installation


Trolley system


Omni panels installation

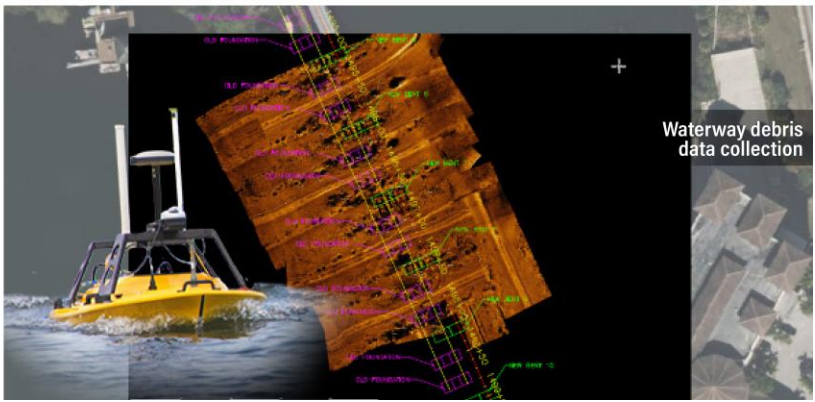
Brightline photo courtesy of the Roaming Railfan

The **Brightline High-Speed Railroad** project in Florida represents a significant construction endeavor aimed at transforming transportation in the state. This dual-track, high-speed rail project, spanning 130 miles from West Palm Beach to Cocoa Beach with 155 at-grade crossings and 28 bridges, presents complex challenges given its size, geographic scope, and the need for precision and accuracy. WGI, the sole surveying and geospatial consultant for the project, implemented innovative technologies and approaches to meet project demands. The work included geodetic control, LiDAR data collection, hydrographic surveys, ground-penetrating radar, construction layout, and structural monitoring, among other tasks. WGI's web-based Work Order Tracking System (WOTS) recorded work requests and facilitated scheduling. Robotic bridge monitoring stations provided 24/7 measurements, improved construction efficiency, and enhanced safety. The trolley system with robotic total stations measured rail location and gauge used to ensure demanding precision for high-speed rail operations. Hydrographic surveys aided in identifying potential underwater construction issues, saving costs and mitigating risks. The application of these technologies extends beyond this project. WGI uses these techniques on other projects, such as mining and light rail. WOTS has become a valuable tool that continues to be used by WGI for project scheduling. The client's satisfaction and support for WGI's performance highlights the success of this project. Its innovations will benefit the geospatial profession and the public in future project ventures, offering safer, more cost-effective solutions.

ACEC Engineering Excellence Awards

Project Location: Brevard, Indian River, Saint Lucie, Martin, and Palm Beach Counties, FL
Client/Owner: HSR Constructors, A Joint Venture (St. Joseph, MO)
Entering Firm: WGI, Inc. (West Palm Beach, FL)


Mobile LiDAR


Waterway debris data collection

The reconstruction of US-89 in Davis County from Farmington to I-84 addresses the current and future needs of a heavily congested area. Prior to the project, this area experienced heavy traffic in the morning and afternoon peak hours that were exacerbated by a 60-mph speed limit, signalized intersections, and frequent stop-controlled accesses. The $525 million project is UDOT's first Progressive Design Build (PDB) project and one of the first in the nation for a public transportation agency. The PDB model is designed to engage the design-build team earlier in the pre-construction process to explore opportunities that introduce innovation, risk mitigation, and cost savings into the project.

WSP provided program management services including contract procurement, design quality reviews, and construction quality management services for this 9-mile highway expansion project. The scope included adding a lane in each direction on US-89, four new interchanges and two grade-separated intersection as well as completing a 3-mile extension of the existing Gordon Avenue to connect to US-89.

The reconstructed roadway was opened in July 2023. WSP helped UDOT reach its project goal of building the right project for the area by incorporating the PDB model and providing coordination and oversight throughout the design and construction process. The completed roadway reduces accidents, accident severity, and greatly improves mobility in this rapidly growing area.

UDOT US 89; Farmington to I-84

Davis County, Utah

Utah

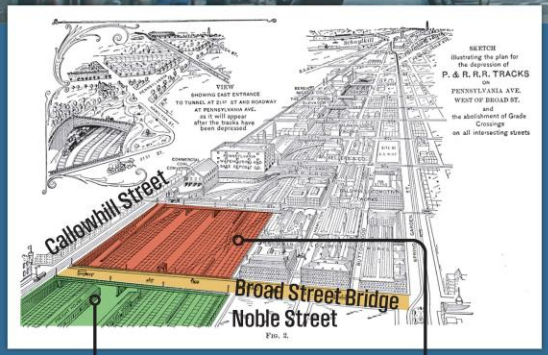
Utah

ACEC Engineering Excellence Awards

BROAD STREET BRIDGE RECONSTRUCTION

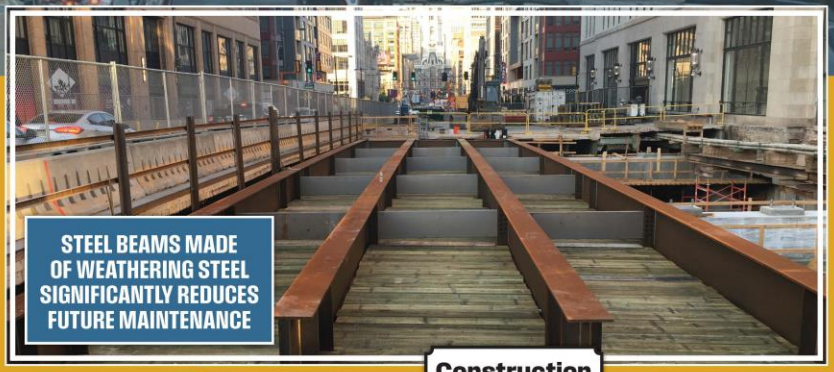
A ONE OF A KIND STRUCTURE

nestled between two iconic and historically registered landmark buildings in the heart of Philadelphia



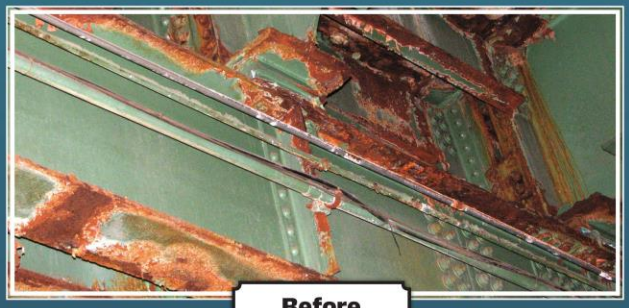
CURRENT FOOTPRINT OF TERMINAL COMMERCE BUILDING.
Huge data center for NE USA.

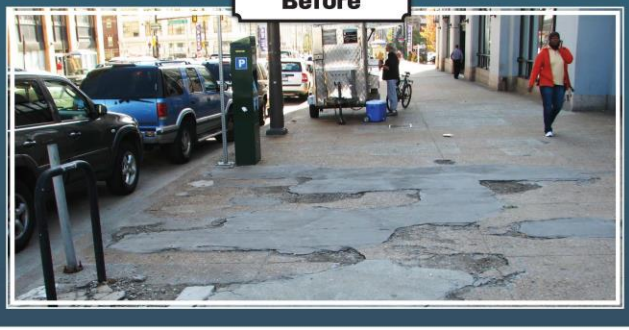
INQUIRER BUILDING FOOTPRINT
(now home of the City of Philadelphia Police Headquarters)

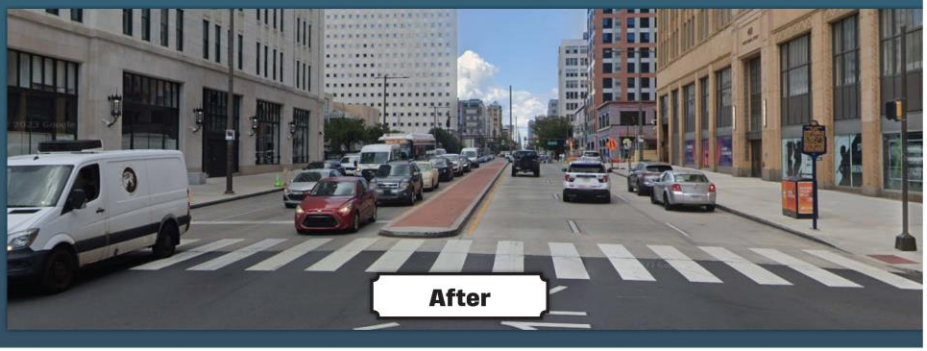


Pedestrian access to adjacent buildings was maintained throughout construction.

Subway Safety
Pier foundations and footings were carefully constructed within the existing footprint to match the areas that had been strengthened when the subway was built.







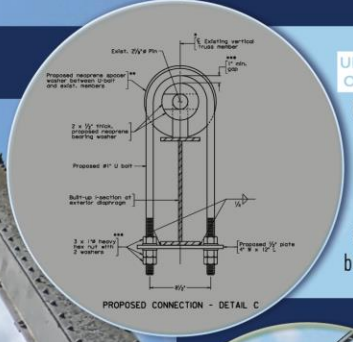
ACEC/PA
American Council of Engineering Companies of Pennsylvania

Broad Street Bridge Rehabilitation, Philadelphia, PA • Pennsylvania Department of Transportation, Philadelphia, PA

Philadelphia, PA
WSP

JOHN G. LEWIS MEMORIAL BRIDGE REHABILITATION

LOUDOUN COUNTY, VIRGINIA

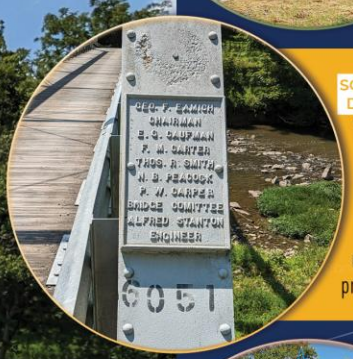


UNIQUENESS AND/OR INNOVATIVE APPLICATIONS OF NEW OR EXISTING TECHNIQUES

Our design was carefully plotted to combine the old bridge with the new structure. To do this, our team developed an innovative connection detail at the truss pinned joints and vertical members to provide lateral stability, satisfy thermal compatibility, and transfer a small portion of live load from the new bridge to the truss.

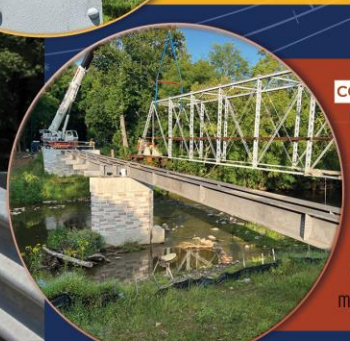
FUTURE VALUE TO THE PROFESSION

Our extensive community outreach showed the community the multiple iterations one structure can go through before it reaches a final design and demonstrated how they can get involved in the process.



SOCIAL, ECONOMIC AND SUSTAINABLE DEVELOPMENT CONSIDERATIONS

The community and its safety were at the heart of this project. The design contented with the community's preference toward historic preservation with the need to create a safer, greater load bearing bridge. We were also able to reuse masonry from the existing abutment to promote sustainability.



COMPLEXITY

Our team developed a modified steel girder design to meet appearance and superstructure depth requirements. The new superstructure also accommodates differential thermal expansion and contraction movements.

modernizing the past to let history live on

WSP designed the rehabilitation of the John G. Lewis Memorial Bridge while navigating the desires of a deeply engaged community, the complexities of historic register standards, and the necessity of bridge safety. Our team worked with stakeholders to create a solution that satisfied the need to have a structurally-sound bridge that preserved the look and historic feel of the original structure.

SUCCESSFUL FULFILLMENT OF CLIENT/OWNER NEEDS

The existing bridge was losing functionality over the past two decades and becoming costly for VDOT to maintain. Our design met the needs of the project stakeholders and increased the bridge's load capacity and life span while lowering future maintenance costs.

"[The WSP Team] always go the extra mile to ensure on-time, and on-budget project delivery as evidenced by the project success." – VDOT Project Manager

ACEC Engineering Excellence Awards

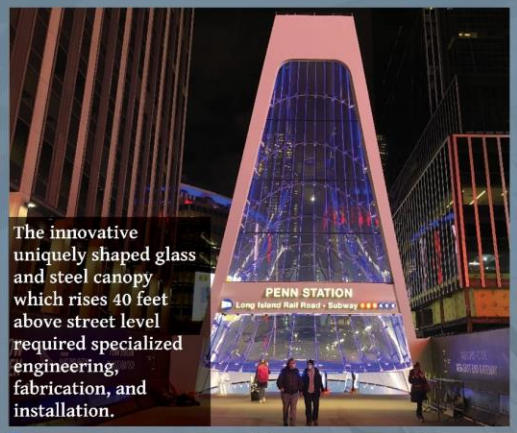
Client: Virginia Department of Transportation | Virginia
Entrant: WSP USA Inc. | Herndon, Virginia

Penn Station LIRR Concourse Improvement Project,

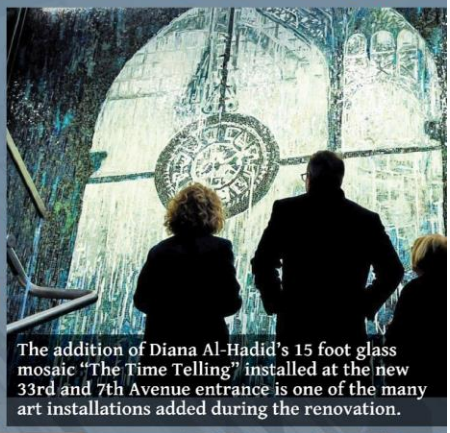
New York, NY

Enhancing the Station User Experience

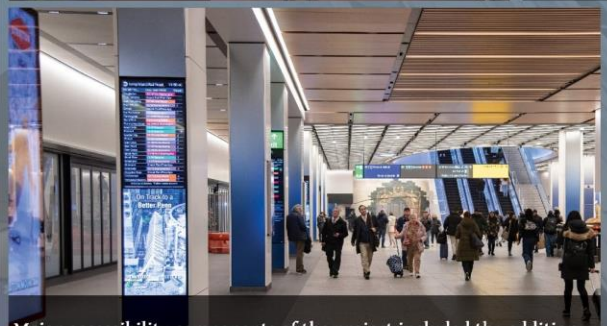
Penn Station LIRR Concourse Improvement Project consists of major improvements split into two phases. Phase 1 included adding a grand new East End Gateway Entrance bringing natural light into the concourse from 33rd Street west of 7th Avenue directly down to the Train Hall's 33rd Street Concourse. This consists of an innovative steel and double curved glass canopy, three 72-1/2-foot-long escalators, and a stairway to increase passenger access while providing an added entrance and egress from the LIRR Train Hall. Phase 2 included the widening of the 33rd Street concourse and constructing improvements in the other LIRR concourses, including new and refurbished elevators and stairs, lighting, wall and ceiling finishes, wayfinding signage, refreshed flooring, rehabilitated and expanded electrical and mechanical systems, new spaces for retail tenants, and expanded back-of-house facilities. Station users now have access to a state-of-the-art, energy-efficient facility that will provide future value to users for many years to come.



The innovative uniquely shaped glass and steel canopy which rises 40 feet above street level required specialized engineering, fabrication, and installation.



The addition of Diana Al-Hadid's 15 foot glass mosaic "The Time Telling" installed at the new 33rd and 7th Avenue entrance is one of the many art installations added during the renovation.



Major accessibility components of the project included the addition of a new ADA elevator, the replacement of four additional elevators, three deep escalators, and new and upgraded stairs in the train station which now brings accessibility to all passengers.

Passengers utilizing the station experience natural light emanating from the street above and 360 color-changing LED programmable ceiling panels creating infinite color schemes and pre-programmed light shows.

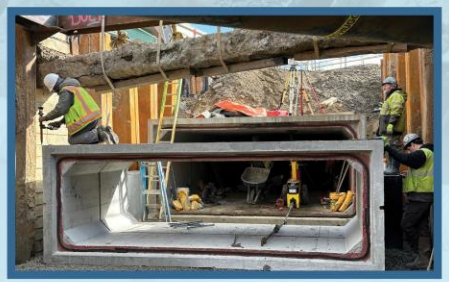
This project raised the ceiling heights and nearly doubled the width of the corridor which allows for improved passenger circulation, eases congestion and provides enhanced retail options. Wayfinging signage, video screens, and building systems upgrades were also implemented.

ACEC Engineering Excellence Awards

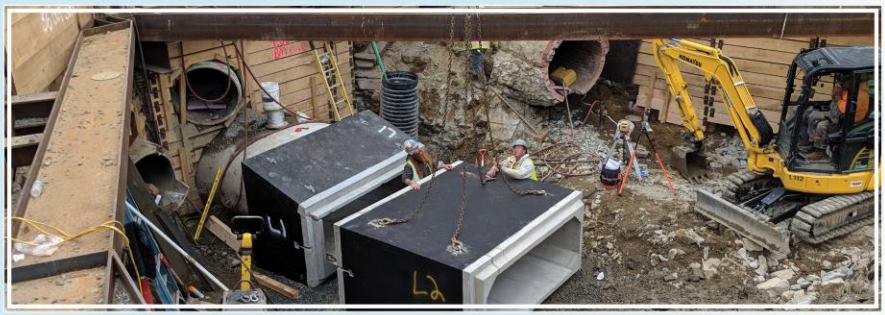
Title: Penn Station LIRR Concourse Improvement Project, New York, NY
Client: MTA C&D, New York, NY
Firm: WSP USA Inc., New York, NY

SOMERVILLE AVE. UTILITY & STREETSCAPE PROJECT

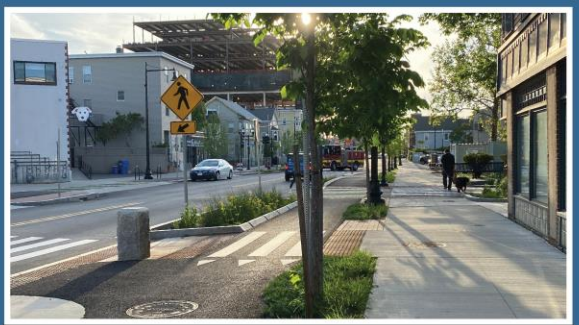
Chronic flooding due to the inadequacy of 19th century sewers combined with the aging water infrastructure were not up to the needs of 21st Century Union Square. With the opening of a new transit station, the City of Somerville undertook a major investment in its storm water, sewer, water and transportation infrastructure. The centerpiece of the transformation was a half-mile long drainage conduit, 14'x6' constructed through this busy business district while maintaining traffic and access to abutters. On the surface, a complete streets design included provisions for all modes of transport.



CONSTRUCTION OF THE MAJOR DRAINAGE CONDUITS TO ADDRESS CHRONIC FLOODING



BUSINESSES REMAINED OPEN AND TRAFFIC FLOWED DURING THE MAJOR UTILITY CONSTRUCTION



FINISHED STREETSCAPE INCLUDED PROTECTED CYCLE TRACKS AND 55 NEW TREES

THE COMPLETE STREETS DESIGN INCLUDED SEPARATION BETWEEN PEDESTRIANS, BICYCLES, AND VEHICLES, WITH FLOATING BUS STOPS AND ENHANCED STREETSCAPE INCORPORATING GREEN STORM WATER INFRASTRUCTURE

PROJECT COSTS

Total Project Cost Budget: $51,618,125.50

Total Project Actual Cost: $66,275,626.74

SOMERVILLE AVE. UTILITY & STREETSCAPE PROJECT
Somerville, MA

ACEC Engineering Excellence Awards

City of Somerville, MA

WSP 100 Summer Street, Boston, MA 02110

Transforming the Long Island Rail Road

ACEC Engineering Excellence Awards

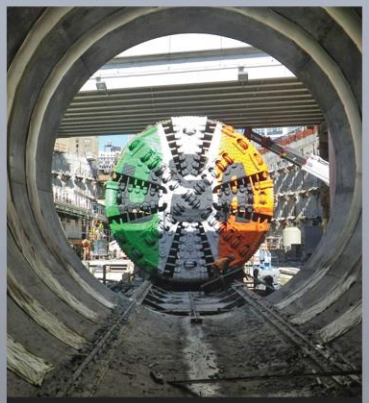
East Side Access

With a long history in New York City, East Side Access (ESA) is now completed and transporting Long Island Rail Road (LIRR) passengers to and from Manhattan's East Side. The project extends the LIRR from Queens to a new terminal, Grand Central Madison (GCM), below the existing Grand Central Terminal (GCT).

To complete such a complex project, many "firsts" were successfully completed to safely and efficiently navigate around the built environment and regularly scheduled train service. These methods led to the first major expansion of LIRR in more than a century and numerous other improvements, such as upgrades at Harold Interlocking, creating an immeasurable generational impact and standing to completely transform commuting between New York City and Long Island, as well as regional rail reliability.

Through one of the first uses of ground freezing in the U.S. the New Austrian tunneling method/sequential excavation method was successfully completed for the first time in New York City. This process was used for the Northern Boulevard Crossing, a complex 120-foot section of tunnel under NYCT's BMT elevated Astoria Line, IND Queens Boulevard subway, and Northern Boulevard, a major truck route.
IMAGE CREDIT: MTA C&D

Caverns were excavated 150 feet below GCT to create a new, three-level GCM terminal with four platforms and eight tracks
IMAGE CREDIT: MTA C&D



The first use of pressurized-face tunnel boring machines in the New York area—bored through soft-ground in Queens.
IMAGE CREDIT: MTA C&D

Harold Interlocking emblemizes the project's overall technical complexity, doubling the existing size of this vital juncture—all without stopping service. A key modification included relocating hundreds of catenary structures
IMAGE CREDIT: MTA C&D

On January 25, 2023, the inaugural LIRR train enters Grand Central Madison passing through Harold Interlocking.

Commuters can easily navigate the spacious and modern Grand Central Madison, with wayfinding features embedded into artistic floor installations, as seen at the 46th St. Concourse.
IMAGE CREDIT: MTA C&D

East Side Access
New York, NY

Client:
MTA Construction and Development Company, New York, NY

Entrant:
General Engineering Consultant (WSP USA Inc., STV, and Parsons Corporation), New York, NY