ACEC

American Council of Engineering Companies
of Ohio

2022 Engineering Excellence Awards

March 10, 2022
Bridgewater Banquet and Conference Center
Columbus, Ohio

THE ENGINEERING EXCELLENCE AWARDS

The ACEC Ohio Engineering Excellence Awards Competition is a national program that, for over 50 years, has recognized engineering companies for the role they play in developing projects "that demonstrate a high degree of achievement, value and ingenuity."

Every year, engineering companies from across the country enter their most innovative design projects and studies in state competitions, such as ACEC Ohio's, with the top entries from each state advancing to the national competition in Washington.

Projects are judged according to these five criteria:

- Original or Innovative Application of New or Existing Techniques
- Perception by the Public
- Social, Economic, and Sustainable Design Considerations
- Complexity
- Successful Fulfillment of Client/Owner Needs

Competition Judges

Cash Misel, P.E.	Former Assistant Director, Ohio Department of Transportation, retired
Jon Link, P.S.	Civil Engineering & Surveying Program Coordinator, Columbus State
William Shelley, P.E.	Former President, Shelley, Metz, Baumann & Hawk, Inc., retired
Lyle Flower, P.E.	Former Administrator of Consultant Services, Ohio Department of Transportation, retired

Grand Award Winner

Strand Associates | Lick Run Valley Conveyance System and Greenway

To develop an economic response to a USEPA consent decree, the Metropolitan Sewer District of Greater Cincinnati (MSDGC) hired a Strand Associates team to design and implement a unique wet-weather control strategy. The team studied multiple watersheds within the Lower Mill Creek Basin. The focus quickly turned to addressing combined sewer overflow (CSO) No. 5, MSDGC's largest CSO–located at the discharge of the Lick Run combined sewer to the Mill Creek in the2,700-acre Lick Run Watershed–accounting for more than 10 percent of its total annual overflow volume. The Lick Run Valley Conveyance System (VCS) and Greenway Project, as it is known, is one of the largest green infrastructure control projects in the country to reduce CSOs. It provides watershed management, flood control, stormwater conveyance and storage, water reuse, and water quality treatment. The broader vision for the corridor included opportunities for redevelopment and streetscape and transportation improvements along 5,600 linear feet of daylighted stream through South Fairmont, a once thriving industrial community that has since fallen on hard times. At a final construction cost of $103 million, this project helped MSDGC achieve regulatory compliance by reducing CSO No. 5overflow volume by 370 million gallons annually.

Outstanding Achievement Awards

McMillen Jacobs and Wade Trim | Doan Valley Storage Tunnel

A major component of the Northeast Ohio Regional Sewer District's Project Clean Lake program, the Doan Valley Storage Tunnel (DVT) project now controls 11 permitted combined sewer overflow (CSO) discharge overflows. The DVT system was designed to function as both a deep interceptor conveyance sewer and a CSO storage facility. The DVT system consists of 3.7 miles of tunnel in rock, ranging from 8.5 to 18 feet in diameter, routed through an urbanized environment just east of downtown Cleveland that includes Case Western Reserve University, several hospitals, schools, museums, public parks, and potential areas for urban redevelopment.

Creative solutions were used to meet performance requirements, optimize design and construction, manage community impacts, and provide substantial savings. To minimize the construction footprint, all tunnels were mined from the same main construction site, and two of the tunnels were mined from the same shaft. Further project optimizations avoided a proposed development and improved hydraulic performance. Computational Fluid Dynamics modeling was used to optimize each drop shaft's configuration and a flow monitoring program and extensive hydraulic modeling were conducted to calibrate the model and support design activities. Benefits

Michael Baker International | 33 Smart Mobility Corridor

The 33 SMC is a part of the Columbus region smart mobility ecosystem, known as the Beta District. It encompasses three counties (Franklin, Union, and Logan) and connects the cities of Marysville and Dublin to Honda's North American Campus and research and development business, as well as the Transportation Research Center (TRC), the largest independent transportation testing facility in the United States.

Michael Baker International provided program management and technical oversight for the implementation of CV technologies along the corridor, partnering with the NW 33 Innovation Corridor Council of Governments (COG), made up of the local governments of the city of Marysville, the city of Dublin, Union County, and the Marysville-Union County Port Authority, the Ohio Department of Transportation (ODOT), and DriveOhio to develop and deploy a program that includes 63 roadside units (RSUs) along the freeway corridor providing continuous connectivity, 45 connected intersections within the two cities, on- board units in over 200 fleet vehicles and four specific safety applications.

Outstanding Achievement Awards

Hazen & Sawyer | Celina Water Treatment Plant DAF-Bioreactor Upgrade

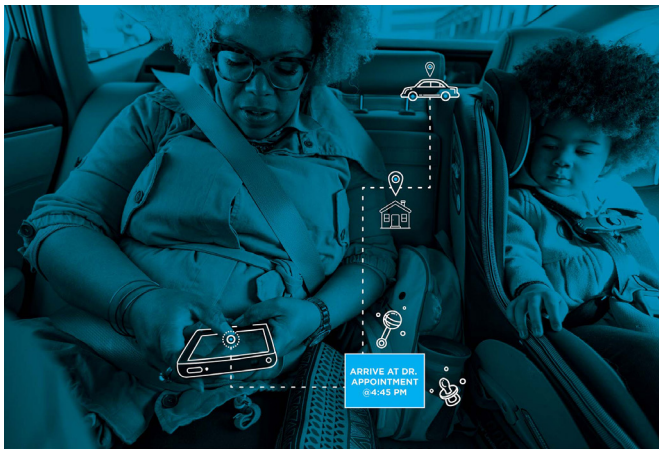
In an effort to mitigate Cyanobacteria, a key component of harmful algal blooms, the City of Celina instituted an effort to remove these harmful bacteria from their water supply. Because Celina has a year-round cyanobacteria population that is capable of toxin synthesis, a prevalent hepatotoxin, source waters and water treatment facilities are monitored and regulated by the Ohio Environmental Protection Agency. Over the years, prior water treatment plant upgrades failed to completely remove the cyanobacteria and cyanotoxins. A new water treatment plant upgrade replaced the up-flow clarifiers with dissolved air floatation (DAF), an turbidity removal process that uses microbubbles to float solids to the top of the tank rather than settling to the bottom. DAF is highly effective for cyanobacteria and algae related turbidity. Bubbles from the dissolution forces the organisms to the top of the water column, where they are skimmed off the top of the tanks. This projects benefits provide a sustainable solution to keep the public safe and to mitigate in-plant cyanobacteria challenges.

Woolpert | CVG CONRAC Terminal Drive Bridges

The Kenton County Airport Board (KCAB) planned to construct a Consolidated Rental Car Facility (CONRAC) at the Cincinnati/Northern Kentucky International Airport (CVG) as part of their capital improvements. Woolpert assisted the airport in discussing and evaluating alternatives that removed a portion of an existing parking garage and provided a more direct route to the terminals as a relocation of Terminal Drive. This relocation includes a split roadway between the upper (Departures) level supported by a series of bridges stacked over the lower (Arrivals)roadway. The goals included reducing traveler time when entering the airport, opening the west side of the airport for additional cargo and business development, and creating a new “front door” to the airport. Removing traffic from traveling below the terminal was an added benefit, as it was a security and emergency services risk. The CVG Airport is an economic driver with a$6.8 billion economic impact on the region. This continues to grow with the addition of Amazon and other large cargo transporters. This project included a $175 million investment with 1,600 people on the job. Final bids for the CVGCONRAC Bridges came in at $14.7M, well under the Guaranteed Maximum Price of $20.7M.

Outstanding Achievement Awards

HNTB | The US Department of Transportation's Smart City Challenge: Smart Columbus



The Smart Columbus Program was funded primarily by the United States Department of Transportation (USDOT) Smart City Chal lenge (SCC), which provided $40 million to the City of Columbus. The Smart Columbus Program is a compi lation of transportation, mobility and data projects developed to improve access to jobs, enhance the visitor experience, stimulate economic prosperity, better connect residents to safe and reliable transportation, and support the efficient movement of people and goods through environmentally sustainably practices. The projects were developed to independently address several transportation challenges related to safety and mobility in the city. Ultimately, the Smart Columbus Program was redesigned to integrate the different project elements into a holistic solution that was purposely designed and deployed to demonstrate how an intelligent transportation system, focused on equitable access to transportation, empowers all residents to live their best livesHNTB provided program management, systems engineering, performance measurement and safety management across the diverse portfolio of projects.

The Kleingers Group | Blue Ash Road Corridor Improvements

Before reconstruction, the Blue Ash Road corridor, a regional north-to-south collector, suffered from vacant businesses, absent landlords, real and perceived safety issues. With a city administration dedicated to maintaining a safe community for their residents, it was alarming to be confronted with a high rate of accidents and fatalities. The City engaged The Kleingers Group to investigate the circumstances contributing to the unsafe conditions and develop recommendations for improvements. The Kleingers Group identified the safety shortcomings of the corridor and helped the city secure the funding needed for improvements. The primary causes of unsafe conditions, on-street parking, lack of adequate lighting, and other deficiencies were identified and addressed. Design challenges were overcome with coordination and input from the community and stakeholders alike, including the utility providers Growth and viability are now being realized due to proper planning, community engagement, and utilizing existing engineering technologies and techniques. This project proves again that the financial backing of public safety and infrastructure creates private sector investment momentum and economic vitality for a new generation of residents.

Outstanding Achievement Awards

KS Associates | Wendy Park Bridge

The Wendy Park Bridge links more than 66,000 Cleveland residents to centers of employment, schools, shopping districts, parks, and recreation facilities. It provides a much- needed access to Wendy Park along the shoreline of Lake Erie. The bridge links Cleveland's downtown neighborhoods, provides access to the Cuyahoga River and the West Bank of the Flats, and connects to the popular 101-mile Ohio and Erie Canalway "Towpath Trail."

KS worked side-by-side with Cleveland Metroparks to overcome challenges to make this long-awaited project a reality, including: securing a difficult-to-obtain Railroad Agreement from NSRR to construct a bridge over active railway; designing a bridge to withstand high winds and ice loads during frigid Cleveland winters along the lake, and airborne salt particulate from the nearby Cargill salt mines; and developing a carefully staged sequence of construction to accommodate NSRR's active train schedule, and to work within a landlocked site on Whiskey Island with limited room for construction materials and equipment.

Outstanding Small Project Award

The Mannik Smith Group | Urban Runoff Capture and Otter Creek Restoration

To develop a park and capture urban runoff, the City of Oregon utilized an EPA Great Lakes Restoration Initiative grant to improve water quality, manage stormwater and restore lost habitat to public greenspace. While the Otter Creek Park looks like any other natural park in the area the principal purpose of its design is to a reduce non-point source pollution from the nearby 43-acre urban watershed. By utilizing natural processes facilitated by the constructed wetland system the project achieved a measurable reduction of documented non-point source urban runoff pollutants, which included: sediment, hydrocarbons, bacteria, and nutrients. Today, the park is frequented by many residents, provides a unique natural native floodplain backdrop to the community and is a harbor to native vegetative and animal species.

Honor Awards

LJB | Statewide Pedestrian Safety Improvement Program

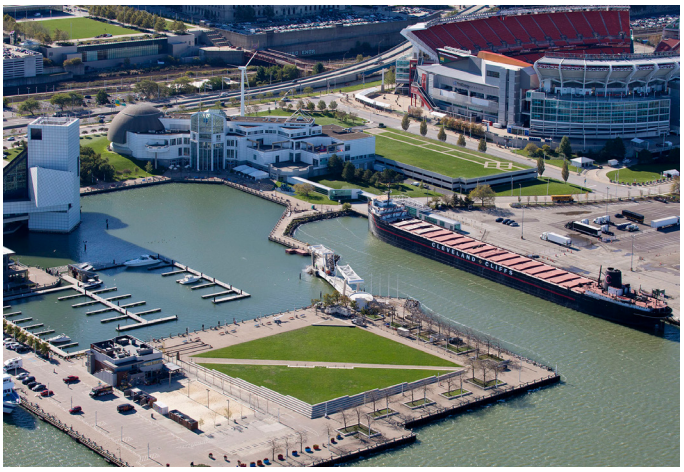
After fatal pedestrian crashes in Ohio increased 60% over the last decade, LJB worked with the Ohio Department of Transportation (ODOT) to develop the Pedestrian Safety Improvement Program (PSIP), which provides $10M in funding to address the issue. Ten counties accounted for 65% of these pedestrian fatalities—not surprisingly around Ohio's most densely populated metropolitan areas: Columbus, Cleveland, Cincinnati, Toledo, Dayton, Akron, Youngstown, and Canton. The goal of the program is effective use of the available funding to construct safety improvements in 2021 and 2022 to improve safety for pedestrians across the state. These time-saving approaches have allowed the program to support bidding all projects across the state in early 2021.

Korda Nemeth Engineering | Forensic Science Center

The Forensic Science Center that opened in May of 2020 to serve Franklin County contains many complex engineering systems designed to serve the multiple missions of the coroner's office. Not only does this facility support the work of investigating criminal activity, but it will be an important tool for Central Ohio to understand public health emergencies and managing mass casualty events. This space is designed with significant infection control measures that include 100% outside air, negative pressurization compared to adjacent spaces, and a high level of filtration of the exhaust systems to protect the public. With a population over 2,000,000 people, Franklin County's Forensic Science Center will help guide the response to public health emergencies and mass casualty disasters. The work performed within this facility will inform public policy with respect to issues such as drug abuse, crime, and public health.

Honor Awards

CDM Smith | North Coast Harbor Pedestrian Bridge



The City of Cleveland retained CDM Smith Inc. to design the North Coast Harbor Pedestrian Bridge at its downtown lakefront. The project, located adjacent to the Rock & Roll Hall of Fame and Museum and the Great Lakes Science Center, connects the north end of a finger pier at Dock 32 to the southwest corner of Voinovich Park. The purpose of the project was to complete the pedestrian loop around the North Coast Harbor basin, connect the park to future and recent development initiatives, and to provide a secondary point of egress in the event of an emergency with the construction of a signature pedestrian bridge. The bridge also provides maritime access to the transient marina located in North Coast Harbor, which serves as a harbor of safe refuge in case of severe conditions on Lake Erie.

K.E. McCartney & Associates | Butler Regional WWTP

The Village of Butler Regional Wastewater Treatment Plant is in Richland County between the Villages of Butler and Bellville. The Village of Butler was under Ohio EPA(OEPA)Findings &Orders to replace its failing treatment plant, which discharges into the scenic Clear Fork River, one of the few rivers in Ohio that supports trout and is a popular location for outdoor enthusiasts including gold prospectors. K.E. McCartney & Associates (KEM) was hired to design, bid, and construct a new treatment plant to serve the Village. Project design included gravity sewers and three pump stations to convey sanitary flows to the new regional plant. KEM worked with local property owners to obtain easements to run the sewers along the alignment of an existing bike trail, which allowed for minimal impact to the surrounding area during construction. This new state of the art plant met all of KEM's project objectives including regionalized treatment, providing a cost-effective solution for the residents of both Villages, and making our world a little better by improving the environment of this scenic river valley.

Honor Awards

LJB |Fast-Track Fall Hazard Abatement Design

Leveraging its expertise in fall protection consulting and design, LJB has been assisting Bon Secours Mercy Health (BSMH) to proactively and systematically address fall hazards on building roofs throughout its network of acute care facilities in Ohio, Kentucky, South Carolina, and Virginia. During a fall hazard risk assessment, LJB identified 1,800+ fall hazards at 45BSMH facilities and then worked with BSMH to create a multi-year strategy to address the fall hazards. Using LJB's systematic approach, BSMH is following a program with annual budgeted line items from 2020 to 2023 to address fall hazards that will enable the company to mitigate 80% of its fall risk. For this project, LJB designed solutions to 18 hazards that present the most risk to the organization, helping BSMH mitigate 41% of its fall risk. This 2020 installation project represents year one implementation of a four-year fall hazard risk reduction plan.

Stantec | Downtown Storage Basin - Toledo Waterways Initiative Phase II

The $44M Downtown Stage Basin project reached final completion in August 2020 as the last of the 45 projects in the 18-year TWI Program come to completion. The project consists of a 17 MG underground concrete basin, modifications to four existing drop shafts to increase capacity into a CSO tunnel below downtown Toledo, a new 110" tunnel into the basin, and an 80' deep 2,650 GPM pump station adjacent to the Maumee River. The project will significantly improve the water quality of the Maumee River and provide social and economic benefits that will aid in the revitalization of Downtown Toledo. Stantec provided an overall cost reduction of around $3M for this project which services approximately 500,000 City of Toledo customers and the countless residents who benefit from improved water quality in the Maumee River and Lake Erie.

Honor Awards

ms consultants | Hazel Storage Basin (CSO Rack 10 and Rack 11)

The City of Akron's Long Term Control Plan (LTCP) Update (2011) required the construction of the Hazel Storage Basin to achieve zero overflows from the Combined Sewer Overflow (CSO) Rack 10 and 11 during the adjusted typical year storm event. Since the LTCP Update, recent work within the City's Integrated Plan and recalibration of the City's hydraulic model resulted in a storage increase to 4,500,000 gallons in order to optimize the available capacity within the downstream portions of the Little Cuyahoga Interceptor. Using value engineering, and working alongside the knowledgeable city staff, ms consultants made two significant project modifications which led to a savings of approximately $12.5 million. Additionally, the project was completed nearly 23 weeks ahead of the agreed upon timeframe.

Osborn Engineering | Net Zero Cool: Phase I

Osborn Engineering completed NOACA's proposed "Net Zero Cool," a three phase, comprehensive suite of stormwater control measures to the Northeast Ohio regional Sewer District (NEORSD) in 2019 for a 2020 green infrastructure grant to reduce stormwater runoffs from it's 100% impervious Downtown Cleveland site and mitigate runoff's harmful impacts on the Doan Brook-Frontal Lake Erie Watershed. "Net Zero Cool" refers to NOACA's ambition to showcase its green infrastructure elements with eye-catching, water-themed design; mural and green wall on the sides of the building; educational placards along the bioretention area; and outdoor classroom space on the green roof terrace available for lectures and tours as well as NOACA public meetings. The project is a small piece of the puzzle, but sets the precedent for the community of 1.23 million in Cuyahoga County that are impacted by the CSO system.

Honor Awards

Stantec | Lima CSO Storage Tank & Dewatering Pump Station

Designing the Lima Combine Sewer Overflows (CSO) Storage Tank and Dewatering Pump Station is not where Stantec's role on this project began, but is rather the culmination of a two decades long partnership with the City of Lima. The single most significant project in the CSO Control Plan, which was also developed by Stantec, is the 13 MG CSO storage tank. This project is one of the largest capital improvement projects ever undertaken by the City. The 5-year design and construction efforts of this massive project were completed within budget and 6 months ahead of schedule. The project benefits 38,000 residents of the City of Lima and many more who use the Ottawa River for fishing and recreational purposes. Given that the site was a park prior to construction, the tank was designed to be fully underground to return the park to its original purpose.

ms consultants| Muskingum Watershed Conservancy District Phase I

A Recreational Master Plan was developed in 2013 to upgrade facilities at 6 MWCD lakes. ms consultants was chosen to serve as Program Management Consultant and implementation of the Master Plan was initiated in October 2014. More than 100 capital improvement projects within the $130 million budget have been successfully completed. The focus of engineering, planning, and design was to upgrade the camp areas according to guest and public priorities, including: campground renovations; upgraded restrooms, shower, and laundry facilities; new rental units; trails, shelters, and playground areas; amenities for swimming, boating, fishing, and personal watercraft; and utility infrastructure. Phase I improvements were completed before the 2021 camping season.

Honor Awards

Woolpert | Suspension Bridge over the Stillwater River

The restorative power of nature for both health and access to open spaces for recreation and quality of life have become even more apparent during the COVID-19 pandemic. The Stillwater Prairie Connector and Suspension Bridge, located west of Piqua, now safely connects the east and west trail systems of the Stillwater Prairie and Maple Ridge Reserves. The bridge was designed to complement and enhance the scenic views available of the Stillwater River and surrounding parkland. This was accomplished by minimizing the visual impact with low profile systems such as dark colored cabling, netting that blends into the wooded surrounding and utilizing native white oak timber decking. The benefits of the project include increasing access to green space, conserving sensitive natural resources, and offering additional outdoor experiences with the Miami County Park District.

Johnson, Mirmiran and Thompson & TranSystems | FRA-71-9.62 Interstate and Stringtown Interchange Improvements

This project involved the major rehabilitation of I-71 from Stringtown Road to SR 315 along with the widening and reconstruction of two interchanges on I-71. Two individual consultant selections were then rolled into a coordinated effort between JMT and TranSystems recommending a solution which included collector-distributor lanes. Coordination also included the efforts between the design and construction teams involved with adjacent projects to ensure the final design fit within the broader context of the area with a single maintenance of traffic (MOT) plan developed for the combined project. Ultimately, the team was able to save $7 million in construction costs through the finding of innovative construction solutions, while completing the design of the project on an aggressive schedule and delivering plans in four months.

Honor Awards

Korda/Nemeth Engineering | North High Street Streetscape Improvements

When the Short North Special Improvements District (SID) asked The City of Columbus to invest in the area's infrastructure, the city hired Columbus-based Korda/Nemeth Engineering (Korda) to lead the project. During the design of the project, many things had to be considered from business access during construction, deliveries, parking, special events, and traffic maintenance (both foot and vehicle) always including stakeholders. In the end, the project created an additional 9,000 square feet of green space, which includes the addition of an impressive 1,327 Silva Cells. Pedestrians in the area enjoy the shade of nearly 200 more trees and the light of 180 more streetlamps while also benefiting from 56,000 more square feet of sidewalks. Motorists have nearly to 30% more parking spaces when visiting this area.

Burgess & Niple | Richland Avenue Pedestrian Passageway Project

In the heart of Ohio University, vehicular traffic congestion was a growing problem near a busy at-grade pedestrian crossing causing the City of Athens to find a solution. B&N designed a solution that involved raising the profile of Richland Avenue to provide a new pedestrian passageway below. The B&N team studied and matched the exterior passageway aesthetics to mimic the Georgian architectural style throughout campus. The final project also included programmable aesthetic LED lighting inside the passageway, bench seating, aesthetic light posts, and landscape architecture for the adjacent embankment slopes.

Honor Awards

Empower Energies & EMH&T | JPMorgan Chase Parking Lot Solar Canopies

EMH&T was a part of the exceptional team assembled by project lead Empower Energies to design and construct this major project, which is the second largest commercial office solar installation in the world, surpassed only by Apple's corporate offices in Cupertino, California. EMH&T played a key role in delivering this project for JPMC. As the project's civil engineer, EMH&T provided a range of professional services, including survey, site/civil engineering design, landscape architecture design, permitting services, initial review of existing parking conditions, and development of a plan to accommodate a 15% increase in overall parking availability by changing parking layouts. The project successfully fulfilled the desire of JPMorgan Chase to reduce its carbon footprint by increasing the amount of energy this major office building gets from a low carbon, renewable energy source.

Premium Sponsors | $500

Silver Sponsors | $250

PREVIOUS ACEC OHIO GRAND AWARD WINNERS

2020 **Gannett Fleming** – Buckeye Lake Dam Improvement Project

2019 **Jacobs Engineering** – Dublin Road Water Plant Treatment Capacity Increase Project

2018 **DLZ Ohio, Inc**. – OARS-OSIS Augmentation & Relief Sewer Project

2017 **Stantec** – Scioto Greenways Project

2016 **AECOM** – University Medical Center New Orleans Project

2015 **HNTB Ohio, Inc.** – I-90 George V. Voinovich Innerbelt Bridge Project

2014 **URS Corporation** – Spaceport America Terminal & Hangar Facility Project

2013 **THP Limited, Inc.** – Central Riverfront Garage – Phase 2 Project

2012 **ms consultants, inc.** – I-70/I-71 Columbus South Innerbelt Study

2011 **DLZ Ohio, Inc./HNTB/Spiro Pollalis** – Main Street Bridge Replacement Project

2010 **Wilbur Smith Associates** – Euclid Corridor Transportation Project

2009 **THP Limited Inc.** – The Ascent at Roebling's Bridge Project

2008 **FIGG** – Veterans' Glass City Skyway Project

2007 **HNTB Corporation** – Perry Street Bridge Replacement Project

Karpinski Engineering – Cleveland State University Recreation & Wellness Center Project

2006 **DLZ Ohio, Inc.** – River Chamber Stabilization & Demolition – Charleroi Locks & Dam Project

2005 **Lantz Jones Nebraska Inc.** – Knowlton Hall School of Architecture Project

2004 **Burgess & Niple, Inc.** – West Columbus Flood Protection Project

2003 **W. E. Monks & Co.** – Honda Transmission "Green" Building Project

2002 **Parsons Brinckerhoff Ohio, Inc.** – Fort Washington Way Reconstruction Project

2001 **Civil Design Associates, Inc.** – Atwood Lake Sewer System Phase I Project

2000 **Malcolm Pirnie, Inc.** – Aircraft Deicer Runoff Pilot Plant Treatability & Modeling Study

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