# ANNUAL REVIEW



# **OUR COMMITMENT**

One of the benefits of overseeing a firm with deep and diverse expertise is the opportunity to watch our employees solve complex challenges for our clients. I never cease to be impressed with the tenacity and resourcefulness of our talented staff members and their commitment to solutions that are both visionary and practical.

As I consider the contents of this 2021 Annual Review, that ability to problem-solve is clear in each of the highlighted projects. But we take it further than that—not only addressing the challenges at hand but looking far into the future for strategies to help clients in the years and decades ahead. Whether we're addressing energy efficiency and cost savings or safety and long-term resilience, we help our clients optimize resources, protect assets, and enhance the quality of life within their communities.

If the past two years have taught us anything, it's how interconnected we are—in terms of our systems and communities, and as individuals. A breakdown or vulnerability in one place can have a broad effect on many people, just as sound solutions can positively impact entire populations. Preparing for the challenges ahead requires focus and never losing sight of the details, as well as vision and the ability to think big in order to benefit as many as possible. I am proud of the projects we've featured in this report, and believe we are more connected to our clients and communities than ever before.

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DONALD E. STONE, JR. Chief Executive Office

# DIMENSIONS® ANNUAL REVIEW 2021

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Barry K. Dewberry

**CHAIRMAN EMERITUS AND FOUNDER** Sidney O. Dewberry

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PICTURED ABOVE Elmont Water Storage Tank and Booster Pump Station, Elmont, VA

#### **OUR HEADQUARTERS**

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#### OUR MISSION

Dewberry is a nationwide firm of planning, design, and construction professionals. We create responsible and innovative solutions for those who own, operate, and maintain natural and built environments. We value lasting relationships, achieving our clients' visions, and celebrating in their success.

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#### OUR VISION

CREATE VALUE FOR OUR CLIENTS. IMPROVE OUR COMMUNITIES. EMPOWER OUR EMPLOYEES. EXPAND OUR REACH.

#### **Top:** Dewberry | Edmonds; Birmingham, AL **Bottom:** Dewberry | Hydro; Lakeland, FL

# **EXPANDING OUR SOUTHERN REACH** EDMONDS ENGINEERING AND HYDRO SOLUTIONS CONSULTING JOIN DEWBERRY

Two strategic acquisitions highlight Dewberry's growth over the past year, bringing deeper capabilities in mechanical, electrical, plumbing (MEP), and fire protection engineering and water infrastructure design. The two companies added nearly 100 employees in offices throughout four southern states.

#### Edmonds Engineering,

a 75-person firm established in 1987 with five offices in Alabama, Mississippi, and Tennessee, brings considerable depth and experience in MEP engineering in the healthcare, education, municipal, industrial, federal, and commercial markets. "Dewberry and Edmonds are very much aligned in terms of services, market focus, and geography," says Dan Blackman, PE, vice

president and operations unit manager with Dewberry and former CEO of Edmonds.

"Most importantly, we share a culture and values that prioritize problem-solving, long-term relationships, and professional growth throughout our organization," Blackman adds. The combined operations are now known as Dewberry | Edmonds.

The acquisition of Hydro Solutions Consulting adds 20 staff members in three offices in the Central Florida region. The firm, which was founded in 2007, expands Dewberry's expertise in water infrastructure, permitting, utilities visioning, and natural systems services and now operates as Dewberry | Hydro.

former president of Hydro Solutions who is now serving as vice president and business unit manager, "It is exciting to combine our experience in addressing Florida's water resource needs, including the 'one water' platform, with Dewberry's resources and national presence. We look forward to leveraging that knowledge to benefit clients within the Gulf Coast region and beyond."

According to Robert Beltran,





### WE SHARE A CULTURE AND VALUES THAT PRIORITIZE PROBLEM-SOLVING, LONG-TERM RELATIONSHIPS, AND PROFESSIONAL GROWTH THROUGHOUT OUR ORGANIZATION.

DAN BLACKMAN

# SHIFTING THE CORRECTIONS PARADIGM TRANSITIONAL WOMEN'S FACILITY CREATES ENVIRONMENT FOR OPPORTUNITY AND SUCCESS

At first glance, the 160-bed women's unit at Nebraska Community Corrections Center – Lincoln (CCC-L) might easily be mistaken for a college dorm or residence. A large central dayroom provides space where people can congregate and interact. Natural light beams down on comfortable furnishings, featuring a bright color palette and wood finishes.

In this case, appearances are not deceiving. Dewberry served as justice consultant to prime architect Carlson West Povondra Architects of Omaha in designing the 57,018-square-foot building. The new structure represents the best mix of form and function in what is a changing evolution in corrections philosophy—one that emphasizes opportunities for education, skills training, employment, and ultimately, reentry to the community.

Critical to this approach is an environment that encourages personal improvement. Integrating pre-release services into an attractive, normalized setting instills and reinforces a sense of self-worth and confidence. Studies have found this important in facilitating a safe and successful transition back to society, and consequently, reducing the likelihood of future incarceration. Addressing the impact of the project, Scott Frakes, director of the Nebraska Department of Correctional Services (NDCS) noted that while the agency in and of itself cannot cause people to change, "we can provide safe, effective, and meaningful opportunities for change. That is how we keep people safe."

### POSITIVE OUTCOMES BEGIN WITH COMPREHENSIVE PLANNING

Such goals are not always easy to achieve. Correctional facilities are typically among the longest-lived public buildings and staying in step with changing philosophies is not always feasible nor cost effective. This is particularly true among older facilities, which tend to reflect a more punitive approach to inmate rehabilitation. At the same time, correctional systems have a responsibility to maximize the value of taxpayers' investment in their facilities and operations.

For more than 14 years, Dewberry has worked with NDCS to tackle these sometimes conflicting issues through a variety of projects, including the development of the agency's 2014 master plan, which set the stage for the CCC-L women's facility. Four pods of dormitory-style rooms connect to a spacious dayroom where residents can socialize, study, or watch TV. The facility also includes flexible, technology-enhanced spaces for a variety of vocational training classes, counseling, and treatment programs, as well as other group activities.

After two years, NCDS reports that women in CCC-L treat the facility like their own home. Similarly, NDCS staff members find the setting more conducive to carrying out their duties. Conveniently located offices allow them to be more accessible and available when needed. A well-designed space contributes to enhanced staff wellness and retention.

"We set out to design an incarceration space that didn't look or feel like a place of incarceration," Frakes said, adding that the result produced the sightlines, movement flow, and physical security required, as well as durable materials needed for spaces that operate 24/7. "This environment speaks to the facility's commitment to providing opportunities for reentry services as well as embracing trauma-informed approaches in addressing the needs of women who live there."



THIS ENVIRONMENT SPEAKS TO THE FACILITY'S COMMITMENT TO PROVIDING OPPORTUNITIES FOR REENTRY SERVICES AS WELL AS EMBRACING TRAUMA-INFORMED APPROACHES IN ADDRESSING THE NEEDS OF WOMEN WHO LIVE THERE.

SCOTT FRAKES, Director, Nebraska Department of Correctional Services

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# SUPPLY CHAIN CONTINUITY SUPPORTING THE DELIVERY OF GOODS AND SERVICES DURING THE COVID-19 PANDEMIC

Sector Party State

Since the onset of the COVID-19 pandemic in the U.S., there has been a growing concern about the nation's ability to maintain the supply chain that is relied upon for the transportation of goods, such as food, water, medicine, fuel, and personal protective equipment. For the Federal Emergency Management Agency (FEMA), it's critical that supply chain networks are functioning at capacity as people's safety and well-being depend on them. To support FEMA in its mission to keep the supply chain functioning, Dewberry provided the agency with Supply Chain Analysis Network (SCAN) services through its Logistics Construction and Support Contract.

### A FOCUS ON DIRECT COMMUNICATION

The biggest challenge in reaching FEMA's goal was managing the changing deliverable parameters due to the fluid nature of the pandemic. To address this challenge, Dewberry focused initially on frequent and timely communication, which included a daily team call with FEMA representatives to manage expectations and deadlines and resolve gaps and inconsistencies in the data or analysis that the firm was providing.

For 90 days, 20 Dewberry and 10 subconsultant staff worked seven days a week to produce eight short-term strategic and operational deliverables on COVID-19 impacts to national and regional supply chains. Dewberry's team of supply chain analysts, engineers, planners, GIS analysts, and emergency management professionals acquired data and provided analysis on key commodity shortages and impacts to various demographics.

### ANALYZING DATA FOR KEY DECISION-MAKING

By analyzing global and national supply chain disruptions, Dewberry was able to develop and maintain a list of recommendations on policies impacting private-sector supply chains for FEMA leadership to help shape the decision-making process. Dewberry's processes helped verify that pandemic response actions were conducted while maintaining a robust supply chain for key commodities.

Deliverables included multiple national supply chain ecosystem, traffic, and freight assessments; as well as multiple regional supply chain ecosystem, traffic, freight, ports, and lifeline assessments, such as food, water, and fuel lifelines. National and regional ecosystem assessments were developed through extensive research and validated by previously identified industry experts from across the key commodity industries. This approach provided an operational review and agreement by industry and private-sector subject matter experts. The deliverables Dewberry produced were often shared with the White House COVID Task Force.

Dewberry's professionals will continue to play an integral role in helping FEMA assess supply chains, including grid power, transportation infrastructure, pipelines, telecommunications networks, and banking systems. The firm is also equipped to continue to support FEMA with SCAN services, including pandemic response guidance, hurricane response support, and cyber-attack resilience measures. 🎕

Freight truck commodity impacts were one key data set that was closely monitored throughout the SCAN COVID-19 support project.



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# **INNOVATIONS HIGHLIGHT SANTA RITA WATER RECLAMATION FACILITY** A COMMUNITY-MINDED DESIGN OFFERS **BIG RESULTS WITH LOW IMPACT**

The City of Durango's 3.0-million gallons per day (MGD) wastewater treatment plant, originally constructed in 1952, was nearing capacity and had become difficult to maintain. Set along the scenic Animas River in southwest Colorado, the aging plant had last been updated in the 1980s and was not equipped to meet future regulatory requirements or additional growth. Concerns also focused on odors generated by the plant that impacted the Durango Whitewater Park, the Animas River Trail, and Santa Rita Park—all popular recreational spots located adjacent to the site.



### RETAINING A COMPACT FOOTPRINT

After evaluating several potential sites, the Durango City Council determined that the most cost-effective option was to upgrade the plant at the current location. Dewberry's design of the new Santa Rita Water Reclamation Facility (SRWRF) would expand the plant's capacity to 3.26 MGD, but would largely fit the facility within the existing footprint—a key consideration given the plant's proximity to the city's high-profile recreational amenities.

Other objectives included protection of the quality of the Animas River and the ability to comply with current and future

The design included the new Johannesburg aeration basin, a biological nutrient removal process capable of producing effluent with concentrations of 0.5 and 6 mg/L, respectively, with no supplemental carbon.



regulatory requirements, including Colorado's Regulation 85, the Nutrients Management Control Regulation, which sets effluent limits for nutrients discharged from treatment plants. Additionally, the SRWRF needed to include state-of-the-art odor controls to address community concerns.

### ENGAGING THE COMMUNITY: AN EIGHT-MONTH PROCESS

With residents concerned about the plant's impact on the nearby parks, public engagement was vital to the success of the project. Dewberry worked with the city to conduct a robust outreach process involving a series of design charrettes, public workshops, and meetings. Ultimately, the community's concerns in terms of potential encroachment, visibility,

and odor control were carefully addressed in the final design.

Designed to LEED® Gold standards, the 17,000-square-foot administration building was constructed of native stone and glass with a green roof and exhibits on the plant's treatment process. Designed to blend into the park environment, the building now serves as an attractive gateway to the site and a community amenity.

### A RESILIENT, HIGHLY EFFICIENT FACILITY

The upgraded treatment facility features an energy-efficient Johannesburg biological nutrient removal process, anaerobic digesters with innovative linear motion mixers and beneficial use biogas production, and visually appealing architectural

Designed to blend into the park environment, the building now serves as an attractive gateway to the site and a community amenity.

and site design. The beneficial use biogas system from the anaerobic digesters produces sufficient gas to provide approximately 40% of the total aeration power for the upgraded treatment process. The facility now produces higher quality effluent while utilizing approximately the same energy as the original treatment plant. Additional features include UV disinfection, biosolids dewatering, dewatering supernatant treatment, active primary clarification, and odor control.

Dewberry also provided supervisory control and data acquisition (SCADA) programming and process optimization and operations assistance. The SRWRF is now set to accommodate more than 20 years of growth, while the improvements will enable the city to defer millions of dollars in treatment infrastructure upgrade costs until 2042. 👯

# 2021 IN REVIEW NOTABLE PROJECTS

#### GEORGETOWN UNIVERSITY EAST WEST ROAD Washington, D.C.

We provided full-service engineering and architecture services for a new half-mile roadway at Georgetown University. This intricate project required complex utility relocations and the construction of more than 1,000 linear feet of new retaining wall. We developed a construction phasing strategy to address the university's aggressive timeline and eliminate the need for long-term utility outages and roadway closures.





### STATE ROAD 5 (U.S. 1) AT MATANZAS WOODS PARKWAY Palm Coast, Florida

For Florida's first multi-lane roundabout on a high-speed facility, we designed the transportation system and performed survey, right-of-way mapping, drainage design, environmental permitting, landscape design, and construction phase services.



### WEST SHINNECOCK BAY WATER QUALITY IMPROVEMENT FEASIBILITY STUDY Southampton, New York

Shinnecock Bay has been plagued with poor water quality, affecting the use of this natural resource, leading to persistent beach closures and a reduced shell fishing industry. We worked with Southampton and the governor's office to identify potential solutions; pre-screen and prioritize them; assess water quality benefits, costs, and environmental and social impacts; and facilitate stakeholder engagement.

### TURNPIKE WASTEWATER TREATMENT PLANT UPGRADES Leesburg, Florida

The Leesburg Turnpike Wastewater Treatment Facility is being expanded to support operations of up to 4.5 million gallons per day. To offset the costs of improvements, we helped the agency secure \$1.4 million in state funding. Our designs included a sequencing batch reactor, blowers, waste activated sludge (WAS) pumping, tertiary disk filters, disinfection conversion, biosolid treatment, pump stations (decant, reclaimed, in-plant reuse), electrical, instrumentation, and SCADA upgrades.



<sup>></sup>hoto courtesy of Wharton-Smith, Inc.





#### WEST AND CENTRAL TEXAS GEOSPATIAL LIDAR ACQUISITION AND ASSESSMENT Texas

Using 12 planes, each with their own sensors, we captured nearly 42,600 square miles of lidar data across west and central Texas. Our largest in-house lidar acquisition project to date, we were able to complete the acquisition in one fall/winter season.

#### NEW YORK CITY COLLEGE OF TECHNOLOGY VOORHEES HALL BOILER AND CHILLER PLANT REPLACEMENT Brooklyn, New York

In response to New York City's energy efficiency initiatives and as part of a joint venture between Dewberry and Ramboll, we designed the replacement of the boiler and chiller plants in Voorhees Hall, resulting in an expected energy savings of 52% for the chiller plant and 23.5% for the boiler plant. This translates into a significant annual energy cost savings for the college and an overall reduction in greenhouse gas emissions of nearly 260 tons per year.

#### POTOMAC RIVER 69KV CABLE CROSSING Washington, D.C.

When an electric feeder crossing a large river failed, we worked quickly to address engineering and permitting needs. We rapidly mobilized to survey the river bottom, and deliver in-river geotechnical exploration, alternative analysis for the selection of a new 69kV submarine cable, engineering of landside conduit connections, and permit strategies leading to full power restoration in less than a year.





### NOAA CGSC3 AUTOMATIC IDENTIFICATION SYSTEM (AIS) DATA MANAGEMENT

Charleston, South Carolina

We developed an mplementation plan for the National Oceanic and Atmospheric Administration's Office for Coastal Management, which included system architecture, data pipelines, and data security protocols necessary for the first migration of its data to the cloud. Our iterative and cloud-native approach outlined the deployment of an enhanced provisioning backend system for its AIS data.

#### VERIZON WIRELESS 5G SMALL CELL PROGRAM Virginia Beach, Virginia

With more than two million tourists visiting the Virginia Beach boardwalk annually, the local police department and cell phone carriers required updated infrastructure to address two problems safety and cell coverage. We designed and installed custom poles capable of concealing licensed-assisted access (LAA), citizens broadband radio service (CBRS), 4G, and 5G technology while providing space for security cameras, ultimately saving the city significant funds, and allowing Verizon to be the only carrier with wireless infrastructure on the boardwalk.



### EMPIRE LIBRARY Stanislaus County, California

This new 4,900-square-foot library features reading areas for adults, teens, and children, a sheriff's office, and a community room that opens to a secure covered gathering space. The ample outdoor community area includes accessible landscape features. We delivered architecture, interior design, historic artifact display, coordination, signage design, and furniture, fixtures, and equipment services.



### GREENVILLE SIGNAL SYSTEM UPGRADE Greenville, North Carolina

We designed citywide system upgrades including 2070LX controllers, system software and traffic control center enhancements, a resilient Ethernet-based, fiber-optic communications network, and 360-degree pilot project using digital short-range and 5G cellular communications with a smartphone app.



### FAIRGROUNDS TRIBUTARY

# WAKEMED COVID ON-CALL RESPONSES









#### FORT CARSON SOLAR ARRAY DAMAGE REPAIR Fort Carson, Colorado

After catastrophic hail and wind damaged solar panels at Fort Carson, we were tasked with repairing the affected panels and systems. Reusing a majority of what was onsite and installing new system components, such as modules and inverters, we were able to completely restore what was lost in the damage.

### PEKIN INSURANCE HEADQUARTERS

As Pekin Insurance worked to recruit and retain staff, we were hired to design and assist with visioning, workplace strategies, and branding to complete a 50,000-square-foot addition, including flexible workspace, collaboration areas, and a kitchen/dining area overlooking an outdoor pavilion. We provided architecture, interior design, civil, structural, MEP, and technology solutions services.





#### UNION COUNTY ASSET MANAGEMENT PROGRAM Union County, North Carolina

We partnered with Union County Water to provide asset management services for its water and wastewater infrastructure. The program included discovery and design of suitable enterprise asset management systems, business analytics, geographic information systems, technology and software system assessment, enterprise information management, decision support, and maintenance management services.





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We provided land planning and civil engineering services to take this project from concept to opening day in 18 months, bringing to Loudoun County its first professional soccer stadium. We were responsible for site-related entitlements, design, permits, procurement support, and construction administration to develop the 5,000-seat soccer stadium, access roadways, and parking areas.





### WALERGA ROAD BRIDGE REPLACEMENT OVER DRY CREEK Antelope, California

We assisted with funding applications and reviewed the 65% complete bridge design. After securing an additional \$1.5 million for design and \$7 million for 2,200 feet of approach roadway through the Federal Highway Bridge Program, the county selected us to perform final bridge design, water infrastructure, and construction management services.



We performed arc flash analyses and studies for multiple bu across the University of Alabama at Birmingham's campus. C track to be completed in early 2022, this project included a to



oto courtesy of University of



### CLIMATE RESILIENCE FOR CRITICAL FEDERAL INSTALLATIONS

Virginia and Marylanc

Our team provided resilience support for Department of Defense facilities in Maryland and Virginia, including watershed master planning based on integrated and sustainable design principles, flood risk management for current and future sea level rise scenarios, and Phase II NPDES MS4 compliance support.



# **2021 RECOGNITION FOR OUR COMMUNITIES AND PROJECTS**



DIMENSIONS



f Illinois at Chicago ngineering Innovation cago, Illinois	*	<b>Design Award,</b> Distinguished Building Over \$5M, AIA Northeast Illinois Chapter
<b>f Virginia Brandon</b> en Street e, Virginia	*	Best Urban BMP in the Bay Area (BUBBA) Award, 2021 Best Ultra Urban Project, Chesapeake Stormwater Network
<b>ny Outdoor Classroom</b> ma	*	<b>Design Excellence Citation Award,</b> AIA Eastern Oklahoma
<b>unty Courts Complex</b> ginia	*	<b>Retrospective of Courthouse</b> <b>Design Series,</b> National Center for State Courts (NCSC)
County Government	*	Retrospective of Courthouse

Design Series, NCSC



### TRANSPORTATION

#### PICTURED BELOW

Newark Bay-Hudson County Extension Deck Reconstruction Project Fresno County Sidewalk Improvements Fresno, California

I-95/Route 630 Interchange

Stafford County, Virginia

**Reconstruction and Widening** 

- ★ Community Improvement Award, American Society of Civil Engineers (ASCE) San Francisco Section
- ★ 2021 VTCA Engineering Award, Unbuilt Category, Design-Build Category, Virginia Transportation Construction Alliance (VTCA)
- ★ **Pinnacle Award,** American Council of Engineering Companies (ACEC) Virginia

★ **Platinum Award**, Transportation

Category, ACEC New York

Metropolitan Transit Authority (MTA) Long Island Railroad (LIRR) Murray Hill Station Improvement **Project** Queens, New York

- Newark Bay-Hudson County **Extension Deck Reconstruction Project** Bayonne, New Jersey
- ★ Leading Infrastructure Award, New Jersey Alliance for Action
- Rehabilitation of Bloomfield Avenue **\*** Project of the Year, Over \$10 Million, American Society of Highway Engineers (CR 506) Bridge Over NJ Transit (ASHE) South Jersey Chapter Bloomfield, New Jersey

**Replacement of Ridge Road** and Orient Way Bridges Project Lyndhurst and Rutherford, New Jersey

- ★ 2021 Distinguished Engineering Award, New Jersey Alliance for Action
- Western Placerville Interchange Phase II Placerville, California
- ★ Project of the Year Award, Transportation Projects under \$50 Million, Construction Management Association of America (CMAA)



### WATER

PICTURED ABOVE Elmont Water Storage Tank and Booster Pump Station

**Elmont Wate** and Booster Elmont, Virgi

in Jamaica Bay Tributary Queens, New York



er Storage Tank <sup>•</sup> Pump Station	*	Mer	it
nia			

Green Infrastructure Project

Award, ACEC Virginia

★ Platinum Award, Waste and Stormwater Category, ACEC New York





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These eco-friendly, clear envelopes are made of 100% compostable materials.

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# DEWBERRY ACQUIRES AIRBORNE LIDAR SENSORS

With the recent purchase of two state-of-the-art airborne lidar sensors—a RIEGL VQ-1560 II-S topographic sensor and a CZMIL SuperNova topobathymetric sensor—Dewberry has significantly increased its remote sensing and mapping capabilities. The sensors, which feature 150 MegaPixel aerial mapping cameras, will enable the firm to manage the entire lidar data acquisition life cycle in-house, with greater control over scheduling and the quality assurance of high-definition datasets.

The RIEGL VQ-1560 II-S topographic lidar sensor is equipped with a laser pulse repetition rate of up to 4 MHz, resulting in up to 2.66 million measurements per second on the ground. The system is capable of efficient wide-area mapping or ultra-high-density site and corridor mapping with terrain capabilities. Data acquisition applications include complex urban environments, utility corridor mapping, mapping of lakesides and river banks, and agricultural and forestry lands.

Dewberry is currently the only privately held firm in North America to offer the CZMIL SuperNova lidar sensor, which is an advanced airborne hydrographic mapping sensor with a depth penetration of up to 75 meters below the water surface line. Applications include seamless topographic and bathymetric capture, coastal and shoreline mapping, riverine systems, shallow lake bathymetry, submerged habitat detection, and estuarian and wetland mapping.

Dewberry is already using the sensors on critical contracts. For the U.S. Geological Survey, Dewberry recently performed topobathy lidar mapping of the Potomac River in Maryland and West Virginia using the SuperNova sensor. Additional projects using the Riegl topographic sensor are underway in Nevada and southern California.

