



moffatt & nichol

ROADWAYS AND BIKEWAYS



ABOUT US

Whether providing planning, design, program management, or strategic advisory services, our clients depend on Moffatt & Nichol to find innovative ways to improve, enhance, and expand their transportation systems—of all sizes, with a focus on safety, connectivity, and sustainability.

For over 75 years, Moffatt & Nichol has offered multidisciplinary transportation engineering and planning services, from conceptual planning, feasibility studies, and preliminary engineering through final design and construction support. Our project experience ranges from complete street plans; roadways; and bikeways to bridges; highways; grade separations; and rail, intermodal, multimodal, and transit facilities. Today, with local staff in key transportation markets, we are well-positioned to offer clients the depth of local knowledge paired with our firmwide industry experience to provide personalized solutions to meet their unique transportation needs.

WE PROVIDE...



LOCAL CONTENT



VALUE FOR MONEY



SOCIAL AND ENVIRONMENTAL SAFEGUARDS

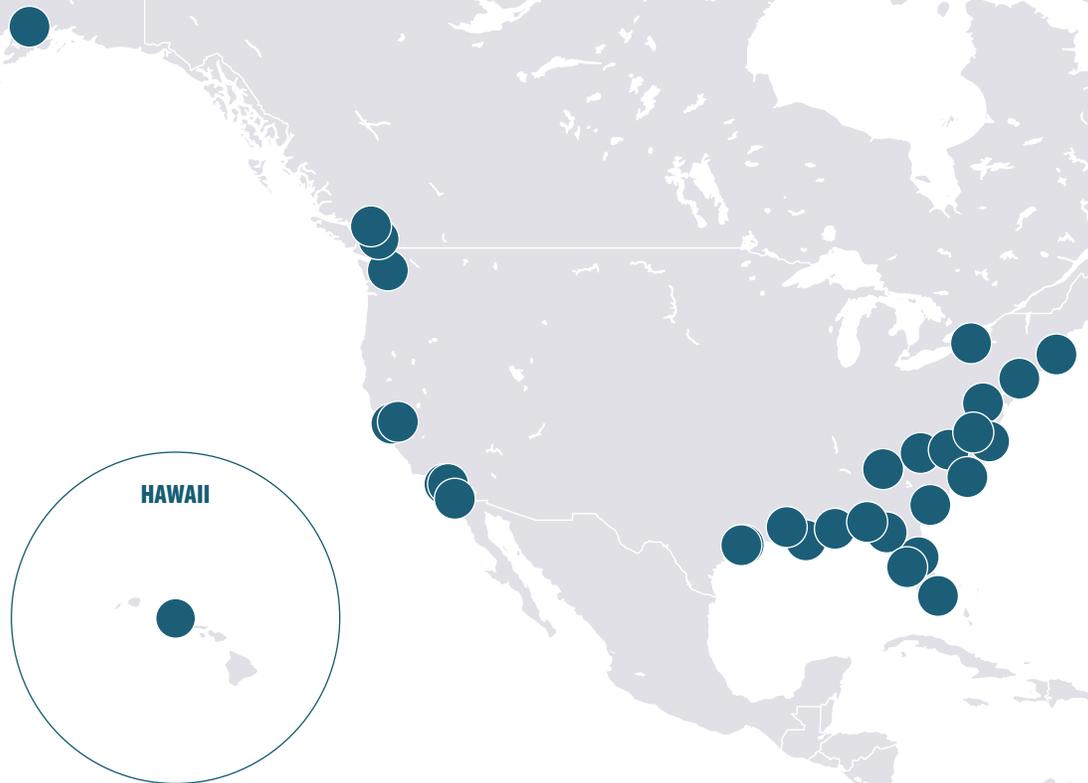


CLIMATE RESILIENCE



INCLUSIVITY

OUR NORTH AMERICA OFFICES



Anchorage, AK
Atlanta, GA
Baltimore, MD
Baton Rouge, LA
Boston, MA
Bridgeport, CT
Carlsbad, CA
Carson City, NV
Charlotte, NC
Chipley, FL
Corpus Christi, TX
Costa Mesa, CA
Federal Way, WA
Fort Lauderdale, FL

Honolulu, HI
Houston, TX
Jacksonville, FL
Katy, TX
Long Beach, CA
Miami, FL
Mobile, AL
Morehead City, NC
New Orleans, LA
New York, NY
Norfolk, VA
Oakland, CA
Ontario, CA
Orlando, FL

Pensacola, FL
Philadelphia, PA
Raleigh, NC
Richmond, VA
Rochester, NY
San Diego, CA
Savannah, GA
Seattle, WA
Tallahassee, FL
Tampa, FL
Vancouver, Canada
Walnut Creek, CA
West Palm Beach, FL
Wilmington, NC



ROADWAY AND BIKEWAY SOLUTIONS

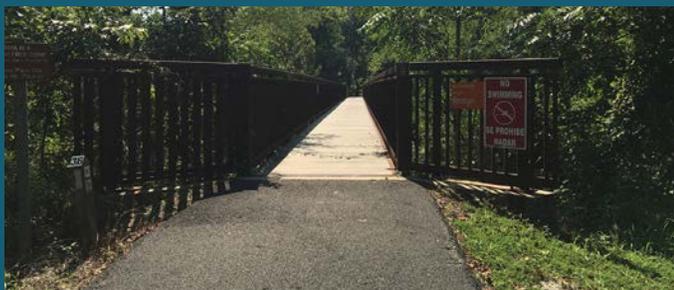
T. TYLER POTTERFIELD MEMORIAL BRIDGE

LOCATION: RICHMOND, VIRGINIA | OWNER: HARGREAVES ASSOCIATES

The City of Richmond's multimodal T. Tyler Potterfield Bridge was the first project developed as part of the city's visionary Riverfront Plan. Moffatt & Nichol worked closely with the project architects to coordinate architectural details related to the structure's decking, seating, lighting, and bridge railings, adapting contemporary design to the 100-plus-year-old footings of a 19th century dam. The basis of design included AASHTO specifications for bicycle and pedestrian bridges, small vehicular live loading, and hydraulic/water levels. For new bridge components, the structural design mimicked the original design of built up steel pier trusses, paralleling the skew of the existing supports and adding built up steel members to support scenic overlooks and a 10-foot walkway. Americans with Disabilities Act (ADA) access was achieved throughout the project.

DOMINION CHESTERFIELD STATION BICYCLE ACCOMMODATION STUDY

LOCATION: CHESTERFIELD, VIRGINIA | OWNER: DOMINION ENERGY



Moffatt & Nichol assisted Dominion Energy with developing a methodology to address ways to incorporate accommodations for Chesterfield County's bikeways and trails plan to comply with the county's site plan review process for one of multiple upcoming site development projects at Dominion's Chesterfield Power Station. To develop a comprehensive approach to addressing trail accommodations to cover all of the projects, Moffatt & Nichol performed a wide-ranging alternatives analysis, looking at both on-road bikeway and pedestrian accommodations, as well as potential off-road multiuse trails, with connecting a future Chesterfield County bikeway and trail system to existing trails at nearby Henricus Historical Park as the primary consideration for selecting an alternative.

BELMONT SPUR TRAIL

LOCATION: BELMONT, NORTH CAROLINA | OWNER: CITY OF BELMONT AND NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RAIL DIVISION

Moffatt & Nichol worked with the City of Belmont and the North Carolina Department of Transportation Rail Division to develop a 10-foot wide greenway alongside the inactive railroad corridor that runs from downtown Belmont north to Belmont Abbey College in the City of Belmont. The bicycle-pedestrian greenway design was inspired by the uniqueness of the Belmont community and was designed to connect adjoining neighborhoods and community resources, such as the Sisters of Mercy, Belmont Abbey College, and North Belmont to the downtown area. The trail design concepts were drawn from a thorough and careful understanding of the land, community, and the history that has shaped the city.



STATE ROAD 61 IMPROVEMENTS

LOCATION: TALLAHASSEE, FLORIDA | OWNER: FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 3



This roadway improvement project included major repair, rehabilitation, and retrofit design of a major six-lane strategic intermodal system facility. The improvements included reducing existing lane widths from 12 feet to 11 feet and converting existing 4-foot bike lanes to 7-foot buffered

bike lanes and providing major ADA upgrades, along with enhanced signalized pedestrian crossings with enhanced lighting. Moffatt & Nichol prepared a detailed ADA survey report, accident data report, community awareness plan, typical section package, maintenance-of-traffic lane closure report, lighting justification report, utility conflict matrix, cost estimates, design variances, design construction plans, signing and pavement marking plans, and nighttime plans.

U-5773: CONCORD LAKE ROAD WIDENING KANNAPOLIS/CONCORD

LOCATION: CABARRUS COUNTY, NORTH CAROLINA, NORTH CAROLINA | OWNER: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION



Moffatt & Nichol provided multi-modal planning and design services for this road widening project. The design included application of a four-lane “superstreet” with design of bicycle accommodations

with roadways. The project integrates sidewalks, trails bike lanes and bikeways into transportation infrastructure, traffic operations and corridor planning. Moffatt & Nichol’s efforts included successful processing of quantitative and qualitative field data, developing and applying policies and project modeling tools. Our project team worked seamlessly with NCDOT team members to consult with communities on goals and objectives of the project, which included social quality, economic growth and environmental sustainability.

OLIVE ROAD STREET IMPROVEMENTS

LOCATION: ESCAMBIA COUNTY, FLORIDA | OWNER: ESCAMBIA COUNTY



Moffatt & Nichol is designing a unique complete streets project along a 3.5-mile section of Olive Road. The project includes improving pedestrian and bicycle safety by converting a two-lane roadway with ditches into an urban three-lane section with curb and gutter, sidewalks, and a multiuse path. As part of the complete streets design, Moffatt & Nichol is able to address a major flooding area adjacent to the corridor by redirecting 68 percent of the stormwater away from the flooding area to the new regional park pond. Moffatt & Nichol is designing the regional pond to become a new park—complete with a 10-foot-wide walking path, surface aerators, landscaping, butterfly garden, a small pervious parking lot with bike racks, benches, picnic tables, and a new boardwalk over the creek to connect an underserved community.



STATE ROUTE 81 BICYCLE AND SIDEWALK IMPROVEMENTS

LOCATION: HENRY COUNTY, GEORGIA | OWNER: HENRY COUNTY

This federal aid project widens three miles of State Route 81 (SR 81), an existing two-lane rural facility to a four-lane section adding urban shoulders with pedestrian sidewalk facilities for Henry County. The project will add a curb and gutter with sidewalks along both sides of the corridor to provide mobility for pedestrians between the City of McDonough and surrounding neighborhoods, active commercial development, the public library, and Heritage Park. Moffatt & Nichol examined pedestrian crossing needs, existing signalized intersections, and all crosswalks to be improved for compliance with Georgia Department of Transportation and ADA guidance including, potential bicycle origin and destinations with adjacent projects to determine if bicycle facilities are justified and financially feasible.

NORTH-SOUTH GREENWAY GAP CLOSURE

LOCATION: MARIN COUNTY, CALIFORNIA | OWNER: TRANSPORTATION AUTHORITY OF MARIN

The North-South Greenway Gap Closure project is part of a regional effort to expand the non-motorized transportation network in Marin County. Adjacent to the northbound U.S. Highway 101 off-ramp to Sir Francis Drake Boulevard, the project will be designated as part of the Bay Trail network, a planned 500-mile walking and cycling path around San Francisco Bay. The new pedestrian and bicycle bridge crosses Corte Madera Creek in Larkspur and replaces an inadequate 4-foot-wide, substandard sidewalk that did not provide adequate passing space for pedestrians and bicyclists. The new facility comprises a 1,000-foot-long, and 12-foot-wide, multi-use path that connects Sir Francis Drake Boulevard and the Larkspur Ferry Terminal to the north. Southward, the path continues to link up with existing and planned multiuse paths.



LAKE MERRITT CHANNEL TO BAY TRAIL PEDESTRIAN AND BICYCLE BRIDGE

LOCATION: OAKLAND, CALIFORNIA | OWNER: CITY OF OAKLAND

Moffatt & Nichol is the prime consultant for this project to extend and connect the combined pedestrian and bicycle trail that runs along the Oakland Estuary and Harbor to Lake Merritt. The City of Oakland plans to build a signature bridge at this location to close the gap and provide a landmark for the area, as well as a means to revitalize and rejuvenate this part of the city. The Moffatt & Nichol team has developed concepts for the trail extension, including the approaches and bridge. Moffatt & Nichol will manage the project and lead the team from initial planning studies and environmental clearance through final design and support during bidding and construction. The team is currently completing environmental documentation and preparing for public participation meetings.

U.S. ROUTE 101 OPERATIONAL IMPROVEMENTS AT MILPAS STREET AND CABRILLO BOULEVARD

LOCATION: SANTA BARBARA, CALIFORNIA | OWNER: SANTA BARBARA COUNTY ASSOCIATION OF GOVERNMENTS

The Santa Barbara County Association of Governments contracted Moffatt & Nichol to provide viable alternatives to meet traffic demands where three local roadways and the Old Coast Highway intersect near U.S. Route 101.

A roundabout was selected as a traffic calming device to improve traffic circulation and reduce accidents. The configuration incorporated a safe and user-friendly pedestrian and bike path to meet local recreational needs. To address environmental requirements, Moffatt & Nichol maximized the available street cross section to avoid impacting a nearby historic tennis academy and golf course. The final design complements local architecture and includes elements, such as planters with sandstone accents and native plant species, a truck apron, and landscaping that represents input from local groups.



CHITTIK FIELD SPORTS COMPLEX

LOCATION: LONG BEACH, CALIFORNIA | OWNER: CITY OF LONG BEACH

In 1950, the Los Angeles County Flood Control District allowed the City of Long Beach to improve the basin for recreational purposes, beginning with a baseball diamond. However, by 2000, faced with a failing irrigation system and the field turning to dust, the city began planning for sustainable redevelopment and expansion of the facility. Moffatt & Nichol was contracted to reconfigure the basin to develop the site into an outdoor recreational sports complex, with new athletic facilities, including three soccer fields, a regulation football field, and an all-weather track, along with paved parking. To encourage non-motorized travel, a bike path extension was created to connect with an existing bike trail. The detention basin remains an active stormwater management facility.



WALNUT AVENUE INTERSECTION IMPROVEMENTS

LOCATION: LONG BEACH, CALIFORNIA | OWNER: CITY OF LONG BEACH

Walnut Avenue was in desperate need of rehabilitation due to damaged curb and gutter, severe cracking and potholes in the pavement, and non-standard cross fall in the gutter, which was causing ponding. Moffatt & Nichol provided analysis and design of a series of improvements to a 1,300-linear-foot roadway segment, which included improving bicycle and pedestrian routes to local schools and access to recently redesigned nearby outdoor sports park. The new sidewalk and driveway approach design was ADA compliant and intersection improvements included installation of continental sidewalks and redesigned traffic signal.



OCEAN BOULEVARD BIKE TRAIL CONNECTOR

LOCATION: LONG BEACH, CALIFORNIA | OWNER: PORT OF LONG BEACH

The Ocean Boulevard Coastal Bike Trail Connector project provides a 0.5-mile Class I bike path, connecting the eastern terminus of the Mark Bixby Bicycle Path on the new Long Beach International Gateway Bridge to the City of Long Beach's bicycle network east of the Los Angeles River, closing a critical gap in the California Coastal Trail. The project improves public access to California's coastal areas and allowed a safe crossing point over the Los Angeles River. Moffatt & Nichol provided supporting environmental and engineering consulting services, including engineering design development, grant support, construction bid document preparation, bid support services, construction support services, and project closeout services. The project also addressed sustainability design, complying with California's Model Water Efficient Landscape Ordinance and Title 24 lighting standards. Unique engineering solutions, such as the incorporation of lighter steel barriers and the use of a large steel transition plate, contributed to the project's success, enhancing public safety and environmental benefits.



INTERSTATE 405 / MAGNOLIA STREET INTERCHANGE HEIL AVENUE PEDESTRIAN BRIDGE

LOCATION: ORANGE COUNTY, CALIFORNIA | OWNER: ORANGE COUNTY TRANSPORTATION AUTHORITY

This 16-mile segment of the \$2.16 billion Interstate 405 (I-405) Improvement Project involves 1.4 miles along the I-405 mainline and reconfigures two interchanges with a collector-distributor ramp connecting the two interchanges'

northbound direction; it also replaces three large-span, high-skewed overcrossing bridges and one pedestrian overcrossing bridge. The project improves bicycle and pedestrian facilities, including ADA accessibility, existing interchange and local streets. As the designer of record for the overall improvement project, Moffatt & Nichol provided design management services and led several key disciplines, such as roadway, structures, drainage, and staged construction. Project improvements are expected to improve operational efficiency, reduce congestion-related accidents, and provide safety enhancements.





moffatt & nichol

ABOUT MOFFATT & NICHOL

In 1945, John G. Moffatt and Frank E. Nichol formed partnerships in California and Oregon to provide engineering and design services for infrastructure on the rapidly growing U.S. West Coast, focusing on harbor works and waterways, bridges, buildings, industrial facilities, military installations, and public works. Since then, the company has expanded services to include economics, planning, architecture, and construction management for coastal and water resource, energy, environmental, transportation, and urban improvement projects. We are proud to have served public and private clients for more than 75 years, with 80 percent of our business from repeat clients. Today, from offices in North America, Latin America, and Europe, we continue to provide leading-edge engineering and consulting services to clients in the marine terminal, transportation, energy, environmental, and urban development markets around the world.

SERVICES

Ports

- Container and Cargo Facilities
- Military Facilities
- LNG, Oil, and Gas Energy
- Ferry Facilities
- Cruise Homeports and Ports-of-Call
- Dry Bulk and Material Handling
- Offshore Wind Energy

Water

- Numerical Modeling
- Watersheds, Rivers, and Floodplains
- Piers, Marinas, Wharves, and Waterfronts
- Urban Planning and Redevelopment
- Coastal Structures and Shoreline Stabilization
- Dredging and Sediment Management
- Beaches, Inlets, and Estuaries
- Stormwater and Green Infrastructure

Transportation

- Rail and Intermodal
- Bridges and Grade Separations
- Roadway and Civil

Environment

- Environmental Assessment, Investigation, and Remediation
- Permitting, Biological Assessments, and Monitoring
- NEPA/SEPA and Environmental Studies
- Compensatory Mitigation
- Watershed, Stream, Wetland, and Ecosystem Planning and Restoration
- Living Shorelines
- Water, Noise, and Air Quality Assessments

Commercial

- Transportation/Intermodal Studies
- Grant Application Support
- Strategic Development Studies
- Alternative Use Studies
- M&A Due Diligence Support
- Lenders' Technical Advisory Services
- Market Studies and Competitive Analysis
- Benefit Cost Analysis
- Container, Dry Bulk, and Cruise Volume Forecasts
- Master Planning Support