

Advisory Services

Delivering value

wsp



Delivering *value*

Changing economic conditions, funding shortfalls, evolving government priorities, aging assets and emerging technologies are among the biggest challenges faced by developers, owners and operators of infrastructure.

WSP USA's advisory services practice guides clients to better compete in today's economy by providing a unique combination of infrastructure expertise and management consulting leadership. We help our clients procure, develop, manage, finance and invest in their programs and projects.

Our advisory services professionals are dedicated to developing business and operational solutions throughout the project life cycle. We create value for clients by providing deep industry understanding and local knowledge, access to senior advisors with operations and executive management experience, and a fully integrated package of professional services.

As trusted advisors, we work for—and in collaboration with—clients to develop integrated infrastructure solutions for the world today and tomorrow. We deliver transformative game-changing solutions in the following markets:

- Transportation
- Buildings
- Energy
- Water
- Environment



Trust

As an advisor and consultant of choice, we have developed enduring relationships with clients built on our excellent service delivery and results-oriented solutions when it matters most.

Experience

Former executives and senior officials head our team of consultants, all known for their strategic, financial, operational and management experience.

Tailored Solutions

With access to tens of thousands of engineers, scientists, technicians, consultants and academics, we drive best practices and develop practical solutions.

Life Cycle Approach

Clients turn to us at all stages of the development life cycle: strategic planning, design, procurement, construction, operations and maintenance.

Passion

We are passionate about our work and dedicated to making a difference in our communities.

Integrated *solutions*

Accountability and competition drivers are accelerating the need to deliver more and also to do so better, faster, safer and more reliably. The depth and breadth of our expertise and experience enables us to deliver a diverse range of services across all phases of the project life cycle, guiding critical change and key decisions. Our clients come to us to help them make informed decisions, develop assets and deliver programs, projects and services cost effectively.

Innovate

Leverage multidisciplinary expertise to solve our clients' toughest problems to better compete in today's economic climate.

Partner

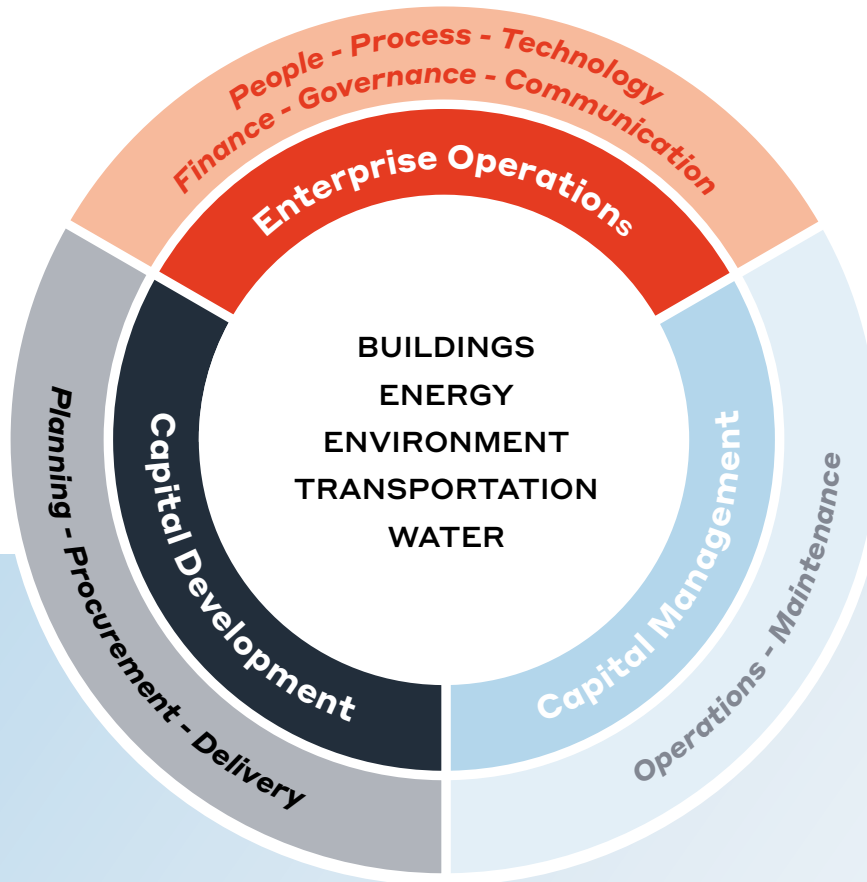
Focus on proactive communication and collaboration with partners and stakeholders to guide holistic solutions at the organizational, program and project level.

Transform

Drive best practices and implementable solutions, providing quality and value in everything we do.



Holistic approach



OUR ADVISORS

We bring diverse entrepreneurial perspectives, drawing on the skills of:

- Executives
- Planners
- Engineers
- Financial Analysts and Economists
- Management Consultants
- Research and Development/Innovators
- Procurement Experts

Our diverse teams give us unique insight into the challenges and opportunities facing our clients, and the ability to effectively communicate with policymakers, key stakeholders and the public.

We pride ourselves on attracting thought leaders from across the industries we serve and recruiting talent from the nation's top academic institutions.

OUR CLIENTS

- Government agencies
- Regional agencies
- Federal government agencies
- Municipal governments
- Utility companies
- Not-for-profit organizations
- Private developers
- Investors



Services *at a glance*

ALTERNATIVE DELIVERY

- Feasibility and options analysis
- Value for money and risk analysis
- Monitoring construction/operation
- Contract administration/compliance
- Market assessments
- Cost benchmarking and forecasting
- Asset condition surveys
- Environmental reviews
- Due diligence reviews

ASSET MANAGEMENT

- Capability and gap assessments
- Improvement programs
- ISO assessment and certification
- Technology solution planning
- Inventory, condition assessment and predictive modeling
- Maintenance advisory
- Risk and vulnerability assessment
- Training program development

BUSINESS IMPROVEMENT

- Strategic and business planning
- Process review and improvement
- Benchmarking/best practices studies
- Governance and organizational assessment
- Performance assessment
- Capacity building and transformation
- Program management office development
- Audit and compliance support

PROJECT STRATEGY AND GRANTS

- Grant and loan eligibility and strategy
- Application development and reviews
- Benefit-cost analysis
- Business case development
- Transportation planning and policy
- Project screening and prioritization
- Multimodal and corridor planning
- Environmental process advisory
- Program management support

ECONOMICS

- Benefit-cost analysis
- Cost escalation forecasting
- Cost risk/Monte Carlo simulations
- Economic impact analysis
- Market demand analysis
- Real estate and fiscal impact analysis
- Regional and economic modeling
- Socioeconomic/land use forecasting

FREIGHT AND LOGISTICS

- Benefit-cost analysis
- Fixing America's Surface Transportation (FAST) Act/federal grant advisory
- Forecasting and modeling
- Freight/rail planning and policy
- Investment grade analytic support
- Market assessments
- Network integration advisory
- Supply chain logistic analysis
- Performance management

MOBILITY MANAGEMENT

- Piloting and performance monitoring
- Intelligent transportation systems
- Systems and software integration
- Connected/automated vehicle technology and deployment
- Highway capacity management
- Managed lanes and motorways
- New mobility solutions
- Road usage charging

POLICY AND RESEARCH

- Innovative financing
- Congestion management
- Environmental process acceleration
- Multimodal asset management
- Integrated civil design, construction and management
- Policy analysis, development and implementation
- Resiliency planning and design

PROJECT FINANCE

- Capital planning and programming
- Capital and operations and maintenance cost analysis
- Repair/replacement cost analysis
- Data tracking and reporting tools
- Financial modeling
- Financial feasibility and planning
- Policy evaluation
- Rates and charges assessments
- Revenue forecasting

DATA SYSTEMS AND TECHNOLOGY

- Civil integrated management (e.g., geospatial data and 3D modeling)
- Connected/automated vehicles (C/AV)
- Technology-driven process improvements
- Smart cities/buildings development
- Unmanned aerial systems
- Database development
- Data integration and visualization
- Network and simulation models



100

Offices in the U.S.

7,000

Employees nationally

44,000

Employees globally

Our *community*

Our *guiding principles*

With experts in offices across the United States, we can respond quickly to issues and challenges.

Our teams have substantial local knowledge and they truly value their relationships with local architects, planners, businesses and governments.

We offer our clients local delivery that's supported by a deep bench of national and global infrastructure and development professionals.

WSP's guiding principles are the cornerstone of the way we work, enabling us to deliver Future Ready™ solutions to transform the business of infrastructure.

- We value our people and our reputation
- We are locally dedicated with international scale
- We are future-focused and challenge the status quo
- We foster collaboration in everything we do
- We have an empowering culture and hold ourselves accountable



Markets we serve

WSP provides strategic solutions across all major infrastructure at the enterprise, program and project levels.

Transportation

- Aviation
- Bridges
- Maritime
- Rail and Transit
- Road and Highways
- New Mobility Options

Energy

- Power Generation
- Power Delivery
- Renewables
- Hydropower
- Underground Storage and Disposal

Buildings

- Commercial
- Education
- Government
- Healthcare
- Residential
- Sports Facilities

Water and Environment

- Water and Wastewater
- Ecosystem Management
- Storm and Groundwater
- Greenhouse Gas Management
- Microgrids
- Climate Adaptation and Resiliency



Supporting *client success nationwide*

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

01

The Washington State Department of Transportation operates and maintains 18,000 lane miles and 3,600 bridges, runs the largest ferry system in the nation and has 32 public partners that collectively provide more than 220 million transit trips per year. WSP provided traffic and revenue, economic, financial, operational and/or forecasting advisory to major development projects of the Washington State Department of Transportation including the SR 520 Bridge Replacement and HOV Program, the SR 99 Alaskan Way Viaduct Replacement Program and the I-5 Columbia River Crossing. Our financial planning work for the \$4.6 billion SR 520 Program included the development of the initial Federal Highway Administration financial plans for its three major projects, and we helped secure a \$300 million federal Transportation Infrastructure Finance and Innovation Act (TIFIA) loan. We also prepared detailed gross-to-net toll revenue forecasts to inform pricing policy decision making and program financing.



DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

02

The District of Columbia Water and Sewer Authority (DC Water) provides retail water and wastewater services to more than 570,000 residential, commercial and governmental customers. An estimated 40 percent of the utility's \$1.6 billion capital improvement plan was bond funded, with the remainder coming from pay-go financing from cash reserves, Environmental Protection Agency grants and capital contributions from its wholesale customers. WSP led the development of a 10-year financial plan and advised DC Water on cost of recovery strategies for a \$2.2 billion combined sewer overflow long-term control plan; developed a billing database to identify impervious areas on every property to recover costs for the control plan; and conducted bond feasibility studies to support the sale of revenue bonds in 2003, 2004, 2007 and 2008. Moody's Investors Service upgraded the rating on DC Water's revenue bonds to A1 from A2, and subsequent upgrades included an AA from Standard and Poor's, and AA- from Fitch Ratings.



SANTA CLARA VALLEY TRANSPORTATION AUTHORITY

03

Since 2012, WSP has provided comprehensive financial planning services to the Santa Clara County Transportation Authority (VTA) on two phases of the Bay Area Rapid Transit (BART) Silicon Valley Extension. Our support includes funding analysis, financial planning, capital planning, and operations and maintenance cost projection. WSP analyzed VTA's financial capacity to support the construction of the second phase of the BART extension and to operate and maintain VTA's existing transit services. The analysis considered the extent that new revenue sources or financing approaches could support completion of the Silicon Valley Extension, including federal New Starts grants and TIFIA program loans. In addition, WSP developed a comprehensive financial model capable of projecting capital and operating costs for VTA's three capital programs. The model optimizes VTA's financial decision making over near-term and long-term horizons, helping the agency to commit funding to its highest priority projects.



Advancing Mobility with innovative policy, management and technology solutions

WSP is providing industry leadership in managed lanes and motorways, integrated and multimodal planning, road usage charging, connected and automated vehicle planning and piloting deployment and more.

CITY OF COLUMBUS

04

WSP played a key role in the City of Columbus' winning application for the federal Smart City Challenge. The city will receive up to \$40 million from the U.S. Department of Transportation to supplement the \$90 million raised from other private partners to carry out the Smart Columbus Program. Using these resources, Columbus will work to reshape its infrastructure and become a fully integrated city that harnesses the power and potential of data, technology and creativity to reimagine how people and goods move throughout the city. One of several strategies the city proposed was to deploy a fleet of electric self-driving shuttles to link the new CV-enabled bus rapid transit service with a burgeoning retail district, connecting more residents to jobs. Our firm will continue to provide Columbus with subject matter experts in C/AV planning and policy as well as intelligent transportation systems development and deployment.



MINNESOTA DEPARTMENT OF TRANSPORTATION

05

The Minnesota Department of Transportation (MnDOT) develops and implements policies, plans and programs that support a wide range of transportation options for over five million urban and rural residents. WSP has worked with MnDOT on a variety of initiatives to maximize operational performance and support the delivery of billions of dollars in transportation improvements. Services have included strategic planning and implementation; transportation operations and advanced mobility; alternative delivery and enterprise risk management; and economic and financial planning and policy efforts to help with project prioritization and maximization of return on investment. Projects we have supported include the statewide Transportation System Management and Operations Strategic Plan; the statewide Connected/Automated Vehicle Strategic Plan; development of a road usage charging pilot program; St. Croix River Bridge Construction Cost Escalation Forecast Model; the Climate Change Vulnerability Study; the Northern Lights Express Financial Planning; and statewide public-private partnership (P3) screening assessments.



LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

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WSP has been working closely with the Los Angeles County Metropolitan Transportation Authority (Metro) since 2007 to advance the Purple Line Subway Extension to Century City and Westwood. We assisted Metro in developing the long-term financial plan that supported the project's successful pursuit of a Federal Transit Administration New Starts full-funding grant agreement. During the environmental clearance process, WSP prepared financial impact assessments for local project alternatives, including a comparative assessment of capital costs, operating and maintenance costs, and local funding requirements. We worked closely with Metro's financial planning staff to prepare financial documentation, review and interpret financial model results, identify potential funding challenges, and coordinate with the Federal Transit Administration on project development requirements. Our firm continues to assist Metro with development of financial plan reports in pursuit of federal funds for Section 3 of the project.



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ONTARIO TEACHERS' PENSION PLAN

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Our firm served as a strategic consultant to the Ontario Teachers' Pension Plan (OTPP), a private investor, for its \$2.35 billion purchase of four container terminals in New York, New Jersey and British Columbia. The transaction was awarded the North American Acquisition Deal of the Year by *Project Finance* magazine. We evaluated expansion opportunities, reviewed the condition of terminal assets, and supplied or commented on all key commercial inputs to the client's valuation model, including capital and operating cost schedules as well as expected demand and throughput capabilities. Working closely with OTPP and Global Container Terminals (GCT), our team developed a business case for the expansion and modernization project, evaluating various build-out and phasing scenarios based on projected throughput volumes. The evaluation also supported GCT in its lease negotiations with the regional port authority.



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CALTRANS/SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY

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As part of a consultant team, WSP advised Caltrans/San Francisco County Transportation Authority on Presidio Parkway, the first P3 procurement under California's new SBX-4 P3 law. This was a complex project with multiple federal, state and local stakeholders. It required multiple technical, commercial, financial and political resources to advance the project and meet the owner's goals and the stringent requirements of the local federal landowner. We led development of the payment mechanism and part of our advisory and contract oversight role. The project achieved commercial close in January 2011, was opened in July 2015 and won the American Roads and Transportation Builders Association P3 Project of the Year in 2012. In addition to our role as P3 advisor, we supported the successful application for a \$46 million Transportation Investment Generating Economic Recovery (TIGER) grant.



Advising on award-winning P3 and transaction deals

WSP is at the forefront of P3 planning, procurement advisory, asset management and the evolution from pure privatization to more complex partnerships. We have supported both public sponsors and private investors with over 100 P3 projects and investor transactions nationally.

DENVER INTERNATIONAL AIRPORT

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Denver International Airport (DIA) is the fifth largest airport in the nation and the primary driver of Colorado's economy – transporting more than 53 million passengers and generating more than \$26 billion annually. WSP has provided a host of advisory services to DIA as part of our program management and capital improvement planning contracts to maintain and enhance the airport's operations, including asset management, P3 advisory and financial management. We helped develop the agency's asset management policy, and an asset management standards manual that provides guidance on life cycle activities, asset transitioning, planning, capital expenditure evaluation and risk assessment to improve asset reliability and reduce flight delays related to maintenance. We continue to advise on asset management improvement. We also provided P3 advisory services for the main terminal (Great Hall), as well as for the Eagle P3 commuter rail project, which will provide transit access to the airport.



Supporting *the fluid transport of people and goods*

WSP has supported over 80 freight and rail planning projects at the local, state, regional and national level, and 25 statewide freight and rail plans. The plans help to maintain the nation's rail and transportation system, which in turn supports the national economy.

OKLAHOMA DEPARTMENT OF TRANSPORTATION

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In 2007, Oklahoma was identified as one of the fastest-growing economies and is home to one of the country's top 50 freight logistics cities. Since 2008, we have partnered with the Oklahoma Department of Transportation (ODOT) to develop several intermodal transportation plan updates to enhance development of the state's agricultural, aviation, energy, telecommunications and biotechnology economies. The updates included extensive analysis of rail, freight, passenger and highway conditions, needs and investment requirements. We developed a Passenger Rail Investment and Improvement Act-compliant Statewide Freight and Passenger Rail Plan in 2012, and prepared the FAST Act required Statewide Freight Plan in 2017. These plans help to identify and prioritize needed improvements to enhance rail service, freight mobility and economic development. We also helped ODOT secure nearly \$80 million in federal grant funding to move its prioritized capital projects forward.



60 HERTZ

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60 Hertz is a renewable energy microgrid developer and independent power producer. They develop, construct, own, operate and deliver energy via microgrids to small and remote communities in order to help reduce their dependency on diesel fuel consumption. 60 Hertz engaged WSP to provide techno-economic modeling and advisory services related to system optimization and financial structuring for prototypical community-wide solar and energy storage microgrid systems in rural Alaska. WSP completed hourly energy simulations using HOMER, used the National Renewable Energy Laboratory's System Advisor Model to estimate project returns, and advised on tax equity investments and credits for a community solar microgrid under various implementation scenarios. For the communities studied, a microgrid energy solution could be used to reduce diesel consumption by up to 80 percent using solar energy, and will mean significant long-term energy cost savings for a region that currently pays about four times more for electricity than urban parts of Alaska.



MONROE COUNTY, FLORIDA

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Currently, communities in the coastal areas of Monroe County, Florida (the Florida Keys) experience increased flooding and loss of neighborhood access for extended periods of time. WSP provided planning services and support to enable the county to explore design options for two pilot communities. The recommended strategies will ensure that infrastructure investments made today factor in sea level rise and associated tidal effects in the roadway improvement planning process. This study helped define future policies for infrastructure investments and identified the most cost-effective design options for the ongoing county-wide roadway improvement program. WSP also helped the county secure a state coastal planning grant to assess the benefits and costs of adaptation strategies for a county-owned facility; and we are overseeing a county-wide LiDAR (Light Detection and Ranging) mapping effort to provide needed data. The county will use the mapping to refine its understanding of long-term sea level rise exposure and impacts on a number of infrastructure assets including transportation, utility and building assets.



Helping clients secure funds to build capital projects

WSP has helped clients secure over \$25 billion in federal grants and loans for 140 projects nationwide from a variety of discretionary grant and subsidized loan and credit assistance programs. Program opportunities available to our clients are influenced by federal legislation, which has included authorization for over \$300 billion in funds to a wide range of public and private sector clients through 2020.

UNITED STATES DEPARTMENT OF TRANSPORTATION

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An optimized combination of policy initiatives across strategic planning, project development, finance, design and delivery, technology, operations and maintenance will drive development. WSP works with the U.S. Department of Transportation's operating administrations, national governmental organizations and other stakeholders to advance the state of the practice within local, state and regional governments and agencies to deliver service better, faster, safer and more reliably. Our firm has active projects and task order contracts with several federal agencies and national research institutions. We support the research, analysis, development and deployment of national policy and guidance—as well as innovative delivery tools and programs—to increase transportation system safety, security and mobility and to enhance economic growth.



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NEW YORK METROPOLITAN TRANSPORTATION AUTHORITY

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The Metropolitan Transportation Authority (MTA) is the busiest and largest transit system in North America with over 76,000 employees. The MTA manages \$1 trillion in assets to support commuter rail, subway and bus services for over eight million daily riders. WSP continues to assist the MTA at all levels of the organization with the development and implementation of an Enterprise Asset Management (EAM) program, providing tactical, strategic and program-level advisory to help the MTA enhance safety, security, operations and maintenance. Specific projects include gap assessments for five of its operating agencies and acquisition support for an agency-wide EAM software solution. In addition, at the urgent request of the governor, we led the development of a strategic report in 90 days that covered important topics to prepare for the next 100 years (e.g. population growth, climate change, institutional barriers, technological innovations) and generated ideas for funding, policy and process.



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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

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WSP is serving as the California High-Speed Rail Authority's rail delivery partner, providing environmental, engineering and program management services. In addition, we helped secure over \$3 billion in federal grants and additional state funding by managing the preparation of the Authority's business plans, which address the full range of issues associated with project implementation, including a framework for private sector participation, an economic benefit and job creation analysis, ridership and revenue forecasts, analysis of station area development effects, and long-term economic development impact. Other efforts to advance the nation's first high-speed rail system include managing the procurement strategy for the Silicon Valley to Central Valley line, establishing an asset management office, managing the sustainability program, and leading the development of a partnering plan to deliver key portions of the capital program.



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About WSP USA

WSP USA is the U.S. operating company of WSP, one of the world's leading engineering and professional services firms. Dedicated to serving local communities, we are engineers, planners, technical experts, strategic advisors and construction management professionals. WSP USA designs lasting solutions in the buildings, transportation, energy, water and environment markets. With more than 7,000 people in 100 offices across the U.S., we partner with our clients to help communities prosper.