

ENVIRONMENTAL REVENUES HIT \$1.3 BILLION FOR WSP; INTEGRATING ACQUISITIONS GROWS ENVIRONMENTAL STAFF TO 1,200; TRANSPORTATION OFFERS HUGE OPPORTUNITY FOR TRANSFORMATION

WSP is one of the world's leading professional services firms. WSP has a global staff of more than 50,000 people — 9,500 of whom are based in 150 offices across the United States — providing planning, engineering and design services to clients in the transportation, environment, water, property and buildings, power and energy, resources and industry, and government sectors. WSP's global experts include planners, environmental specialists, engineers, advisors, technicians, scientists, and surveyors, as well as program and construction management professionals.

EBJ: How has WSP's business fared over the past couple of years?

ENVIRONMENT ACQUISITIONS AND BUSINESS REPOSITIONING

Cornell: WSP has performed very well over the past couple years; globally we saw 10 percent net revenue growth over 2018 and 31 percent in the United States through combined organic and acquisitive growth. In the last two years we have seen annual organic growth of over 8 percent and more significant growth from acquisitions. Even in 2020, when the United States has been significantly impacted by the COVID-19 pandemic, our operation will meet its plan in this very challenging business environment.

The last two years have also been particularly strong for the WSP environment business, as we have grown and diversified substantially. We now have 7,000 environmental consultants worldwide within our total global workforce of more than 50,000. In 2019, our revenues from environmental services were \$1.34 billion, an increase of 14 percent on 2018. With our diversified business we now complete work in the federal, state and municipal, and commercial market sectors, with nationwide geographic reach and excellent work experience.

Paquette: WSP has truly become full-service environment firm, supported by one of the largest infrastructure consulting firms in the United States. Major highlights in our environment business include major growth of our federal market share; diversification of our sustainability practice to market segments beyond top commercial and technology firms; and investments in our resiliency practice where we support impacted communities and commercial businesses in managing and mitigating climate, economic and social stresses.

We were honored this year to be ranked one of the world's largest and fastest growing consultancies on the Engineering News-Record (ENR) 2020 Top 200 Environmental Firms list. Building on 10 years of consistent growth, we are now the sixth largest environmental consulting business in the world, up from 16th place in 2019 and 38th in 2018.

EBJ: WSP finalized the Ecology & Environment acquisition in December 2019. Can you tell us about this acquisition and the integration process?

Paquette: The acquisition of E&E significantly enhances WSP's position as a leader in the U.S. environmental market, as well as our ability to provide our clients with a more comprehensive suite of services. We are also integrating our re-

cent purchase of LT Environmental (LTE). LTE has built a nice suite of services addressing the needs of the oil and gas sector in our Texas, Rocky Mountain and Central regions, which allows us to bolster our already proven mid-continent energy services. Building the mid-continent practice fills out some geographic gaps and helps us bridge east and west.

McKibben: Acquisition is only the first step, though. The real work begins with integration. WSP has been quite successful at integrating companies. Our philosophy is to work quickly and deliberately in promoting excitement around people, clients and service offerings. It takes time to fully integrate our processes, human resources, operational systems and controls, but we've discovered if you immediately put people together around clients and give them a sense of being part of something great, you realize quick engagement. With E&E and LTE we were able to build that camaraderie quickly in the first quarter before COVID hit. If we had been slower out of the gate, and over 500 professionals had not been able to get those relationship started, we would have been even more encumbered.

Paquette: We have officially been planning and implementing integration of both firms for most of the year and will fully rebrand E&E and LTE as WSP by September 2020. We have been engaging staffs of all companies in an ongoing "town hall" webcast series that spotlights how the integration of the businesses aligns with WSP's strategic pillars: clients, expertise, people and culture, and operational excellence. This has been exceptionally well received and has allowed personnel to interact across the companies and introduce the various pockets of expertise that now exist within our expanded WSP universe.

As we move to finalize the integration, we are further ramping up our employee engagement, migrating web assets, re-branding collateral, developing strategic

Answering EBJ's Questions for WSP are:

Lou Cornell, Chief Executive Officer of WSP USA: Lou has over 25 years of extensive and progressive experience managing leading engineering, environmental, architectural and construction service firms. Lou has been successful in running operations, setting strategy and significantly growing profits for businesses with annual gross revenues in excess of \$1.2 billion, covering all end markets.

Steven Paquette, President, WSP USA Water and Environment: Steven is the president of the U.S. water and environment business for WSP USA, which provides full-service environmental, sustainability, water and wastewater services to private, commercial, municipal and government clients. He has over 30 years of senior management, operational and business development experience at major consulting engineering organizations.

Mike McKibben, WSP USA Director of Environment: Mike is a collaborative leader with three decades of experience in environmental business management. Mike oversees the operations, project delivery, client relations and staff development of the U.S. environment business. He has extensive experience with highly engineered systems and deep knowledge of applicable environmental regulations and standards at the state and federal levels.

Alice Lovegrove, WSP USA National Director, Acoustics, Vibration, Greenhouse Gases, Air Quality: Alice leads a team of professionals providing support to WSP projects throughout the country. She has extensive experience in environmental engineering emphasizing global climate change, energy analysis and air quality and she has in depth knowledge of all the applicable federal and state regulations that apply to air quality and greenhouse gas emissions.

Laura Tobin, Area Manager, WSP USA Water & Environment: Laura has dedicated the past 20+ years solving client's environmental due diligence, site investigation, and remediation challenges. Laura is responsible for staff, operations, and project delivery for WSP's environmental operations in Colorado and the Texas-Mountain Region. Laura's passion is leading interdisciplinary teams on complex projects.

David Earley, WSP USA Director of Strategic Planning and Development: As director of strategic planning and development, David drives implementation of specific strategic and organizational initiatives and supports adoption of more sophisticated data and business analytics to improve business efficiency and revenue growth. He has held several leadership roles with WSP, including director of sales, markets and government relations, where his role included business and strategic planning.

Julie D'Orazio, WSP USA Market Leader, Transit and Rail: With more than 30 years of experience in management and analytical design experience on highway, railroad and transit projects, Julie is responsible for increasing firm revenue, enhancing marketing capabilities and strengthening relationships with clients, and she provides strategic and tactical advice to WSP clients on a wide range of transit and rail issues.

Michael Mangione, WSP USA National Markets Director for Transportation: Michael works with all market leaders to develop growth strategies, position WSP for major opportunities and encourage collaboration and technical excellence, and he supports regional managers, business development directors, area managers and project managers to grow our pipeline, win and deliver key projects and recruit industry-best talent.

Theo Gargagliano, WSP USA Aviation Market Leader: Theo brings 18 years of experience to his role leading a team of aviation infrastructure professionals delivering planning, design and program management/construction management services for airside and landside programs — including terminals, runways and airport systems — for the largest airports in the United States.

plans, refining our client and service line teams, proposing our projects together and working on exciting projects. What's missing is the face to face with each other and our clients; we are all hoping we will get back to that soon.

EBJ: This acquisition took place a few months after COVID hit and was already a complex transaction due to the magnitude of both companies. What additional challenges did COVID pose to integration?

McKibben: COVID has presented logistical challenges related to the integration, especially as it concerns in-person office introductory meetings with staff, planning around rebrand, travel, operations logistics and reduced client activities. Again, we feel we got a jump start on our integrations of E&E and LTE because we immediately got people together, put our qualifications together and started working jointly on projects. So, we were intentional, and lucky that we had the opportunity to be proactive before COVID hit all of us hard in March.

Market pricing for West Texas sweet crude went negative in April and prices will be slow to come back up. Hopefully, it will come back in 2021 but this but this negatively affected our oil and gas business — including LTE's large upstream services business. It has also affected E&E's midstream permitting business and our other midstream businesses especially in the Texas Rocky Mountain and Central Regions.

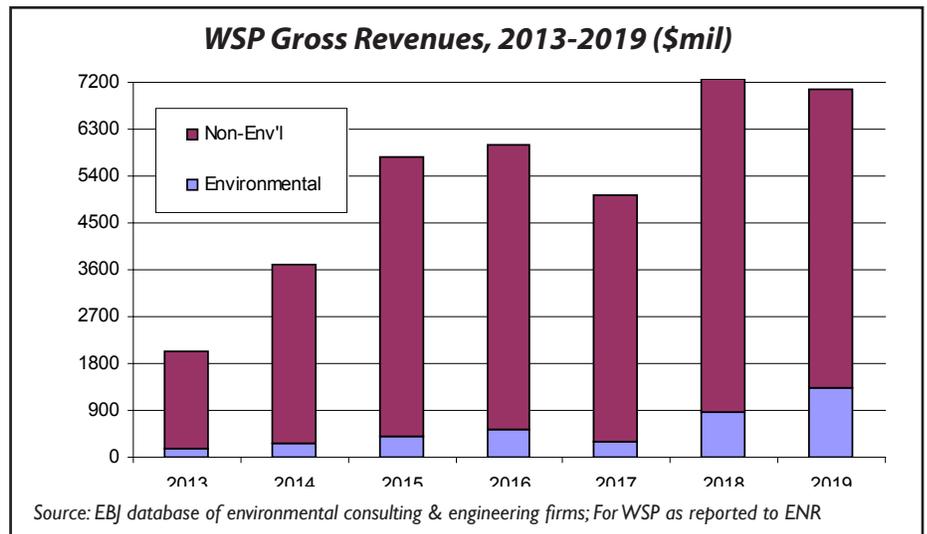
Paquette: Other markets, including Federal, have picked up a bit, and we have been able to provide COVID-related decontamination/disinfection services to government agencies. COVID has also forced us to look at doing business differently. For example, our Property and Buildings business line has seen more opportunity in mechanical and heating, ventilation and air conditioning work; our industrial clients needed business continuity help; water and wastewater utilities needed to maintain their basic infrastructure to provide clean water supplies; transportation clients still needed to move people and do it safely; developers were driven to other markets that we could follow.

EBJ: How has your environmental practice grown since acquiring Ecology & Environment?

Paquette: With the combination resources from WSP, LT Environmental, and Ecology & Environment — and the previous acquisition of Louis Berger — we have created one of the largest and most diverse environmental firms in the United States. We have grown from 400 staff in 2019 to over 1,200 staff, in over 60 offices, with broad capabilities and innovative expertise. Fueling the reposition of WSP as a leader in the environment market is the excitement around the longstanding brand reputation of these firms, and the addition of great people and contracts — we picked up approximately \$75 million in revenue, and a solid backlog of work.

E&E has a strong reputation for delivering diverse environmental services, including environmental engineering and assessment, ecological restoration, watershed management, emergency planning and renewable energy solutions. The E&E acquisition also enables us to further expand into the State and Federal environmental sectors. In addition to LTE's work in environmental services for the oil and gas industry, its entrenched reputation in the Rocky Mountain West also extends into waste management, industrial manufacturing and real estate development.

McKibben: The acquisitions have also grown our contaminated land management, compliance assurance and permitting businesses, as well as complemented our Louis Berger government programs work for U.S. Army Corps of Engineers, Environmental Protection Agency and other federal agencies. Likewise, LTE has broadened our practices in remote remediation systems, field services, response management and specialized air services, including remote continuous emissions monitoring systems using advanced and proprietary technology.



TRANSPORTATION INFRASTRUCTURE

EBJ: WSP has a big infrastructure practice. Please comment on the state of the infrastructure market and how it has been impacted by COVID and by technology.

Earley: In general, the transportation infrastructure market was poised for growth in 2020 and beyond based on increased funding from federal, state and local governments. State and local investments were validated at the polls through overwhelming voter approval of nearly \$10 billion in transportation funding measures; public awareness of long-term underinvestment in transportation asset improvement and maintenance — and its growing impact on quality of life — influenced voter sentiment.

D'Orazio: About a dozen multi-billion-dollar heavy rail and light rail long-term projects in major urban centers has driven transit growth. Unfortunately, the transportation mode is among the most impacted by the COVID-19 pandemic. Impacts include the original cost of containment, anticipated long-term operational changes, and severely reduced revenue. Recovery will depend on such factors as the continued spread of the virus and the public's comfort with transit, and increased work from home. Without additional federal funding, transit agencies' options include service cuts, fare hikes, labor cuts and borrowing substantial sums of money.

The pandemic has created some positive trends related to increased federal investment to improve bus service and consider bus rapid transit systems as an alternative to light rail, as well as boosting transit-oriented development — integrating residential and commercial space with existing or proposed stations.

Throughout history, Class I freight railroads have demonstrated tremendous resiliency during times of crisis and should successfully navigate through the current pandemic. Freight volumes appear to be increasing after lows in April and May, but carloads are still down 18 percent owing to reduced shipments of commodities such as coal, vehicles and nonmetallic minerals. Recovery will be slow and tied directly to improvements in the retail and manufacturing sectors and reestablished supply chains.

Mangione: Despite uncertainty in the future funding of highway and bridge construction, state and local governments continue to move forward with projects. Contract awards in 2020 between March and May were up 4 percent for highways and 9 percent for bridges compared to the same period last year. While there has been a suspension of work in many areas, most projects are being delayed rather than cancelled, reflecting a wait-and-see approach while federal funding is debated in Congress.

User decline of between 40 and 80 percent has caused fiscal stress on the toll road market. Large metro interurban roads were

more impacted than regional systems with managed lanes facilities experiencing the most shock. Freight and heavy vehicle traffic were relatively resilient due to the increased shipping demand from mandated stay-at-home requirements.

One significant COVID-related trend is the increased investment in the maintenance of current transportation assets and reduction in costly major capital expansion plans, illuminating the fiscal limitations owners are facing. Another is the accelerated delivery of projects to stimulate the economy. Owners are taking advantage of lower traffic volumes to advance completion of on-going projects and improve worksite safety, as well as the updated National Environmental Policy Act (NEPA) regulations meant to streamline and shorten the approval process for infrastructure projects.

Gargagliano: The aviation industry grew considerably over the past two years due to the value of construction contracts. Much of the growth was driven by over a dozen major airport expansion projects totaling over \$1 billion that are underway, with others set to begin. However, COVID created some unprecedented challenges that impacted the entire aviation system. Traffic was down 75 percent, and the outlook is difficult to predict and likely dire for the foreseeable future.

According to the U.S. Department of Transportation, recovery of the aviation industry and an increase in passenger travel volume will depend on such factors as levels of community transmission, efforts to reduce public health risk related to travel, public and workforce confidence, removal of travel restrictions, local government rules and responses to public health concerns, and air carrier operational capacity.

Until revenue is restored, most of the trends will likely be COVID related including the facilitation of low health risk passengers, like trusted passenger programs for flyers that can prove vaccination, recovery or immunity. Other trends may focus on advanced biometrics to improve the passenger experience, reduced processing time, improved security and new processes that allow for the automated sanitization

of high touch/use areas.

Krishnan: The current state of the maritime market is improving but remains complex due to the interdependent global relationships, politics and economics that are now overlaid with the impacts of the COVID pandemic. The latter caused declines in exports and imports as many businesses were operating at limited capacity or ceased operations completely, and the movement of travelers across borders was restricted. Cargo volumes were down 20 percent from 2019 but are rebounding as supply chains begin improving, factories come back on-line and auto production increases.

Maritime trends that pre-existed COVID will continue, including large resiliency programs to face sea level rise; aging infrastructure and economic pressures associated with costly reconstruction; landside logistic integration with waterfront facilities (road, rail, buildings); infrastructure improvements to support larger vessels (container & liquid bulk); renewable energy development on the East Coast; and a continued push by the Federal Government for the rehabilitation or replacement of Naval dock facilities.

EBJ: Please comment on transportation infrastructure funding from various sources.

Macek: The transportation sector is facing a federal funding crunch in the near-term caused by the impacts of the COVID-19 pandemic, and in the long-term due to the September 30, 2020 expiration of the Fixing America's Surface Transportation Act. In the near-term, transportation agencies have benefited from significant federal funding from the Coronavirus Aid, Relief and Economic Security (CARES) Act, which provides billions of dollars for transit agencies, Amtrak, seaports, airports, airlines and other infrastructure owners. This act provided much-needed relief to agencies suffering from significant declines in passenger traffic as a result of the pandemic. However, as the impacts of the pandemic extend over a longer duration, agencies are increasingly in need of a second federal relief package to support their sagging finances. The House passed its broad \$2 trillion infrastructure bill in

July but was quickly denounced by the Senate and White House, and it's not likely the infrastructure negotiations will resume until after the November elections.

In the long-term, our clients are increasingly looking toward the next federal surface transportation authorization, which will provide a framework for federal transportation funding over the next four to six years. At present, Congressional proposals moving through the House and Senate emphasize different transportation funding priorities but aim to provide at least as much funding as the expiring FAST Act. One feature of bills in both houses is an increased focus on funding for resiliency and sustainability projects, but to varying degrees. The inclusion of these measures in both bills makes it highly likely that the impacts of climate change will be addressed for the first time in a surface transportation bill.

State funding considerations mirror federal trends, with states trying to make up for funding losses resulting from the economic impact of the COVID-19 pandemic. Reductions in driving and spending during the second quarter have resulted in significant drops in fuel tax and sales tax revenues, which provide a large share of state transportation funding. Revenues are improving as the economy rebounds, but states are still seeking federal relief funds to support transportation programs.

Yet even before the pandemic, states have faced the question of how to increase funding for transportation programs to make up for slower growth in federal funds. According to the National Conference of State Legislatures, since 2013, 30 states have increased fuel taxes to provide additional funding for transportation programs.¹ In addition, states have turned to tolls and congestion pricing to generate additional revenue for transportation programs. These trends are likely to continue if Congressional interest in increasing federal funding for transportation remains limited.

According to a report by the American Road and Transportation Builders Association (ARTBA), 16 states and 20 local authorities have delayed or canceled road, transit and airport projects worth \$9.55

billion (\$5.01 for states and \$4.54 billion for local authorities). This comes as state and local governments have or are putting together FY21 budgets and are reassessing what to spend on infrastructure. It could also mean delaying or canceling maintenance projects and long-range capital projects. However, income support, food assistance and education will ultimately be higher priorities.

A recent white paper by WSP published by the Transportation Research Board, explores historic trends in federal transportation funding uncertainty. It's part of a forthcoming study on the impact of federal funding uncertainty on state, local, and regional departments of transportation

After early volatility in March and April, the municipal market is recovering thanks in large part to the Fed's intervention to buy bonds through its \$500 billion Municipal Liquidity Facility. With assurances that the Fed will be an investor if necessary, banks and foreign investors have taken advantage of the low rates for COVID-sensitive transportation sectors. Permanently reinstating tax-exempt advance refunding by Congress will create another incentive.

Cities, counties and regions, like states, have grappled with identifying additional funds for transportation programs. At present, local and regional governments face increased costs and decreased revenues stemming from the COVID-19 pandemic. Pre-pandemic, many regions sought to increase sales taxes, fuel taxes and tolls to pay for infrastructure investment. These measures have generally enjoyed strong voter support, with an estimated 90 percent of the 305 measures on the ballot in November 2019 approved by voters (according to ARTBA's Investment Advocacy Center.

Presidential election years are often targeted for local ballot measures to approve new funding for transportation. However, due to the economic downturn, many measures previously planned for November have been cancelled or postponed by public agencies. These measures will likely return to ballots in future years, but in the meantime, they will not generate new revenue for transportation programs.

Concerning the private sector, infrastructure funds, primarily U.S. pension funds, have invested billions in U.S. infrastructure. Most have been very successful for the investors. Currently, most pension plans include infrastructure investments in their portfolio with the capacity to invest billions more. Additional federal legislation is necessary to fully unlock the potential of private investment.

Confronted with a degrading infrastructure and budgetary stress caused by the COVID pandemic, the National Governors Association is looking at opportunities for public-private partnerships (P3s) investments in major roads, bridges, transit, and aviation projects. In addition to accelerating delivery and encouraging innovation, they also recognize the potential for generating value for the asset and the ability to release revenue for other needs.

EBJ: If you had the opportunity to adjust the allocation of public expenditure in transportation infrastructure, what would you do?

Earley: The effects of the COVID pandemic on transportation will continue to influence infrastructure planning, design and implementation for at least the next few years. During this period, we can anticipate that the level of public investment, without appreciable federal sponsorship, will likely be smaller in comparison to pre-COVID levels. In fact, based on our own survey nearly 70 percent of our clients are facing a decrease in capital funding of greater than 10 percent for fiscal year 2021.

Further, changes in mobility choices may no longer support planned investments, thereby realigning current priorities. In the same survey, 50 percent of our clients indicated that they will be shifting planned capital investments to the maintenance of existing assets or dividing large projects into smaller segments to rank needs with available funds.

Allocating public expenditures to ensure the safety of existing infrastructure, and extend its service life, is one example of funding redistribution but there are other important initiatives that deserve increased consideration and will remain

largely unaffected by the pandemic. These are investments that address social and environmental commitments and reflect the transportation industry's proactive contribution to insuring a bright future.

Decarbonization is one such example. Across the nation, public agencies are incorporating emission reduction into their investment and operational strategies. They are laying the foundation for a future that targets new efficiency opportunity, resilient new infrastructure, and the leveraging of sustainable economic development possibilities.

We should be investing now in the technologies of the future by using our roadway networks as connections to a sustainable energy grid, prioritizing the selection and delivery of projects that move us towards a more resilient future. Emerging technologies such as autonomous and connected vehicles deserve more significant federal investment as part of a broader push to transition from a single occupancy-based highway system to a more integrated network of transportation options that efficiently move people, goods, and services.

EBJ: How is the sector being impacted by technology? Will things be different 10 years from now?

Kuciema: Technology impacts the entire system. It impacts how people use transportation to get around and how shippers use transportation to move goods. It impacts the manufacturers of vehicles that use the network, as well as the owners and operators charged with providing the infrastructure on which vehicles run. In short, technology has a 360-degree impact on transportation at large.

Over the past 50-75 years transportation was viewed as slowly evolving — people largely drove 4-wheeled vehicles, and there were various forms of public transportation available in dense urban areas. Advancements were incremental, not game changers. Now we see real movement in advanced freeway corridor management, digital delivery, artificial intelligence, asset management, public engagement and communications, etc. Which leads to the next question...

EBJ: How would you describe Smart Mobility trends?

Kuciemba: Here's where transportation can potentially change more in the next 10 years than it has over the past 50-plus. Prior to COVID-19, the possibility for sharing transportation, and viewing it more as a service, was gaining significant traction. There were obvious environmental benefits to shared mobility, and particularly in urban areas reduced car ownership, and by extension traffic, simply made sense. Shared mobility was truly the path to reducing congestion, but we don't yet know how COVID may or may not have impacted this trend.

Regardless of sharing, technology will continue to play a key role in Smart Mobility, and in transportation in general. Now that 80 percent of Americans own smart phones and more than 90 percent have some form of internet access, we are connected, and our travel decisions will undoubtedly be impacted by smart technology.

EBJ: What are the main problems the climate crisis poses to transportation infrastructure? What is being done to address them?

Tobin: Climate change has several potential adverse effects on transportation infrastructure. Increased flood elevations or sea level rise and increased frequency and intensity of flooding events may impact transportation infrastructure in areas close to sea level. Heat related effects such as expanding and buckling of roadways and rail lines can be caused by high temperatures. Conversely, extreme cold fluctuations may shorten the anticipated life expectancy of transportation infrastructure.

WSP's Future Ready global innovation program allows us to better anticipate future conditions and plan and design for the future. For example, WSP has designed smart bridges and roadways that use sensors to evaluate and predict climate and weather patterns, as well as designed zero emission transit systems.

Through work with the Federal Highway Administration, WSP developed the Adaptation Decision-making Assessment

Process (ADAP) tool to evaluate if and how specific facilities may be impacted by climate change through detailed engineering analyses and economic analysis. We've used this tool to conduct vulnerability assessments on regional infrastructure networks — at the local, county and state level — and develop inventories of climate change-related effects. These inventories cover a broad set of stressors so that agencies can prioritize those assets most at risk to ensure they can withstand changing conditions.

Land use and environmental planning, and capital advisory programming to ensure new structures and existing structures are located outside of impact areas associated with sea-level rise, can partially mitigate some of the challenges associated with climate change. Other methods WSP has employed to slow or divert flood or storm surges from critical assets include redesigning structures to avoid impacts, removing traditional flood retaining structures and adding plantings, elevating roadways, designing innovative sluice gate and smart pumping systems, and implementing green infrastructure strategies.

Lovegrove: We are also helping agencies conduct analyses to actively compare various modes of transportation to determine which will have the lowest GHG, energy and criteria pollutant impacts over the project's anticipated lifespan. We have also helped agencies update their Congestion Mitigation and Air Quality (CMAQ) tools so that they can include GHG emissions and accurately evaluate the impacts of introducing or expanding bus facilities, pedestrian walkways and bicycle lanes into their local communities.

While the country lacks a federal initiative to reduce GHG, many states are actively looking to reduce emissions in the transportation sector. This includes reevaluating how construction is done, evaluating alternatively fueled/powering equipment in both the operational and construction phases of a project, and funding projects that will reduce GHG emissions while still allowing a community to grow and succeed.

EBJ: How does your environmental practice support your transportation practice?

McKibben: Our environmental specialists routinely work in tandem with our transportation planners and engineers on a wide range of infrastructure improvement and development projects. We assist them in conducting pre-design environmental corridor investigations and identifying locations where contaminated media may be encountered, and we assist in obtaining liability release documents from regulatory agencies for acquisition of contaminated right of way or parcels. Our teams conduct environmental monitoring for contaminants during roadway construction, including sampling of all media and assistance with waste management. We also complete regulatory compliance studies and permitting activities, as well as biological and cultural studies.

Lovegrove: WSP has a robust acoustics, vibration, air quality and greenhouse g (AVAQ) practice. That team works with our transportation engineers to perform multiple types of air quality analyses, from construction impact assessments to GHG inventories, stationary source modeling to mobile source emission analyses, and air quality permitting to power plant, building and ventilation studies. Concerning noise and vibration analysis, we perform state-of-the-art noise and vibration measurements and modeling, permitting, prepare construction specifications including those activities that include blasting and explosives, and oversee and monitor contractor compliance.

The AVAQ group plays a key role on almost every major transportation project WSP is involved in across the U.S. A couple examples are included below.

As part of our role on the California High Speed Rail (CAHSR) project, WSP is overseeing the air quality and climate change analyses for all segments. Our team designed EIR/EIS section templates, including the latest regulations pursuant to both CEQA and NEPA, and reviewed all the air quality and climate change technical reports and EIS sections. We also conducted the statewide emission burden analysis for each of the EIR/EIS sections

and calculated the statewide GHG analysis. Additionally, WSP developed, and currently manages, the CAHSR sustainability program, which includes overseeing and implementing policy development on various sustainability issues, from GHG emissions modeling and renewable energy to materials choices and construction practices.

For the proposed Gordie Howe International Bridge, which connects the cities of Detroit, Michigan, and Windsor, Ontario, our environmental team performed air quality and noise studies. The study evaluated the potential air quality impacts associated with the operation of the build condition within the area, including an analysis of carbon monoxide and particulate matter, mobile source air toxic and GHG. The traffic noise study focus was on the re-evaluation and optimization of the lengths, heights and acoustic effectiveness of three sound barriers, identifying additional sound barriers and noise measurements at several representative sites with future build traffic noise predictions

On a design build project to improve Interstate 70 through Downtown Denver, Colorado (Central 70 project), a major challenge of the roadway expansion is the project alignment through a dense urban area with more than a century of commercial and industrial development, as well as a Superfund site. Our environment team is serving in the hazardous materials manager position, and as the environmental moni-

toring technicians. More than 500,000 cubic yards of soil has been excavated thus far under WSP's environmental oversight role. ☐

FOOTNOTES

1. <https://www.ncsl.org/research/transportation/2013-and-2014-legislative-actions-likely-to-change-gas-taxes.aspx>
2. <https://www.artba.org/2019/11/06/voters-approve-nearly-90-percent-of-transportation-investment-ballot-measures/>

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