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## Transportation Sustainability in a Post-Pandemic World and the Importance of Managing Emerging Third-Party Risk

As COVID-19's grip on the world wanes as anticipated in 2022, transportation agencies are expected to turn their attention to the pervasive challenge of mitigating both their energy usage and the carbon footprint their services generate. Agencies' shift in attention and resources likely will produce a host of exciting opportunities for new "green" technologies and processes—as well as new "green" vendors—in the transportation marketplace. This shift also could present many challenges. As a result, it will be crucial for transportation agencies to properly capitalize on new opportunities while carefully mitigating their risk.

The move toward more sustainable, environmentally friendly transportation is not a new one. Transportation agencies throughout the world have been systematically building more sustainable systems and vehicles, and upgrading existing systems and vehicles to reduce their carbon footprints, for much of the past two decades. Those efforts were stepped up in 2015, when 196 countries signed the UN Climate Change Conference of Parties' historic Paris Agreement, committing to increase their focus on sustainability and help reduce global carbon dioxide emissions by 45 percent by 2030. Countries that signed the historic agreement also agreed to help reach net-zero carbon emissions by 2050.<sup>1</sup>

Transportation, and public transit in particular, accounts for a sizeable portion of the world's carbon dioxide, or CO<sub>2</sub>, emissions. While energy generation and transmission accounts for nearly half of all CO<sub>2</sub> emissions globally, the transportation sector produces an estimated 23 percent,<sup>2</sup> followed closely by manufacturing and construction, at about 21 percent.<sup>3</sup> Emissions from cars and trucks account for nearly 75 percent of transportation-related emissions,<sup>4</sup> and many transportation agencies have responded by building new systems or expanding and modernizing existing ones to get commuters out of their automobiles and off the roadways. While that trend is expected to continue, agencies also are increasing their focus on other sustainable options, including building dedicated or "express" lanes for high-speed buses and multi-passenger cars, purchasing vehicles that run on electricity or alternative fuels, and making infrastructure improvements that make transit faster and more efficient or that reduce overall traffic congestion. Agencies also are removing traditional barriers to transportation that exist in many communities by siting new transportation hubs in neighborhoods that most need them, making existing systems faster and easier to navigate, and by providing on-demand, door-to-door transit—in smaller, more energy-efficient vehicles—to the elderly or those with limited mobility. In addition, agencies are eyeing operational efficiencies that reduce their own energy usage, and changing how they plan new systems, emphasizing sustainability, equity and

community stewardship over a simple focus on increasing ridership alone.

Transportation agencies were hard hit, both financially and operationally, by the COVID-19 pandemic, and many experienced deep declines in both ridership and revenue, a lack of available workers, mandated shutdowns and supply chain disruptions. Still, work to create more sustainability system-wide still progressed, albeit slowly, in many regions, and is expected to intensify as COVID-19 wanes, ridership grows,<sup>5,6</sup> and focus on Climate Change intensifies.<sup>7</sup>

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### “Much effort is needed to increase sustainability in transportation in the coming years”

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In opening a recent three-day UN Sustainable Transport Conference in Beijing, UN Secretary-General António Guterres said that the pandemic shed new light on transportation’s importance. Transport, he said, is “far more than a means of getting people and goods from A to B.”<sup>8</sup> Much effort is needed to increase sustainability in transportation in the coming years, the Secretary-General said.

“The next nine years must see a global shift towards renewable energy. Sustainable transport is central to that transformation,” Guterres said. “Transport, which accounts for more than one quarter of global greenhouse gases, is key to getting on track. We must decarbonize all means of transport, in order to get to net-zero emissions by 2050 globally,” he added.<sup>8</sup>

To do that, transportation agencies will need to adopt new technologies, tools and strategies system-wide, and rely on a host of new providers to supply them.<sup>9</sup> Change, however, is never easy. While the partnership with new vendors or third parties can yield extraordinary results, they also can be fraught with uncertainty. Even long-standing vendors that are grappling with the design, manufacture or installation of new, cutting-edge tools such as digital monitoring or positive train control, bus electrification, driverless vehicles, safety screening and AI, and automated ticketing and check-in can experience challenges.

Vendors that cannot deliver the goods or services they promised, within stipulated budgets and schedules, can undermine even the most carefully planned procurement or capital project, even in flush times. Now, in the post-pandemic era, when transportation agencies’ coffers already are hard-hit, delivering what has been promised is more important than ever.

“As the global economic recovery continues to gather steam, what is increasingly apparent is how it will be stymied by supply-chain disruptions that are now showing up at every corner,” financial and investor services firm Moody’s reported in mid-October. Moody’s sobering supply-chain report came on the heels of an IMF downgrade in projected economic growth for the US just two days earlier. The

downgrade was due, in large part, to projected supply-chain challenges that are expected to continue over the coming months.

“Border controls and mobility restrictions, unavailability of a global vaccine pass, and pent-up demand from being stuck at home have combined for a perfect storm where global production will be hampered because deliveries are not made in time, costs and prices will rise and GDP growth worldwide will not be as robust as a result,” Moody’s wrote in its October 12 report.<sup>10</sup>

Transportation agencies can employ a number of management tools to ensure that new, untested vendors are properly vetted and assigned, and that disruptions in the supply of raw materials, equipment, computer systems, vehicles, alternative fuel sources and other vital tools are minimized.

## **AREAS OF CONSIDERATION**

Transportation agencies are well versed in planning their capital projects well ahead of construction, and can employ that same penchant for planning when eyeing procurements, especially when considering the purchase of a new technology or the hiring of a new third-party vendor.

Areas of consideration can include:

- What are the objectives of the end program?
- What are the objectives of the project?
- How large is the supply chain?
- Which delivery model is appropriate?
- How can collaboration across the supply chain be facilitated?
- What is needed, at both the agency and at the vendor levels, to thoroughly understand the technology?
- Are there single points of failure? What are they?
- How should risk be allocated so that each party carries the appropriate amount of risk?

## **OUTCOME-BASED COLLABORATION**

Outcome-based collaboration, in which all parties thoroughly discuss and understand the myriad risks (including delays, labor shortages, supply-chain disruptions, evolving sustainability regulations, and an increasingly complex insurance market) can help chart future success, especially when using a new vendor or third-party.

This collaboration is essential at the start of a procurement, and is a valuable tool to employ throughout the life-cycle of the project, to help ensure that goals agreed upon at the outset are adhered to, or are appropriately modified as needed to accommodate changes.

## **COMMUNICATION**

Clear, consistent and frequent communication among stakeholders has been key to keeping transportation projects moving during the

challenges presented by COVID-19. Communication surrounding potential and actual delays, whether due to workforce shortages, material or equipment supply-chain interruptions or other factors has been particularly helpful in minimizing the impact and working around these challenges over the past several months. And, as the transportation industry regains its footing and returns to normal operations following COVID-19, communication will continue to play a central role in owners' relationships with their contractors, subcontractors and vendors, and in the successful completion of their capital projects.

## **ASSESSING RISK**

Effective vendor and third-party risk management programs start with solid policies and supporting procedures that identify how risks will be assessed, managed, monitored, and mitigated or absorbed.

Assessing risks presented by outsourcing is essential, but can involve significant effort. While outsourcing services and technology tools can appear to transfer risk, this is not always the reality. Turning over management and control of vital technologies to a third party, for example, reduces agencies' ability to foresee and remediate potential challenges and, thus, actually can increase their overall risk. It is essential, therefore, that transportation agencies establish and maintain comprehensive vendor and third-party risk management programs to complement their outsourcing programs.

Transportation agencies can rely on a risk-rating system that includes, at a minimum, an evaluation of vendors' "maturity." Maturity is determined by a number of factors, including the length of time the vendor has been in business, its size, and the history of the product or service it offers. Risk assessments also should encompass reviewing the company's financial posture, reputation, and compliance with laws and regulations. It also may be prudent to request a copy of a vendor's own risk management policies and procedures to gain a clearer sense of its overall maturity. On-site visits also may be a good idea, especially if the company is providing technological support, such as data-hosting services.

Risk Assessment tools also can be vital to managing vendor and third-party risk. While these tools often require the painstaking collection of key data, they can yield much risk-related information. Consistent, thorough review of this information is essential.

## **MANAGING RISK**

Since risks often evolve as capital projects move from planning through design, construction, testing and start-up, it's important to continually monitor progress and supporting documentation to identify challenges early.

Transportation agencies also can use their own vendor controls, including systems for risk-rating, due diligence, on-boarding, continuous monitoring and off-boarding. There are a variety of

emerging vendor and third-party risk management software programs in the marketplace, with myriad capabilities and features.

Training can be an invaluable tool in on-boarding new vendors and in managing overall vendor risk. Training can be easily tailored to meet evolving needs and challenges. It also can be offered virtually or in-person, and as often as deemed appropriate.

Communication also plays a key role in managing risk, and both owners and vendors should adhere to consistent communication protocols while recognizing that evolving risk demands more communication; not less.

The Chief Information Security Officer, (CISO) who's primary role is to monitor and manage cybersecurity for the entire organization, plays a key role in managing vendor and third-party cyber-risk. They oversee the entire risk management spectrum of the respective vendors and third parties, from assessment, implementation, management, and termination. Depending on the owner's size, a CISO might have a sizable team, or in many cases leverages third-party service providers for specific subject matter expertise.

## **CONTRACTS**

Once vendor due diligence has been completed and risk management tools are in place, transportation agencies can select a contracting methodology that best meets their own needs and goals and addresses in detail their expectations for how vendors or other third parties will work toward attaining those goals.

Depending on the specific needs of the stakeholders and the project, contract types can include:

**Lump Sum or Fixed-Price Contracts** – set a pre-determined cost of work, but can include mechanisms for rewarding early completions or penalties for schedule or budget overruns. Lump sum or fixed-price contracts also can help agencies avoid excessive change orders and other cost variations throughout the life-cycle of the project.

**Unit Price Contracts** – categorize, in detail, the tasks and materials needed to complete the work, making it easier to evaluate specific costs associated with specific tasks and, ideally, to identify and mitigate potential cost overruns. Unit price contracts may not be appropriate for entire capital programs or projects, but can be useful for smaller, distinct projects where managing cost is paramount.

**Cost Plus Contracts** – stipulate that owners shoulder project costs, including the cost of labor and materials. Contractors, subcontractors or vendors then are reimbursed for their overhead costs and profit. These contracts include cost plus fixed percentage, cost plus fixed fee, and cost plus with guaranteed maximum price (GMP) contract. While cost plus contracts can help manage costs, especially when using an untested contractor or vendor, it also assigns most of the risk for overruns and other challenges to the owner.

Time and Materials Contracts – stipulate the daily or hourly rate that contractors, subcontractors or vendors can charge.

Transportation agencies, as owners, then would be responsible for funding ancillary project costs. These types of contracts are best used for smaller, distinct projects rather than large programs, and when the scope of work has not been clearly defined, or is continually evolving during the project life-cycle.

## **DOCUMENTATION AND DATA**

Documentation plays a key role in both the progress of work and in resolving challenges that arise along the way.

In general, transportation agencies should require that their contractors, subcontractors or vendors document consistently and clearly document all aspects of project progress, including potential or actual areas of concern. Should a potential challenge arise, agencies should require documentation that details the status of the project, the nature of impacting events, when the impacting event started, and why it occurred.

Contractors, subcontractors or vendors then should be required to gather and organize all relevant event-related documents, including subcontractor work, client directives, meeting minutes, RFIs, status reports and emails. Schedules detailing progress both before and after the impacting event also should be required.

Photos and videos also can be very helpful in documenting the status of all work, and employing drones to capture images can be particularly useful, providing visual information not readily available from the ground.

Documentation regarding staffing and productivity also should be required, including planned and actual workforce at each stage of the project and, especially, before and after any impacting events.

## **MITIGATION OF DISPUTES AND CLAIMS**

Disputes and claims occur for myriad reasons during the course of a capital project, and no single mitigation or resolution technique will fit all of them.

In reality, dispute resolution begins at the earliest stages of a project, when contracts are formulated that effectively and fairly allocate risk; identify costs, pricing and how budget or schedule overruns should be handled; and set in place procedures for reporting and resolving issues of concern before they impact project progress.

During planning and design, transportation agencies can identify a contracting strategy that best meets their needs, equitably allocates risk, and clearly identifies cost and schedule objectives. This contracting strategy also should identify ways to foster open,

consistent communication, including strategies for communicating both progress and pitfalls.

Contracts also should incorporate guidance on how project teams function and delineate responsibilities. They also should include stipulations on when and how to elevate disputes and claims, and whether dispute review boards or mediators should first be called in before formal claims are filed.

Clearly communicating the scope of work involved in a capital project also can go a long way toward mitigating potential disputes and claims. It also is helpful to ensure that the project team, especially untested contractors or vendors, clearly understands the work required, the level and availability of staffing required, and the availability of materials and equipment that will be needed to perform the work.

Issues of concern, including concerning site conditions, should be identified and discussed as early as possible, so that effective work-arounds can be employed without impeding progress.

Finally, it is vital that transportation agencies create an open, collaborative environment that fosters flexibility and open communication of ideas, which can be invaluable when troubleshooting. Simultaneously, however, agencies also should actively oversee all aspects of the project, conducting their own due diligence to ensure that the progress being reported is accurate and realistic. While third parties can effectively provide this oversight, keeping a close eye on budgets and schedules, it is important that agencies stay as engaged as possible.

These and other leading practices will be essential as increasing numbers of transportation agencies turn from responding to the challenges of COVID-19 to the even greater challenges presented by climate change. Sobering statistics indicate that, despite an early slowdown in carbon emissions at the start of the pandemic, levels soon rose again as people moved out of mandated quarantines and shutdowns and once again began commuting or traveling.<sup>11</sup> Today, carbon levels are again at an all-time high, making the need to respond quickly more important than ever.

Transportation agencies can meet the challenges ahead by taking steps now to ensure that capital projects designed to reduce their carbon footprints are planned, designed and implemented efficiently and cost-effectively, without disputes and claims that can waste precious time.

### Citations

1. <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>
2. <https://www.iisd.org/articles/road-sustainable-transport>

3. <https://transportgeography.org/contents/chapter4/transportation-sustainability-decarbonization/>
4. <https://transportgeography.org/contents/chapter4/transportation-sustainability-decarbonization/>
5. <https://www.nbcnews.com/news/us-news/pandemic-sunk-mass-transit-use-data-shows-its-slow-recovery-n1274784>
6. <https://apnews.com/article/coronavirus-government-and-politics-environment-and-nature-politics-lifestyle-56d36574e38cec038f77339ef12076bc>
7. <https://www.cnbc.com/2020/07/01/coronavirus-major-turning-point-for-responsible-esg-investing-says-jpmorgan.html>
8. <https://news.un.org/en/story/2021/10/1103062>
9. <https://www.forbes.com/sites/forbestechcouncil/2021/06/28/three-ways-technology-is-helping-public-transportation-become-more-sustainable/?sh=5ab4af33afee>
10. <https://www.cnn.com/2021/10/12/business/global-supply-chain-nightmare/index.html>
11. <https://unstats.un.org/sdgs/report/2021/goal-13/>

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