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Transit Mega Projects: Legal Issues

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Background

The nation's 6,800 plus public transportation agencies need to have access to a program that can provide authoritatively researched, specific studies of legal issues and problems having national significance and application to the public transportation industry. Some legal issues and problems are unique to transit agencies. For example, compliance with transit-equipment and operations guidelines, FTA financing initiatives, private-sector programs, and labor or environmental standards relating to transit operations. Also, much of the information that is needed by public transit attorneys to address legal concerns is not summarized in a single source. Consequently, it would be helpful to the transit lawyer to have well-resourced and well-documented reports on specific legal topics available to the public transportation legal community.

The Legal Research Digest (LRDs) are developed to assist public transit attorneys in dealing with initiatives and problems associated with transit start-up and operations, as well as with day-to-day legal works. The LRDs address such issues as eminent domain, civil rights, constitutional rights, contracting, environmental concerns, labor, procurement, risk management, security, tort liability, and zoning. The transit legal research, when conducted through the TRB's legal studies process, either collects primary data that generally are not available elsewhere or performs analysis of existing literature.

Foreword

Transit mega projects are unique, expensive and often funded by a mix of federal grants and state and local funding. Federal agencies have specific legal requirements, including specific legal provisions to include in contracts and intergovernmental agreements, and provide valuable advice for managing and coordinating such projects.

This digest includes lessons learned (successful and unsuccessful) from transit agencies that have overseen federally funded complex mega projects, such as insights from reviewing third-party contracts and intergovernmental agreements, FTA guidance, pertinent legal decisions, and other valuable references. This digest also covers lessons learned from five case studies and summarizes legal issues these mega transit projects faced, including funding, environmental challenges, contracts, design, insurance, dispute resolution, and intergovernmental coordination.

This digest will be useful to lawyers representing public transportation agencies of all sizes that are planning transit mega projects or are considering applying for federal funding to design and/or construct transit mega projects. This digest also will be helpful to non-attorneys involved in the development, design, construction, funding, or management of transit mega projects, including engineers, insurance providers, state and federal personnel, consultants, contractors, and students.

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TRANSIT MEGA PROJECTS: LEGAL ISSUES

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I. INTRODUCTION

Transit mega projects present significant and, in some cases, unique legal challenges for the attorneys tasked with steering such projects from conception to completion, and through operations. The objective of this digest is to identify and analyze legal issues that have resulted from, or are related to, the implementation of transit mega projects. Drawing on general research and experience, as well as specific examples from five mega projects, this digest seeks to introduce attorneys to the special or legal issues that such mega projects face, and to provide considerations and potential solutions by way of examples from past projects.

The five projects relied on in particular are:¹

1. Colorado Eagle P3 Project;
2. Transforming Rail in Virginia Initiative;
3. The California High-Speed Rail Project;
4. Sound Transit's East Link Extension Project; and
5. The Hudson-Bergen Light Rail Project.

Researching and explaining the legal issues that arise in transit mega projects is its own mega project. For purposes of this digest, "mega projects" are defined as projects with estimated total costs exceeding \$1 billion.² In this context, the \$1 billion figure represents a subjective but still useful threshold. Experience indicates high cost often correlates with a high degree of complexity. The recent passage of the Infrastructure Investment and Jobs Act (IIJA)³ presents an opportunity to renew focus on the legal issues encountered by rail transit agencies specific to mega projects.

Each transit mega project presents its own unique story, and there are few characteristics that can be said to be categorically universal. Nevertheless, there are common characteristics often shared by these types of projects, and they provide a basis for a more systematic approach to understanding them. To conduct and present this research in a manageable manner, the researchers focused on a specific set of strategic themes, which are guided by common characteristics shared by most mega projects. For instance, the size of most mega projects

often requires significant federal involvement and the application of federal standards and requirements. Furthermore, most transit mega projects are funded through the Federal Transit Administration's Capital Investment Grants (CIG) program, although several other federal, state, and local funding sources may also be involved. Accordingly, this digest describes the role of federal funding and regulation—specifically Federal Transit Administration (FTA) funding requirements—while also noting the role of other federal agencies and private interests, and state and local laws where appropriate. In addition to FTA-funded projects, this digest also draws on other passenger rail mega projects funded by the Federal Railroad Administration (FRA). While detailed discussion of the themes is beyond the scope of this research, the researchers highlighted key issues and provided illustrations and context, while also pointing out further resources where appropriate.

This legal research digest is divided into four sections beyond the introduction.

Section II briefly provides an overview of the research approach.

Section III provides an overview and background of transit mega projects and their key characteristics, the federal role in these projects, common funding sources, and the profiles of the specific projects we researched.

Section IV discusses specific topics that are common to most mega projects including funding and financing, regulatory oversight and permitting, property acquisition, insurance and indemnification, coordination with public and private entities, and dispute resolution.

Section V concludes with a summary of the research findings and areas of future research for consideration.

II. RESEARCH APPROACH

A. Project Goal and Framing

The objective of *TCRP LRD 60: Transit Mega Projects: Legal Issues* was to produce a report of key legal issues that lawyers representing parties developing transit mega projects in the United States can consult for insight, issue framing, and problem-solving strategies. Accordingly, the researchers endeavored to investigate issues that apply uniquely to mega projects without losing the perspective of transit and transportation projects more generally. They focused on fixed guideway projects because most transit mega projects that were studied fell within that mode of transportation. Considering the breadth of issues that can arise in a transit mega project, this digest only addresses a few key legal issues for each identified topic. This

¹ The California High-Speed Rail and Transforming Rail in Virginia projects are not formal FTA transit projects. But, they are mega projects that offer critical insights into the inherent legal challenges faced by transit mega projects. Both projects were included in this digest after consultation with the TRB steering committee.

² See *infra* Section III for a further discussion of the use of the term mega projects in this digest.

³ Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429.

digest may also be useful for transportation agency managers, procurement officers, planners, engineers, and financial managers.

The researchers began by defining and characterizing transit mega projects, as discussed further in Section III. Using this definition and characterization, areas of inquiry were developed that represent legal themes that are commonly faced in developing transit mega projects. The researchers relied on professional experience and involvement in the legal aspects of developing transit mega projects as the basis for development of this initial list of inquiry areas. They then conducted desktop legal research to review applicable laws, regulations, guidance, and secondary materials covering these topics.

Given the range and complexity of legal issues that arise in transit mega projects, the researchers identified a shortlist of ongoing and completed mega projects through which to investigate common legal themes. Thereafter, they contacted individuals in positions of authority with direct experience on these projects to interview them. Representatives from a subset of these cases agreed to in-depth interviews from which the team further developed its themes and analysis.

The results of these interviews were combined with the desktop legal research to provide five illustrative core case studies, which serve as reference points for the balance of this digest. Where appropriate, the researchers complemented this discussion with additional examples from other contexts.

B. Key Documents

The researcher conducted desktop research across multiple sources to refine the candidate case studies. An illustrative list of key documents consistently consulted (and revisited) includes:

- Federal and state statutes, administrative rules, and guidance;
- Federal and state court decisions;
- National Environmental Policy Act (NEPA) documents;
- Funding agreements, contracts, and other transactional documents; and
- Project specific websites, public presentations, board materials.

C. Screening

The researchers conducted preliminary research and informal interviews for fourteen projects delivered across eleven states.⁴ These projects were then screened based on project status, potential for meaningful insight, and staff availability. Agency staff, lawyers, and key project personnel involved and available to share insights and successes were contacted. But as a practical matter, litigation and ongoing contractor claims foreclosed access to certain “candidate” case studies beyond publicly

available information. The researchers also considered the full range of issues from project conception through delivery (e.g., the critical requirement to finalize agreements with railroads prior to applying for a Full Funding Grant Agreement (FFGA); harmonization of regulations from multiple funding agencies; and negotiating and navigating public-private partnerships). From the initial pool of candidate projects, and from the initial fourteen projects identified during scoping, five projects were selected.

D. Interviews

The researchers conducted seven formal interviews in the summer and fall of 2021 to develop five case studies. Interview questions were provided to participants in advance to facilitate more substantive, detailed conversation. The list of interview questions used are included as Appendix C to this digest. The researchers then pulled common themes from interview responses and used those themes to determine key areas of focus and analysis for this digest’s discussion. High level summaries of the interviews are included as Appendix D.

The interviews helped identify key legal issues encountered in transit mega projects and this digest describes lessons learned by transit agencies. However, since every project is unique, and every transit agency is subject to different state statutory frameworks and case law, the lessons learned may not necessarily be generalized for other projects.

III. TRANSIT MEGA PROJECTS: AN OVERVIEW

A. What Is a Transit Mega Project?

While there is no single, generally accepted standard definition of a “transit mega project” in the United States, the term usually refers to capital projects that (1) involve design and construction, (2) of transit infrastructure (i.e., public transportation, infrastructure, systems, and not just the procurement of rolling stock), which are both (3) large in scale, and (4) have one or more other indicia of relatively greater complexity relative to what is typical for a particular jurisdiction, agency, or modality (e.g., with respect to engineering challenges, funding, permitting, inter-party coordination).

A common and readily quantifiable means of determining the scale of a project is its overall cost. Such a focus on project cost as a defining characteristic also aligns with past federal statutory definitions. For example, Congress previously defined “mega project” under the public transportation provisions of the United States Code as “a project with an estimated total cost of \$1 billion or more.”⁵ Although that definition was eliminated by Congress in 2012,⁶ this amount nevertheless serves as a use-

⁵ 49 U.S.C. § 5327(f) (amended 2012).

⁶ See MAP-21, Pub. L. 112–141, § 20020(2), 126 Stat. 405, 708. Following the elimination of the \$1 billion designation the formal “mega project” designation no longer existed for certain highway projects valued in excess of \$1 billion. However, current federal law does account for major project designations in various related contexts, including FTA’s “major capital project” definition under 49 C.F.R.

⁴ CA: BART Silicon Valley Extension; CA: California High-Speed Rail; CO: Eagle P3; HI: Honolulu Area Rapid Transit; IL: Red-Purple Line Modernization; MA: Silver Line Gateway Project; MD: Purple Line; NJ: Hudson-Bergen Light Rail; NY: East Side Access Project; NY: Second Avenue Subway; TX: Houston Light Rail; TX: Project Connect; VA: Virginia Capacity Projects; WA: East Link Extension.

ful metric for defining what constitutes a transit mega project. While any dollar amount is somewhat arbitrary, projects of \$1 billion or more occupy, for now, a fairly rarefied space that often correlates to issues of a nature and complexity that set them apart from smaller projects. This results in large measure because increased costs are often not just a function of size but also of complexity and risk. Thus, for the purpose of this digest, \$1 billion is used as the threshold for determining a transit project to be a mega project.

The “transit” component of transit mega projects differentiates such projects from other infrastructure mega projects. This is true not just for projects in other sectors, such as water and energy infrastructure, but even with respect to other types of transportation projects, such as on the federal highway system. As may be gleaned from the discussion below, transit mega projects resemble and sometimes borrow from other types of mega projects. This is particularly the case for passenger rail projects more broadly, which may not receive funding from the FTA or be subject to its conditions and requirements, but may nevertheless be similar in many other respects, including similar federal regulatory requirements. The specific mechanisms for federal public funding of transit projects make the requirements unique to public transportation.

These two basic elements—valuation in excess of \$1 billion, and the transit sector context itself—inform a host of other factors that can generally be said to set transit mega projects apart from other capital projects. Most immediately, within transit, the dollar-value threshold results in most mega projects including elements of “fixed guideway” projects, largely because the cost threshold for transit mega projects normally means that it includes the acquisition of property and the construction of infrastructure specifically or uniquely serving public transportation. The federal statute defines “fixed guideway” as “a public transportation facility—(A) using and occupying a separate right-of-way for the exclusive use of public transportation; (B) using rail; (C) using a fixed catenary system; (D) for a passenger ferry system; or (E) for a bus rapid transit system.”⁷ The most common form of fixed guideway transit system are rail systems. Transit mega projects are more likely to involve construction of costly, capital-intensive facilities like fixed guideway systems or multimodal stations that incorporate multiple transit modes.

In addition, while transit mega projects generally follow the same project phases—planning, environmental, permitting, right-of-way acquisition, funding, financing, design, engineering, construction, and commissioning—the complexity of these phases are compounded by the project size. Because of their size

and complexity, transit mega projects also more often involve a larger number of jurisdictions, partners, funders, and regulators with whom a project sponsor must coordinate or contract. Size also dictates other characteristics indirectly, such as federal involvement in funding and the resulting funding conditions and obligations. Transit mega projects therefore virtually always involve the entity that administers federal funding for and regulation of transit, the FTA, although other transportation-specific agencies often play important roles if their jurisdictions fall within the project boundaries.

B. Key Characteristics of Transit Mega Projects

This section of the digest highlights three common characteristics of transit mega projects in the United States: (1) their multi-jurisdictional nature, (2) the role and nexus of federal funding, and (3) the presence of elevated project risks. These characteristics are expounded in later sections of this digest. Many more common characteristics exist; however, these three elements illuminate the core issues that arise in transit mega projects—a sea of corresponding interests and, at times, competing priorities driven by more than a strict transportation need. Transit mega projects are more complex than building the fastest, most efficient transportation facility. Therefore, attorneys advising on transit mega projects must have a keen sense of all the parties involved and each party’s nuanced role, as well as how the project’s risk profile might evolve over time from project conception through operations.

1. Multi-Jurisdictional Nature

One key characteristic of transit mega projects is the involvement of multiple jurisdictions, which may hold both complementing and, at times, competing interests. As a result of their size and function, transit mega projects often extend beyond the geographical jurisdiction of a single governmental unit. The multi-jurisdictional scope of transit mega projects necessitates local, state, and federal coordination.⁸

At the local level, projects are crafted by the social and economic values of key stakeholders that seek to influence the outcome of the transit mega project. While local stakeholders may start with a unifying vision, along the life of a project corresponding priorities (like the need for a new facility) may morph into competing priorities (e.g., the impact of station location(s) on costs, operational performance, and regional

⁷ 633.5 (2022) (total project costs of \$300 million or more, \$100 million or more of federal funding, and expenditure not limited to vehicles or rolling stock), FHWA’s discretionary designation for “major projects” with costs of \$500 million or more, and the “major project” designation for purposes of the one federal decision environmental review under 23 U.S.C. § 139(a)(7) which focuses not on a dollar value but on projects requiring multiple permits, approvals, reviews or studies under federal law other than NEPA.

⁸ 49 U.S.C. § 5302(8).

⁸ As described in Section IV.I.1. of this digest, in most cases, the multi-jurisdictional nature of mega projects requires some form of agreement or understanding between the parties as to roles, responsibilities, and rights as well as the regional needs of the area. This often takes the form of an intergovernmental agreement. Intergovernmental agreements are interpreted and construed under the principles of contract law. In order to be valid, the governmental parties to an intergovernmental agreement must have adequate authority to enter into such an agreement. In negotiating intergovernmental agreements, project sponsors should expect to engage early on with regional planning associations, state and local governmental agencies, as well as the public to avoid unnecessary delays, issues and misunderstandings.

economic activity). The multi-jurisdictional nature of transit mega projects may inform who should be the project sponsor.

Beyond local jurisdictional considerations, there also exists a suite of state and federal interests.⁹ These external stakeholders maintain different types of responsibility and authority, all of which must be coordinated to successfully deliver a transit mega project. And yet further removed, although not readily apparent, transit mega projects directly benefit from (or rely upon) the international transfer of technologies and the procurement of key components.¹⁰

Therefore, it is incumbent upon attorneys advising on transit mega projects to have a clear sense of all the parties involved and the nuanced roles they may play within their respective jurisdictions; for where one entity's authority ends, another's begins.

2. Federal Funding and Oversight

Another key characteristic of transit mega projects is the presence of federal funding and oversight, primarily by the FTA. The sheer size of transit mega projects and their connection to interstate commerce and mobility virtually guarantees federal involvement. The federal government has a multifaceted role in any transit mega project, but primarily provides funding support, which accounted for approximately one-sixth of the \$79 billion spent on public transit in 2019.¹¹ In fact, from 2016 to 2019, annual federal funding for public transportation averaged \$13 billion dollars.¹² The recent passage of the IIJA adds to this number by providing unprecedented federal funding for rail improvement projects across the United States. The IIJA contains \$102 billion in total rail funding, including \$66 billion from advance appropriations, and \$36 billion in authorized funding.¹³

The FTA is the federal agency primarily responsible for the administration of federal funds for non-highway public transportation projects. The FTA provides this funding through non-

discretionary, formula-based programs such as the Urbanized Area Formula Program,¹⁴ and through discretionary programs like the CIG Program.¹⁵ From 2016 to 2019, approximately \$3 billion of the \$13 billion in annual federal transportation funding went to the CIG Program.¹⁶ The IIJA authorizes \$3 billion per year in annual appropriations for the CIG Program, including funding that may be awarded under the Expedited Project Delivery Pilot Program.¹⁷ In addition, the IIJA directly provides \$1.6 billion per year in advance appropriations as a supplement to annual appropriations for the CIG Program.¹⁸

Public transportation entities must apply for CIG funds, which are awarded after a competitive, multi-step process.¹⁹ The FTA rates projects pursuant to statutory evaluation criteria.²⁰ Successful CIG applicants must also sign an FFGA, a key nexus by which a host of federal laws and requirements are incorporated into a transit mega project, including environmental compliance provisions (as discussed below in Section IV.E.) and procurement rules (as detailed below in Section IV.C.).²¹

Beyond its funding role, the FTA also provides oversight and guidance on federal requirements, conditions, and obligations to which project sponsors and CIG recipients must adhere. The FTA has published Project Management Oversight Procedures to assist project sponsors on critical topics such as project management, value engineering, quality assurance, project delivery method, and third-party agreements.²² Even where the federal government (or more specifically, the FTA) provides a relatively small proportion of overall project funding, federal requirements will still apply to the entire project (for further discussion of federal requirements tied to project funding in see *infra* Section IV.B.). Accordingly, attorneys advising on transit mega projects must understand the need for federal funding, the specific funding program or source, and all accompanying requirements to ensure that the project is properly planned and executed.

⁹ In situations where multiple states are involved, interstate compacts generally require some form of approval by each state legislature and consent by Congress. Often, transportation-related interstate compacts establish the governing entity controlling a major interstate service, system, or infrastructure. Examples of transit-related interstate compacts are the Port Authority of New York and New Jersey (compact between New York and New Jersey), Washington Metropolitan Area Transit Compact (between Maryland, Virginia, and Washington, DC to establish WMATA for the DC area), and the Connecticut-New York Railroad Passenger Transportation Compact (between New York and Connecticut to establish passenger rail service between New York City and New Haven, Connecticut). Understanding the intricacies of any pertinent interstate compact is crucial to success of a transit mega project.

¹⁰ See, e.g., Memorandum of Cooperation on Strengthening Efforts to Combat Climate Change and Economic and Trade Relations between the Government of Japan and the State of California, the United States of America (March 21, 2022), <https://www.s.f.us.emb-japan.go.jp/files/100319559.pdf>; *Programs*, CALIFORNIA HIGH-SPEED RAIL AUTHORITY (2022), <https://hsr.ca.gov/programs/>.

¹¹ CONGRESSIONAL BUDGET OFFICE, 57940, FEDERAL FINANCIAL SUPPORT FOR PUBLIC TRANSPORTATION 1 (2022).

¹² *Id.*

¹³ *Bipartisan Infrastructure Law Information from FRA*, FED. R.R. ADMIN (June 14, 2022) <https://railroads.dot.gov/BIL>.

¹⁴ 49 U.S.C. § 5307.

¹⁵ 49 U.S.C. § 5309.

¹⁶ CONGRESSIONAL BUDGET OFFICE, 57940, FEDERAL FINANCIAL SUPPORT FOR PUBLIC TRANSPORTATION 4 (2022).

¹⁷ Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, § 30005, 135 Stat. 429, 894-900 (2021) (codified as amended at 49 U.S.C. § 5309); *Fact Sheet: Capital Investment Grants Program*, FED. TRANSIT ADMIN. (Jan. 3, 2022), <https://www.transit.dot.gov/funding/grants/fact-sheet-capital-investment-grants-program>.

¹⁸ *Fact Sheet: Capital Investment Grants Program*, FED. TRANSIT ADMIN. (Jan. 3, 2022), <https://www.transit.dot.gov/funding/grants/fact-sheet-capital-investment-grants-program>.

¹⁹ See U.S. DEP'T OF TRANSP., FINAL INTERIM POLICY GUIDANCE FEDERAL TRANSIT ADMINISTRATION CAPITAL INVESTMENT GRANT PROGRAM 2 (2016).

²⁰ *Id.* at 10.

²¹ See FTA, Circular C 5200.1A, Full-Funding Grant Agreements Guidance, Chapter III: Terms, Conditions, and Attachments (Feb. 27, 2020) <https://www.transit.dot.gov/regulations-and-guidance/fta-circulars/full-funding-grant-agreements-guidance#chapter3>.

²² See *Project Management Oversight Procedures*, FED. TRANSIT ADMIN., (May 23, 2022) <https://www.transit.dot.gov/regulations-and-guidance/project-management-oversight-procedures>.

Furthermore, while the FTA may be the primary funding agency for transit projects at the federal level, other federal modal agencies often play a supporting role. These agencies include the FRA,²³ the Federal Highway Administration (FHWA), and the Surface Transportation Board (STB); their roles are generally a function of jurisdictional scope or the funding of joint infrastructure. For example, the FRA has jurisdiction over the safety of railroad passenger operations including, but not limited to, shared use operation of light rail passenger service on the general railroad system.²⁴ And, the STB has jurisdiction over rail line sales, and may become involved where a transit authority acquires an active rail line for provision of rail passenger or light rail services.²⁵

Similarly, there are other federal programs that may be used to fund and finance transit mega projects, such as the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) (formerly BUILD and Transportation Investment Generating Economic Recovery (TIGER)) grants,²⁶ Infrastructure for Rebuilding America (INFRA) grants,²⁷ and Transportation Infrastructure Finance and Innovation Act (TIFIA) loans,²⁸

²³ See *infra* Section IV.B.1. for a more detailed discussion of FRA's funding role.

²⁴ 65 Fed. Reg. 42528 (July 10, 2000).

²⁵ The acquisition of an active rail line and the corresponding common carrier obligation ordinarily requires STB approval. For acquisitions by a noncarrier, the standard for approval is set forth at 49 U.S.C. § 10901, even if the acquiring entity is a state. See Mass. Dep't of Transp.—Acquis. Exemption—Certain Assets of CSX Transp., Inc., No. FD 35892, slip op. at 3 (STB served Mar. 19, 2015), <https://dcms-external.s3.amazonaws.com/MPD/62491/78A4B30DE03B079385257E0C005B8245/44313.pdf>; see also Common Carrier Status of States, State Agencies & Instrumentalities, & Pol. Subdivisions, 363 I.C.C. 132, 133 (1980), *aff'd sub nom.* Simmons v. ICC, 697 F.2d 326 (D.C. Cir. 1982). However, under the Board's State of Maine line of precedent, a non-carrier's acquisition of an ownership interest in the physical assets of a rail line (such as track or right-of-way) does not constitute the sale of a rail line within the meaning of 49 U.S.C. § 10901, provided that the arrangement establishes that: (1) the selling freight rail carrier retains (or transfers to another carrier) a permanent freight rail operating easement that is exclusive with respect to the noncarrier, together with the common carrier obligation on the line; and (2) the terms of the sale would protect the carrier from undue interference with the provision of common carrier freight rail service. See Maine, Dep't of Trans.—Acquis. and Operation Exemption—Maine Cent. R.R. Co. 8 I.C.C.2d 835, 836-37 (May 20, 1991); see also Santa Cruz Cnty. Reg'l Transp. Comm'n—Pet. for Declaratory Ord., No. FD 36213, slip op. at 2-3 (STB served Oct. 24, 2018), <https://dcms-external.s3.amazonaws.com/MPD/62491/F50388BBA07C861B8525832F0073E445/46596.pdf>; Mass. Dep't of Transp.—Acquis. Exemption—Certain Assets of CSX Transp., Inc., No. FD 35312, slip op. at 4-5 (May 3, 2010), <https://dcms-external.s3.amazonaws.com/MPD/62491/6478E6C9C74BFF7985257718006E09F6/40677.pdf>.

²⁶ RAISE Discretionary Grants, U.S. DEP'T OF TRANSP. (Jan. 28, 2022), <https://www.transportation.gov/RAISEgrants>.

²⁷ The INFRA Grants Program, U.S. DEP'T OF TRANSP. (March 21, 2022), <https://www.transportation.gov/grants/infra-grants-program>.

²⁸ TIFIA Credit Program Overview, U.S. DEP'T OF TRANSP. (March 30, 2021), <https://www.transportation.gov/buildamerica/financing/tifia/tifia-credit-program-overview>.

which are described with greater detail in Section IV.B (Funding and Financing).

Therefore, attorneys advising on transit mega projects should identify the applicable (and potential) federal funding sources and modal agencies. This preliminary step is critical to understanding what federal obligations and requirements may be triggered on a transit mega project. Experience suggests that understanding these agencies' oversight roles, and working with them early, can avoid serious funding and compliance setbacks later in the project.

3. Project Risks

The third key characteristic of transit mega projects is best considered under the umbrella of project risks. The high cost of transit mega projects is well correlated with a high degree of complexity. Transit mega projects require an enormous amount of political capital, and as a result represent highly visible promises to the public. Simply put, satisfying a transit mega project's purpose and needs implies overcoming elevated levels of project risks such as: engineering challenges, land use and resource considerations, and stakeholder coordination. In turn, these touchpoints dictate a high cost, which further implicates both the multi-jurisdictional considerations and federal funding role noted above.

While the federal government is often the primary funder of transit mega projects, federal funds are generally insufficient to fully fund a project by design. The FTA and other federal agencies are generally required by statute to condition federal grants on matching non-federal funds. In fact, projects that provide higher local matches are rated higher under discretionary funding programs like the CIG.²⁹ Therefore, transit mega projects must seek multiple funding sources. As an inherent result, project sponsors often wrestle with complex funding arrangements that grow increasingly complex in proportion to the project's risk profile and expanded stakeholder list.

The identification, allocation, and mitigation of risks becomes one of an attorney's primary concerns on transit mega projects. Typically, the topic of risk is generated by fiscal realities and requirements, but the topic inevitably touches every aspect of the project, including: project structure, procurement, engineering, environmental due diligence, safety, physical construction, and regulatory oversight—to name but a few. Additionally, the private sector's role is increasing through the growth of public-private partnerships (P3s) wherein private entities are responsible for various aspects of developing and delivering transit mega projects. As a result, advising on transit mega projects has grown more complex to include ensuring that funding and financing arrangements align with stakeholder incentives, and to ensure that all risks are properly allocated. This requires understanding the project's fiscal elements, and how a project's risk profile evolves over time, from project conception through operation.

²⁹ FED. TRANSIT ADMIN., FINAL INTERIM POLICY GUIDANCE FEDERAL TRANSIT ADMINISTRATION CAPITAL INVESTMENT GRANT PROGRAM 35 (2016).

C. Project Profiles

Notwithstanding the common key characteristics shared across transit mega projects, there is also a wealth of diversity. Each transit mega project is situated within a unique context. These projects are governed by the specific needs and priorities of the communities they serve and are subject to funding constraints and opportunities. Each project encounters its unique challenges along the way to completion. With the incredible diversity in transit mega projects, it can sometimes be a challenge to make general assertions.

Providing context is key, and reference to specific transit mega projects may further assist in contextualizing the issues encountered and lessons learned. Accordingly, five feature projects were employed to supplement and illuminate the general research conducted.³⁰ These five projects and broader experiences provide deeper insight into the legal issues that may arise in transit mega projects.

1. The Colorado Eagle P3 Project

The Colorado Eagle P3 Project is a 36.5-mile commuter rail transit system located in the Denver, Colorado, metropolitan area.³¹ The Eagle P3 Project is also part of the larger FasTracks Program, a voter-approved initiative designed to expand rail and bus transit across the Denver metropolitan region.³²

The now-completed project consists of five major elements: The A, B, and G lines, 56 commuter rail cars, and a commuter rail maintenance facility.³³

- The A Line consists of 22.8 miles of commuter rail and five transit stations, which extends east from Denver Union Station to the Denver International Airport;
- The B Line consists of 6.2 miles of commuter rail and runs from the Denver Union Station to the City of Westminster;
- The G Line consists of 11.2 miles of commuter transit rail, includes six transit stations, and extends from the Denver Union Station to the City of Wheat Ridge; and
- The Commuter Rail Maintenance Facility (CRMF), which is located adjacent to the B and G Lines, includes a control center, a maintenance shop, and a rail storage yard.

The Denver Regional Transportation District (RTD) is the responsible transit agency for the Eagle P3 Project.³⁴ The Colorado legislature created the RTD in 1969 to develop, oper-

ate, and maintain the region's mass transportation system. The RTD is governed by a 15-member elected Board of Directors, with each director serving a four-year term.³⁵ RTD's jurisdictional area includes eight counties and a service area of over three million people. Among other things, RTD's statutory authority may be found, at least in part, in Colorado Revised Statutes Title 32, Article 9.³⁶

The Eagle P3 Project cost \$2.2 billion and was funded and financed by federal, state, local, and private sources. The bulk of the project, \$1.03 billion, was funded through an FTA New Starts FFGA. The project also received a \$280 million TIFIA loan. Additional sources of funding and finance include \$40 million in state and local contributions, \$396.1 million in private activity bonds, and \$54.3 million in private equity.³⁷

The Colorado Eagle P3 Project was delivered through a design-build-finance-operate-maintain (DBFOM) agreement made between the RTD and the project's concessionaire, Denver Transit Partners, LLC. Under the concession agreement, availability payments are made by the RTD to the concessionaire over a term of 34 years.³⁸

The Eagle P3 Project is considered the first public-private partnership (P3 or PPP) for commuter rail in the United States to include design-build, financing, and long-term operations.³⁹

2. The Transforming Rail in Virginia Initiative

The Transforming Rail in Virginia Initiative is a multibillion-dollar program of projects, that include the Commonwealth of Virginia, Amtrak, CSX Transportation (CSXT), the Virginia Railway Express (VRE), and Norfolk Southern Railway.⁴⁰ These projects aim to double Amtrak state-supported service, increase the VRE's service lines, and modernize stations to meet both existing and growing future demand for freight and passenger rail service in the corridor.⁴¹

According to some estimates, auto travelers experience 320 million hours of delay annually due to congestion across Virginia and the Washington metropolitan region. The limited ability to expand the interstate corridors, has made passenger rail a viable, cost-effective solution, both in the near and long

³⁰ Although they are included in the five examples, The California High-Speed Rail and Transforming Rail in Virginia projects are not formal FTA transit projects. But, they are mega projects that offer critical insights into the inherent legal challenges faced by transit mega projects.

³¹ *Project Profile: Eagle Project*, U.S. DEP'T OF TRANSP. FED. HIGHWAY ADMIN. https://www.fhwa.dot.gov/ipd/project_profiles/co_eagle_project.aspx (last visited June 7, 2022) [hereinafter *Project Profile: Eagle Project*].

³² *Eagle P3 Project*, RTD-DENVER, <https://www.rtd-denver.com/reports-and-policies/facts-figures/eagle-p3-project> (last visited June 7, 2022).

³³ *Id.*

³⁴ U.S. DEP'T OF TRANSP., *EAGLE COMMUTER RAIL, DENVER COLORADO 1* (2016), <https://www.transit.dot.gov/sites/fta.dot.gov/files/CO-Denver-Eagle-Commuter-Rail-FY-18-Profile.pdf>.

³⁵ RTD, 2021 AGENCY PROFILE AND FACTS 32 (2021), https://www.rtd-denver.com/sites/default/files/files/2021-04/FactBook_2021_final-web-March31_0.pdf.

³⁶ COLO. REV. STAT. tit. 32, art. 9.

³⁷ *Project Profile: Eagle Project*, *supra* note 31.

³⁸ Availability payments are payments made by the public entity or project sponsor to the concessionaire or developer in exchange for the delivery of the project and performance of an ongoing service, *see discussion infra* Section IV.C.2.

³⁹ *Project Profile: Eagle Project*, *supra* note 31.

⁴⁰ *What is Transforming Rail in Virginia?*, TRANSFORMING RAIL IN VIRGINIA, <https://transformingrailva.com/resource-library/faq/> (last visited June 22, 2022).

⁴¹ *What does Transforming Rail in Virginia Involve?*, TRANSFORMING RAIL IN VIRGINIA, <https://transformingrailva.com/resource-library/faq/> (last visited June 22, 2022).

term. Between 2030 and 2040, Virginia's population is expected to increase from 8.7 million to 10.2 million.⁴²

The Transforming Rail initiative originated under the Atlantic Gateway Project in 2016 and was formally established in 2019.

The Atlantic Gateway Project was a \$1.4 billion package of rail and highway expansion projects that was funded through a federal FASTLANE grant⁴³ for \$165 million, combined with \$710 million in state transportation funds, and \$565 million in private investments.⁴⁴

Since 2019, the Commonwealth of Virginia has acquired over 300 miles of railroad right-of-way and 200 miles of track in corridors that parallel I-95, I-64, and I-85. These property acquisitions were made pursuant to an agreement with CSXT and cover: half of the railroad's right-of-way between Washington, DC, and Petersburg, VA; all of the railroad's out-of-service right-of-way between Petersburg, VA, and Ridgeway, NC; nearly all of the railroad's right-of-way between Doswell, VA, and Clifton Forge, VA; and the track within the right-of-way purchased by the Commonwealth.⁴⁵

Similarly, in 2021 the Commonwealth reached an agreement with Norfolk Southern Railway to expand passenger rail to southwest Virginia. Under this agreement the Commonwealth will acquire approximately 30 miles of the Norfolk Southern right-of-way from Salem, VA, to Christiansburg, VA.⁴⁶

In addition to the ongoing property acquisitions detailed above, the Transforming Rail in Virginia program currently features at least 12 active projects. Two notable examples are the Long Bridge Project, and the Washington, DC to Richmond Southeast High-Speed Rail (DC2RVA) Project.⁴⁷ The Long Bridge Project is a proposed expansion of the 2.0-mile Long Bridge Corridor from two railroad tracks to four. The project would build a new railroad bridge over the Potomac River and the George Washington Memorial Parkway (GWMP); it would be located between the existing railroad bridge and the Metrorail Bridge.⁴⁸ The current total project estimate is approximately \$1.9 billion.⁴⁹ The goal of the DC2RVA Project is to increase high-speed rail options from Washington, DC, to Richmond, VA, through existing rail infra-

structure, corridors, and railroad right-of-way.⁵⁰ The DC2RVA is part of the higher-speed intercity passenger rail network.⁵¹ The current total project estimate ranges from \$4.3–\$5.5 billion.⁵²

The Virginia Passenger Rail Authority (VPR), an independent authority, is the responsible transit agency for the Transforming Rail in Virginia Initiative.⁵³ The Virginia General Assembly created VPR in 2020 “to promote, sustain, and expand the availability of passenger and commuter rail service in the Commonwealth and to increase ridership of such service by connecting population centers with passenger and commuter rail service and increasing availability of such service.”⁵⁴ VPR is governed by a statewide board of directors made up of 12 voting members, one ex officio member from Amtrak, one ex officio member from VRE, and the director of the Department of Rail and Public Transportation (DRPT), who serves as chairperson.⁵⁵ Among other things, VPR's statutory authority may be found, at least in part, in the Code of Virginia Title 33.2, Article 6.⁵⁶ Notable examples of VPR's express powers include the authority to:⁵⁷

- Grant others the privilege to design, build, finance, operate, and maintain rail facilities;
- Grant others the privilege to operate concessions, leases, and franchises;
- Borrow money and issue bonds to finance and refinance rail facilities;
- Fix, alter, charge, and collect fees, rates, rentals, and other charges for the use of rail facilities, the sale of products, or services rendered by the VPR; and
- Make and enter into all contracts and agreements necessary or incidental to the performance of its duties including agreements with any person, federal agency, other state, or political subdivision of the Commonwealth.

3. The California High-Speed Rail Project

The California High-Speed Rail (HSR) Project is a proposed 800-mile, 24 station high-speed rail system.⁵⁸ There is no

⁴² *Id.*

⁴³ The Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE) grant has since evolved into the INFRA grant program.

⁴⁴ *History*, TRANSFORMING RAIL IN VIRGINIA, <https://transformingrailva.com/about/background/> (last visited June 22, 2022).

⁴⁵ *Background*, TRANSFORMING RAIL IN VIRGINIA, <https://transformingrailva.com/about/background/> (last visited June 22, 2022).

⁴⁶ *Id.*

⁴⁷ *Long Bridge Project*, TRANSFORMING RAIL IN VIRGINIA, <https://transformingrailva.com/projects/long-bridge/> (last visited June 22, 2022); *Project Background*, DC TO RICHMOND SOUTHEAST HIGH-SPEED RAIL, <https://dc2rvarail.com/about/project-history/> (last visited June 22, 2022).

⁴⁸ *Long Bridge Project*, TRANSFORMING RAIL IN VIRGINIA, <https://transformingrailva.com/projects/long-bridge/> (last visited June 22, 2022).

⁴⁹ LONG BRIDGE PROJECT: EXECUTIVE SUMMARY, U.S. DEP'T OF TRANSP.: FED. R.R. ADMIN. 16 (2019) http://longbridgeproject.com/wp-content/uploads/2019/09/Chapter00_ExecutiveSummary_LonBridgeDEIS.pdf.

⁵⁰ DC2RVA, TRANSFORMING RAIL IN VIRGINIA, <https://transformingrailva.com/resource-library/dc2rva/> (last visited June 22, 2022).

⁵¹ *Project Background*, DC TO RICHMOND SOUTHEAST HIGH-SPEED RAIL, <https://dc2rvarail.com/about/project-history/> (last visited June 22, 2022).

⁵² ALTERNATIVES COST ESTIMATE AND METHODOLOGY REPORT, D.C. TO RICHMOND SOUTHEAST HIGH-SPEED RAIL 7-2 (2017) https://dc2rvarail.com/files/3915/0413/3650/APPENDIX_K_Capital_Costs_DC2RVA_DEIS.pdf.

⁵³ *What is the Virginia Passenger Rail Authority?*, TRANSFORMING RAIL IN VIRGINIA, <https://transformingrailva.com/resource-library/faq/> (last visited June 22, 2022).

⁵⁴ VA. CODE § 33.2-288(c).

⁵⁵ *What is the Virginia Passenger Rail Authority?*, TRANSFORMING RAIL IN VIRGINIA, <https://transformingrailva.com/resource-library/faq/> (last visited June 22, 2022).

⁵⁶ VA. CODE tit. 33.2, art. 6.

⁵⁷ VA. CODE § 33.2-292.

⁵⁸ *High-Speed Rail in California*, CAL. HIGH-SPEED RAIL AUTH., <https://hsr.ca.gov/high-speed-rail-in-california/> (last visited June 22, 2022).

commonly accepted definition of “high-speed rail,” however, the California legislature has defined high-speed rail to mean “intercity passenger rail service that utilizes an alignment and technology that makes it capable of sustained speeds of 200 miles per hour or greater.”⁵⁹ ⁶⁰ As such, California’s high-speed rail system will be capable of operating at speeds in excess of 200 miles per hour on fully grade-separated track. The California HSR Project has been broken into two distinct project phases. Phase 1 refers to the 520-mile segment approved in 2008 by California voters. Phase 1 extends from the San Francisco/Merced Sections to the Los Angeles/Anaheim Sections of the California HSR Project. Additionally, Phase 2 refers to future program extensions from Merced to Sacramento, and from Los Angeles to San Diego.⁶¹

The California High-Speed Rail Authority (CHSRA) is the responsible agency for the California HSR Project.⁶² The California legislature created the CHSRA in 1996 to “direct the development and implementation of intercity high-speed rail service that is fully integrated with the state’s existing intercity rail and bus network.”⁶³ The CHSRA is governed by a Board of Directors consisting of nine members: five members are appointed by the Governor; two members are appointed by the California Senate Committee on Rules, and two members are appointed by the Speaker of the California General Assembly. Each member represents the entire state and serves a four-year term.⁶⁴ Among other things, the CHSRA’s statutory authority may be found, at least in part, in the California Public Utilities Code, Division 19.5.⁶⁵ Notable examples of the CHSRA’s express powers include the authority to:⁶⁶

- Conduct engineering and other studies related to the selection and acquisition of rights-of-way and the selection of a franchisee;
- Evaluate alternative high-speed rail technologies, systems and operators, and select an appropriate high-speed rail system;
- Establish criteria for the award of a franchise;
- Accept grants, fees, and allocations from the state, from political subdivisions of the state or from the federal government, foreign governments, and private sources;
- Select a proposed franchisee, a proposed route, and proposed terminal sites;

⁵⁹ CAL. PUC CODE § 185012(c).

⁶⁰ 49 U.S.C. § 26106 defines the term “high-speed rail” to mean “intercity passenger rail service that is reasonably expected to reach speeds of at least 110 miles per hour.” See 49 U.S.C. § 26106(b)(4).

⁶¹ *Project Sections*, CAL. HIGH-SPEED RAIL AUTH., <https://hsr.ca.gov/high-speed-rail-in-california/project-sections/> (last visited June 22, 2022).

⁶² *About California High-Speed Rail*, CAL. HIGH-SPEED RAIL AUTH., <https://hsr.ca.gov/about/high-speed-rail-authority/> (last visited June 22, 2022).

⁶³ CAL. PUC CODE § 185030.

⁶⁴ *Board of Directors*, CAL. HIGH-SPEED RAIL AUTH., <https://hsr.ca.gov/about/board-of-directors/> (last visited June 22, 2022).

⁶⁵ CAL. PUC CODE div. 19.5.

⁶⁶ CAL. PUC CODE § 185034.

- Enter into contracts with public and private entities for the preparation of the plan; and
- Prepare a detailed financing plan, including any necessary taxes, fees, or bonds to pay for the construction of the high-speed train network.

The current project estimate for Phase 1 ranges from \$72.3–\$105 billion.⁶⁷ The CHSRA has identified approximately one-third of the funds needed to complete Phase 1 through federal and state sources.⁶⁸ These primary sources of funds include \$9.95 billion approved by California voters through the passage of Proposition 1A (2008); \$2.5 billion in federal funds through the American Recovery and Reinvestment Act (2009); and \$929 million in federal funds through a Congressional appropriation. Additionally, through 2030, the California legislature has authorized appropriations of approximately 25% of annual proceeds from the state’s Cap-and-Trade Program to fund the California HSR Project.⁶⁹ The initial operating section of the project, located in the Central Valley, is being delivered through a series of design-build (DB) contracts broken into four construction packages.⁷⁰ The project is also procuring a “Track and Systems” design-build-maintain contract, which includes trackwork, railway systems, electrification, testing, and commissioning; and a 30-year maintenance agreement.⁷¹ Other project elements are also being delivered through more traditional design-bid-build (DBB) approaches as well.

Upon opening, the California HSR Project will be the first high-speed rail system in the United States.

4. East Link Extension Project

The East Link Extension Project is a 14.5-mile light rail transit and managed lanes system located in the Seattle, Washington, metropolitan area.⁷² The East Link Project is part of the larger Sound Transit system. It will connect to the existing light rail system in downtown Seattle, extend the system east to Mercer Island, Bellevue, and Redmond, while adding ten transit stations to the system.

The East Link Extension Project also includes the I-90 Two-Way Transit project, which will provide eight miles of high-occupancy-vehicle (HOV) lanes across the I-90 Floating Bridge to improve transit and HOV reliability.

⁶⁷ CAL. HIGH-SPEED RAIL AUTH., DRAFT 2022 BUSINESS PLAN 69 (2022), https://hsr.ca.gov/wp-content/uploads/2022/02/2022_Draft_Business_Plan.pdf.

⁶⁸ *Capital Costs & Funding*, CAL. HIGH-SPEED RAIL AUTH., <https://hsr.ca.gov/about/capital-costs-funding/> (last visited June 23, 2022).

⁶⁹ *Id.*

⁷⁰ *Design-Build Construction Packages*, CAL. HIGH-SPEED RAIL AUTH., <https://hsr.ca.gov/business-opportunities/contractors/design-build-construction-packages/> (last visited June 23, 2022).

⁷¹ *Track & Systems*, CAL. HIGH-SPEED RAIL AUTH., <https://hsr.ca.gov/business-opportunities/contractors/design-build-construction-packages/> (last visited Sept. 13, 2022).

⁷² *Project Profile: East Link Extension*, U.S. DEP’T OF TRANSP.: FED. HIGHWAY ADMIN. https://www.fhwa.dot.gov/ipd/project_profiles/wa_east_link_extension.aspx (last visited June 7, 2022) [hereinafter *Project Profile: East Link Extension*].

The Central Puget Sound Regional Transit Authority (Sound Transit)⁷³ is the responsible transit agency for the East Link Extension project. Pierce, King, and Snohomish Counties created Sound Transit in 1993 to plan, develop, implement, and operate a high-capacity transportation system within the region.⁷⁴ The Washington State legislature expressly enabled the creation of Sound Transit.⁷⁵ Sound Transit is governed by an 18-member Board made up of local elected officials proportional to the population included in the Sound Transit district.⁷⁶ Three members are from Snohomish County; ten from King County; and four from Pierce County. The last seat is held by the Washington State Secretary of Transportation.⁷⁷ Among other things, Sound Transit's statutory and enabling authorities may be found, at least in part, in the Revised Code of Washington Title 81, Chapter 81.104.⁷⁸

The total project cost is \$4.031 billion. Approximately \$3.81 billion of the total cost is attributed to the transit line and supporting facilities, whereas the remaining \$225.6 million serves as the transit contribution to the I-90 HOV facilities. The bulk of the project was funded and financed through \$1.086 billion in Sound Transit's tax revenues, \$1.06 billion in bond proceeds, and \$1.33 billion through a TIFIA loan.⁷⁹ Additional sources include a \$281.4 million cash contribution from Sound Transit, and federal and local grants: a \$184.5 million contribution from the City of Bellevue, and a \$14 million TIGER USDOT federal grant.⁸⁰

Sound Transit and its partners are delivering the East Link Extension Project through a combination of contracting methods including DB and a construction manager/general contractor (CM/GC).⁸¹

5. Hudson-Bergen Light Rail (NJ)

The Hudson-Bergen Light Rail (HBLR) Project is a 20.6-mile light rail transit system located along the Hudson River water-

front in Hudson and Bergen Counties, New Jersey.⁸² The now-completed project was comprised of three minimum operable segments (MOS) that opened between 2000 and 2011.⁸³

- MOS-I was a 9.5-mile, 16 station segment that extended from the Hoboken Terminal to 34th Street in Bayonne, and Westside Avenue in Jersey City;
- MOS-II was a 6-mile, 7 station segment that extended the system from the Hoboken Terminal to the Tonnel Avenue park-and-ride in North Bergen, and to 22nd Street in Bayonne; and
- MOS-3 was a 4.9-mile segment that extended the system from Tonnel Avenue to the New Jersey Turnpike's Vince Lombardi Park-and-Ride, to 5th Street in Bayonne, and to Route 440 in Jersey City.

The New Jersey Transit Corporation (NJ Transit) is the responsible transit agency for the HBLR Project.⁸⁴ ⁸⁵ The New Jersey legislature created NJ Transit in 1979 to acquire, operate, and contract for transportation service in the public interest.⁸⁶ NJ Transit is governed by an 11-member board of directors.⁸⁷ NJ Transit covers a service area of 5,325 square miles, is the nation's third largest provider of bus, rail, and light rail transit services, and provides nearly 270 million passenger trips each year.⁸⁸ Among other things, NJ Transit's statutory authority may be found in New Jersey Statutes Title 27, Chapter 25.⁸⁹

The total HBLR project cost was \$2.3 billion: MOS-I cost \$1.0 billion; MOS-II cost \$1.2 billion; and MOS-III cost \$100 million.⁹⁰ Similar to other transit mega projects, the primary source of funding was provided through FTA New Starts FFGAs. The rest of the project was financed through revenue bonds, which were backed by anticipated federal funding and passenger fares, and motor fuel tax receipts made available to the project through the state's Transportation Trust Fund.⁹¹

⁸² *Project Profile: Hudson-Bergen Light Rail*, U.S. DEP'T OF TRANSP.: FED. HIGHWAY ADMIN., https://www.fhwa.dot.gov/ipd/project_profiles/nj_hudson_bergen.aspx (last visited June 7, 2022) [hereinafter *Project Profile: Hudson-Bergen Light Rail*].

⁸³ FED. TRANSIT ADMIN., ANNUAL REPORT ON FUNDING RECOMMENDATIONS: FISCAL YEAR 2005 38-39 (2004) https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FY05_Annual_Report_on_Funding_Recommendations.pdf.

⁸⁴ U.S. DEP'T OF TRANSP.: VOLPE NAT'L TRANSP. SYSTEMS CENTER, HUDSON-BERGEN LIGHT RAIL, NJ (2010), <https://www.transit.dot.gov/sites/fta.dot.gov/files/2021-03/Region-2-Hudson-Bergen.pdf>.

⁸⁵ *Project Profile: Hudson-Bergen Light Rail*, *supra* note 82.

⁸⁶ *How It All Began*, N.J. TRANSIT (2021) <https://www.njtransit.com/first-run/how-it-all-began>.

⁸⁷ N.J. TRANSIT, 2020 ANNUAL REPORT 65-73 (Jan. 26, 2021), <https://data.nj.gov/Transportation/2020-New-Jersey-Transit-Annual-Report/4def-4dk3>.

⁸⁸ *About Us*, N.J. TRANSIT <https://www.njtransit.com/our-agency/about-us> (last visited June 23, 2022).

⁸⁹ N.J. REV. STAT. § 27:25.

⁹⁰ *Project Profile: Hudson-Bergen Light Rail*, *supra* note 82.

⁹¹ FED. TRANSIT ADMIN., ANNUAL REPORT ON FUNDING RECOMMENDATIONS: FISCAL YEAR 2005 38-39 (2004) https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FY05_Annual_Report_on_Funding_Recommendations.pdf.

⁷³ "Sound Transit" to be the Name for Regional Transit Authority Services, SOUND TRANSIT (Aug. 15, 1997), <https://www.soundtransit.org/get-to-know-us/news-events/news-releases/sound-transit-to-be-name-regional-transit-authority>.

⁷⁴ WASH. STATE DEP'T OF TRANSP., SOUND TRANSIT BACKGROUND 1, https://wsdot.wa.gov/partners/erp/background/3-1_About%20the%20Agency-Sound%20Transit%20Background.pdf.

⁷⁵ SOUND TRANSIT, CENTRAL PUGET SOUND REGIONAL TRANSIT AUTHORITY 1 (2017) https://www.soundtransit.org/st_sharepoint/download/sites/PRDA/FinalRecords/2018/2017%20Subarea%20Equity%20Report.PDF.

⁷⁶ *Id.* at 3.

⁷⁷ *Board of Directors*, SOUND TRANSIT (2022), <https://www.soundtransit.org/get-to-know-us/board-directors>.

⁷⁸ WASH. REV. CODE § 81.104 (2022).

⁷⁹ *Project Profile: East Link Extension*, *supra* note 72.

⁸⁰ *Id.*

⁸¹ SOUND TRANSIT, PUBLIC WORKS DELIVERY METHODS AND USE AT SOUND TRANSIT 5-9 (2019), <https://www.soundtransit.org/sites/default/files/documents/public-works-delivery-methods-and-use-presentation-20191205.pdf>.

The project was initially developed as a conventional DBB project.⁹² However, it was delivered through a 15-year, fixed-price contract to design-build-operate-maintain (DBOM) the system. The initial contract between NJ Transit and its private partner, 21st Century Rail Corporation, only covered MOS-I and was therefore amended to include the subsequent operating segments.

The HBLR Project was also part of the FTA's Turnkey Demonstration Program and is considered the first DBOM transit project in the United States.⁹³

Many examples from review of the projects above illustrate the discussion of lessons learned below. However, these cases were by no means the only examples discussed, and references to anonymized examples below do not necessarily refer to the cases described above.

IV. TRANSIT MEGA PROJECT TOPICS

This section addresses the foundations of a mega project and discusses the common qualities that form mega projects through the lens of the project profiles discussed in Section III, above. Specifically, this section will address: (a) project leadership roles and responsibilities for mega projects, (b) funding and financing guidelines, (c) project contracting and procurement, (d) the importance and impact of regulatory oversight, review, and permitting, (e) environmental issues that may affect the project's cost and schedule, (f) key regulatory factors for property acquisition and relocation, (g) additional considerations for contract terms, (h) insurance and indemnification, (i) coordinating with relevant stakeholders, and (j) options for dispute resolution.

A. Project Leadership

1. Who Is the Responsible Transit Agency?

Unsurprisingly, the aforementioned question is perhaps the most relevant threshold inquiry for any lawyer involved in developing and delivering a transit mega project. It critically informs the transit agency's authority, or lack thereof. And rooted in its answer is a roadmap for resolving the unique legal challenges that exist at every stage of the project.

Having clear roles and responsibilities is critical to success from planning to completion and through commencement of operations. As such, an agency's statutory authority is a prudent starting point for a transit lawyer.

The project profiles and interviews reflect the importance of understanding the scope and scale of a transit agency's authority, as well as how this authority varies through the phases and challenges of: long-range planning and environmental clearances, funding and financing, design and construction, staffing, procurement, real property acquisitions and dispositions, and

transit system operations. The project profiles and interviews also illuminate how these challenges may be overcome early at project conception, or later, through "special purpose entities" and project agreements.

Predictably, the common themes and questions raised on transit mega projects revolve around funding and financing the project, which encompasses the ability to receive federal grants and loans, issue bonds and other debt, and "spend;" all of which may trigger the need to conduct environmental reviews pursuant to NEPA. Especially in these contexts, the fundamental gateway is understanding who the responsible transit agency is.

2. Who Is the Project Sponsor?

The phrase "responsible transit agency" is a term of art employed to embody project leadership. The responsible transit agency normally also serves as the "project sponsor," another term of art, in the federal transportation, environmental, and regulatory context, and may also refer to a federal grant (or loan) applicant (or recipient) in the federal funding and financing context.

The "project sponsor" for FTA funding purposes is the "entity designated to deliver the project per the terms set forth in the grant agreement" with the FTA.⁹⁴ In an FTA Core Capacity Improvement Project, the project sponsor is a state or local governmental authority,⁹⁵ and is generally the governmental entity responsible for providing transportation services to the public.⁹⁶ The project sponsor ensures that the project's cost, scope, and budget comply with the grant during and after the life cycle of the grant; it is responsible for filing key documents with the FTA such as Annual Certifications and Assurances; and, it ensures compliance with key federal laws such as Title VI of the Civil Rights Act of 1964 prohibiting discrimination, and the Davis-Bacon Act establishing local wages for construction workers.⁹⁷

Federal law requires a project sponsor to satisfy certain criteria. First, the project sponsor must demonstrate that it has the "legal, financial, and technical capacity to carry out the project, including the safety and security aspects of the project,"⁹⁸ and the ability to operate the project upon completion. Successfully completing at least one new fixed guideway or core capacity project within that project's projected budget, cost and ridership outcomes, and maintaining the required staff and resources to implement a new project, is sufficient to prove technical capacity to the FTA.⁹⁹ Second, the project sponsor must ensure that it has or will have "satisfactory continuing control" over the equipment or facilities associated with the project and that it can maintain both new and existing equipment and facilities.¹⁰⁰

⁹⁴ 49 C.F.R. § 633.5 (2022).

⁹⁵ 49 U.S.C. § 5309(a)(1).

⁹⁶ See FED. TRANSIT ADMIN., CONSTRUCTION MANAGEMENT HANDBOOK 22 (2016) https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Construction_Project_Management_Handbook_2016.pdf.

⁹⁷ *Id.* at 18-19.

⁹⁸ 49 U.S.C. § 5309(c)(1)(B)(i).

⁹⁹ 49 U.S.C. § 5309(c)(3).

¹⁰⁰ 49 U.S.C. § 5309 (c)(1)(B)(ii).

⁹² *DBOM Contract: Proper Delegation of Major Tasks*, FED. TRANSIT ADMIN. (Jan. 31, 2016), <https://www.transit.dot.gov/regulations-and-guidance/dbom-contract-proper-delegation-major-tasks>.

⁹³ *Project Profile: Hudson-Bergen Light Rail*, *supra* note 82.

Finally, the project sponsor must prove that it has met specific performance targets and filed the required annual certifications with FTA.¹⁰¹ If the intended project sponsor does not meet these criteria, it will not be a successful applicant for these specific grant funds. The FRA has similar grant requirements detailed in 49 U.S.C. §§ 22901–22908.¹⁰²

3. Who Is the NEPA Sponsor?

The FTA, the FHWA, and the FRA have issued joint regulations implementing NEPA contained in 23 C.F.R. Part 771, Environmental Impact and Related Procedures. In this context, the responsible transit agency, or NEPA Sponsor, will often be the agency charged with working with one of the USDOT's modes to conduct environmental studies and to prepare environmental review documents in support of project actions and funding approvals. The NEPA Sponsor ensures that environmental mitigation measures, a mitigation monitoring plan, and cost estimate with an adequate level of contingency are identified and approved by federal authorities.¹⁰³ The NEPA process is further described in Section IV.E. below. The NEPA Sponsor is not required to also be the project sponsor.

Coordination with the FTA is crucial to ensure that the proposed mega project is consistent with the project's scope.¹⁰⁴ The NEPA Sponsor will be the point agency determining the preferred alignment for the project, the affected resources, and consideration of alternatives to the preferred alignment.¹⁰⁵ The NEPA Sponsor must also ensure that reasonably foreseeable transportation improvements are not foreclosed by the project. Community engagement between the NEPA Sponsor and the affected neighborhoods is important to both ensure appropriate mitigations are implemented and to help avoid litigation as the project progresses.

4. Key Takeaways

When transit agencies lack the full range of statutory authorities required to deliver a mega project, they can create special purpose entities who, from inception, have the specific duties and powers required for the project. In one state we examined, a non-profit corporation was formed pursuant to state law to deliver the mega project and was given the authority in its by-laws to issue debt, receive federal grants and loans, and administer contracts. However, because condemnation authority did not extend to the corporation, the corporation had to contract

with local governments who possessed the required condemnation power.

In 2018, after discovering that the initial entity tasked with delivering these projects did not have the statutory authority to receive federal grants, the New York and New Jersey legislatures each passed identical legislation to create the Gateway Development Commission (GDC), a public special purpose entity whose mission is to effectuate a series of infrastructure projects in the northern New Jersey/New York City area known as the "Gateway Program."¹⁰⁶ Similar to other special purpose entities, the Gateway legislation gave GDC significant authority, including but not limited to, the ability to issue debt, purchase property, hire staff, and procure contracts. Because of the interstate nature of many of the Gateway projects, GDC must coordinate with multiple stakeholders—the two neighboring states of New York and New Jersey, multiple transit agencies, private property owners, and several federal authorities. Ensuring that the needs of each stakeholder are sufficiently met can be a challenge, especially if those needs conflict.

Another benefit of creating a special purpose entity is providing sufficient resources for a project sponsor to complete the project. As pointed out by one interview participant, because 90 to 95% of typical transit agency's resources and attention are normally allocated to day-to-day operations, it is not surprising that such agencies are often not sufficiently equipped or resourced to handle the challenges of a transit mega project, thus presenting a significant constraint. One such challenge identified by the interviewers is hiring and maintaining staff with the appropriate skillset and expertise. Another is ensuring a continued sense of purpose and championing of the project. It is therefore not uncommon for special purpose public entities to be established to lead transit mega projects.

The CHSRA and the VPRRA are additional examples of public entities established to facilitate transit mega projects. In the case of the CHSRA, special statutes were passed by the California legislature to exempt key positions from the state's standard pay scale.¹⁰⁷ One interviewer indicated that this was intended to ensure that the right leadership with the appropriate expertise to run the agency as well as competent, experienced staff, could be hired.

At the same time, building a special purpose agency while simultaneously planning and building a mega project presents its own issues. Even where a public entity is established specifically for the purpose of implementing a transit mega project, securing adequate capacity and expertise to run such an agency can be a challenge.

In sum, it is critical to understand the scope of a transit agency's authority to determine if it is adequate to deliver a mega project. Arguably, the agency's most important authority involves funding and financing the Project, which includes its ability to receive federal grants and loans, issue bonds and other debt, and spend funds, all of which may trigger the need to con-

¹⁰¹ 49 U.S.C. § 5309(c)(1)(C).

¹⁰² This digest focuses on mega projects receiving FTA and FRA grants; for FHWA grant programs see *Grant Programs*, FED. HIGHWAY ADMIN. (Aug. 7, 2019), <https://highways.dot.gov/research/technology-innovation-deployment/grant-programs>.

¹⁰³ FED. TRANSIT ADMIN., CONSTRUCTION MANAGEMENT HANDBOOK 43 (2016) https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Construction_Project_Management_Handbook_2016.pdf.

¹⁰⁴ See 23 C.F.R. § 771 (2022).

¹⁰⁵ See generally *Environmental Review Process*, FED. TRANSIT ADMIN. (Nov. 5, 2020) <https://www.transit.dot.gov/regulations-and-programs/environmental-programs/environmental-review-process>.

¹⁰⁶ N.J. REV. STAT. §§ 32:36–1–:36–26 (2019); 2019 N.Y. AB 8126A.

¹⁰⁷ STATE OF CA., EXEMPT SALARY SCHEDULE 55 (2021), <https://www.calhr.ca.gov/Documents/exempt-salary-schedule.pdf>.

duct and prepare environmental reviews pursuant to NEPA. Each mega project sponsor should consider the use of special purpose entities, legislation, or key agreements to expand the agency's authority as needed.

B. Funding and Financing

Funding and financing are critical factors in any transit mega project. Mega projects involve greater capital costs than typical transit projects. The need to secure greater sums of capital results in a cascade of challenges, not simply ones related to raising more dollars but often involving the need to secure funds from different, or more diverse, programs and sources than might be necessary for less costly projects.

At the outset of the discussion of funding and financing it is critical to define and differentiate the two. Project funding refers to money which does not require repayment. Examples include grants and allocation of tax or other government revenue sources. In addition, such projects may require financing. Unlike grant funding, financing needs to be repaid. Examples include municipal and other forms of bond financing, loans (government or commercial), and private equity investments. While projects can be built without financing, on very large transit projects, as is the case with most capital-intensive construction projects, it may be practically difficult or financially unwise to entirely avoid the use of financing. Often, a combination of funding and financing sources will be used in the case of transit mega projects.

The source and type of funding sought and secured, including the decision to pair funding with financing, will have significant implications for many aspects of development. For example, the acceptance of federal grants requires adherence to a project sponsor or grant agreement in addition to which a range of federal regulations will become applicable to the project. Similarly, debt financing introduces the need to adhere to lender requirements and controls.

1. Federal Grants

As discussed above, the FTA is the federal agency primarily responsible for providing financial assistance to public transit systems, including fixed guideway systems such as subways, light rail, commuter rail, and trolleys, as well as road- and water-based public transportation. The FTA's authority for providing funding for public transportation is found in Chapter 53 of Title 49 of the U.S. Code. While historically the primary source of federal spending on public surface transportation is the Highway Trust Fund, established in 1982, which collects revenue from a tax on gas sales (currently 18.4 cents per gallon), Congress must still authorize spending through transportation legislation including with respect to FTA funding programs.

The FTA's Urbanized Area Formula Program¹⁰⁸ apportions federal funding for public transportation to state governors, responsible local officials, and publicly owned operators of transit services according to a formula based on public transportation

route miles for larger urban areas. Activities for which funds may be spent include: capital costs such as planning, engineering, design, and evaluation of transit projects; capital investments in new and existing fixed guideway systems including rolling stock, overhaul and rebuilding of vehicles, track, signals, communications, and computer hardware and software; some expenses associated with mobility management programs; preventative maintenance; and some Americans with Disabilities Act (ADA) complementary paratransit service costs. Federal funding for these costs may not exceed 80% of the overall costs, meaning that grant recipients must cover at least 20% of the cost from other non-federal sources (10% in the case of equipment to comply with the ADA or Clean Air Act). The federal share will vary depending on federal requirements.

For mega projects, the Urbanized Area Formula Program provides value, but would not typically be enough to support an entire project. This is in large measure due to the apportionment formula, which is designed to spread funds across the country. This, together with the limitations on federal share overall, limits the utility of this program in that it may provide only part of the funding solution for mega projects.

The FTA also offers, on a competitive basis, discretionary funding through its CIG Program.¹⁰⁹ The CIG Program funds three different types of projects: "New Starts," "Small Starts," and "Core Capacity" projects, of which New Starts and Core Capacity are most relevant to mega projects.¹¹⁰

As the names suggest, the difference between New Starts and Core Capacity grants rests on their use for either new facilities or investments in existing systems. New Starts are fixed guideway projects or extensions to existing fixed guideway systems whose total estimated capital cost is \$400 million or more, or where \$150 million or more is being sought from the federal government.¹¹¹ Core Capacity projects are substantial corridor-based capital investments in existing fixed guideway systems that increase the capacity of a corridor by at least 10%. Public transportation entities must apply for CIG funds, which are awarded annually on a competitive basis that involves a multi-step process which typically extends over several years. The FTA rates projects according to a rating system developed pursuant to statutory evaluation criteria.¹¹² In addition, by statute, potential recipients must have and demonstrate: "(i) the legal, financial, and technical capacity to carry out the project, including the safety and security aspects of the project; (ii) satisfactory continuing control over the use of the equipment or facilities;¹¹³

¹⁰⁹ 49 U.S.C. § 5309.

¹¹⁰ *Fact Sheet: Capital Investment Grants Program*, FED. TRANSIT ADMIN. (Jan. 3, 2020), <https://www.transit.dot.gov/funding/grants/fact-sheet-capital-investment-grants-program> (Small Starts funds fixed guideway projects or extension with a total estimated project cost of less than \$400 million (*i.e.*, well below a mega project's valuation) and that are seeking CIG funding of less than \$150 million).

¹¹¹ *Id.*

¹¹² 49 U.S.C. § 5309(d), (e), (i), (h)(3)-(5).

¹¹³ Terms and conditions for operations of service and use of facilities that are leased by a recipient to another must comply with a number of requirements, including providing for the right of FTA and/or the

¹⁰⁸ 49 U.S.C. § 5307.

and (iii) the technical and financial capacity to maintain new and existing equipment and facilities.¹¹⁴

The CIG program has historically provided the core source of federal funding for transit mega projects. For example, the Eagle P3 project was funded in part with a \$1.03 billion New Starts grant. CIG grants bring with them several conditions typical of federal funding, as well as some unique requirements. As such, CIG grants provide a useful illustration of the types of issues that arise when using federal funding on a transit mega project. CIG grant recipients must adhere to federal contracting requirements and flow downs, and complete a NEPA process for projects. As with all FTA grants, they must also comply with reporting and annual compliance certification processes. As is the case with other recipients of funding through the FTA, CIG grant recipients are required to annually sign and submit an agreement with a list of Certifications and Assurances that bind the grant recipient.¹¹⁵ This includes compliance with: non-discrimination statutes (e.g. Title VI of the Civil Rights Act of 1964 and the ADA); the Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970 (URA); federal procurement and Buy America requirements; labor requirements (see Section IV.C *infra*, Project Contracting and Procurement); and environmental requirements (see Section IV.E *infra*, Environmental Issues and Compliance). Other funding sources similarly require funding agreements that attach conditions to the project sponsor's grant of funding.

Finally, FTA New Starts and Core Capacity grantees must sign an FFGA¹¹⁶ with the FTA that memorializes the obligations of the grant recipient. This includes the obligation to refund the federal government for a variety of reasons such as, failure to meet the contractual revenue service date or if the grantee terminates the project.

The CIG grant program presents both opportunities and challenges for mega projects. Funds are limited, and competitive. At best such grants will cover 80% of net capital project costs, and may amount to less, leaving funding gaps.¹¹⁷ Such grants typically require years of preparatory engineering, financial structuring, and environmental work to step through the

CIG grant process; delays in that process have potential to delay the project by a year or more. Once granted, CIG grant funds bring with them FTA oversight, including the Project Management Oversight (PMO) program, which may add additional scrutiny in the event of a troubled project. FTA's PMO acts alongside the FTA to monitor projects in order to determine if they are progressing on budget, on time, and in compliance with grant requirements. For example, Hawaii's \$11 billion Honolulu Rail Transit Project received a \$1.55 billion New Starts grant in 2012 but, after a series of delays and cost increases, it has seen the remaining \$744 million in funds held up by the FTA pending compliance with now three successive FTA mandated recovery plans (in 2017, 2019, and 2022).¹¹⁸ The revised recovery plan submitted in 2019 outlined how additional local revenues would further assist the project in meeting its financial plan. Further revisions submitted in the 2022 recovery plan proposed reduced scope, shortening the rail line, and elimination of a proposed parking garage, in order to meet the time and budget commitments.

Although CIG grants are the primary vehicle for FTA to fund transit mega projects, the FTA also provides capital funding for maintenance, replacement, and rehabilitation projects for fixed guideway and bus systems through its State of Good Repair Program, which is codified at 49 U.S.C. § 5337. Funds are apportioned using statutory formulas based on the revenue and route miles for high intensity fixed guideway systems. Eligible costs include investment in rolling stock, track, line equipment and structures, signals and communications, power equipment, passenger stations and terminals, security equipment, and maintenance facilities.

While FTA is generally the primary source of federal funding for transit mega projects in the U.S., other sources of federal funding also often play an important role. FRA's Consolidated Rail Infrastructure and Safety Improvements (CRISI) grant program¹¹⁹ provides discretionary funding on a competitive basis for projects that will improve passenger and freight rail transportation systems in terms of safety, efficiency, or reliability. FRA also administers the Federal-State Partnership for State

recipient to conduct periodic inspections to confirm proper maintenance of the project property. Associated enforcement rights are to be set out in a service agreement as part of the ongoing use. See FTA Circular 5010.1E, Award Management Requirements, FED. TRANSIT ADMIN. (July 16, 2018), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/fta-circulars/58051/5010-1e-circular-award-management-requirements-7-16-18.pdf>.

¹¹⁴ 49 U.S.C. § 5309(c)(1)(B).

¹¹⁵ 49 U.S.C. § 5323(n).

¹¹⁶ See *Full-Funding Grant Agreements Guidance*, FED. TRANSIT ADMIN. (Feb. 27, 2020), <https://www.transit.dot.gov/regulations-and-guidance/fta-circulars/full-funding-grant-agreements-guidance#general>.

¹¹⁷ "The maximum CIG (Sec 5309) share varies by project type, with New Starts: 60 percent, Small Starts: 80 percent, and Core Capacity: 80 percent. Total federal funds for any project type may not exceed 80 percent." *Fact Sheet: Capital Investment Grants Program*, FED. TRANSIT ADMIN. (Jan. 3, 2020), <https://www.transit.dot.gov/funding/grants/fact-sheet-capital-investment-grants-program>. See also 49 U.S.C. § 5309(l)(1)(B).

¹¹⁸ HAWAII, DEP'T OF TRANSP., HIGH CAPACITY TRANSIT CORRIDOR PROJECT HONOLULU 1 (2015), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/HI_Honolulu_HCT_Profile_FY16.pdf; see News Release, Kevin Whitton, HART Recovery Plan Submitted to Fed. Transit Admin. (June 3, 2022), <https://www.dropbox.com/s/beezip6d4cq8c-jal/2022.06.03.NR.Recovery%20Plan.pdf?dl=0> (discussing 2022 plan); see also, Marcel Honore, *Inside the "Frantic" Push to Shorten Rail and Keep its Federal Funding*, HONOLULU CIVIL BEAT, (April 28, 2022), <https://www.civilbeat.org/2022/04/inside-the-frantic-push-to-shorten-rail-and-keep-its-federal-funding/> (discussing funding and recovery plan problems). See generally KRISHNIAH N. MURTHY, HART RECOVERY PLAN (2017) (2017 plan); ANDREW S. ROBBINS, HART REVISED RECOVERY PLAN OF 2018 (2019) (2019 plan).

¹¹⁹ *Consolidated Rail Infrastructure and Safety Improvements Program*, FED. R.R. ADMIN. (June 2, 2022), <https://railroads.dot.gov/grants-loans/competitive-discretionary-grant-programs/consolidated-rail-infrastructure-and-safety-2>.

of Good Repair program,¹²⁰ which provides funding for capital projects that repair, replace, or rehabilitate qualified railroad assets to reduce the state of good repair backlog and improve intercity passenger rail performance.¹²¹ Similarly, certain FHWA grant programs may be available for transit projects, including the ATCMTD Program.¹²²

Other relevant USDOT infrastructure grant programs¹²³ include the competitive RAISE (formerly BUILD and TIGER) grants,¹²⁴ INFRA grants,¹²⁵ and National Infrastructure Project Assistance (Mega) grants.¹²⁶

The utility of these programs for mega projects varies. For example, eligible INFRA project costs may include reconstruction, rehabilitation, acquisition of property (including land related to the project and improvements to the land), environmental mitigation, construction contingencies, equipment acquisition, and operational improvements directly related to system performance. In 2022, projects located within a single state were effectively capped at a \$30 million INFRA grant amount (and then only if such state had received the maximum allocation of \$100 million).¹²⁷ Similarly, in 2022, the RAISE grant program caps funding for a single project at \$25 million, with projects in a single state capped at \$341.25 million RAISE grant funding.¹²⁸ By contrast, the new Mega grant program is explicitly designed to address the needs of mega projects. Funds are only available for projects that are “likely to generate national or regional economic, mobility, or safety benefits” and that “are in significant need of Federal funding.”¹²⁹ Appropriations for the Mega grant program are currently reserved for projects with costs exceeding \$500 million.¹³⁰

¹²⁰ *Federal-State Partnership for State of Good Repair Grant Program*, FED. R.R. ADMIN. (March 9, 2022), <https://railroads.dot.gov/grants-loans/competitive-discretionary-grant-programs/federal-state-partnership-state-good-repair-1>.

¹²¹ FRA’s authority for this program is found under 49 U.S.C. § 24911.

¹²² *Advanced Transp. and Congestion Mgmt. Tech. Deployment*, FED. HIGHWAY ADMIN. (Feb. 2016), <https://www.fhwa.dot.gov/fastact/factsheets/advtranscongmgmtfs.cfm>.

¹²³ *Grants*, U.S. DEP’T OF TRANSP., <https://www.transportation.gov/grants> (last visited June 16, 2022).

¹²⁴ *RAISE*, U.S. DEP’T OF TRANSP. (Jan. 28, 2022) <https://www.transportation.gov/RAISEgrants>.

¹²⁵ *The INFRA Grants Program*, U.S. DEP’T OF TRANSP. (March 21, 2022), <https://www.transportation.gov/buildamerica/financing/infra-grants/infrastructure-rebuilding-america>.

¹²⁶ *The Mega Grant Program*, U.S. DEP’T OF TRANSP. (April 22, 2022), <https://www.transportation.gov/grants/mega-grant-program>.

¹²⁷ Notice of Funding Opportunity for the Dep’t of Transp’s Multimodal Project Discretionary Grant Opportunity, 87 Fed. Reg. 17108 (March 25, 2022), <https://www.federalregister.gov/documents/2022/03/25/2022-06350/notice-of-funding-opportunity-for-the-department-of-transportations-multimodal-project-discretionary>.

¹²⁸ *RAISE Discretionary Grants*, U.S. DEP’T OF TRANSP. (Aug. 22, 2022), <https://www.transportation.gov/RAISEgrants#:~:text=Additional%20background%3A,for%20projects%20in%20urban%20areas>.

¹²⁹ 49 U.S.C. § 6701(f)(1).

¹³⁰ Notice of Funding Opportunity for the Dep’t of Transp’s Multimodal Project Discretionary Grant Opportunity, 87 Fed. Reg. 17108, 17124

Understanding funding availability and limitations, as well as what obligations or restrictions attach to federal funding, is a critical task for project sponsors. Federal grant programs do not offer unlimited funds, and often require competitive funding applications. As described above, even if such applications are successful, receipt of federal funding comes with obligations to ensure that the money is spent in a manner consistent with federal law and policy.

2. State and Local Funding

The other major source of funding of transit mega projects aside from federal funding is state and local funds.¹³¹ The source of state and local funding and financing covers a wide spectrum, from general or special purpose tax revenues to existing or future leveraged public transportation passenger revenue. Denver RTD’s FastTracks project, for example, leveraged dedicated sales tax revenues as a source of funding including to support a private activity bond issuance.

Crucially, as previously noted, many federal funding programs require local matching revenue sources, meaning that state or local funding is a must.¹³² Additional federal requirements shape the sources and uses of local match funding. For example, federal requirements prohibit local matches from being used for more than one grant, although they may include financed funds.¹³³ Local match funding may include in-kind contributions (e.g., donation of land or gifts) but will be subject to federal regulations regarding in-kind contributions.¹³⁴ Contributions and donations to a project from a state or local source also cannot be sourced from federal funds in order to meet the local match requirements (i.e., any funding received by grant recipients, even from third parties, that is federally sourced cannot satisfy the non-federal share requirements of a federal-aid project).¹³⁵

3. Federal Loans

A project sponsor may have access to a source of long-term revenues that it wishes to use to fund a project, but that may not be available in sufficient amounts in time to pay project costs when they are incurred. Alternatively, a sponsor may have

(March 25, 2022), <https://www.federalregister.gov/documents/2022/03/25/2022-06350/notice-of-funding-opportunity-for-the-department-of-transportations-multimodal-project-discretionary>.

¹³¹ Another potential source of revenue is user fees or other sources of direct project revenues. For present purposes, these can be considered a form of local funding in that such revenues flow to the facility owner or service operator, i.e., a local authority, and can be treated as a funding source at that level.

¹³² See *Local Matching Funds*, FED. TRANSIT ADMIN. (Dec. 21, 2017), <https://www.transit.dot.gov/funding/procurement/third-party-procurement/local-matching-funds>.

¹³³ See *id.*

¹³⁴ See 2 C.F.R. § 200.306 (2022). A more detailed discussion of local funding is beyond the scope of this digest.

¹³⁵ See 2 C.F.R. § 200.434 (2022). See generally CONGRESSIONAL BUDGET OFFICE, FED. SUPPORT FOR FINANCING STATE AND LOCAL TRANSP. AND WATER INFRASTRUCTURE (2018), <https://www.cbo.gov/system/files/2018-10/54549-InfrastructureFinancing.pdf>.

enough funds to pay for project costs as they are incurred, but may prefer to manage the expense of a mega project over time. In either case, financing presents an option to borrow funds to pay project costs as they are incurred. Federal loan programs offer a potential source of such financing for mega projects.

Loans for transportation infrastructure projects are primarily administered through the USDOT's Build America Bureau (BAB),¹³⁶ which was launched in 2016 to "serve as a one-stop shop for state and local governments, public and private developers, and investors seeking to utilize innovative financing strategies for transportation infrastructure projects."¹³⁷ The two key Federal loan programs, TIFIA and the Railroad Rehabilitation and Improvement Financing (RRIF), predate the BAB. They charge significantly lower interest rates than those available from commercial lenders, and in fact, from many municipal finance alternatives. Prospective borrowers are required to submit letters of interest, and then applications, to secure loans which are ultimately documented in a manner that approximates commercial loans in many respects. However, as with federal grants these loans come with federal obligations on the borrower, paired with the customary credit obligations that a borrower would assume toward any debt provider.

Most notably for transit mega projects, the BAB financing programs include the TIFIA program,¹³⁸ which provides long-term loans for eligible highway and transit projects that feature dedicated, credit-worthy sources for repayment.

TIFIA is designed to "fill market gaps and leverage substantial private co-investment by providing supplemental and subordinate capital."¹³⁹ To apply, a project must have total costs of at least equal to the lesser of \$50 million, or 33.3% of the amount of federal highway funds apportioned in the most recent fiscal year to the relevant state; or fit within a designated category.¹⁴⁰ The project must have a dedicated revenue source pledged to secure both the TIFIA and senior debt financing, and TIFIA and senior debt loans must receive investment grade ratings. Such revenue source does not need to be derived from the project itself (for example, fares), but any source of revenue, including tax revenues or appropriations, can be pledged. Eligible applicants include state and local governments, transit agencies, railroad companies, special authorities, special districts, and private en-

ties. However, TIFIA loans are limited to 33% of reasonably anticipated eligible project costs (49% if the project sponsor provides a compelling justification). Sound Transit's East Link Extension light rail project and Maryland's Purple Line project are case study examples of transit mega projects that made use of USDOT BAB TIFIA financing.¹⁴¹

Also relevant is the RRIF program, which provides loans for rail capital improvements. Direct loans may fund up to 100% of an eligible railroad project, with repayment periods of up to 35 years.¹⁴² Eligible borrowers include railroads, state and local governments, government-sponsored authorities and corporations, and joint ventures that include at least one railroad. RRIF loans are in many ways like TIFIA loans, with the notable exception that—unlike TIFIA—Congress has not appropriated funds to cover the cost to the government of providing financial assistance, meaning that borrowers must bear this cost through payment of a credit risk premium which factors into the cost of the loan. Transit projects that have received RRIF assistance include Dallas Area Rapid Transit, which received a \$908 million RRIF loan for a regional passenger rail project.

TIFIA and RRIF have additional characteristics which may be relevant to mega projects. First, both TIFIA and RRIF can be considered part of "local share funds" for purposes of CIG grants (if repaid with funds that are local share), marking a rescindment of the FTA's 2018 decision to the contrary.¹⁴³ Given the size of local funding requirements on mega projects, this is potentially significant. Second, as noted above, federal loans bring with them federal requirements—even if other federal funds are not being expended—in addition to all the customary requirements of a lender. Third, both loans require adherence to an application and credit approval process which can stretch out over several months, or longer, and require pledging of a revenue source which may not then be available for other purposes. Finally, both loans come with unique issues—such as the RRIF credit risk premium, or a feature of the loans which is known as the "springing lien"¹⁴⁴—with which unfamiliar borrowers must familiarize themselves.

¹³⁶ *Credit Oversight and Risk Management: Overview*, U.S. DEP'T OF TRANSP. (April 13, 2021), <https://www.transportation.gov/budget/innovative-financing>.

¹³⁷ *U.S. Transportation Secretary Foxx Announces Creation of the Build America Bureau*, U.S. DEP'T OF TRANSP. (Jul. 20, 2016), <https://www.transportation.gov/briefing-room/us-transportation-secretary-foxx-announces-creation-build-america-bureau>.

¹³⁸ See *TIFIA Credit Program Overview*, U.S. DEP'T OF TRANSP. (March 30, 2021), <https://www.transportation.gov/buildamerica/financing/tifia/tifia-credit-program-overview>; see also 23 U.S.C. §§ 601-609 (TIFIA authorizing statute).

¹³⁹ *Program Overview*, U.S. DEP'T. OF TRANSP. (May 25, 2022), <https://www.transportation.gov/buildamerica/financing/tifia>.

¹⁴⁰ 23 U.S.C. § 602(a)(5)(A). Lower thresholds apply for intelligent transportation system, transit-oriented development, rural, and certain local government projects, see 23 U.S.C. § 602(a)(5)(B).

¹⁴¹ *East Link Extension*, BUILD AMERICA BUREAU, <https://www.transportation.gov/buildamerica/projects/east-link-extension> (last visited June 16, 2022); *Purple Line Project*, BUILD AMERICA BUREAU, <https://www.transportation.gov/buildamerica/projects/purple-line-project> (last visited June 16, 2022).

¹⁴² RRIF is authorized under 49 U.S.C. §§ 22401-06.

¹⁴³ *Dear Colleague Letter Capital Investment Grants*, US DEP'T OF TRANSP., FED. TRANSIT ADMIN. (Jun. 29, 2018), <https://www.transit.dot.gov/sites/fta.dot.gov/files/2021-02/fta-2018-dear-colleague-letter-capital-investment-grants-rescinded-on-02-16-21.pdf>. See also *Dear Colleague Letter Capital Investment Grants*, US DEP'T OF TRANSP., FED. TRANSIT ADMIN. (Feb. 16, 2021), <https://www.transit.dot.gov/sites/fta.dot.gov/files/2021-02/fta-dear-colleague-letter-capital-investment-grants-02-16-21.pdf>.

¹⁴⁴ The term "springing lien" refers to the principle that an otherwise subordinated (*i.e.*, in order of priority of repayment relative to other debt) TIFIA loan will no longer be subordinated in the event of bankruptcy, insolvency, or liquidation of the obligor. ("TIFIA financing is available with a senior or subordinate lien, but is typically used as subordinate debt, meaning it is in line to be repaid after the project's

4. Public Debt Financing

State, regional, and local authorities have traditionally relied on tax municipal bond issues to finance transit mega projects, among many other needs. Through such debt issuances an authority can covert a long-term funding or revenue source into current (borrowed) funds to be repaid back over time as funding or revenue is received.

For transit mega projects, there are subcategories of tax-exempt debt that deserve particular consideration. Most notably, Section 142 of the Internal Revenue Code provides a tax exemption for certain “exempt facility bonds” if issued for specific types of projects, and used predominantly for public purposes, even if the projects have certain indicia of being private and not public (for example, public-private partnerships). Most of the bonds that can be issued in this manner are subject to state volume caps, except for those issued for “qualified highway or surface freight transfer facilities,”¹⁴⁵ which are subject to a \$30 billion national aggregate limit. These are commonly referred to as private activity bonds and have been used predominantly, but not exclusively, on road projects. Transit mega projects which receive some funding under Title 23 of the United States Code can also qualify. Notable projects which have received allocations and issued private activity bonds include the PPP Eagle P3 and Maryland Purple Line Light Rail projects.

The benefit of private activity bonds (and the potential benefit of other tax advantaged structures for private debt issuances) is that they can lower the cost of debt issued by a private partner on an otherwise public project, since absent such an allowance the debt would typically be taxable and raise overall project costs. This could make otherwise attractive project structures involving private partners non-viable. Instead, private activity bonds can narrow the cost competitiveness gap with traditional municipal finance. However, such bonds also must be approached with caution as they are tax structured and require detailed attention to IRS regulations designed to ensure that the bond issuance is eligible and indeed serves an ultimately public purpose.

operational expenses and senior debt obligations. However, the TIFIA statute includes a provision which requires that in the event of a project bankruptcy, the federal government will be made equal with senior debt holders. This is referred to as the “springing lien,” and has led some to ask whether TIFIA financing is truly subordinate.”. 23 U.S.C. § 603(a)(6). See also CONGRESSIONAL RESEARCH SERVICE, THE TRANSPORTATION INFRASTRUCTURE FINANCE INNOVATION ACT PROGRAM 3 (2019), <https://sgp.fas.org/crs/misc/R45516.pdf>.

¹⁴⁵ “[T]he term ‘qualified highway or surface freight transfer facilities’ means—(A) any surface transportation project which receives Federal assistance under title 23, United States Code (as in effect on the date of the enactment of this subsection), (B) any project for an international bridge or tunnel for which an international entity authorized under Federal or State law is responsible and which receives Federal assistance under title 23, United States Code (as so in effect), or (C) any facility for the transfer of freight from truck to rail or rail to truck (including any temporary storage facilities directly related to such transfers) which receives Federal assistance under either title 23 or title 49, United States Code (as so in effect).” 26 U.S.C. § 142(m)(1).

5. Private Investment and Participation in Financial Risk Allocation

While a smaller source of financing for transit mega projects in the United States, private investment is important and increasingly considered as a component for structuring transit mega projects. Private investment generally refers to equity invested by private parties in projects, typically alongside debt financing, in exchange for potential repayment with a return on investment. The source of repayment can be the same as for debt financing, and on a transit project can range from fares, to other business revenues, to payments from government-made funding sources available to it.

For transit projects private investment normally arises in the form of a P3. The World Bank notes, “[t]here is no standard, internationally-accepted definition” for P3s and, as a result, “[t]he term is used to describe a wide range of types of agreements between public and private sector entities.”¹⁴⁶ The USDOT similarly recognizes this challenge, as “[t]he term ‘P3’ may be used to describe various types of agreements between a public and private entity.”¹⁴⁷ For purposes of this digest, the definition jointly put forth by FHWA and FTA in their *Public-Private Partnership (P3) Procurement: A Guide for Public Owners* is used, which defines a P3 as “procurement of a long-term contract for multiple elements that may include development (design and construction), operation and/or maintenance of a facility that involves a component of private financing.”¹⁴⁸ The definition is intentionally flexible and can accommodate a wide variety of different approaches so long as they remain within these general, broad contours.

Arguably the central distinguishing element of a P3 is the involvement of private equity finance. In one way or another, whether through project revenues, a pre-set payment for service delivery and performance, or otherwise, the private sector partner will have access to a revenue or payment stream that supports a combination of debt financing and private at-risk equity investment. Importantly, while a P3 can be very helpful in certain circumstances, it is neither a panacea nor a source of free money—bearing in mind the distinction between funding and financing, every dollar invested through equity financing must be repaid with at least the potential for a return.

To date, P3s have been used or considered for several transit mega projects including the Eagle P3 project, the HBLR project (as originally structured), Maryland’s Purple Line Light Rail Project, and the Honolulu Rapid Transit Project. See Section IV.C.2. *infra* for further discussion on the use of P3s.

The use of private investment carries with it potential benefits, as well as risks, resulting in a trade-off. Private investment can (i) help bridge current funding gaps (effectively by financ-

¹⁴⁶ *About PPPLRC and PPPs*, THE WORLD BANK <https://ppp.worldbank.org/public-private-partnership/about-us/about-public-private-partnerships> (last visited June 16, 2022).

¹⁴⁷ U.S. DEP’T OF TRANSP., PUBLIC-PRIVATE PARTNERSHIP (P3) PROCUREMENT: A GUIDE FOR PUBLIC OWNERS 2 (2019) https://www.fhwa.dot.gov/ipd/pdfs/p3/toolkit/p3_procurement_guide_0319.pdf.

¹⁴⁸ *Id.*

ing them), (ii) be leveraged to secure private debt financing, and (iii) provide financing for non-traditional projects which otherwise might not be able to secure traditional debt financing. Private investment however requires a return which typically exceeds the premium paid through interest for debt finance. It is important to recognize that a higher equity rate of return reflects in part a greater risk that it will not be repaid. Equity investment does not enjoy the priority or protections afforded to debt finance and will suffer loss before debt providers will. This return still needs to be justified in exchange for potential benefits. In part, this is justified through the incentives that the risk/return profile of an equity investment makes. An investor is incentivized to perform as required under a contract to protect its investment, and to deliver a product that meets or exceeds requirements.

6. Funding and Financing Lessons from Project Profiles

As an example of the type of funding complexity that a transit mega project may engender, Denver RTD's Eagle P3 involved delivery of two new rail lines, including a downtown to airport connector, in addition to other new facilities. The total project cost under the FFGA was \$2.043 billion, with just over \$1 billion coming from FTA's Section 5309 New Starts CIG funding program.¹⁴⁹ The project also took advantage of \$57 million in other federal grants, nearly \$40 million in additional local and state contributions, and significant up-front (as well as pledged over time) sales tax revenues. These funds were leveraged through private activity bonds, a TIFIA loan, and equity financing under the P3 structure.¹⁵⁰

In practice, transit mega project sponsors must seek funding in many places. One case study project is indicative of the diversity and scope of funding needed for a transit mega project. According to one interviewee, the project sponsor has developed a preliminary funding plan that funds the project with a variety of state funds while also seeking federal funding to help alleviate some of the cost. The state funding includes dedicated rail funding, statewide priority transportation funds, project sponsor operating capital funds, and toll revenues; the latter of which is limited to improvements within the toll road corridor. Contributions to the project also come from partner railroads who will share the benefits of the rail corridor improvements.

C. Project Contracting and Procurement

The form of contracting and procurement method of each transportation mega project plays a prominent role and directs the trajectory of the project. Project structure should be evaluated early in the process, and key elements should be identified, such as: the preferred procurement method, who will be the

delivery entity (discussed further in Section IV.C.4. *infra*), which agency will operate and maintain the asset(s), whether there are any legislative regulations that could restrict or enhance delivery opportunities, and the risk each model brings to the project. This section will evaluate each of these criteria and provide examples from mega projects around the country that highlight the analysis the transportation entity undertook prior to deciding on the appropriate delivery method for its project.

1. Pre-Procurement Activities

Procurement in a mega project is unique because "procurement" begins well before the public agency issues any solicitation documents—often referred to as "pre-procurement." The pre-procurement stage can involve a variety of activities on the part of the public agency as discussed below.

Before issuing procurement documents, the public sector is well-advised to consider its project readiness. From a private sector perspective, engaging in a procurement is a cost—a cost incurred with no guarantee of selection. Therefore, the private sector is less likely to engage meaningfully with a procurement if it appears that the public agency is not sufficiently prepared to implement the project. "Readiness" can mean different things for different projects, but certain common factors are important to consider. For example, are there requisite governmental approvals that are conditions precedent to the project? Has the public agency engaged with all necessary federal and/or state agencies? Has the agency acquired all permits? Other examples may include, obtaining third-party permits, real estate, and rights-of-way. Though the public agency does not need to *resolve* such issues before starting procurement, the pre-procurement stage of identifying and addressing such issues signals a level of project readiness that will, in turn, yield helpful industry feedback.

Mega projects are also subject to jurisdictional bounds and may have to engage in additional pre-procurement activities at the outset. In the context of P3s, certain states have dedicated P3 offices that screen potential projects and ensure alignment of such project with overall infrastructure plans. Virginia Department of Transportation's Office of Public-Private Partnership (VAP3) is one example of such an office. VAP3, for example, requires a value-for-money (VfM) analysis before a project is approved for the procurement phase.¹⁵¹ A VfM analysis compares on a risk-adjusted basis, the total costs of pursuing a project as a P3 versus a non-P3. Certain other states also require VfM analyses as part of the pre-procurement process. State-specific P3 legislation may also require screening processes for potential projects. For example, LA Metro has a "two-phase screening process for evaluating P3 project candidates."¹⁵²

¹⁴⁹ U.S. DEP'T OF TRANSP., EAGLE COMMUTER RAIL: DENVER, CO 1 (2016), <https://www.transit.dot.gov/sites/fta.dot.gov/files/CO-Denver-Eagle-Commuter-Rail-FY-18-Profile.pdf>; *Project Profile: Eagle Project*, *supra* note 31; see also FED. TRANSIT ADMIN., ANNUAL REPORT OF FUNDING RECOMMENDATIONS FY 2018 (2017), <https://www.transit.dot.gov/sites/fta.dot.gov/files/2020-07/FY18-Annual-Report-on-Funding-Recommendations.pdf>.

¹⁵⁰ *Project Profile: Eagle Project*, *supra* note 31.

¹⁵¹ COMMONWEALTH OF VIRGINIA, VIRGINIA PUBLIC-PRIVATE PARTNERSHIPS: P3 VALUE FOR MONEY GUIDELINES 3 (2016) https://www.p3virginia.org/wp-content/uploads/2016/07/VfM-Guidelines_V3_June-2016_Final.pdf.

¹⁵² *Public-Private Partnerships*, METRO <https://www.metro.net/about/public-private-partnerships/> (last visited June 24, 2022); see also *Project Evaluation Process*, METRO http://media.metro.net/projects_studies/ppp/images/ppp_project_evaluation.pdf (last visited June 24, 2022) (visually depicting a project evaluation process for LA Metro).

Industry forums are another pre-procurement tool—both in a P3 or non-P3 context—that provide the public agency an opportunity to present its project to the private sector developers, consultants, and investors (prior to issuing procurement documents), and obtain valuable market feedback from industry. The format of industry forums varies from open-ended conversations to more formal, scripted discussions, they can span over multiple days, and can include site visits of the project site. In a COVID-19 era, industry forums have continued in a virtual format. During an industry forum, the private sector can gauge important information about the potential project and ask questions. At times, public agencies may also request private entities to meet with them to receive deeper feedback about the potential project. The public agency may also notice recurring issues or questions from the private participants, which may serve as valuable indicators of future pitfalls in the project. Ultimately, such market engagement leads a public agency to issue a more robust, thoughtful, and marketable procurement package.

Market sounding is another pre-procurement tool that public agencies utilize ahead of formal procurements. Similar, but separate from industry forums, market sounding allows the public agency to engage with developers and consultants (technical, financial, and legal). Like industry forums, market sounding is aimed at receiving high-level feedback from the market but allows the public agency to leverage its relationships with industry professionals to obtain direct feedback outside the formalities of an official industry day.

Requests for information (RFIs) may also be used to solicit information about the private sector capabilities and receive feedback on a proposed project. RFIs differ from market sounding discussed above in that they take the form of non-binding submissions from industry actors. Like other pre-procurement tools, feedback from RFIs can be useful in building the procurement package, and refining the project scope, specifications, and risk allocation.

As a final separate point, mega projects are high impact on the relevant communities. Therefore, early community engagement is a vital pre-procurement step that serves the project well in the long run. This is particularly true when the mega project involves a long-term operations component requiring the private developer to operate and maintain a transit system in the community for several decades into the future.

2. Project Contracting Methods

The contracting method refers to the approach taken in contracting for delivery of a project. Foundational to the difference in contracting methods is the allocation of risks associated with the project between the project sponsor and the private companies hired to design and construct (and in some cases, operate and maintain) the project. With transit mega projects, the scale of the project generally lends itself to more nuanced approaches to allocating risk, which is reflected in more sophisticated and differentiated contracting types.

There are several contracting methods that have long been standard in the transportation industry, with market trends in recent years demonstrating an expansion of such methods to

alternative modes, some of which include the private sector. Transportation entities may choose one or multiple contracting methods within a single mega project, depending on the needs, size, and scope of the project.

DBB involves the traditional construction project delivery method wherein a federal funding recipient commissions an architect or engineer to prepare drawings and specifications under a design services contract and separately contracts for construction by a contractor through sealed bidding.¹⁵³ DBB delivery methods ensure thoroughly planned projects and a more accurate estimate of final project costs, as well as simplified management of the project by the recipient, but the sequential process may take longer to complete, and the recipient assumes the design/construction integration risk. For example, delays in acquiring property for a small element of the mega project could interrupt notice to proceed for key construction contracts, resulting in postponement of project completion. DBB delivery is particularly suitable where constraints do not allow for flexibility in design. Such constraints may be due to construction in a brownfields environment, technical requirements that may not be waived, commitments to stakeholders, or a simplistic project that presents no opportunity to innovate and little risk of scope change. DBB is not without its limitations, however. Faulty design furnished by the public agency could result in change orders and increased costs for the public agency. The public agency is also well-advised to consider the implication of the *Spearin* doctrine discussed in Section IV.G. of this digest.

DB contracting involves the combined delivery of services that are often procured separately (e.g., design and construction) through a single contract, but without the inclusion of private capital investment. This method typically uses an RFQ/RFP (request for qualifications/request for proposals) procedure, which includes a concept or reference design prepared by the owner that may be up to 30% complete and provides the contractor with a design basis on which to progress the project, subject to other design parameters included in the contract documents. In DB contracting, more risk and management responsibilities are allocated to the DB contractor, sometimes resulting in better integration of design and construction. However, allocating such responsibility to the DB contractor can also be a liability if the DB contractor miscalculates cost estimates.¹⁵⁴ Since the public entity retains responsibility for financing the project, unforeseen costs could halt the project in its entirety until the required funding is secured. The DB delivery method can encourage cost savings and innovation through the DB contractor managing the design process and being naturally incentivized via typical contract risk allocation to promote constructability and fit for purpose solutions in design by working directly with the designer. Recognizing the potential of these innovative solu-

¹⁵³ FED. TRANSIT ADMIN., FTA REPORT NO. 0105, BEST PRACTICES PROCUREMENT & LESSONS LEARNED MANUAL 39 (2016), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/funding/procurement/8286/fta-best-practices-procurement-and-lessons-learned-manual-2016.pdf>.

¹⁵⁴ *Id.* at 40.

tions in DB contracting, owners have sometimes included an Alternative Technical Concept (ATC) mechanism in the RFP process. Such a mechanism allows the DB contractor to propose design solutions that may vary from the requirements of the contract through the proposal development period. Owners may assess such proposals, under no obligation to accept them, and negotiate their inclusion into the ultimate contract. The DB delivery method allows for this flexibility in a way that the DBB delivery method does not, given that the DB procurement documents do not include a 100% complete design solution.

Progressive Design-Build (PDB) is an application of DB delivery in which the owner selects a proposer based on qualifications alone. Thereafter, the owner and proposer work collaboratively to arrive at a negotiated design and contract price. A PDB project is typically divided into two phases: (1) pre-construction services; and (2) final design and construction. After selecting the proposer, the design-builder progresses the design in collaboration with the owner up to a point (usually 40 to 60%) at which the design-builder provides a proposal for a final design and construction services. If the parties agree on such proposal, then the design-builder proceeds to complete final design and construction in accordance with such negotiated terms. As apparent, PDB contains some inherent uncertainty since a subset of negotiations are deferred. Therefore, PDB agreements generally provide for owner “off-ramps” that permit the owner to terminate the PDB agreement, use the partially developed design, and consider alternative contracting for the project. Among other benefits, a PDB helps address scheduling constraints with a shorter procurement process and provides for greater owner and design-builder collaboration.

In a CM/GC or Construction Manager at Risk (CMR) procurement, an owner contracts with a construction manager to manage and construct a project within a guaranteed maximum price. The construction manager acts as a consultant to the owner in the design phases of the project. This allows for better integration through contractor involvement in the design phase, which can streamline and speed up the project, but also requires the recipient to have adequate oversight and leadership during both design and construction.¹⁵⁵ This delivery method is a good candidate for a mega project with multiple infrastructure needs. For example, the CM/GC approach can be used for two civil works contracts whereas a DB may be more appropriate for design and construction of a new maintenance facility.

DBOM models incorporate long-term operation and maintenance into the combined contract, resulting in all those functions becoming the responsibility of the contractor. This method may be a valuable consideration in projects where the public entity responsible for construction is invested in maximizing operational gains. In the DBOM model, the public entity retains responsibility for financing the project. While this can help integrate design and construction, and align designer/contractor incentives with operational considerations, it also often results in a much more involved procurement process.¹⁵⁶

Design-build-finance (DBF) and DBFOM are like DBOM delivery methods but add a private equity and debt financing component to the DB and DBOM models and are discussed below. DBFOM with a Pre-Development Agreement (PDA) is becoming more common in the United States. During a PDA process, the public agency makes a qualifications-based selection with one or more private entities to collaborate on the project design while simultaneously seeking environmental review and approval. The PDA model seeks to (i) mitigate uncertainty for both sides due to increased collaboration during the design process and (ii) help the developer price the project more accurately.

Recently, P3s have also become more popular, and USDOT implemented incentives to public entities using P3s as a delivery method, including financing tools such as TIFIA, Private Activity Bonds and RRIF loans.¹⁵⁷ Generally a P3 is a “long term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears the significant risk and management responsibility and remuneration is linked to performance.”¹⁵⁸ Breaking down this definition further, P3s typically involve a *long-term* relationship between the public and private parties, wherein the private party performs what would traditionally be a governmental function over an extended period (20 to 40 years). Given such a long-term relationship, P3 agreements contemplate payment mechanisms that link the private party’s compensation over time to its performance in operating and maintaining the asset/providing the service.

Though project finance structures vary across P3s, P3s are generally financed with a mix of debt and equity. From a private developer’s perspective, a P3 project must be presented with an identifiable source of revenue to repay its lenders and achieve a rate of return on its equity (without which the project is untenable). Therefore, P3s should always be seen as a financing mechanism versus a funding source. There are generally three primary P3 payment models: (1) project revenues; (2) availability payments; and (3) management fees. Project revenues include user fees, utility fees, parking revenue, rental fees, concession revenues, advertising or other business revenue, and lease revenue. The developer takes the revenue risk (or demand risk) in such circumstances. Availability payments are payments made by the public entity or project sponsor to the concessionaire or developer in exchange for the delivery of the project and performance of an ongoing service. These can be funded from various public sources (bond revenue, sales tax revenues, and/or federal grants and loans). Availability payments are typically made once a facility is in operation and depend on the developer achieving stated operational and reliability standards. These payments are sometimes paired with progress or milestone payments paid during construction that cover part (but not all) of

¹⁵⁵ *Id.* at 41-42.

¹⁵⁶ *Id.* at 42.

¹⁵⁷ See *Private-Public Partnerships*, BUILD AMERICA BUREAU, <https://www.transportation.gov/buildamerica/p3>, (last visited Sept. 16, 2022).

¹⁵⁸ WORLD BANK, PUBLIC-PRIVATE PARTNERSHIPS REFERENCE GUIDE 5 (3rd ed. 2017), <https://ppp.worldbank.org/public-private-partnership/sites/ppp.worldbank.org/files/documents/PPP%20Reference%20Guide%20Version%203.pdf>.

the construction costs. Management fees are paid on a fee-for-service, time-and-materials, fixed-fee, or any other traditional bases for payment purely for services rendered.

The size and scope of transit mega projects may necessitate or invite opportunities to tailor the procurement of specific aspects of the project to meet specific demands. For example, the East Link project in Washington State was a mega project designed to run from the International District Station, across Interstate 90 over a floating bridge across Mercer Island and the East Channel Bridge to South Bellevue. This \$4 billion project spanned 14.5 miles and included the construction of ten stations.¹⁵⁹ Sound Transit, the project sponsor, used a hybrid delivery model to secure the contractor early on during the design process to clarify the scope of the project, seek efficiencies, and refine scheduling and other various aspects of the project. Sound Transit relied on a CM/GC method because the project involved an innovative approach in construction, namely building light rail on a floating bridge. The technical aspects of this endeavor meant that the agency had to construct a line for light rail vehicles traveling upwards of 40 to 50 miles per hour from a stable set of tracks onto a floating pontoon bridge. Involving the contractor early in the process to obtain its ideas and input was key to ensuring this project's success. Moreover, Washington State's Department of Transportation had very strict guidelines to ensure, for example, that the bridge deck was not penetrated when the rail system was affixed onto the bridge. DB was used for the remainder of the project but the heavy civil work that had numerous technical challenges were best served through the CM/GC delivery method.

In other cases, the project structure may respond to the scale of the financial requirements for a transit mega project. NJ Transit used a DBFOM method to deliver its HBLR project. The HBLR involved construction of a light rail system through densely populated urban areas, freight lines, and less populated areas. The DBFOM structure allowed NJ Transit to make availability payments for operations and maintenance to the contractor for a minimum of 15 years. The contractor took no additional risk beyond what a normal construction contract and a normal operations and maintenance contract would include. The financing mechanism of the DBFOM structure was restructured when NJ Transit found alternative state funding to pay the contractor for construction at a much lower rate. NJ Transit also received a commitment from the state transportation trust fund to guarantee a certain amount of funding for the project in order to, according to one interviewer, ensure that contractors felt comfortable bidding on a project without the risk that it would get defunded.

The Eagle P3 project was launched in 2008 as one of the first successful P3 delivery structures for rail mega projects. The three Denver transit entities involved in that project had to contend with the private industry's desire that the project yield

significant transit efficiencies rather than social and equitable measures that the sponsor favored. Eagle P3 also launched during a recession, making financing the project more challenging. In the end, the P3 method accelerated the traditional procurement schedule and was an efficient way for one entity to bundle the project's needs. The transit agency only had to deal with one party in the event of litigation, and rail cars, operators and construction materials were procured together through one entity, saving time and money for the project.

3. Procurement Models

Once a project sponsor has settled on one or more contracting methods, it must then determine the appropriate method to procure the project. Project procurement is a foundational building block for the long-term success of a project. This is especially true for mega projects since a solid foundation—starting with procurement—will have a lasting impact on project health and set the tone for the relationship between the public and private sector. Therefore, a conversation about procurement in mega projects is not limited to the nuts-and-bolts of procurement. Rather, it requires an understanding of considerations differentiating mega projects and how such considerations may influence procurement in mega projects.

Mega projects are unique given the sheer quantum of dollar values along with the politically sensitive nature of many mega projects. For example, small increases in developer costs (as a percentage) tend to have a much greater impact on a developer's financial model. Given the quantum of mega projects, the private sector's cost-benefit analysis also changes as private developers and lenders assess risk differently. Instead of focusing on a typical risk *allocation* conversation, private developers are keen on addressing risk *reduction* in mega projects. Considering the quantum, technical qualifications, and other differentiating features of a mega project, it is unsurprising that the pool of bidders on the private side may also be limited for mega projects. Other limitations include the level of investment necessary from the private side, the long-term nature of certain mega projects, and other potential uses of the same capital. Accordingly, it is imperative to craft a procurement strategy that understands the market, sets realistic expectations, and allows the project the best chance of success.

Procurement strategies differ based on the project delivery method utilized and are informed by state and local laws. Some states have specific alternative delivery legislation which include procurement rules applicable to such projects.¹⁶⁰ Certain public agencies may also have their own procurement guidelines in place. For example, VDOT's 2017 Manual and Guidelines contains guidance for a project's procurement process, and the FTA has a *Best Practices Procurement & Lessons Learned Manual* for guidance.¹⁶¹ As a reminder with respect to the risk discus-

¹⁵⁹ *East Link Extension*, BUILD AMERICA BUREAU, <https://www.transportation.gov/buildamerica/projects/east-link-extension> (last visited June 27, 2022); *East Link Extension*, SOUND TRANSIT, <https://www.soundtransit.org/system-expansion/east-link-extension> (last visited June 27, 2022).

¹⁶⁰ See FLA. STAT. § 334.30 (2021) (outlining Florida's P3 legislation and applicable sections with respect to procurement).

¹⁶¹ VA. DEP'T OF TRANSP., PPTA IMPLEMENTATION 2017 MANUAL AND GUIDELINES (2017), http://www.p3virginia.org/wp-content/uploads/2017/12/2017-PPTA-Manual-and-Guidelines_FINAL.pdf;

sion above, moving from traditional (or segregated) DBB procurements to more integrated project delivery packages shifts project risk from the public to the private sector.¹⁶² Notwithstanding wide implementation of procurement strategies, the discussion below focuses on certain key elements of a procurement package.

The instructions to proposers (ITP) is the primary document that public agencies use to set the “rules of the road.”¹⁶³ The ITP provides a project overview and key background information and addresses other topics—most importantly, evaluation criteria and submission requirements, stipends, ATCs and confidentiality, diligence, proposer comments on the RFP, meetings, and conflict of interest rules. Poorly prepared ITPs, therefore, lead to confusion on part of the private parties which ultimately leads to unhelpful information submitted to the public agency. The balance of this section discusses the aforementioned topics and best practices with respect to the same.

Upon receipt of proposals, public agencies must have transparent criteria in evaluating proposals. Transparency in this step is vital to maintain the integrity of the procurement and credibility of the agency. The public agency must ask itself whether it will be able to defend its assessment of proposals during a debrief with an unsuccessful bidder. The development of weighting and scoring criteria can vary considerably based on the needs of the public agency and the project. FTA has provided additional guidance regarding the development of proposal evaluation criteria.¹⁶⁴ The ITP will address the various evaluation criteria and speak to scoring as well. Evaluation criteria are generally divided into two categories—pass/fail and substantive. The pass/fail evaluation criteria addresses “procedural” aspects of a submission, such as whether the proposal was submitted on time and in the correct format, and whether the proposal contains certain information requested in the ITP. The substantive evaluation delves into certain core elements of the proposal such as a proposer’s technical approach, financial approach, schedule and project delivery approach, quality management approach, and public engagement approach, among others. The public agency, in collaboration with its lawyers and consultants, will develop the various pass/fail and substantive evaluation criteria that

it deems most important for the project.¹⁶⁵ A customized approach in developing the substantive scoring criteria is important because it tends to reflect the agency’s priorities and signals the relative importance to the proposers. A technically complex project, for example, may weigh the technical approach heavily relative to other criteria, and proposers are well-advised to ensure a high-quality technical proposal. Allocating relative weight across technical, financial, and other elements is not a simple task, however, and is somewhat subjective based on the public agency evaluation team’s judgment. While development of weighing and scoring criteria can be somewhat subjective, the public agency must nevertheless include sufficient detail in this section of the ITP to define the characteristics it is looking for in the proposal to warrant high marks. ITPs will often provide a formula for final selection based on the scores proposers receive during their evaluation (for example, based on best-value determination). In mega projects it is typical for evaluations to be conducted by an evaluation team. The evaluation teams are often subdivided based on expertise—technical, commercial, and financial—to ensure relevant persons are reviewing.¹⁶⁶

To ensure the highest quality of proposals, the procurement documents should clearly set forth the organizational requirements for the proposal submissions. A recent ITP for a DB road-transit project organized its submission requirements as set forth in Table 1 (which has been modified and revised for brevity).

As mentioned above, private developers experience high up-front costs in developing a proposal for a mega project. A developer must consider not only these costs, but also alternative uses of its resources. The developer’s down-side risk can be high depending on the number of shortlisted teams in a two-step procurement. To mitigate some of the up-front costs incurred by developers, public agencies often provide a stipend during the procurement process to incentivize developers to remain engaged during the procurement and submit a responsive proposal. The ITP will typically state the stipend amount which is a one-time payment to each unsuccessful team, subject to terms and conditions set forth in the ITP or a separate stipend agreement. Although there is no standard industry formula dictating stipend amounts, stipend amounts range from 0.10 to 0.15% of the contract value for projects in excess of \$1 billion, and 0.25% of the contract value for projects above \$500 million.¹⁶⁷ The ITP or stipend agreement will also ensure that the developer’s proposal, including any intellectual property contained in such proposal, becomes the property of the public agency and may be

FED. TRANSIT ADMIN., BEST PRACTICES PROCUREMENT & LESSONS LEARNED MANUAL sec. 4.3 (2016), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/funding/procurement/8286/fta-best-practices-procurement-and-lessons-learned-manual-2016.pdf>.

¹⁶² See discussion of alternative project delivery *supra* Section IV.C.2.

¹⁶³ To clarify nomenclature, certain agencies utilize a short-form ITP document that only contains submission requirements while housing other elements of the procurement (such as evaluation criteria) in the RFP. For purposes of the discussion in this digest, the “ITP” refers to the main process document that a public agency issues during procurement and an “RFP” refers collectively to the ITP along with a form of contract.

¹⁶⁴ FED. TRANSIT ADMIN., BEST PRACTICES PROCUREMENT & LESSONS LEARNED MANUAL sec. 4.3 (2016), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/funding/procurement/8286/fta-best-practices-procurement-and-lessons-learned-manual-2016.pdf>.

¹⁶⁵ See FED. TRANSIT ADMIN., BEST PRACTICES PROCUREMENT MANUAL, app. A, app. B.1 (2001), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/BPPM_fulltext_1.pdf.

¹⁶⁶ See, e.g., VA. DEP’T OF TRANSP., PROGRESSIVE DESIGN-BUILD EVALUATION GUIDELINES (2022), https://www.virginiadot.org/business/resources/APD_Docs/APD_Office_Page/PDB_Evaluation_Guidelines_-_March_2022.pdf.

¹⁶⁷ AIAI, BEST PRACTICES FOR PUBLIC PRIVATE PARTNERSHIPS STIPENDS 3, <https://aiai-infra.info/wp-content/uploads/MK013-AIAI-Best-Practices-STIPENDS-2-20171.pdf>.

Table 1. Sample of Organized Submission Requirements for a DBR Road-Transit Project

Proposal Contents	Page Limit	ITP Cross References
Volume 1—Administrative Proposals	[]	[]
1. Proposal Letter	n/a	[]
2. Organizational and Authorizing Documents	n/a	[]
3. Letter(s) Approving Pre-Proposal Submissions	n/a	[]
4. Proposal Security	n/a	[]
5. Affidavits and certifications	n/a	[]
a. Buy America Certification	n/a	[]
b. Non-Collusion Affidavit	n/a	[]
Volume 2—Technical Proposal		[]
1. Executive Summary	[]	[]
2. Team Organization	n/a	[]
3. Technical Approach	[]	[]
4. Proposal Schedule and Project Delivery Approach	[]	[]
5. Quality Management Approach	[]	[]
6. Public Engagement Approach	[]	[]
7. ATCs	n/a	[]
Volume 3—Financial Proposal	[]	[]

used on the project at hand or future projects in consideration of the stipend amount.

ATCs are often used in mega projects to harness private sector solutions that the public sector may not have considered. An ATC permits the proposer to propose an equal or better solution than the requirements in the procurement documents without modifying the goals and purposes of the project. The ITP will set out the process for ATC consideration, including, at times, a “conceptual” ATC submission followed by a “detailed” ATC submission. If the public agency approves an ATC proposed by the selected proposer, the ITP will provide guidance on how such ATC will be reflected in the project agreement. Since ATCs reflect a proposer’s Innovation, ATCs are subject to the public agency’s confidentiality obligations. The LBJ Freeway in Dallas is an example of ATCs at work. The LBJ Freeway is an approximately \$2.6 billion project to rebuild and add express toll lanes. The winning proposer proposed using depressed express lanes rather than using tunnels for express lanes which resulted in significant cost savings.¹⁶⁸

One-on-one meetings are one of the most important ways in which the public and private sectors interact during a procurement. These meetings are important because they allow for greater transparency in understanding proposer concerns that the proposer may not wish to put in writing. Obtaining such real-time feedback not only helps the public agency make necessary adjustments to the procurement, but also enables the proposer to

understand the project and the agency objectives more closely. One-on-one meetings can take various forms—they can be scripted wherein the public agency only answers pre-submitted questions by the proposer, or more free-form guided by general agenda topics. From a public agency’s perspective, ensuring consistent messaging across proposer teams is of utmost importance so that no proposer team gains a competitive advantage.

During the procurement stage, proposers will also need access to diligence information already available or the ability to conduct their own diligence. Generally, public agencies provide certain diligence information—commonly referred to as “reference information”—as part of the procurement package. Such reference information can include environmental, geotechnical, and other test, investigations, and studies that the public agency has already performed. However, proposers may also need additional diligence in preparing their proposals and may utilize a supplemental due diligence process in addition to the reference information already provided. Such supplemental due diligence may include additional geotechnical borings, or a review of relevant third-party agreements not already provided as “reference information.” The supplemental due diligence processes will be different for each project and limit the types of diligence activities that a proposer may perform subject to the limitations in the ITP.

Several interviewees highlighted Buy America¹⁶⁹ provisions as particularly challenging for mega projects.¹⁷⁰ Globalized

¹⁶⁸ ROBERT W. POOLE JR., *RETHINKING AMERICA’S HIGHWAYS: A 21ST-CENTURY VISION FOR BETTER INFRASTRUCTURE* 105 (2018).

¹⁶⁹ 49 U.S.C. § 5323(j).

¹⁷⁰ The USDOT has issued a temporary waiver of Buy America requirements for awards that are obligated on or after May 14, 2022 and

manufacturing and supply chains as well as increasingly complicated systems based on high-tech and electronic parts makes it more difficult to determine important distinctions undergirding Buy America provisions such as components versus subcomponents. The sheer scale of transit mega projects makes Buy America compliance a significant challenge for project proponents. The sometimes seemingly inconsistent grant of waivers also makes it difficult to anticipate what elements of a project may constitute a problem under Buy America.¹⁷¹

Disadvantaged Business Enterprise (DBE) requirements¹⁷² are similarly difficult for a transit mega project. Even if DBE goals are small proportionally to the overall mega project cost, project proponents may have difficulty conducting industry outreach that locates qualified contractors and subcontractors. Project proponents therefore need to take a very proactive approach in identifying and assisting qualifying contractors and subcontractors to participate in DBE programs. For instance, one strategy is to conduct public events about the project and establish platforms for outreach to DBEs. These may take the form of in-person job fairs or online platforms that can provide more information to DBEs regarding contracting and subcontracting opportunities.

4. Delivery Entity

Traditionally, the transit agencies operating new or enhanced infrastructure are often the delivery partner. However, with mega projects, a transit agency may struggle to design and construct a mega project due to the high internal staffing and technical capacity required for the project. Particularly complex projects may also increase interface or coordination issues, for example where a municipality, airport authority, or other government agency may have a significant vested interest in the project requiring a heightened level of involvement.

In some cases, the responsibilities for project funding, delivery, and operation may be split among two or more authorities, either by choice or due to legal limitations on the roles and functions which various agencies may fill. For example, the Honolulu Rapid Transit Project is being designed and constructed by the Honolulu Authority Rapid Transit, with funding coming from—and ultimate operational responsibility resting with—the City and County of Honolulu.¹⁷³ Along similar

lines, Austin's Project Connect similarly involves collaborations among multiple entities intermixing funding, design, construction, and operational responsibilities.¹⁷⁴ Such arrangements raise critical governance, credit, and inter-agency agreement issues which need to be addressed in order to enable them to achieve successful project delivery. Governance issues may arise due to the need for project management, approvals, and oversight to be split and coordinated. Credit issues may arise where responsibility for project delivery and funding and/or financing are divided thereby requiring potential funders or lenders to have to factor in risks associated with this division of responsibility.

D. Regulatory Oversight, Review, and Permitting Generally

1. Federal Requirements Regulation and Permitting

Several federal laws normally applicable to transit mega projects require forms of public notice and participation. These include public participation regarding environmental and historic impact (e.g., NEPA, see Section IV.E. *infra*); public outreach to affected property owners and residents (e.g., URA, see Section IV.F. *infra*); and outreach to DBEs for contracting or subcontracting (see Section IV.C. *supra*).

On the federal side, several interviewees noted that conflicting needs and regulations between FRA and FTA posed challenges to their projects that, if remedied, would help streamline processes. Although they want to be innovative and embrace unique approaches to transportation projects, federal agencies many not always be nimble and must comply with statutory restrictions making them, at times, slow to react. As a result, it can be harder for a project sponsor to take risks in the project. In one project, FRA refused to engage with the project sponsor, and in another, FRA required additional agreements unforeseen by the project sponsor to protect FRA's federal interest in the area. Several interviewees raised concern over mega projects containing both FRA and FTA funding and/or jurisdiction and conflicting statutory requirements. In one project, for example, the project scope had to be sliced into distinct components with FTA dollars funding one portion and FRA grants funding another. While this approach worked well for the Portal North Bridge project in New Jersey, not all mega projects can easily undertake this approach and it was a concern identified by several transit agencies. Enforcing the One Federal Decision policy¹⁷⁵ may help resolve some of these issues so that action by one federal agency satisfies requirements by the other. Allowing federal highway funds to be used for a rail mega project sharing a highway corridor also creates more flexibility and opens additional funding opportunities.

before November 10, 2022. Unless extended, the waiver expires on November 10, 2022. U.S. DEP'T OF TRANSP., 4910-9X, TEMPORARY WAIVER OF BUY AMERICA REQUIREMENTS FOR CONSTRUCTION MATERIALS (2022), <https://www.transportation.gov/sites/dot.gov/files/2022-05/Temporary%20Waiver%20of%20Buy%20America%20Requirements%20for%20Construction%20Materials.pdf>.

¹⁷¹ A 2018 Government Accountability Office investigation into the grant of waivers across a number of agencies found "instances in which contracting officers applied a waiver or exception to contracts where the waiver did not apply." U.S. GOV'T ACCOUNTABILITY OFF., GAO-19-17, BUY AMERICA ACT: ACTIONS NEEDED TO IMPROVE EXCEPTION AND WAIVER REPORTING AND SELECTED AGENCY GUIDANCE 19 (Dec. 2018).

¹⁷² 49 C.F.R. Part 26.

¹⁷³ See Noelle Fujii-Oride, *How Rail Got to \$12.45 Billion and 11 Years Late*, HAWAII BUSINESS MAGAZINE, Nov. 9, 2021, <https://www.hawaiibusiness.com/hart-history-hawaii-rail-project-when-finished-budget/>.

¹⁷⁴ See PAUL LEWIS ET AL., AUSTIN'S PROJECT CONNECT: INDEPENDENT REVIEW OF GOVERNANCE AND LEADERSHIP (2022), <https://www.enotrans.org/wp-content/uploads/2022/04/Austins-Project-Connect-Eno-Center-for-Transportation.pdf>.

¹⁷⁵ Infrastructure Investment and Jobs Act of 2021, Pub. L. No. 117-58, § 11301, 135 Stat. 429, 525 (2021) (codified at 23 U.S.C. § 139).

In the Portal North Bridge project, NJ Transit regularly coordinated with all federal and state agencies funding the project, including FTA, FRA, and New Jersey's Economic Development Authority, to structure the project in a manner that complied with all relevant state and federal regulations. Where agency requirements conflicted, creative solutions acceptable to all entities were crucial for the project's success. One such creative solution involved resolving the inherent conflicts between FTA's Buy America and Amtrak's Buy American requirements.¹⁷⁶ Rather than include two separate Buy America/n provisions in the construction contract, FTA, FTA, and NJ Transit created separate workstreams for the project and specified to which workstream the federal funds would flow. FTA grant monies would fund the NJ Transit procured construction contract whereas FRA dollars would subsidize Amtrak's force account and insurance costs. By coordinating early and often with its federal partners, NJ Transit successfully structured its project to ensure compliance, minimize confusion, and prevent unnecessary delay.

Structuring project oversight to ensure close collaboration between project sponsors and other agencies is particularly important in the case of mega transit projects, where there are often several agencies and stakeholders involved. Facilitating collaboration is possible but takes commitment and continual attention from the parties involved. In Colorado, the Metro Denver Transportation Expansion Project (T-REX), which consisted of joint highway and transit improvements primarily along the north-south I-25 corridor in Denver, required close coordination between FHWA, FTA, and local project sponsors Colorado Department of Transportation (CDOT) and Denver RTD. To complete environmental review, federal and state officials met regularly to keep the project on time, using joint task force groups, which resulted in substantial time savings to the project. CDOT and Denver RTD also co-located staff physically with private consultants and the DB contractor in order to ensure a level of cooperation between entities not possible otherwise.¹⁷⁷ This was a success story, but unfortunately subsequent transit mega projects in Colorado do not appear to have been able to achieve the same level of collaboration.¹⁷⁸

2. State Requirements, Regulation, and Permitting

Project sponsors must also examine state laws where their project will be built and operated. State law can be more restrictive, necessitating creative solutions and early planning

to avoid delays. For example, the law in the state of one case study project prevented the project sponsor from indemnifying third parties, which would normally be how the project sponsor would have mitigated the level of risk for affected railroads sufficient to make them comfortable participating in the project. As a result, the parties were required to find other means of re-allocating the risk of the project. One solution that the parties came up with was for the project sponsor to agree with one jointly operating railroad that the project sponsor would require any of its contractors on the project to provide full indemnification to the railroad, while the project sponsor was also required to obtain insurance sufficient to cover its liability as a property owner. The parties also agreed in multiple agreements between various stakeholders to absorb risk and assure all parties that their interests were protected.¹⁷⁹

E. Environmental Issues and Compliance

1. National Environmental Policy Act

NEPA requires federal agencies to perform environmental reviews before they take major action.¹⁸⁰ Major federal actions include (i) approving or partly financing large projects, and (ii) acquiring real property interests, including but not limited to, rail corridor and related facilities using federal funds.¹⁸¹ It is important to determine early in the planning of a mega project the extent of environmental review required by the federal funding agency. In most cases, final design activities, property acquisition, purchase of construction materials or rolling stock, or project construction may not proceed until the completion of environmental review under NEPA.¹⁸² The thoroughness of NEPA review, and the documentation an agency must produce over the course of that review, depends on how significant the anticipated effects of the proposed agency action are:

- NEPA defines effects and impacts to mean “changes to the human environment from the proposed action or alternatives that are reasonably foreseeable.”¹⁸³ These include direct effects, indirect effects like “growth inducing effects . . . and related effects on air and water and other natural systems,” and “[c]umulative effects, which are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless [whom] undertakes such other actions.”¹⁸⁴ Cumulative effects “can result from indi-

¹⁷⁶ Amtrak is required to adhere to a domestic spending preference that is distinct from the Buy America requirements applicable to FTA. Either 49 U.S.C. § 24305 or 49 U.S.C. § 22905 may apply to Amtrak projects, depending on the source of funds. 49 U.S.C. § 22905(a) applies when Amtrak is operating under a grant or performing a contract for another grantee applying 49 U.S.C. § 22905(a). However, 49 U.S.C. § 24305(f) applies when Amtrak is spending from its own capital grant.

¹⁷⁷ See *Transportation Expansion (T-REX) Multi-Modal Transportation Project*, FED. HIGHWAY ADMIN., <https://web.archive.org/web/20061109222253/http://www.environment.fhwa.dot.gov/strmlng/casestudies/co.asp> (last visited June 27, 2022).

¹⁷⁸ See Eliza Carter, *The Highway Lowdown: Denver's I-70 Expansion Controversy, Explained*, THE COLO. INDEP., July 13, 2016, <https://www.coloradoindependent.com/2016/07/13/i-70-expansion-explained/>.

¹⁷⁹ See also discussion on CEQA *infra* p. 57IV.C.3.

¹⁸⁰ See 42 U.S.C. §§ 4321-4370.

¹⁸¹ See 40 C.F.R. § 1508.18 (2022); see also 41 C.F.R. § 102-76.40 (2022) (“NEPA applies to actions that may have an impact on the quality of the human environment, including leasing, acquiring, developing, managing, and disposing of real property.”). For a more detailed discussion of pre-NEPA property acquisition, see Section IV.F. of this digest.

¹⁸² 23 C.F.R. § 771.113 (2022).

¹⁸³ 40 C.F.R. § 1508.1(g) (2022).

¹⁸⁴ *Id.*

vidually minor but collectively significant actions taking place over a period of time.”¹⁸⁵

- For actions which “do not individually or cumulatively have a significant effect on the human environment,” an agency may invoke a categorical exclusion (CE).¹⁸⁶ If an action falls within a CE, an agency need not prepare an environmental assessment (EA) or environmental impact statement (EIS), discussed below.
- If an action is not categorically excluded, an agency usually begins the environmental review process by preparing an EA. An EA is a “concise public document” that provides “sufficient evidence and analysis” of projected environmental effects.¹⁸⁷ An EA is sometimes used to assess whether a fuller analysis—an EIS—is required.
- If an agency determines that no significant environmental impacts exist, it can prepare a finding of no significant impact (FONSI) concluding the NEPA process. An agency can also prepare a mitigated FONSI, which finds that an action will not have a significant impact because the agency commits to performing mitigation measures.¹⁸⁸
- If an action is likely to “significantly affect[] the quality of the human environment,” the agency must prepare an EIS.¹⁸⁹ An EIS is a “detailed statement” which must include a discussion of anticipated impacts, mitigation measures, and alternatives.¹⁹⁰ While an EA must also include “brief discussions of the need for the proposal, of alternatives . . . [and] of environmental impacts,” it is usually considerably shorter than an EIS.¹⁹¹
- Agencies are encouraged to conduct environmental review in stages—known as tiering—when doing so would “eliminate repetitive discussion of the same issues [and help] focus on the actual issues ripe for decision.”¹⁹² A Tier 1 report analyzes the project on a broad, systems scale. Subsequent tiers examine individual sections or site-specific proposals, “incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.”¹⁹³

Agencies, including the Department of Transportation, are obligated to enact regulations establishing their own procedures for environmental review under NEPA.¹⁹⁴ These must “not impose additional procedures or requirements beyond those set forth in the regulations” promulgated by the Council on Environmental Quality (CEQ), the main federal agency that admin-

isters NEPA, but instead clarify how NEPA review will occur in specific contexts.¹⁹⁵

Under USDOT’s specific NEPA regulations, the project sponsor must submit requisite information for federal review despite the agency leading the process. To expedite project review, environmental review under USDOT’s NEPA regulations must be conducted concurrently and in an integrated manner with other forms of review, including historic and other environmental laws.¹⁹⁶ USDOT requires that project sponsors “intending to apply for funds or request Administration action should notify the Administration at the time that a project concept is identified.”¹⁹⁷ FTA guidance states “an applicant must have circulated a draft EIS at the time it submits an application,” unless the project has been categorically excluded or received a FONSI.¹⁹⁸ A tiered EIS will suffice, and FTA guidance describes how project sponsors may tier their review. “The first tier EIS would focus on broad issues such as general location, mode choice, and areawide air quality and land use implications of the major alternatives. The second tier would address site-specific details on project impacts, costs, and mitigation measures.”¹⁹⁹

2. NEPA Review of Mega Projects

Mega projects, by their very nature, will almost always qualify for NEPA review—and they are especially vulnerable to NEPA-related issues. There are several reasons why.

First, mega projects generally require constructing or improving transportation infrastructure on a large scale, often resulting in significant disturbance of existing environmental conditions. Such disturbances include developing unimproved lands, threatening endangered species or their habitats, increasing pollution or carbon emissions, degrading local air or water quality, dredging wetlands, impairing viewsheds, and increasing noise and vibrations, among others. As a result, environmental reviews of mega projects must consider an exceptional amount of information. And they must increasingly consider less direct impacts on the environment, such as those related to climate change and environmental justice.²⁰⁰

Second, NEPA requires a thorough analysis of the environmental impacts of a mega project at every stage of its development. From the temporary impacts of staging areas used during project construction to the increased traffic impacts a successful project may yield, mega projects have large footprints. The environmental disruption caused by the preparation

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* § 1508.4.

¹⁸⁷ *Id.* § 1508.9.

¹⁸⁸ See generally COUNCIL ON ENV’T. QUALITY, APPROPRIATE USE OF MITIGATION AND MONITORING AND CLARIFYING THE APPROPRIATE USE OF MITIGATED FINDINGS OF NO SIGNIFICANT IMPACT 2, 7 (2011).

¹⁸⁹ 42 U.S.C. § 4322(c).

¹⁹⁰ See *id.*; see also 40 C.F.R. §§ 1508.11, 1502.10 (2022).

¹⁹¹ 40 C.F.R. § 1508.9(b) (2022).

¹⁹² *Id.* § 1501.11(a) (2022).

¹⁹³ *Id.* § 1508.1(ff) (2022).

¹⁹⁴ See *id.* § 1507.3.

¹⁹⁵ *Id.*

¹⁹⁶ *Id.* § 1502.24(a).

¹⁹⁷ 23 C.F.R. § 771.111(a)(3) (2022).

¹⁹⁸ U.S. DEP’T OF TRANSP., CREDIT PROGRAMS GUIDE 3-9 (2017), https://www.transportation.gov/buildamerica/sites/buildamerica.dot.gov/files/2019-08/Bureau%20Credit%20Programs%20Guide_March_2017.pdf.

¹⁹⁹ 23 C.F.R. § 771.111(g) (2022).

²⁰⁰ WHITE HOUSE ENV’T. JUSTICE ADVISORY COMM., CLIMATE & ECON. JUSTICE SCREENING TOOL & EXEC. ORDER 12898 REVISIONS 77-78 (2021), <https://www.epa.gov/sites/default/files/2021-05/documents/whiteh2.pdf>.

needed to begin such projects, for example, often surpasses the total disruption caused by more discrete projects.

Third, the complexity and scale of mega projects means there are ample alternatives to whatever action is eventually chosen. “Just as the heart of NEPA is the EIS, the heart of the EIS is the analysis of alternatives, wherein the agency must ‘rigorously explore and objectively evaluate’ all reasonable alternatives.”²⁰¹ Accordingly, mega projects provide litigants with more opportunities to argue the EIS did not consider crucial alternatives, thereby increasing the likelihood that a mega project may not survive a NEPA challenge.

For similar reasons to those mentioned above, mega projects are particularly suited to tiering. Tiered review allows project sponsors to evaluate far-reaching issues in a beginning phase before expending significant resources on site-specific analysis and engineering. The staggered timing of a tiered EIS allows project sponsors to integrate data and directives from concurrent land use and natural resource planning, helps ensure sufficient construction funding is available to prepare subsequent tiered reports, and protects entire projects against delay if review at a specific section of a project stalls. Tiering also makes analyzing the unavoidably large cumulative effects of mega projects more manageable. Project sponsors can sometimes defer addressing the cumulative impacts of a project to later tiered reports,²⁰² or in other circumstances, may avoid lengthy discussions of cumulative impacts in later studies by tiering back to the Tier 1 EIS.²⁰³ Still, project sponsors must be mindful of the risks of tiering, including a poorly defined scope creating bloat in the Tier 1 EIS or Tier 2 studies identifying new issues that require preparing a Tier 1 supplemental EIS (SEIS).²⁰⁴

Although the nature of mega projects lends themselves to NEPA challenges, there are strategies to avoid project disruptions from litigation. If the NEPA analysis is done correctly, a plaintiff will likely not be able to permanently halt an ongoing project by challenging it on NEPA grounds, despite it impacting a protected environmental or historical landmark. This is because an agency is required to consider alternatives and mitigation options when they are choosing their preferred course of

action.²⁰⁵ A federal court hearing a NEPA challenge will generally uphold an agency’s decision so long as they have engaged in reasoned decision making, have satisfied the procedural requirements of NEPA, and have properly considered public comments.²⁰⁶ Due to the procedural nature of NEPA, it would be rare that an environmental issue would arise after a project has begun that the agency was not aware of. However, if an agency fails to disclose or adequately analyze an environmental impact of the proposed project then they open themselves up to legal challenges—even if the challenges are ultimately unsuccessful in permanently halting the project, they can cause untimely and costly delays.

Examining the case *Beverly Hills Unified School District v. Federal Transit Administration* highlights the unique vulnerabilities of mega projects.²⁰⁷ In *Beverly Hills*, the plaintiffs challenged a \$1.2 billion subway extension project in Los Angeles, alleging the decision to tunnel under Beverly Hills High School violated NEPA. The case showcased the higher informational burden mega projects face; the United States District Court for the Central District of California reopened environmental review of a nine-mile subway expansion after finding FTA did not disclose that seismic data related to a single subway stop was incomplete.²⁰⁸ The case also demonstrated that mega projects provide multiple chokepoints capable of delaying development, as the plaintiffs argued FTA’s decision to build a staging area in a specific location violated NEPA.²⁰⁹ Finally, the case showed how expansively litigants can interpret NEPA’s obligation to consider reasonable alternatives in the context of mega projects, as the plaintiffs demanded that overlooked staging alternatives should amount to NEPA violations.²¹⁰ Although the plaintiffs staging arguments were ultimately unsuccessful, these arguments did result in years of delay and increased costs.

Indeed, two interview participants expressed the sentiment that the biggest challenge environmental review poses to transit mega projects is protracted delays due to litigation—not compliance with environmental regulations themselves. These interview participants believed that even though many environmental claims against transit projects were meritless, NEPA provides an

²⁰¹ *Oak Ridge Env’t. Peace All. v. Perry*, 412 F. Supp. 3d 786, 806 (quoting 40 C.F.R. § 1502.14).

²⁰² See *Salmon River Concerned Citizens v. Robertson*, 798 F. Supp. 1434, 1440 (E.D. Cal. 1992), *aff’d*, 32 F.3d 1346, 1360 (9th Cir. 1994) (upholding a Tier 1 EIS that did not address the cumulative impacts of the use of herbicides because such analysis was too hypothetical until forest managers selected a herbicide, meaning the analysis was better suited for subsequent tiered reports).

²⁰³ See *Ark. Wildlife Fed’n v. U.S. Army Corps of Eng’rs*, 431 F.3d 1096, 1101 (8th Cir. 2005) (upholding the cumulative impacts analysis in a subsequent report because it tiered back to a Tier 1 EIS that contained the relevant new information about new environmental impacts).

²⁰⁴ Tier 2 documents “must include a finding that the conditions and environmental effects described in the broader [Tier 1] document are still valid or address any exceptions.” 43 CFR § 46.140 (2022). A large discrepancy could result in the need to draft an SEIS.

²⁰⁵ See 42 U.S.C. § 4332a(2)(E); 40 C.F.R. § 1501.5 (2022); 40 C.F.R. § 1502.14(a) (2022).

²⁰⁶ See *Conservation Alliance of St. Lucie County v. U.S. Dep’t of Transp.*, 2015 WL 7351544 (S.D. Fla. Nov. 5, 2015) (upholding the agencies’ chosen bridge location despite it encroaching on public land because the agencies engaged in reasoned decision making when looking into different alternatives and imposed mitigation measures to reduce the impact the bridge would have on the environment).

²⁰⁷ See *Beverly Hills Unified Sch. Dist. v. Fed. Transit Admin.*, 2016 U.S. Dist. LEXIS 192573 (C.D. Cal. 2016).

²⁰⁸ *Beverly Hills Unified Sch. Dist. v. Fed. Transit Admin.*, No. CV 12-9861-GW (SSx), at 158-60 (C.D. Cal. Feb. 1, 2016) <https://la.streetsblog.org/wp-content/uploads/sites/2/2016/02/Westside-Tentative-Opinion-2016-February-1.pdf>.

²⁰⁹ *Beverly Hills Unified Sch. Dist. v. Fed. Transit Admin.*, No. CV-18-716-GW, at 1 (tentative ruling) <https://la.streetsblog.org/wp-content/uploads/sites/2/2020/05/BEVERLY-HILLS-TENTATIVE-MSJ-051820.pdf>.

²¹⁰ *Id.*

easy means for opponents of projects to slow down the process and increase costs, which in turn jeopardizes completion of the project. One interview participant noted that the threat of legal challenge has also resulted in ballooning environmental review documents that seek to address any potential legal challenge.

Lengthy litigation not only drives up compliance costs, but because facts-on-the-ground continue to change during a review's pendency, prolonged environmental review can increase the risk of noncompliance and additional litigation. The Maryland Transit Administration's difficulty maneuvering its Purple Line project through NEPA review demonstrates this risk.

In 1990, Maryland had begun developing plans to construct a mass public transit project—dubbed the Purple Line—to facilitate better connections between Maryland counties and Washington, DC's Metrorail. In 2003, Maryland applied for funding under the FTA's "New Starts" program to help defray construction costs, thereby triggering NEPA review. Between 2003 and 2008, FTA and Maryland jointly prepared a draft EIS that discussed eight project design alternatives. After satisfying NEPA's public notice and participation requirements, FTA and Maryland released a final EIS in August 2013 and a Record of Decision (ROD) approving the project in March 2014.

Despite the environmental review process taking a full decade, private plaintiffs sued FTA six months after the issuance of the ROD, alleging the agency violated NEPA by not (1) responding adequately to public comments about the Project, (2) clearly articulating the environmental differences between the alternatives, and (3) examining various aspects and impacts of the Preferred Alternative in sufficient detail.²¹¹ In October 2015, while construction was stalled and the lawsuit was pending, the plaintiffs wrote to FTA about purported new information on Metrorail's safety and ridership problems. The plaintiffs argued the new information required FTA to supplement its EIS, triggering entirely new rounds of litigation over new legal issues. The matter was not resolved until December 2017, when the D.C. Circuit overturned a district court decision requiring FTA to prepare the supplemental EIS.²¹² Had the appellate court reached the opposite conclusion, the NEPA process would have functionally reset.

And in California, a lower threshold for standing and the even more protective nature of the California Environmental Quality Act (CEQA) make challenging transit mega projects even easier.²¹³ For example, the California High-Speed Rail

Authority (CHSRA) has faced over a dozen lawsuits under CEQA. As part of its defense strategy, CHSRA sought to establish preemption of CEQA claims under the federal statutory regime regulating the economic components of the interstate rail network, the Interstate Commerce Commission Termination Act (ICCTA).²¹⁴ While CHSRA was successful in convincing the federal STB, which regulates interstate rail commerce, to issue a declaration that CEQA was preempted by the ICCTA,²¹⁵ California state courts have ruled that the state can enforce state environmental laws against a state-owned railroad without triggering preemption under the ICCTA.²¹⁶

3. Mitigating the NEPA Risks Mega Projects Face

The delayed projects in *Beverly Hills* and *Friends of the Capital Crescent Trail* do not mean all mega projects are doomed to decades-long delay and litigation. Instead, the cases reaffirm the importance of project sponsors proactively managing NEPA compliance and risks at the outset of their project. Project sponsors can do this by taking advantage of NEPA's evolving regulatory requirements and through effective project management.

a. Navigating Evolving Regulatory Requirements

Before beginning the NEPA process, project managers must be cognizant of the NEPA requirements bearing on their specific project. As the length and cost of NEPA reviews increase—in 2020, CEQ issued a report stating the average EIS completion time across all federal agencies was 4.5 years²¹⁷—lawmakers have attempted to modernize NEPA. The Obama, Trump, and Biden Administrations have each tried to reform the NEPA process, resulting in oscillating rules that increase regulatory uncertainty and litigation risk.²¹⁸

(Cal. 2014) (holding that "ordinances enacted by initiative, either directly or by election, are not subject to CEQA review"). This has allowed large projects like Los Angeles's new NFL stadium to go forward. See Kellen Zale, *How the NFL Ducked CEQA*, ENV'T LAW PROF. BLOG (Jan. 19, 2016) https://lawprofessors.typepad.com/environmental_law/2016/01/how-the-nfl-ducked-ceqa.html. The California legislature has excepted or streamlined large projects in other contexts (e.g., stadium construction) from CEQA review in the past, suggesting one (potentially controversial) means of limiting disruption of transit mega project delivery. *Id.*

²¹⁴ 49 U.S.C. §§ 10101-10102.

²¹⁵ *Cal. High-Speed Rail Auth.—Petition for Declaratory Order*, FD 35861 (STB served Dec. 12, 2014).

²¹⁶ *Town of Atherton v. Cal. High-Speed Rail Auth.*, 228 Cal. App. 4th 314 (2014); *Friends of the Eel River v. N. Coast R.R. Auth.*, 399 P.3d 37 (Cal. 2017), *cert. denied*, 138 S.Ct. 1696 (2018).

²¹⁷ COUNCIL ON ENV'T QUALITY, ENV'T IMPACT STATEMENT TIMELINES 2010-2018 1 (2020) https://ceq.doe.gov/docs/nepa-practice/CEQ_EIS_Timeline_Report_2020-6-12.pdf.

²¹⁸ For example, the Trump Administration issued a rule in 2020 extensively revising NEPA regulations. See 85 Fed. Reg. 43304 (July 16, 2020). The Biden Administration imposed a two-year moratorium on the implementation of the 2020 Rule on his first day in office. See Exec. Order No. 13,990, 86 Fed. Reg. 7307 (Jan. 25, 2021); see also Van Ness Feldman, *Biden Administration Walks Back Key Trump Era NEPA Regulation Changes*, XII Nat'l L.R. 117 (April 27, 2022). The Administration issued its own notice of proposed rulemaking to reverse the 2020 Rule in October 2021. See 86 Fed. Reg. 55757 (Oct. 7, 2021). In the interim, the 2020 Rule remains in effect.

²¹¹ See *Friends of the Capital Crescent Trail v. Fed. Transit Admin.*, 877 F.3d 1051 (D.C. Cir. 2017).

²¹² The D.C. Circuit held the existing EIS had already considered the ramifications of the new information at earlier stages in the NEPA process, noting "NEPA does not require agencies to needlessly repeat their environmental impact analyses every time [new] information comes to light" so long as that new information does not provide a "seriously different picture of the environmental landscape." *Friends of the Capital Crescent Trail*, 877 F.3d at 1060 (alterations and citations omitted).

²¹³ Notably, large projects have been able to circumvent CEQA review if they are proposed through the political initiative process. See *Tuolumne Jobs & Small Business Alliance v. Superior Court*, 59 Cal. 4th 1029, 1040

Many of these changes are relevant to mega projects. The Fixing America's Surface Transportation Act, or FAST Act, passed Congress in 2015.²¹⁹ The FAST Act included several sections pertaining to environmental permitting, now known as FAST-41.²²⁰ FAST-41, among other changes, streamlined various administrative processes for "covered projects," which include energy production, transmission, aviation, water resource, and many other large infrastructure projects.²²¹ Specifically, FAST-41 allows the project sponsor to start the review process by submitting a notice of initiation to relevant federal agencies, requires the agency leading the review to develop a coordinated project plan with a permitting timetable, and imposes deadlines for agency review and public participation.²²² Notably, most surface transportation projects were exempted from FAST-41 because they were already subject to similar streamlining procedures under other laws.²²³

President Trump's Executive Order (EO) 13807, issued in 2018, set forth a new framework—known as "One Federal Decision"—for federal agency cooperation on environmental review and permitting for major infrastructure projects.²²⁴ The EO required federal agencies to use a single process for NEPA review, including preparation of a single EIS and ROD. This EO was revoked by the Biden Administration,²²⁵ but the IIJA has re-animated some of its key reforms.

The IIJA included amendments further streamlining NEPA review. The IIJA made the following changes, among many others, to the environmental review process:

- Reinstates an amended version of the One Federal Decision review included in EO 13807. Among other requirements, the IIJA codifies EO 13807's goals of limiting environmental review to two years and directive that agencies prepare a single, joint EIS with a presumptive 200-page limit on the alternatives analysis sections of EISs.²²⁶
- Requires USDOT to develop categorical exclusions to accelerate project delivery, in conjunction with the other agencies involved in the environmental review process.²²⁷
- Requires all authorization decisions necessary for construction of a major project under 23 U.S.C. § 139, or a covered project under FAST-41, to be completed within 90 days after issuance of the ROD—and shortens the time a lead

agency has to invite other agencies to participate in NEPA review.²²⁸

- Reauthorizes FAST-41 by removing its sunset provision and expanding the number of projects able to benefit from FAST-41's permitting dashboard requirements.²²⁹

These regulatory changes could dramatically speed up NEPA review of mega projects. However, they may also create additional burdens on project sponsors and federal agencies to meet tight deadlines and navigate uncertain regulatory requirements. It is incumbent on project sponsors to understand which regulations bear on their projects and prepare to comply with these new rules.

b. Project Management

Given the complexity surrounding NEPA review of mega projects, it is important that project sponsors begin the NEPA process as early as possible. FTA advises project proponents to "talk early and often" with FTA grant managers about the NEPA process,²³⁰ as it will not obligate funds for a project until it has received a final agency decision—i.e., a ROD or FONSI.²³¹

Closely coordinating with the leading federal agency may help minimize the risk of NEPA noncompliance and litigation,²³² but project sponsors must also manage their project in ways that minimize NEPA risks. This includes properly scoping the project. Establishing the scope of the project and its progression or phasing is a critical early step that may determine how environmental review may proceed. A project satisfies this requirement where it (1) connects logical termini and is of sufficient length to address environmental matters on a broad scope; (2) has independent utility or significance, i.e., is usable and is a reasonable expenditure even if no additional transportation improvements in the area are made; and (3) does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.²³³ This does not mean that *construction* of a project may not proceed in phases, but that the environmental review of those phases must be conducted together unless the above criteria are met.²³⁴ Segmentation of a project into smaller projects in order to avoid some or all of the

²¹⁹ Fixing America's Surface Transportation Act, Pub. L. No. 114-94, 129 Stat. 1312 (2015).

²²⁰ FAST Act, Federal Permitting Improvement, 42 U.S.C. §§ 4370m-4370m-13.

²²¹ In general, a covered project is an infrastructure project that requires NEPA review, has a total estimated cost over \$200 million, and does not qualify for abbreviated authorization or environmental review processes under any applicable law. 42 U.S.C. § 4370m(6).

²²² 42 U.S.C. § 4370m-2.

²²³ See generally 23 U.S.C. § 139.

²²⁴ Exec. Order No. 13,807, 82 Fed. Reg. 40463 (Aug. 24, 2017).

²²⁵ Exec. Order No. 13,990 § 7(b), 86 Fed. Reg. 7037 (Sep. 25, 2021).

²²⁶ See Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, § 11301, 135 Stat. 429, 525-30 (2021) (codified at 23 U.S.C. § 139).

²²⁷ See *id.*

²²⁸ Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, § 70801, 135 Stat. 429, 1287-94 (2021).

²²⁹ See *id.*

²³⁰ MARK A. ASSAM & ELIZABETH BREISETH, INTRODUCTION TO NEPA COMPLIANCE D-13 (Fed. Transit Admin., 2017).

²³¹ 23 U.S.C. § 602(c)(2) (regarding TIFIA funding).

²³² The project sponsor must determine which federal agency will "lead" the NEPA process, and which will be "cooperating" agencies. Under NEPA there is only one "lead" agency, but other federal agencies with jurisdiction over the project may be involved as "cooperating" agencies. For projects under USDOT jurisdiction, the project sponsor may request that the Secretary of Transportation designate the lead federal agency. 23 C.F.R. § 771.111(c) (2022).

²³³ 23 C.F.R. § 771.111(f) (2022).

²³⁴ See OFFICE OF PLANNING AND THE ENV'T, SOP NO. 16, REVIEW AND FILE MGMT. OF CATEG. EXCLUSIONS 1 (2019), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/environmental-programs/56021/16-categorical-exclusions_2.pdf.

project from being considered a major action is prohibited.²³⁵ However, a project proponent may seek to approve only a portion of a project so long as the NEPA documentation “adequately analyze[s] and disclose[s] the impacts of the entire [p]roject—including those portions that have yet to be approved.”²³⁶

4. Risks from Environmental Contamination

Another environmental consideration, apart from NEPA, relates to the environmental condition of project property and the allocation of liability for contamination.²³⁷ The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) assigns liability to potentially responsible parties (PRPs) that owned or operated a site at the time of a hazardous release, or that transported or arranged transport of hazardous substances from which there was a release.²³⁸ PRPs may be held strictly jointly and severally liable for cleanup costs under CERCLA for releases or threatened releases of hazardous substances.²³⁹

CERCLA contains a waiver of federal sovereign immunity,²⁴⁰ which means that “when the government engages in activities that *would* make a private party liable *if* the private party engaged in those types of activities, then the government is also liable.”²⁴¹ Courts have interpreted this waiver narrowly in the remediation context, holding that governmental cleanup activities are immune from liability under CERCLA, and that such cleanup activities by themselves do not render a governmental entity a PRP.²⁴²

²³⁵ 40 C.F.R. § 1502.4(a) (2022); *see also* Webster v. U.S. Dep’t of Agric., 685 F.3d 411, 426 (4th Cir. 2012).

²³⁶ *Defenders of Wildlife v. North Carolina Dep’t of Transp.*, 762 F.3d 374, 397 (4th Cir. 2014); *see also* *Defenders of Wildlife v. U.S. Dep’t of the Navy*, 733 F.3d 1106, 1116 (11th Cir. 2013). “Tiering” of environmental review, is where an initial EIS is prepared to “focus on broad issues such as general location, mode choice, and areawide air quality and land use implications of the major alternatives” 23 C.F.R. 771.111(g) (2022); 40 C.F.R. § 1501.11 (2022). The second tier of review “would address site-specific details on the project impacts, costs, and mitigation measures” and may incorporate by reference the issue discussed in the earlier document. 23 C.F.R. § 771.11(g) (2022).

²³⁷ This report highlights CERCLA because it can impose substantial and costly liability on project sponsors. Still, it is prudent to note that there are a number of other environmental laws that must also be considered when developing mega projects, most notably historic review under Section 106 of the National Historic Preservation Act. 36 C.F.R. § 800 (2022). Projects that may affect park and recreational lands, wildlife and waterfowl refuges, and historic sites are also subject to specific review requirements under Section 4(f) of the Department of Transportation Act. 23 C.F.R. § 774 (2022). These processes can and should be incorporated into the NEPA environmental review, but it is important that their individual requirements be met.

²³⁸ 42 U.S.C. § 9607(a).

²³⁹ *Id.*

²⁴⁰ *See* 42 U.S.C.S. § 9620(a)(1).

²⁴¹ *FMC Corp. v. United States Dep’t of Commerce*, 29 F.3d 833, 840 (3rd Cir. 1994) (emphasis in original).

²⁴² *See, e.g., id.* at 841.

Courts have extended these same principles to state and local governments.²⁴³ Moreover, CERCLA—and the subsequent Brownfields Utilization, Investment, and Local Development Act of 2018 (BUILD Act)—include additional protections for local governments. Most importantly, CERCLA § 101(20)(D) exempts state and local governments from owner or operator liability if they acquire ownership or control of a contaminated property “via a function that can only be effectively performed by governments using a mechanism only available to governments”—including property acquired through eminent domain.²⁴⁴ This could protect public entities seeking to develop mega projects on certain kinds of properties. However, these provisions would not protect local governments that caused contamination during mega project construction or operation.²⁴⁵ Nor would they protect local governments that acquired title through purchase, inheritance, bequest, gift, or donation.²⁴⁶ Finally, local and state governments enjoy the same BUILD Act protections private parties enjoy, including third-party defense, innocent landowner, bona fide prospective purchaser, and contiguous property owner defenses.

It is also important to note that liability for environmental contamination—unlike noncompliance with NEPA—can be dealt with through contract.²⁴⁷ Indemnification clauses can help protect parties from environmental contamination risks. Of course, indemnifying or transferring unknown risks is much more difficult than indemnifying or transferring known risks. Proper due diligence and consideration of how to tailor management of unknown risks is therefore critically important to mega project procurement. Railroads, for example, will often seek to carefully protect themselves from liability arising from acquisition of railroad property, or even from due diligence that might reveal hazardous conditions. However, the latter arrangement may not be possible under state open records acts.

Public agencies can also negotiate allocation of costs for CERCLA liability. In one project, for example, a project sponsor ameliorated the risk of soil contamination by identifying the contamination early in the project through geotechnical borings and negotiated with the contractor to share the risks of remediation. The agency assumed a portion of the cost of remediation related to project construction and the contractor assumed the remaining risk. Undertaking extensive due diligence to identify contamination and conducting diligent preliminary engineering work before the project began saved the agency time and money.

²⁴³ *See, e.g., Stiloe v. Almy Bros.*, 782 F. Supp. 731, 736 (N.D.N.Y. 1992) (“[W]hen a state is acting solely in its statutory capacity to clean up a hazardous waste site, this activity does not raise its status to that of an operator within the meaning of CERCLA section 107.”).

²⁴⁴ CYNTHIA L. MACKEY, SUPERFUND LIABILITY PROTECTIONS FOR LOCAL GOVERNMENT ACQUISITIONS AFTER THE BROWNFIELDS UTILIZATION, INVESTMENT, AND LOCAL DEVELOPMENT ACT OF 2018 7, 9 (EPA, June 15, 2020).

²⁴⁵ *Id.* at 5.

²⁴⁶ *Id.* at 8.

²⁴⁷ The government cannot offload NEPA responsibilities to a developer or contractor, so it remains a natural risk and responsibility for the public side to manage.

Relatedly, remediation costs (and risks) are topics that can be addressed through project procurement and careful scoping, design, and project due diligence. Again, the unique challenges of mega projects must be considered—such as, whether to price and include such actions in a project bid versus dealing with them via an allowance, change, or claim. For example, conducting subsurface investigations and rigorous preliminary engineering work early on in a project is more disruptive and more costly in highly developed areas, making it even more critical for sponsors of mega projects to be clear with contracting parties regarding the level and allocation of risks related to preexisting conditions.

This was a lesson that one project sponsor learned the hard way during an early phase of its light rail expansion involving underground construction under a densely developed portion of a major metropolitan area. To avoid undue neighborhood impacts and for budgetary considerations, the project sponsor relied on the city's as-built utility drawings rather than conducting extensive digging and drilling to investigate underground conditions. When project contractors encountered unexpected contamination, the cleanup delayed project delivery, and disputes related to allocation of cleanup and delay costs required the parties to go to arbitration. Fortunately, the project was still completed under budget, in part because the project sponsor had the foresight to include a sufficient financial cushion in the budget when it was approved. Reflecting on the experience, one interviewee involved in the project noted the difficulty in weighing the disruption to neighborhoods and cost of conducting more extensive subsurface investigations with the risks of unforeseen contamination. Ultimately, they concluded that an important lesson learned was to conduct the early investigation if possible, and to ensure clarity regarding the level of risk accepted by the contracting parties regarding unexpected environmental conditions. Another interviewee stated that even for DBOMs “the more borings, the better.”

F. Property Acquisition/Relocation

Transit mega projects generally require acquisition of property rights to assemble rights-of-way, station and platform areas, parking lots, staging areas, and possible access ways to and from the construction zones and transit facilities. Many public agencies can acquire the property rights through the power of eminent domain—either through exercising their own authority or by partnering with another public agency that has eminent domain authority. However, in some cases the need for alignments to run fixed guideway service requires acquisition of rights-of-way from a freight railroad where eminent domain authority may not be exercised. A further discussion of these issues is set forth below.²⁴⁸

²⁴⁸ For a more in-depth discussion on issues that emerge when public entities acquire a real property interest in rail lines, see Charles A. Spitulnik et al., *NCRRP LRD 3: Issues That Emerge When Public Entities Acquire a Real Property Interest in Rail Lines*, (Feb. 2016), https://www.kaplankirsch.com/portalresource/LRD_3_Issues_That_Emerge_Public_Entities_Real_Property_Interest_in_Rail_Lines.pdf.

Project staff will have to conduct adequate planning to determine the property rights that are needed for the construction, operation, and maintenance of a mega project. Handling the acquisition of possibly thousands of project properties must be completed in accordance with federal law;²⁴⁹ creating procedures to manage this work is essential to complete them in a timely manner and is a potential cost savings to the project budget. FTA requirements for acquisition of project property explain the requirements for a Real Estate Acquisition Management Plan (RAMP).²⁵⁰ A RAMP is required for all major capital projects as part of the Project Management Plan (PMP).²⁵¹

While not all aspects of a RAMP or other property acquisition plans are legal issues, there are a multitude of concerns that need to be addressed such as: defining the types of property interests needed for the project; review of title information; appraiser and review appraiser procurement;²⁵² and appraisal and review methodology to be consistent with federal,²⁵³ state, and local requirements. The RAMP will also describe state and local eminent domain law and process; establishment of offer of just compensation; negotiation methodology and authorization to settle with property owners; methods for handling relocation of affected property rights owners in accordance with the URA;²⁵⁴ and how interface between condemnation and negotiations will be handled. Lawyers will also become involved with preparation of a standard purchase and sale agreement for land/easements/licenses; procurement of title services and review of title searches; handling closings of property transfers (including closings, clearing title exceptions, methods to deposit funds to escrow for closing, what closing documents will be necessary, what form of deeds, easements or other property interests will be used, how will property taxes be paid or exempted); and procedures for cost recovery for preexisting contamination on the properties affected by the project.

Generally, property acquisition cannot commence until the NEPA process has been completed and the project has received a Categorical Exclusion (CE), FONSI, or ROD (see discussion in Section IV.E. *supra*).²⁵⁵ FTA has developed its own CE that

²⁴⁹ The FTA grantee requirements to acquire, manage, and use real property are governed by the Uniform Relocation Assistance and Real Property Policies Act of 1970, as amended, 42 U.S.C. §§ 4601-4655 (1970) and 49 CFR pt. 24 (2022) (the implementing regulation). FTA guidance for real property acquisition is contained in FTA Circular 5010.1E, Award Management Requirements (July 16, 2018); 49 CFR pt. 24 (2022); U.S. DEP'T OF TRANSP., FED. TRANSIT ADMIN., MASTER AGREEMENT sec. 19 (2020).

²⁵⁰ FTA, Circular 5010.1E, Award Management Requirements ch. IV, sec. 2(h) (July 16, 2018).

²⁵¹ 49 C.F.R. § 633.25 (2022); 49 C.F.R. pt. 24 (2022).

²⁵² FTA, Circular 4220.1F, Third Party Contracting Guidance (March 18, 2013).

²⁵³ 49 C.F.R. pt. 24 (2022); FTA, Circular 5010.1E, Award Management Requirements (March 21, 2017).

²⁵⁴ 42 U.S.C. §§ 4601-4655. Note that the Federal Highway Administration has issued government-wide implementing regulations for the Uniform Act at 49 C.F.R. pt. 24 (2022).

²⁵⁵ See 40 C.F.R. § 1507.3 (2022).

applies to FTA actions.²⁵⁶ Grant applicants must provide the FTA with sufficient information for the FTA to make a CE determination. A CE must capture the entire proposed action, which includes all connected actions.²⁵⁷

Additional actions may meet the criteria for a CE only after FTA approval. Examples of such actions include “[a]cquisition of land for hardship or protective purposes.”²⁵⁸

Hardship acquisition is early acquisition of property by the applicant at the property owner’s request to alleviate particular hardship to the owner, in contrast to others, because of an inability to sell his property. This is justified when the property owner can document on the basis of health, safety or financial reasons that remaining in the property poses an undue hardship compared to others. Protective acquisition is done to prevent imminent development of a parcel that may be needed for a proposed transportation corridor or site. Documentation must clearly demonstrate that development of the land would preclude future transportation use and that such development is imminent. Advance acquisition is not permitted for the sole purpose of reducing the cost of property for a proposed project.²⁵⁹

Certain property acquisition activities are allowed during the NEPA process such as: obtaining rights of entry for surveying or other engineering investigations, subsurface investigations, performing title searches, preparation of relocation plans including interviews with displaced persons or entities to whom the exact project status has been explained, preliminary appraisals, site assessments, and utility relocations. However, unless the FTA has allowed a protective or hardship acquisition, the agency cannot make an actual offer to acquire the property or relocate an affected property owner or tenant until the NEPA process is finalized.²⁶⁰

Acquisitions to preserve or create a right-of-way that will be used in a mega project, may be permitted to proceed under abbreviated review procedures prior to the conclusion of the project’s broader NEPA review. The early acquisition of rights-of-way for future transit use is governed by 49 U.S.C. § 5323(q).²⁶¹

²⁵⁶ 23 C.F.R. 771.118 (2022); Fed. Transit Admin., Guidance for Implementation of FTA’s Categorical Exclusions (June 2016), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-programs/environmental-programs/25256/section-118-guidance-june-2016.pdf>.

²⁵⁷ See Final Guidance on Establishing, Applying, and Revising Categorical Exclusions under NEPA, 75 Fed. Reg. 75,628, 75,632 (Dec. 6, 2010).

²⁵⁸ 23 C.F.R. § 771.118(d)(3) (2022).

²⁵⁹ 23 C.F.R. §§ 771.118(d)(3)(i)(ii) (2022).

²⁶⁰ FED. TRANSIT ADMIN., FAQ: FTA REAL PROPERTY ACQUISITION AND NEPA (2021), https://www.transit.dot.gov/sites/fta.dot.gov/files/2021-01/Real-Estate-and-NEPA-FAQs_0.pdf.

²⁶¹ “(q) Corridor Preservation.—

(1) In general.—

The Secretary may assist a recipient in acquiring right-of-way before the completion of the environmental reviews for any project that may use the right-of-way if the acquisition is otherwise permitted under Federal law.

(2) Environmental reviews.—

Right-of-way acquired under this subsection may not be developed in anticipation of the project until all required environmental reviews for the project have been completed.” 49 U.S.C. § 5323(q).

The FTA has issued a guidance document to “address the conditions for corridor preservation under 49 U.S.C. § 5323(q), including FTA’s definition of ROW for that purpose.”²⁶² The guidance addresses FTA’s “expectations and requirements for the acquisition of [rights-of-way] prior to completion of the NEPA environmental review process for the project that will occupy the ROW.”²⁶³

A well-planned acquisition strategy will be cognizant of these legal limitations but will take advantage of the opportunity to move ahead on certain aspects of property acquisition. For example, during the NEPA process, one project moved forward with activities to acquire the thousands of property interests needed for the construction and operation of its light rail system, including: preparation of surveys, searching title, environmental sampling and evaluating proposed remedial activities, hiring appraisers, preparing appraisals in accordance with federal requirements, and preparing draft offer letters to owners of properties. According to one interviewee, they also began discussions with the affected freight railroad about acquiring portions of the proposed right-of-way for the light rail alignment. Once the NEPA process was completed, the agency was able to move forward expeditiously to obtain the property it needed to construct the project. Once the NEPA process is completed, a grantee may move forward with property acquisition activities in accordance with federal and state laws.²⁶⁴

The DOT’s regulations implementing the URA are found at 49 C.F.R. Part 24. The FTA issued further guidance in stating:

The objective of the [URA] is to ensure equitable treatment of property owners of real property to be acquired for Federal and federally assisted projects; that people displaced by a federally supported project be treated fairly, consistently, and equitably; and that acquiring agencies implement the regulations in a manner that is efficient and cost effective.²⁶⁵

“Real property” for purposes of the URA is defined as “[l]and, including affixed land improvements, structures, and appurtenances. It does not include movable machinery and equipment.”²⁶⁶ The acquisition of easements and rights-of-way are treated the same as any other real estate acquisition.²⁶⁷

Pursuant to the URA, the FTA must review and concur in appraisals and review appraisals for acquisitions over \$500,000 or in-kind contributions of any value before federal funds are expended (or the value is used as local match).²⁶⁸ Determining just compensation is established on the basis of a recent inde-

²⁶² FED. TRANSIT ADMIN., FINAL GUIDANCE ON THE APPLICATION OF 49 U.S.C. § 5323(q) TO CORRIDOR PRESERVATION FOR A TRANSIT PROJECT 3 (2014), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/Final_Corr_Pres_Guidance_FINAL_10-27-2014.pdf.

²⁶³ *Id.*

²⁶⁴ See 40 C.F.R. § 1506.1 (2022).

²⁶⁵ FTA, Circular 5010.1E, Award Management Requirements sec. IV.2.a., p. IV-1 (March 21, 2017).

²⁶⁶ *Id.* at p. I-8.

²⁶⁷ *Rights of Way: FAQ*, FED. TRANSIT ADMIN. (Oct. 23, 2015), <https://www.transit.dot.gov/funding/procurement/third-party-procurement/rights-way>.

²⁶⁸ FTA, Circular 5010.1E, at sec. IV.2.a., p. IV-1.

pendently prepared appraisal conducted by a certified/licensed appraiser that estimates a fair market value. In limited circumstances (e.g., donation of property) a full appraisal may not be required, but some reasonable basis for determination of fair market value is still required. Appraisals must be independently reviewed in accordance with 49 C.F.R. § 24.104. If the review appraiser is unable to recommend/approve an appraisal, they may present evidence in support of a recommended/approved value. Grantees with a qualified and fully staffed real estate department conducting a major capital project may request an alternative appraisal and FTA review process, including higher dollar thresholds for FTA concurrence for property acquisition.²⁶⁹

After just compensation is determined and FTA concurrence obtained (if required), an offer can be made to the owner. The owner of the real property is not required to surrender possession of real property without payment of the agreed purchase price or deposit of the amount established by a condemnation court.²⁷⁰ Uneconomic remnants created by the purchase must also be offered to be acquired.²⁷¹

Any settlement, whether negotiated or settled through litigation, in excess of the grantee's approved just compensation must be addressed as an administrative settlement requiring FTA concurrence based on adequate documentation of reasonable efforts to seek acquisition at the appraised price.²⁷²

FTA regulations require that displaced persons must be provided early written notice and explanation of acquisition and relocation, and may not be moved without at least 90-days advance notice. For residential displacements, relocation notice must include the availability of at least one comparable replacement dwelling. Rental assistance and replacement housing payments may be made available, and certain business and residential moving expenses are reimbursable. State and local requirements exceeding federal limits are not reimbursable by FTA.²⁷³

The URA establishes the requirement that a grantee must use federal procedures to purchase land with local funds if it intends to use the land value as in-kind match.²⁷⁴ In-kind contributions are permitted as part of local match so long as property donated is needed for the project and the value is independently appraised.

When a condemning authority takes property which is already devoted to a public use, the condemning authority must furnish a substitute facility. For instance, if a state condemned a county courthouse property for a new light rail alignment, it would have to provide the county with another courthouse facility. It may either build a substitute or be required to pay enough money for one to be built. Costs necessary to replace a publicly owned facility with a similar necessary facility may

be covered but should be identified and considered early in the process (e.g., during the EA phase).²⁷⁵

Under some state laws, a condemning authority may also be authorized to acquire property for a private party in lieu of compensation through a process called substitute condemnation. For example, if a railroad line must be relocated for the new project, the condemning authority may acquire adjacent property to relocate the existing right-of-way.²⁷⁶

In some cases, the authority of a public agency to acquire property may require legislation. This was the case with one case study project that sought to construct a part of its mega project over National Park Service property. Because of the federal interest involved, effecting this transaction took an act of Congress.

Acquisition of property owned by a freight railroad can be particularly difficult because of the unique history and law regarding acquisition of railroad rights-of-way.²⁷⁷ "With respect to rail corridors and facilities, state and local governments cannot exercise eminent domain powers if taking the property interest will interfere with the railroad's ability to fulfill its common carrier obligation."²⁷⁸ One case study project encountered difficulty in determining the ownership interest of a railroad that agreed to convey a portion of its right-of-way for the project. Compounding these issues of identifying ownership, the jurisdiction in which the property was located asserted that the railroad had not properly recorded all the deeds from prior railroad mergers. Finally, the question arose as to whether the project proponent, a political subdivision of one state, could own property outside of its jurisdiction. This last question was answered in the affirmative.

The complexity of property needs for transit mega projects may be ameliorated with an understanding of federal, state, and local laws as well as a thorough plan for the acquisition of the properties. A structured process will establish the appropriate method and timing for acquiring each unique property that will be assembled to create the framework for the project's construction and eventual completion and commissioning of a transit operation.

²⁷⁵ See FTA, Circular 5010.1E, sec. IV.2.g.(3), p. IV-9 to IV-10.

²⁷⁶ Stanley H. Williams, *Substitute Condemnation*, 54 CAL. L. REV. 1097 (1966); see e.g., WIS. STAT. § 84.09 (2021) (Wisconsin statute enabling substitute condemnation); see e.g., State Dep't. of Transp., WI 61 Op. Att'y Gen. 36 (1972) (Wisconsin Attorney General opinion finding that the Wisconsin Department of Transportation has power to condemn lands of one property owner to provide a public access road to another property owner who would otherwise be landlocked); see *Brown v. United States*, 263 U.S. 78 (1923) (holding that the federal government has constitutional power to condemn private property near other condemned private property to effectuate a public purpose).

²⁷⁷ Charles A. Spitulnik et al., *NCRP LRD 3: Issues That Emerge When Public Entities Acquire a Real Property Interest in Rail Lines*, (Feb. 2016), https://www.kaplankirsch.com/portalresource/LRD_3_Issues_That_Emerge_Public_Entities_Real_Property_Interest_in_Rail_Lines.pdf.

²⁷⁸ *Id.*

²⁶⁹ See FTA, Circular 5010.1E, at sec. IV.2.g., p. IV-8 to IV-12.

²⁷⁰ See 49 C.F.R. 24.102(j) (2022).

²⁷¹ See 49 C.F.R. 24.106 (2022).

²⁷² See 49 C.F.R. 24.102(i) (2022).

²⁷³ See 49 C.F.R. §§ 24.201-24.209 (2022).

²⁷⁴ 42 U.S.C. § 4604.

G. Additional Considerations for Contract Terms

Several other issues can arise on mega projects, the full number of which is beyond the current report. However, some are worth consideration as examples of the types of issues that need to be addressed when developing project documentation:

- **Bonding.** Payment and performance bonds are effectively universally required for transit projects. The FTA generally requires payment and performance bonding be set at 100% of the contract price, with the possibility for reduced bonding where local policy allows for it and “adequately protects the federal interest.” The requirement for 100% bonding is also not unusual from a state law perspective. However, for a mega project with a contract value in the billions spread out over multiple years, 100% bonding may be excessive for the project’s needs and untenable from a pricing perspective. While the FTA allows for deviations, these depend on local law allowing for such exceptions in the first instance. The Eagle P3 project is an example of an approach to solving this problem. In anticipation of the procurement of that mega project, in 2009 RTD secured an amendment to the applicable bonding statute (which ordinarily required bonding in an amount equal to 50% of the project cost) to allow for bonding valued at 50% of the amount payable in any given calendar year for projects valued at \$500 million or more. In this case, the shift to an annual amount lowered the required amount of the bond and therefore its cost. The lower bond amount was ultimately accepted by the FTA as well.
- **Design Liability.** Under the federal *Spearin* doctrine,²⁷⁹ as adopted in various states, a public project owner may be deemed to provide an implied warranty that the plans or specifications provided are adequate and fit for purpose. In traditional project delivery models, such as DBB, this means an owner may bear the risk of design or other specification defects under the construction contract in which such designs and specifications are included. On mega projects, contractors and developers are often selected not just based on price, but also value (see Section IV.C.3 *supra*). This value is derived from their professional discretion in selecting means and methods. In DB or P3 contracting, the contracted design-builder or developer may also be given substantial authority to advance design, and to identify ways of achieving performance within a given specification. As such, a strict application of *Spearin*-type principles could result in the public owner bearing risks on a transit mega project which it is appropriately seeking to shift to its design-builder or developer. In these cases, contract terms must be drafted, where appropriate, to disclaim reliance on certain designs, to be treated as references only, or to replace prescriptive specifications with performance-based ones. Other adjustments may be appropriate to reflect this approach, such as revisions to the representation and warranty provisions to reflect any such disclaimers or contract revisions in connection with risk shifting.

²⁷⁹ *United States v. Spearin*, 248 U.S. 132 (1918).

H. Insurance and Indemnity

The high cost of mega projects and the associated risks these projects present require project sponsors to carefully evaluate existing and potential liability arrangements, as well as determine the structure of various insurance programs early on in the project’s development. State law will help guide the sponsor as to which protections are already available for the project, the financial exposure it may have in the context of a mega project, and whether additional protections can supplement those afforded by state law. The commercial availability of insurance products in the market is another factor; project sponsors must proactively explore ways to manage risk and reduce the associated costs related to mitigating that risk. There are different types of insurance that project sponsors can access, including some innovative insurance programs that may benefit a mega project.²⁸⁰

1. Insurance Generally

During the design phase of the project, sponsors should begin identifying and classifying risks associated with the project. These risks could include environmental risks, increased construction costs, funding challenges, and changing political dynamics. The sponsor should then develop risk mitigation strategies and allocate those risk mitigation strategies to the project participant that is best suited to handle the risk. If the risks cannot be transferred to a project participant or are too great for a project participant to assume, the sponsor or contractor may have to finance that risk through insurance. Generally, the risk assumed by insurance companies is financed by premiums paid by the sponsor or project participant for the insurance company to accept the financial consequences of an insured loss.²⁸¹

2. Standard Types of Insurance

Many sources of coverage will be purchased by the sponsor while others will be purchased by contracting parties such as the designer or construction contractor. Some insurance is specific to the mega project while others are provided as part of the sponsor’s ongoing or operational insurance program. Sponsors should ensure that procured insurance is necessary, not excessive or redundant, and that the sponsor’s exposure to potential loss is adequately covered. Standard insurance often covers property in the course of the construction, workers’ compensation, and errors and omissions coverage for design professional errors. Contracts will often require specific scope and breadth of coverage, notice for any change or cancellations provisions,

²⁸⁰ See generally Eric Kerness et al., *TCRP LRD 47: Legal Issues with Obtaining Insurance on Large Transit Projects*, (Sept. 2014), <https://www.trb.org/Main/Blurbs/171313.aspx> (discussing insurance for large transit projects).

²⁸¹ There are some liabilities, however, that cannot be insured. Professional liability insurance for the errors or omissions of design professionals, for example, may not cover damages that fall below the applicable standard of care. Those liabilities would be covered by the design professional. See also *Spearin*, 248 U.S. 132 (establishing the fundamental liability between owners and contractors for constructability risk).

extensions of coverage for other parties, and documentation of compliance, such as furnishing certificates of insurance. Traditional construction insurance policies include the following:

- **Commercial General Liability (CGL).** These coverages generally cover casualties and address a wide range of third-party exposures. Exposures in this category arise from an individual or entity's legal obligation for damages sustained by third parties for property damage, personal injuries or bodily injury that result from the insured parties' negligence. This can arise from various design or construction activities, site conditions or activities on surrounding properties or rights-of-way.
- **Automobile/Marine/Aircraft Insurance.** This policy covers liabilities arising out of the use of automobiles, aircraft, or water vehicles.
- **Workers' Compensation.** This policy covers liabilities for injuries sustained by employees while in the course of their employment. Workers' Compensation coverage is often mandated by state law and is sometimes the sole remedy an injured employee can seek from their employer. However, the injured employee is not precluded from asserting a liability claim against other parties for their injuries. Therefore, other property owners, contractors or subcontractors who may have caused or contributed to the employee's injuries may be at risk and require their own coverage to protect against such claims. Railroad employees injured during their employment are covered by the Federal Employees Liability Act (FELA).²⁸² FELA requires a separate type of liability coverage since railroad workers are not covered by Workers' Compensation coverage.
- **Umbrella or Excess Liability Policies.** Significant bodily injuries or property damage can strain the limits of coverage found in many insurance policies. To protect against catastrophic loss, sponsors can purchase umbrella or excess liability policies to protect against this additional exposure. These policies supplement the underlying limits in other insurance policies.
- **Errors and Omissions.** Errors and Omissions insurance is a specialized liability protection against losses not covered by traditional liability insurance. Among other things, Errors and Omissions insurance covers claims for a design professional's negligence or inadequate work. In a DB project, this coverage may be shared by the DB entity or team.
- **Pollution Liability Insurance.** These policies cover claims from third parties against bodily injury or property damage caused by hazardous waste materials released during a company's business. This insurance extends to the construction period itself as well as completed operations.
- **Railroad Protective Liability.** This coverage is unique to railroad rights-of-way and protects against risks and damages from construction operations in and around railroad property.

3. Coordinated Insurance Programs

For transit mega projects, standard insurance coverages are often insufficient to cover the potential risks and exposures associated with the project. Coordinated insurance coverages such as Owner's Controlled Insurance Program (OCIP), Contractor's Controlled Insurance Program (CCIP) and Partner Controlled Insurance Plan (PCIP) are, therefore, good options to explore. In coordinated insurance coverage programs, an OCIP covers all project site risks of the owners, construction manager, contractors, and subcontractors involved in the project. The OCIP does not cover off-site activities, design liability, vendors, or material suppliers. The same insurance broker can procure multiple types of policies in separate placements. For example, the broker can cover workers' compensation, general liability, and umbrella liability in one program. Each program has its own advantages and drawbacks depending on the size, complexity, and financial plan of the project. Project sponsors should explore each option in depth and evaluate the costs associated with each program before deciding whether coordinated coverage is appropriate for their mega project.

OCIP is generally used for large scale projects and includes coverages for the owner, contractors, and consultants of various tiers in one policy. Typically, coverage provided includes Workers' Compensation, CGL, umbrella, errors and omissions, and pollution coverage. Generally, projects costing \$100 million or more with a direct labor cost of \$25 million or more may want to consider OCIP coverage. OCIPs are a type of controlled insurance program (CIP) and are sometimes referred to as a wrap-up insurance plan. OCIPs are called wrap-up insurance programs because they allow coverage for multiple parties and from multiple policies to be bundled into a single insurance plan. An OCIP can be purchased by a project sponsor. OCIPs are complex insurance products that can offer great opportunities for cost savings, superior risk management, and streamlined insurance claims processing for property owners and/or construction project managers. However, setting up an OCIP program is more involved than setting up standard construction insurance policies and can burden the owners with added administrative costs and the requirement of being a project sponsor. Moreover, an OCIP structure may increase the risk of contractors claiming injuries on the job that did not occur to take advantage of the insurance offered in the OCIP program. The rising costs of insurance may challenge the coverage limits of OCIP policies, creating additional risk to the project.

CCIP is a program that has become more prevalent in recent years as large general contractor firms seek to create and control their own insurance costs and coverages. The CCIP mirrors the OCIP in concept but CCIPs are purchased, managed, and organized for the benefit of the contractor. CCIPs can be rolling, i.e., available for many projects with varying owners and applied to a wide variety of projects or "ad hoc" for specific, often very large projects. Transit agencies may see CCIPs offered in larger projects or where they engage a large contracting firm to do a DB project.

²⁸² 45 U.S.C. §§ 51-60.

PCIP is a variation of the CCIP where gains from bulk purchases, targeted safety efforts, and aggressive claims management benefit both the owners and the contractor on a scheduled arrangement. This program is becoming more popular in the public sector.²⁸³

A disadvantage of the traditional construction insurance model is that it creates more project cost. Under a traditional model each contractor purchases its own insurance and includes its individual policy costs into its bid, which results in the project sponsor indirectly paying for the cost and overhead of dozens of policies. By streamlining everything into a single policy, property owners may reduce costs and more efficiently cover losses if they occur.

An OCIP needs to be designed and set up before construction begins and preferably before the construction contract is advertised. Details about the OCIP coverage should be completed before contractors are calculating their bids because contractors and subcontractors will need information about the OCIP to submit accurate bids. If the OCIP coverage is provided after contract award it is very difficult to isolate insurance costs in a contractor's bids. Without extracting such costs, the savings of an OCIP are difficult to determine.

4. Indemnification

Indemnification provisions require one party to pay for the damages suffered as a result of the counterparty's actions or inactions. In traditional agreements, the indemnifying party holds the indemnified party harmless for the indemnifying party's negligent acts or omissions and its willful misconduct. There may be other standards, such as gross negligence, which trigger the indemnifying party's obligations. However, given the unique relationship of the parties in a mega project, the indemnification provisions must be aligned to reflect such relationship. Specifically, the developer in a mega project has far greater leeway in performing its scope of work. Therefore, unlike traditional indemnification provisions, project sponsors may require the developer to indemnify the project sponsor against all the developer's acts or omissions, regardless of whether such act of omission constituted "negligence" or was otherwise prohibited under the terms of the agreement. In such an arrangement, the developer agrees to a broader scope of indemnification in consideration of the latitude the project agreement provides the developer. Nevertheless, indemnification obligations come with certain outer bounds. For example, in Florida, statute prohibits indemnification for an indemnitee's own negligence unless the agreement contains a liability cap.²⁸⁴ In Colorado, an indemnification award in construction contracts must not exceed the amounts represented by the degree or percentage of negligence attributable to the indemnitor (or the indemnifying parties).²⁸⁵

Developers may also seek indemnification from a public agency. Public agencies may at times limit their exposure be-

cause of sovereign immunity or statutory protections. Not every jurisdiction may have such protections and certain jurisdictions may legislate only for a subset of public agencies. For example, state agencies in Georgia are prohibited from providing indemnification to third parties because such provisions have been determined to violate the prohibition against pledges of the state's credit.²⁸⁶ A similar analysis is applied in Colorado where a public entity's indemnification obligations may be viewed as a pledge of credit.²⁸⁷ Notwithstanding statutory limitations on public agency indemnification, developers in mega projects may seek recourse for harms caused through other avenues. One such avenue is the supervening event. Supervening events are a set of pre-negotiated events that, if triggered, entitle the developer to additional compensation (*i.e.*, a compensation event) or time (*i.e.*, a delay event) in the performance of its obligations under the project agreement. Addressing each in turn—if a compensation event arises under the project agreement, the developer is entitled to compensation in an amount that leaves the developer in no better or worse position had that event not occurred. Examples of compensation events include certain types of change in law, an unforeseen utility impairment, or an unforeseen geological condition. Each event is carefully defined and negotiated, and the developer's right to compensation is generally subject to the developer's duty to mitigate and available insurance. If an unavoidable delay arises, the developer is provided time relief (but not compensation) in completing its work. Examples of unavoidable delays may include, force majeure events, delayed submittal responses on part of the public agency, or an unreasonable or unusual governmental delay. Again, delay events should be carefully defined and negotiated.

Like traditional projects, mega projects will also utilize performance and payment bonds (P&P bonds). P&P bonds are part of the overall performance security package that public agencies can look to if the developer fails to meet its obligations under the project agreement. Many states have passed bond statutes that outline bonding requirements, especially for public projects. Texas, for instance, grants the governmental agency the option to require a P&P bond or an alternative form of security so long as the amount is "sufficient to ensure proper performance of the agreement and protect the authority and payment bond beneficiaries."²⁸⁸ In Colorado, a contractor awarded a contract for public works is required to deliver a "bond or other acceptable surety approved by the contracting board . . . in a penal sum not less than one-half of the maximum amount payable under the terms of the contract in any calendar year in which the contract is performed" for contracts equal to or greater than \$500 million.²⁸⁹

²⁸⁶ GA. CONST. art. VII, § IV, par. VIII; 1980 Op. Att'y Gen. 80-67 (May 23, 1980).

²⁸⁷ COLO. CONST. art. XI, § 1-2; *see also*, COLO. REV. STAT. 24-91-103.6(1) (2022) (prohibiting public entities from contracting with designers and contractors for public work projects without full and lawful appropriation).

²⁸⁸ TEX. TRANSP. CODE § 366.404(a)(1) (2021).

²⁸⁹ CO. REV. STAT. § 38-26-106(1) (2022).

²⁸³ For more information about insurance coverages in large transit projects, *see* Kerness et al., *supra* n. 291.

²⁸⁴ FLA. STAT. § 725.06 (2021).

²⁸⁵ COLO. REV. STAT. § 13-21-111.5 (2022).

Given the long-term nature of mega projects, the public agency prescribing the bonding requirements must be thoughtful in tailoring the requirements to the project while remaining within the parameters of the relevant bonding statute. Customization is particularly relevant during the operations period in instances where operations will be staggered over a period of time. For example, in a rail transit project if stations become available over a period of time (versus simultaneously), the allowed amount of the P&P bonds will have to be commensurate with the availability of the stations.

I. Project Coordination with Public and Private Stakeholders and Affected Communities

1. Coordination with Public Stakeholders

Mega projects often involve multiple federal, state, and local governments and coordination early on with each entity is important to the project's success. Cooperation and conflict between various governments is likely and project sponsors must embrace opportunities for cooperation and address potential avenues for conflict. The sponsor should look to the cooperating government's enabling legislation and legal authority to take cooperative action. Such authority may be general in nature or may authorize specific powers. For example, one state entity may be permitted to enter into intergovernmental agreements, another may not have the power to issue debt, while a third may be restricted from condemning property. Intergovernmental agreements are an avenue often used to broaden common governmental functions in situations where the enabling legislation of one entity does not give it the authority to progress key elements of a mega project.²⁹⁰ Indeed, such agreements broaden a government's ability to accommodate program needs without affecting its basic organization or structure. In one case study we examined, for example, the state authority financing a mega project did not have the ability to indemnify third parties since its enabling legislation did not grant it that power, nor did it have the right to waive sovereign immunity. As a result, many contractors and other participating entities were reluctant to participate in the project. An agreement between state governments and other private entities resolved these concerns. The agreement called for the entity with the power to indemnify to provide contractors the assurance that they will be protected in the event of a claim and, in return, the state authority increased its payments to the indemnifying party to cover those extra costs. FTA will review the intergovernmental agreements to ensure they comply with its grant requirements. State and local statutes, constitutions and bylaws should be carefully examined to determine an entity's powers as well as its limitations.

Since mega projects often involve multiple federal, state, and local governments, each unit of government poses its own unique challenges. One transit agency noted that local govern-

ments did not fully understand transportation or the importance of transit projects and were more concerned with raising tax revenues and increasing development. As a result, interest in the project waned and other competing priorities shifted local officials' focus, resulting in more work for the project sponsor and delays for the project itself. Educating local governments on the importance of transportation for the entire region, not just their specific jurisdiction and emphasizing the social service benefits transportation provides would help motivate local governments to remain interested and focused on progressing the project. Educating the local public early and often is equally important to avoid misunderstandings, unnecessary lawsuits, and challenges to the project.

Local buy-in can, however, also come at the expense of a mega project's budget. In one project reviewed, passage of a bond measure funding the project and signed agreements with local governments to contribute toward a portion of the project in their respective jurisdictions appeared to indicate broad local support among local elected officials. As the project progressed, the local contributions, usually in-kind in the form of property, ended up requiring significant project proponent-funded contributions toward ancillary components, such as construction of sidewalks and utility connections that ended up costing the project proponent more than the value of the local contribution.

Another case study project sponsor worked with local governments through which the sponsor's mega project passed because the project required many municipalities to develop and adopt new land use codes to allow light rail to run through their towns. The project sponsor had to also rely on local governments to enforce their franchise authority with numerous utility companies since the project sponsor did not have the authority to require utilities to relocate for a transportation project on its own.

Another consideration for coordination with local stakeholders is whether or not the project traverses a metropolitan planning organization (MPO). In areas with a population of more than 50,000 individuals, federal law requires an MPO to improve transportation policy and make investment decisions across a single metropolitan area by annually initiating a metropolitan transportation planning process and developing a Transportation Improvement Program (TIP).²⁹¹ The TIP is updated, at minimum, every four years and includes a plan identifying the financial resources the region will use to implement the TIP.²⁹² Mega projects may traverse multiple MPO jurisdictions, and, as such, a project sponsor must efficiently address planning issues early on and ensure that the project is included in each MPO's TIP. Inclusion of the mega project in the TIP demonstrates that financial resources are dedicated to completing the project and ensuring its success.

²⁹⁰ For a more in-depth discussion of Intergovernmental Agreements, see Larry W. Thomas et al., *TCRP LRD 42: Transit Agency Intergovernmental Agreements: Common Issues and Solutions*, (Nov. 2012), <https://www.trb.org/Publications/Blurbs/168256.aspx>.

²⁹¹ 49 U.S.C. § 5303(c).

²⁹² 49 U.S.C. § 5303(i). See also 23 U.S.C § 134; 23 C.F.R. §§ 450.300-.350 (2022).

2. Coordination with Railroads

Another challenge noted by several organizations is the protracted, and often contentious, negotiations with railroads. Many mega projects require the assemblage of large numbers of properties. Acquiring ownership or property rights to operate on existing rights-of-way can significantly reduce project costs and environmental impacts. When freight railroads own or operate over a rail line required for the mega project's use, the competing needs of freight versus passenger rail and the laws that generally favor freight operations, can complicate and delay a project. Sometimes, transit agencies may preclude certain design options to avoid the need to interact with freight railroads, as was indicated by one interviewee. Complicating this issue more, protracted negotiations with freight railroads can inhibit a transit agency from securing federal funding. For example, FTA will not issue an FFGA without all railroad agreements required for the project in place. This gives freight railroads additional leverage which often frustrates the needs of mega projects.

However, freight and passenger rail can co-exist and even assist with progressing mega projects if the mega project benefits both freight and passenger rail operations. CSXT worked with VPRA to progress the Long Bridge project because the project benefited CSXT in two important ways. First, one of the project's objectives was to separate freight traffic from passenger rail, giving CSXT more freedom to operate. Second, CSXT sold property to VPRA for the project, providing significant profits to the freight railroad. CSXT was incentivized to see the Long Bridge Project's success and assisted VPRA in progressing the project. Similarly, the River Line project in New Jersey successfully coordinated with Conrail. The mutual benefit to both NJ Transit and Conrail by adding light rail service in time-separated operations provided financial benefits to Conrail while ensuring separation from its freight operations.

Commuter rail operators have also contended with the competing needs of interstate passenger rail. In the northeastern United States, for example, commuter agencies looking to improve operations along the Northeast Corridor line owned by Amtrak, face limited availability for Amtrak force account support, and competing on-time performance metrics as barriers to completing mega projects on time and on budget. The Metropolitan Transportation Authority reported that the cost for Amtrak force account work for the East Side Access project more than doubled from \$295 million to \$664 million.²⁹³ In the Eagle P3 project in Denver, agreements with Amtrak were executed after development of the project was well under way. Today, entities such as the Northeast Corridor Commission seek to remedy some of these issues and better streamline communication and coordination between commuter and intercity passenger rail operations along the Northeast Corridor.

J. Dispute Resolution

Dispute resolution clauses provide a clear path to resolving issues that arise during a transit mega project. The clauses generally determine which jurisdiction's laws apply and the process for resolving disputes, whether through mediation, arbitration, or litigation. These clauses offer peace of mind that the parties intend to settle their contractual disputes as amicably and quickly as possible and, if effective, can salvage long-standing business relationships. Like all contract provisions, dispute resolution clauses should be simple and clear to all individuals reading the contract. In addition, effective dispute resolution clauses determine who can help resolve a dispute, when where and how the dispute is resolved, including what legal forum and laws apply, and whether the ultimate resolution is binding on the parties.

There are several types of dispute resolution.²⁹⁴ The first type establishes an escalation process through organizational ranks with the organization heads resolving any outstanding issues. This process allows for lower management to resolve minor conflicts, leaving major disputes to senior management. Those intimately involved with the project are the ones responsible for resolving disputes as they occur and have a vested interest in reaching amicable resolution quickly to avoid further delays and associated costs. The parties may turn to mediation as an alternative. Some dispute resolution processes culminate in litigation while others dictate binding arbitration. In arbitration, both parties choose an arbitrator to hear both sides of the dispute, evaluate relevant evidence and issue a decision that is often binding on both parties. Although the arbitrator may be less familiar with the project, they are often neutral and can evaluate the dispute with fresh, untainted eyes. Since mega projects are more susceptible to disputes because they are larger, more expensive, and often involve many parties and jurisdictions, project sponsors may wish to employ a mediator early on and regularly meet with them to air concerns and minor disagreements early on and before a small worry becomes a major disagreement. Finally, dispute resolution panels are another method employed to resolve conflicts. Dispute resolution panels can be comprised of the parties themselves, industry leaders, public or private stakeholders, neutral arbitrators, or any mix thereof. The panel acts like a judicial body but is pre-selected by the parties early on in the project and often has an interest in resolving outstanding matters quickly to avoid increased costs for the project.

For its light rail extension transit mega project, one project sponsor has used a combination of an escalation process leading to a non-binding dispute resolution panel process followed, if necessary, by litigation in state court. The project sponsor representative interviewed, found the escalation process to be a suitable means for often avoiding more formal processes such as arbitration or dispute resolution panels, which can be costly. If the escalation process is unable to resolve the conflict, the

²⁹³ METROPOLITAN TRANSPORTATION AUTHORITY, REPORT 12-2013, EAST SIDE ACCESS COST OVERRUNS 4 (2013), <https://www.osc.state.ny.us/files/reports/osdc/pdf/report-12-2013.pdf>.

²⁹⁴ For detailed explanation of the process of mediation and arbitration in AIA contracts, see AMERICAN INSTITUTE OF ARCHITECTS, A201-2017 GENERAL CONDITIONS OF CONTRACTS (2017).

project sponsor's contracting documents provided for mediation through a dispute resolution panel, the outcome of which may generally be admissible in state court litigation. The project sponsor representative's experience was that dispute resolution panels were most valuable for the significant experience that their panelists had in the industry, which could lead to insights regarding negotiated solutions. However, for intractable disputes, one interviewee believed the judicial process was a better means of resolution because judges were less prone to "splitting the baby" as often seemed to be the case in arbitration decisions. The interviewee also sought to dispel the conventional assumption that trial juries were more favorable to contractors.

Being able to separately monitor and evaluate construction claims through independent inspection is important. Without independent evaluation, public entities must rely on the inspections of the contractors making the claims, which unsurprisingly may favor the contractor. This happened during construction of the HBLR Line in New Jersey. Ensuring that the public entity has at least a minimal level of inspection staff to independently evaluate new claims, even for projects where a private entity takes on more of the risk and responsibility, such as a DBOM, is therefore advisable according to one interviewee.

Claims from construction contractors are a significant risk in mega projects and project sponsors must similarly provide for a clear, quick process to resolve open claims in each construction contract. There are many activities project sponsors can undertake early and often in the project to protect against claims. For example, project sponsors should properly staff schedulers and inspectors and keep good records of all receipts provided, hours worked, and tasks undertaken. A good legal team to review the initial contract, negotiate change orders, and advise how to avoid potential claims is very useful as well.

Another means of claims avoidance or mitigation is to ensure that contracting documents include clear terms regarding timely notification of claims. In one mega project's state, there is good case law supporting construction contracting terms requiring timely notice of claims.²⁹⁵ According to one interviewer, the project sponsor in that state has drafted their general provisions to require timely (e.g., 7 days) notice of claims encountered by a contractor which, if not timely raised, are forfeited. Such terms prevent a contractor from waiting until completion to seek claims.

V. CONCLUSION

Perhaps unsurprisingly, many of the unusual or important legal issues that arise while delivering transit mega projects derive from their size and the unique features of mass transportation infrastructure. Like rocks creating eddies in a stream, these two defining factors induce a cascade of resulting considerations that can complicate what might otherwise constitute fairly routine or standard infrastructure development processes and models. This can be seen, for instance, in the inter-

governmental and contractual relationships between project sponsor(s), federal transit funders, and other stakeholders, as the number of these participants necessarily increases. In other areas, such as financing and risk allocation, these two factors interact to require the development of new and innovative models and solutions, as is the case when public project sponsors must navigate state restrictions on public debt or special restrictions placed on federal transit funding. By their very nature, transit mega projects are iterative and extend over a longer period of time. The ongoing processes are not repetitive so much as an inherent sequence of operations to change and refine the project, and they are both necessary and desirable as circumstances inevitably evolve. Recognizing this process and understanding the permutations of legal issues resulting from the unique circumstances of transit mega projects is key to ensuring the success of some of the most important infrastructure projects in the country.

This digest has sought to help transit attorneys identify and analyze legal issues that have resulted from, or are related to, the implementation of mega projects for rail transit projects. To do so, we have focused on a specific set of strategic themes informed by common mega project traits, developed and explained with the assistance of case studies researched through desktop legal research, and interviews with relevant attorneys and officials. The ultimate objective of this exercise was to produce a digest that lawyers representing parties developing transit mega projects can consult for insight, issue framing, and problem-solving strategies. It is the authors' hope that the experience of the past may help inform projects of the future to assist building more robust and efficient processes for transit mega projects, in an effort to serve the public and address challenges of the future.

²⁹⁵ See *Mike M. Johnson, Inc. v. County of Spokane*, 78 P.3d 161 (Wash. 2003).

APPENDIX A REFERENCES

Federal Statutes and Executive Orders

Funding

23 U.S.C. §§ 601-609 (TIFIA statute).
 49 U.S.C. §§ 22401-22406 (RRIF statute).
 49 U.S.C. ch. 53 (FTA's enabling statutes).
 49 U.S.C. §§ 5303-5304 (FTA metropolitan, statewide, and nonmetropolitan area planning funding).
 49 U.S.C. § 5307 (Urbanized Area Formula Program).
 49 U.S.C. § 5309 (Fixed Guideway Capital Investment Program).
 49 U.S.C. § 5324 (Public Transportation Emergency Relief Program).
 49 U.S.C. § 22907 (Authority for FRA rail improvement grants).
 Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429.
 Transportation Equity Act for the 21st Century (TEA-21), Pub. L. No. 105-178, 112 Stat. 107 (1998), *amended by* TEA-21 Restoration Act, Pub. L. No. 105-206 (1998). TEA-21 may be viewed at <http://www.fhwa.dot.gov/tea21>. See Title III, Federal Transit Administration Programs.
 Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), Pub. L. No. 102-240, 105 Stat. 1914.

Award and Project Management

42 U.S.C. § 4601-4655 (Uniform Relocation Assistance and Rail Property Acquisition Policies).
 49 U.S.C. § 5323 (FTA funding requirements).
 49 U.S.C. § 5327 (Project management oversight).
 Moving Ahead for Progress in the 21st Century Act, Pub. L. 112-141, 126 Stat. 405, 708 (codified as amended at 49 U.S.C. § 5327).
 49 U.S.C. § 5302(8) (Fixed guideway definition).

Civil Rights, ADA, and DBE

42 U.S.C. § 2000d-2000d-7 (Title VI of the Civil Rights Act of 1964).
 Americans with Disabilities Act of 1990, Pub. L. No. 101-336, 104 Stat. 328 (codified as amended 42 U.S.C. ch. 126; 47 U.S.C. ch. 5).
 49 U.S.C. § 5332 (Nondiscrimination in federally funded transit projects).

Buy America

49 U.S.C. §§ 22901-22910 (DOT Buy America requirements).
 49 U.S.C. 5323(j) (FTA Buy America requirements).

Liability/Insurance

49 U.S.C. § 28103 (liability cap for passenger injury damages).

Environmental

Comprehensive Environmental Response, Compensation, and Liability Act, Pub. L. No. 96-510, title I, § 101, 94 Stat. 2767, 2767-72 (1980) (codified as amended in scattered sections of 15 U.S.C.; 33 U.S.C.; 42 U.S.C.) ("CERCLA").
 National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (codified as amended at 42 U.S.C. § 4321-4370h).
 National Historic Preservation Act, Pub. L. No. 89-665, § 106, 80 Stat. 915, 917 (1966) (codified as amended at 54 U.S.C. § 306108).
 U.S. Department of Transportation Act of 1966, Pub. L. No. 89-670, § 4(f), 80 Stat. 931, 934 (codified as amended at 49 U.S.C. § 303) ("Section 4(f)").
 Infrastructure Investment and Jobs Act of 2021, Pub. L. No. 117-58, § 11301, 135 Stat. 429, 525 (2021) (codified at 23 U.S.C. § 139).
 Exec. Order No. 11514, Protection and Enhancement of Environmental Quality, 35 Fed. Reg. 4247 (Mar. 5, 1970).
 Exec. Order No. 11738, Providing for Administration of the Clean Air Act and the Federal Water Pollution Control Act with respect to Federal contracts, grants, or loans, 38 Fed. Reg. 25,161 (Sept. 10, 1973).
 Exec. Order No. 11990, Protection of wetlands, 42 Fed. Reg. 26,961 (May 24, 1977).
 Exec. Order No. 11988, Floodplain management, 42 Fed. Reg. 26,951 (May 24, 1977).
 Exec. Order No. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7629 (Feb. 16, 1994).

Federal Regulations

Funding

- 49 C.F.R. pt. 80 (2022) (TIFIA regulations).
- 49 C.F.R. pt. 260 (2022) (RRIF regulations).
- 49 C.F.R. pt. 613 (2022) (Joint Planning Regulations).
- 2 C.F.R. § 200.306 (2022) (Local match funding being subject to regulations regarding in-kind contributions).
- 2 C.F.R. § 200.434 (2022) (Restrictions on grant recipients from receiving grant compensation for donations/contributions).
- 49 C.F.R. pt. 611 (2022) (Major Capital Investment Projects).
- 49 C.F.R. pt. 24 (2022) (Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs).

Award and Project Management

- 2 C.F.R. pts. 200, 1201 (2022) (Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards).
- Joint FTA/Federal Highway Administration (FHWA) regulations, “Planning Assistance and Standards,” 23 C.F.R. §§ 450.200-.226, 450.300-.340 (2022); 49 C.F.R. pt. 613 (2022).
- 29 C.F.R. pt. 97 (2022) (Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments).
- 29 C.F.R. pt. 215 (2022) (DOL Guidelines, Section 5333(b) (Federal Transit Law).
- 49 C.F.R. pt. 24 (2022) (Uniform Relocation Assistance Act DOT regulations).
- 49 C.F.R. pt. 633 (2022) (Project Management Oversight).

Civil Rights, ADA, and DBE

- 49 C.F.R. pt. 26 (2022) (DBE).
- 49 C.F.R. pts. 27, 37, 38, 39 (2022) (DOT ADA regulations).

Buy America

- 49 C.F.R. pt. 661 (2022) (FTA Buy America Regulations).

Environmental

- 23 C.F.R. pt. 771 (2022) (DOT NEPA regulations).
- 23 C.F.R. pt. 774 (2022) (DOT Section 4(f) regulations).
- 36 C.F.R. pt. 800 (2022) (Federal regulations implementing NHRA Section 106).
- 40 C.F.R. §§ 1500-1508 (2022) (CEQ NEPA regulations).
- 49 C.F.R. pt. 1105 (2022) (STB environmental procedures).
- 49 C.F.R. pt. 622 (2022) (FTA Environmental Impacts and Related Procedures).
- 49 C.F.R. pt. 622 (2022) (Environmental Impact and Related Procedures).

Federal Agency Policies, Guidelines, and Other Materials

Funding and Financing Programs

- BUILD AMERICA BUREAU, CREDIT PROGRAMS GUIDE (2017), https://www.transportation.gov/buildamerica/sites/buildamerica.dot.gov/files/2019-08/Bureau%20Credit%20Programs%20Guide_March_2017.pdf.
- FTA, Circular 9030.1E, Urbanized Area Formula Program: Program Guidance and Application Instructions (Jan. 16, 2014), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FINAL_FTA_circular9030.1E.pdf.
- FED. TRANSIT ADMIN., FINAL INTERIM POLICY GUIDANCE FEDERAL TRANSIT ADMINISTRATION CAPITAL INVESTMENT GRANT PROGRAM (2016), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FAST_Updated_Interim_Policy_Guidance_June%20_2016.pdf.
- FTA, Circular 8100.1D, Program Guidance for Metropolitan Planning and State Planning and Research Program Grants (Sept. 10, 2018), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/fta-circulars/117736/program-guidance-metropolitan-planning-and-state-planning-and-research-c81001d.pdf>.
- Final Guidance on the Application of 49 U.S.C. 5324(c) to Railroad Right-of-Way Acquisition, 74 Fed. Reg. 82 (Apr. 30, 2009).
- FTA Fiscal Year 2021 Apportionments, Allocations and Program Information, 86 Fed. Reg. 38791 (July 22, 2021).
- Programs and Projects Grants*, U.S. DEPT. OF TRANSP., <https://www.transportation.gov/grants>, (last visited June 17, 2022).
- RAISE Discretionary Grants*, U.S. DEPT. OF TRANSP. (Jan. 28, 2022), <https://www.transportation.gov/RAISEgrants>.
- The INFRA Grants Program*, U.S. DEPT. OF TRANSP. (Mar. 21, 2022), <https://www.transportation.gov/grants/infra-grants-program>.
- Fixing America’s Surface Transportation Act or “FAST Act”*, FED. HIGHWAY ADMIN. (Feb. 2016), <https://www.fhwa.dot.gov/fastact/factsheets/advtranscongmgmtfs.cfm>.

TIFIA Credit Program Overview, U.S. DEPT. OF TRANSP. (Jan. 2017), <https://www.transportation.gov/buildamerica/sites/buildamerica.dot.gov/files/2019-08/TIFIA%20Background%20Slides%20%2801-26-2017%29.pdf>.

Consolidated Rail Infrastructure and Safety Improvements Program, FED. R.R. ADMIN. (Dec. 9, 2021), <https://railroads.dot.gov/grants-loans/competitive-discretionary-grant-programs/consolidated-rail-infrastructure-and-safety-2>.

Federal-State Partnership for State of Good Repair Grant Program, FED. R.R. ADMIN. (Mar. 9, 2022), <https://railroads.dot.gov/grants-loans/competitive-discretionary-grant-programs/federal-state-partnership-state-good-repair-1>.

U.S. DEPT. OF TRANSP., 2014 TIGER AWARDS (2014) https://www.transportation.gov/sites/dot.gov/files/docs/TIGER14_ProjectFactSheets.pdf.

Financing, BUILD AMERICA BUREAU, (Apr. 30, 2020), <https://www.transportation.gov/buildamerica/financing>.

Local Matching Funds, FED. TRANSIT ADMIN. (Dec. 21, 2017), <https://www.transit.dot.gov/funding/procurement/third-party-procurement/local-matching-funds>.

FTA, Circular 9300.1A, Capital Program: Grant Application Instructions, (Oct. 1, 1998), <http://libraryarchives.metro.net/DPGTL/FTA/1998-FTA-Circular-9300.1A.pdf>.

U.S. DEPT. OF TRANSP.: FED. TRANSIT ADMIN., MASTER AGREEMENT MA(8) (2021) <https://www.transit.dot.gov/sites/fta.dot.gov/files/2021-02/FTA-Master-Agreement-v28-2021-02-09.pdf>.

Fiscal Year 2002 Annual List of Certifications and Assurances for Federal Transit Administration Grants and Cooperative Agreements, 67 Fed. Reg. 185 (Jan. 2, 2002).

Award and Project Management

FTA, Circular 4220.1F, Third Party Contracting Guidance (Mar. 13, 2013), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/Third%20Party%20Contracting%20Guidance%20%28Circular%204220.1F%29.pdf>.

FTA, Circular 5010.1E, Award Management Requirements (July 16, 2018), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/fta-circulars/58051/5010-1e-circular-award-management-requirements-7-16-18.pdf>.

FTA, Circular 5200.1A, Full-Funding Grant Agreements Guidance (Dec. 5, 2002), <https://www.transit.dot.gov/regulations-and-guidance/fta-circulars/full-funding-grant-agreements-guidance>.

FTA, Circular 7050.1A, Federal Transit Administration Guidance on Joint Development (Dec. 29, 2016), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA-161221-001%20Joint%20Development%20Circular.pdf>.

Joint Development: Proposed Updated Circular, 84 Fed. Reg. 16,339 (Apr. 18, 2019), <https://www.federalregister.gov/documents/2019/04/18/2019-07812/joint-development-proposed-updated-circular>.

FED. TRANSIT ADMIN., PROJECT CONSTRUCTION AND MANAGEMENT GUIDELINES (2011), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Project_and_CM_Guidelines_-_July_2011_Update_12-01-26.pdf.

CONGRESSIONAL BUDGET OFFICE, FEDERAL SUPPORT FOR FINANCING STATE AND LOCAL TRANSPORTATION AND WATER INFRASTRUCTURE (2018), <https://www.cbo.gov/system/files/2018-10/54549-InfrastructureFinancing.pdf>.

FTA Fiscal Year 2002 Apportionments, Allocations and Program Information, 67 Fed. Reg. 125, (Jan. 2, 2002).

Annual Report on Funding Recommendations, FED. TRANSIT ADMIN. (March 28, 2022), <https://www.transit.dot.gov/funding/grant-programs/capital-investments/annual-report-funding-recommendations>.

FED. TRANSIT ADMIN., GUIDANCE FOR TRANSIT FINANCIAL PLANS (2000), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/funding/funding-finance-resources/options-financing-public-transportation/115376/guidance-transit-financial-plans.pdf>.

Procurement

FED. TRANSIT ADMIN., REPORT NO. 0105, BEST PRACTICES PROCUREMENT & LESSONS LEARNED MANUAL (2016), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/funding/procurement/8286/fta-best-practices-procurement-and-lessons-learned-manual-2016.pdf>.

U.S. DEPT. OF TRANSP., PUBLIC-PRIVATE PARTNERSHIP (P3) PROCUREMENT: A GUIDE FOR PUBLIC OWNERS (2019), https://www.fhwa.dot.gov/ipd/pdfs/p3/toolkit/p3_procurement_guide_0319.pdf.

Civil Rights, ADA, and DBE

FTA, Circular 4702.1B, Title VI Requirements and Guidelines for Federal Transit Administration Recipients (Oct. 1, 2012), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Title_VI_FINAL.pdf.

FTA, Circular 4710.1, Americans with Disabilities Act: Guidance (Nov. 4, 2015), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/Final_FTA_ADA_Circular_C_4710.1.pdf.

Official Q&As on the Disadvantaged Business Enterprise (DBE) Program Requirements, U.S. DEPT. OF TRANSP., <http://www.transportation.gov/civil-rights/disadvantaged-business-enterprise/official-questions-and-answers-qas-disadvantaged> (last visited June 17, 2022).

U.S. Dept. of Transp., Legal Opinion: Facility Alteration Requirements Under 49 C.F.R. § 37.43(a) (May 2016), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/ADA-Sec.37.43_legal%20opinion_May2016_0.pdf.

U.S. DEPT. OF TRANSP., DISABILITY LAW GUIDANCE: FULL-LENGTH, LEVEL-BOARDING PLATFORMS IN NEW COMMUTER AND INTERCITY RAIL STATIONS (Sept. 1, 2005), <https://www.fra.dot.gov/eLib/details/L02760>.

Transportation for Individuals with Disabilities at Intercity, Commuter, and High-Speed Passenger Railroad Station Platforms; Miscellaneous Amendments, 76 Fed. Reg. 57,924 (Sept. 19, 2011) (DOT Final Rule amending 49 C.F.R. pts. 37, 38).

Buy America

Buy America, Fed. Transit Admin., <https://www.transit.dot.gov/regulations-and-guidance/buy-america/buy-america> (last visited June 17, 2020).

Buy America Guidance Letters, Fed. Transit Admin. (Aug. 21, 2018) <https://www.transit.dot.gov/regulations-and-guidance/buy-america/buy-america-guidance-letters>.

Environmental

ENV'T PROTECTION AGENCY, EPA-330-F-11-003, CERCLA LIABILITY AND LOCAL GOVERNMENT ACQUISITIONS AND OTHER ACTIVITIES (2011), <https://19january2017snapshot.epa.gov/sites/production/files/documents/local-gov-liab-acq-fs-rev.pdf>.

FTA, Circular C 4703.1, Environmental Justice Policy Guidance for Federal Transit Administration Recipients (Aug. 15, 2012), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_EJ_Circular_7.14-12_FINAL.pdf.

FED. TRANSIT ADMIN., HISTORIC CONTEXT REPORT FOR TRANSIT RAIL SYSTEM DEVELOPMENT (2017), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/environmental-programs/63526/ftahistoriccontextreport508compliant.pdf>.

Final Dept. of Transp. Environmental Justice Order, 77 Fed. Reg. 27534 (May 10, 2012)

FED. TRANSIT ADMIN., SOP No. 18, SECTION 4(F) EVALUATIONS (2016), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/SOP%2018.pdf>.

FED. TRANSIT ADMIN., GUIDANCE FOR IMPLEMENTATION OF FTA'S CATEGORICAL EXCLUSIONS (23 C.F.R. 771.118) (2016), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-programs/environmental-programs/25256/section-118-guidance-june-2016.pdf>.

FED. TRANSIT ADMIN., FINAL GUIDANCE ON THE APPLICATION OF 49 U.S.C. 5323(Q) TO CORRIDOR PRESERVATION FOR A TRANSIT PROJECT (2014), https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/Final_Corr_Pres_Guidance_FINAL_10-27-2014.pdf.

FED. HIGHWAY ADMIN., PUBLIC INVOLVEMENT TECHNIQUES FOR TRANSPORTATION DECISIONMAKING (2015), https://www.fhwa.dot.gov/planning/public_involvement/publications/pi_techniques/fhwahep15044.pdf.

Program Comment Issued to Exempt Consideration of Effects to Rail Properties Within Rail Rights-of-Way, 83 Fed. Reg. 42,920 (Aug. 17, 2018).

FED. TRANSIT ADMIN., SOP No. 2, OFFICE OF PLANNING AND ENVIRONMENT, PROJECT INITIATION AND DETERMINING NEPA CLASS OF ACTION (2019), <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/environmental-programs/55951/02-project-initiation.pdf>.

Environmental Standard Operating Procedures, FED. TRANSIT ADMIN., (Nov. 5, 2020) <https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/environmental-standard-operating-procedures>.

Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304 (Sep. 14, 2020), <https://www.federalregister.gov/documents/2020/07/16/2020-15179/update-to-the-regulations-implementing-the-procedural-provisions-of-the-national-environmental>.

Case Studies

Financing

Eagle Commuter Rail Project, U.S. DEPT. OF TRANSP. (Dec. 2016) (example of a CIG-funded project which relied on a P3 model), <https://www.transit.dot.gov/sites/fta.dot.gov/files/CO-Denver-Eagle-Commuter-Rail-FY-18-Profile.pdf>.

East Link Extension, U.S. DEPT. OF TRANSP. (example of a transit mega project using USDOT BAB TIFIA financing), <https://www.transportation.gov/buildamerica/projects/east-link-extension> (last visited June 21, 2022).

Interstate Compacts

CONN. GEN. STAT. § 16-343 (Connecticut-New York Railroad Passenger Transportation Compact).

2 C.F.R. § 200.318 (encourages intergovernmental agreements for the procurement or common use of goods and services).

Procurement

COMMONWEALTH OF VIRGINIA, VIRGINIA PUBLIC-PRIVATE PARTNERSHIPS: P3 VALUE FOR MONEY GUIDELINES (June 2016) (requiring a VfM analysis before a project is approved for the procurement phase), https://www.p3virginia.org/wp-content/uploads/2016/07/VfM-Guidelines_V3_June-2016_Final.pdf.

FLA. STAT. § 334.30 (2021) (outlining its P3 legislation and applicable sections with respect to procurement).

Private Industry Sources

AMERICAN SOCIETY OF CIVIL ENGINEERS, *QUALITY IN THE CONSTRUCTION PROJECT: A GUIDE FOR OWNERS, DESIGNERS AND CONSTRUCTORS*, ASCE MANUAL NO. 73 (3d ed. 2012).

Construction Documents for the Future of Infrastructure, ENGINEER JOINT CONTRACT DOCUMENTS COMMITTEE, <https://www.ejcdc.org/> (last visited June 21, 2022).

DESIGN BUILD INDUSTRY ASSOCIATION, *DESIGN-BUILD DONE RIGHT: BEST DESIGN-BUILD PRACTICES* (2014), <https://dbia.org/wp-content/uploads/2018/05/Best-Practices-Universally-Applicable.pdf>.

Education Foundation, ASSOCIATION OF GENERAL CONTRACTORS (free educational resources related to project contracting) <https://www.constructionfoundation.org/> (last visited June 21, 2022).

Engineer Joint Contract Documents Committee, NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS, <https://www.nspe.org/resources/ejcdc-contract-documents> (last visited June 21, 2022).

ASSOCIATION FOR THE IMPROVEMENT OF AMERICAN INFRASTRUCTURE, *BEST PRACTICES FOR PUBLIC PRIVATE PARTNERSHIPS STIPENDS*, <https://aiai-infra.info/wp-content/uploads/MK013-AIAI-Best-Practices-STIPENDS-2-20171.pdf> (last visited June 21, 2022).

Other

What Are PPPs?, THE WORLD BANK, <https://ppp.worldbank.org/public-private-partnership/about-us/about-public-private-partnerships> (last visited June 21, 2022).

Public-Private Partnership Legal Resource Center, THE WORLD BANK, <https://ppp.worldbank.org/public-private-partnership/> (last visited June 21, 2022).

TEX. TRANSP. CODE § 366.404 (Performance and Payment Security).

COLO. REV. STAT. § 38-26-106 (Contractor executes bond—applicability).

Project Evaluation Process, LOS ANGELES METRO, http://media.metro.net/projects_studies/ppp/images/ppp_project_evaluation.pdf (last visited June 21, 2022).

ROBERT W. POOLE JR., *RETHINKING AMERICA’S HIGHWAYS: A 21ST-CENTURY VISION FOR BETTER INFRASTRUCTURE* 105 (2018) (example of using an ATC with the LBJ Freeway in Dallas).

APPENDIX B

GLOSSARY AND TERMINOLOGY

This section will provide an alphabetical list of the terms used in the report that may be unclear to those unfamiliar with the topic of this report.

ADA–Americans with Disabilities Act
ATC–Alternative Technical Concept
ATCMTD–Advanced Transportation and Congestion Management Technologies Deployment
BAB–Build America Bureau
BUILD–Better Utilizing Investments to Leverage Development
BUILD Act–Brownfields Utilization, Investment, and Local Development Act of 2018
CCIP–Contractor’s Controlled Insurance Program
CDOT–Colorado Department of Transportation
CE–Categorical Exclusion
CERCLA–Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CEQ–Council on Environmental Quality
CEQA–California Environmental Quality Act
CGL–Commercial General Liability
CHSRA–California High-Speed Rail Authority
CIG–Capital Investment Grant
CIP–controlled insurance program
CM/GC–Construction Manager/General Contractor
CMR–Construction Manager at Risk
CRISI–Consolidated Rail Infrastructure and Safety Improvements
CRMF–Commuter Rail Maintenance Facility
CSXT–CSX Transportation
DB–design-build
DBB–design-bid-build
DBE–Disadvantaged Business Enterprises
DBF–design-build-finance
DBFOM–design-build-finance-operate-maintain
DBOM–design-build-operate-maintain
DC2RVA–Washington, DC to Richmond Southeast High-Speed Rail
DRPT–Department of Rail and Public Transportation
EA–environmental assessment
EIS–environmental impact statement
FAST Act–Fixing America’s Surface Transportation Act
FELA–Federal Employees Liability Act
FFGA–Full Funding Grant Agreement
FHWA–Federal Railroad Administration
FONSI–finding of no significant impact
FRA–Federal Railroad Administration
FTA–Federal Transit Administration
GDC–Gateway Development Commission
GWMP–George Washington Memorial Parkway
HBLR–Hudson-Bergen Light Rail
HOV–high-occupancy-vehicle
HSR–High-Speed Rail
ICCTA–Interstate Commerce Commission Termination Act
IJA–Infrastructure Investment and Jobs Act of 2021
INFRA–Infrastructure for Rebuilding America
ITP–instructions to proposers
MOS–Minimum Operable Segments
MPO–Metropolitan Planning Organization
NEPA–National Environmental Policy Act

NJ Transit–New Jersey Transit Corporation
OCIP–Owner’s Controlled Insurance Program
P&P bonds–performance and payment bonds
P3 or PPP–Public-Private Partnership
PCIP–Partner Controlled Insurance Plan
PDA–Pre-Development Agreement
PDB–Progressive Design-Build
PMP–Project Management Plan
PRPs–potentially responsible parties
RAISE–Rebuilding American Infrastructure with Sustainability and Equity
RAMP–Real Estate Acquisition Management Plan
RFI–Request for Information
RFP–Request for Proposal
RFQ–Request for Qualification
ROD–Record of Decision
RRIF–Railroad Rehabilitation and Improvement Financing
RTD–Regional Transportation District
Sound Transit–Central Puget Sound Regional Transit Authority
STB–Surface Transportation Board
TIFIA–Transportation Infrastructure Finance and Innovation Act
TIGER–Transportation Investment Generating Economic Recovery
TIP–Transportation Improvement Program
TREX–Metro Denver Transportation Expansion Project
URA–Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970
USDOT–United States Department of Transportation
VAP3–Virginia Department of Transportation’s Office of Public-Private Partnership
VfM–value-for-money
VPRA–Virginia Passenger Rail Authority
VRE–Virginia Railway Express

APPENDIX C

INTERVIEW QUESTIONS

1. Please give a brief description of the responsible project sponsor and the project need and scope (e.g. location, type, length of project, other relevant information).
2. Please describe the project delivery method (design-bid-build, design-build, P3, combination of these methods).
3. Please describe the schedule and budget (target versus actual).
4. Please describe the sources of project funding (e.g., FTA, FRA, FHWA, sources of local match).
5. What in your opinion were some of the major legal “lessons learned” or legal challenges facing the transit mega project? Please provide examples and how you resolved these issues.
6. Please comment on the most important legal issues regarding your transit mega project in the following categories (or as many as you would like and please provide examples, if pertinent):
 - a. Funding and finance
 - b. Project structure
 - c. Environmental issues and compliance
 - d. Property acquisition/relocation
 - e. Design documentation
 - f. Project coordination with public stakeholders and affected communities
 - g. Procurement
 - h. Insurance and indemnification
 - i. Dispute resolution/contractor claims
 - j. Intergovernmental coordination/governance models
7. Are there any legal issues regarding transit mega projects that are generally not well understood or not well documented or researched in the literature?
8. Are there any innovative changes or new challenges facing transit mega projects not contemplated by the current statutory and regulatory frameworks?
9. Are there any steps that the FTA or another federal governmental entity could take to improve transit mega project delivery?
10. Is there anything else you would like to comment on regarding legal issues in transit mega projects?

APPENDIX D

INTERVIEW SUMMARIES

Interview No. 1

Interview 1 was conducted with a former senior attorney for a regional transportation entity and covered several rail transit projects and connected transit-oriented development. Topics that were covered included: financing and project structure (including discussion of P3 structures); compliance with NEPA; issues concerning acquisition of railroad property; governance and project coordination; and procurement. The interviewee discussed the challenges associated with maintaining a shared sense of purpose and cohesion among constituent members participating in the sponsor's transit mega project, as well as the importance of political support for such projects. The interviewee discussed how political buy-in can come at the expense of a megaproject's budget, for example, where the local improvements grow to exceed the local in-kind contributions to a project. The interviewee also discussed the dynamics of public participation during the federal environmental review process, and particularly the challenge arising from litigation based on federal environmental requirements, which can increase project costs considerably and effectively stymie a transit mega project even if challenging litigants are ultimately unsuccessful. The interviewee discussed how various federal requirements seeking to achieve public benefits, such as Buy America provisions, may also delay mega projects or result in higher costs.

Interview No. 2

Interview 2 was conducted with a senior official for a state transportation department and covered a multi-state transit mega project. Topics that were covered included: project funding and financing; project governance and delivery structure; rail property acquisition; liability, insurance, and indemnification. The interviewee discussed the scale and variety of funding sources for the mega project, including general and dedicated state funding, user fee revenues from toll roads, and the potential for federal funding, as well as contributions from freight railroads. The interviewee discussed the complex process of negotiating acquisition of rail property from railroads, and the unique and creative solutions required to satisfy rail property rights holders in this context, including liability issues and restrictions on federally owned property. This included securing special purpose legislation allowing for construction of rail service over property administered by a federal agency. The interviewee also discussed the challenges arising from establishing a stand-alone, special-purpose authority to oversee development and operation of the mega project, and the complexity of doing so while simultaneously negotiating nearly a dozen agreements for the project.

Interview No. 3

Interview 3 was conducted with the former senior official for a special purpose state transportation entity and covered a statewide transit mega project. Topics that were covered included project funding and governance; rail property acquisition; and environmental review. The interviewee discussed the intricacies of securing state funding as a means of pursuing complimentary federal funding support. The interviewee also discussed the benefits and process of establishing a new special purpose transportation authority, and the unique rights granted to enable the new authority to hire and maintain the appropriate staff. Often, transit agencies and local governments do not have the appropriate staff or capacity to handle the specific requirements of a transit mega project, and therefore attention must be paid to ramping up those skillsets. The interviewee expressed their view regarding the difficulty in complying with the overlapping requirements of different federal agencies, which is more likely with a transit mega project, as well as the challenges presented by environmental review processes when they are used by litigious opponents of transit projects. The interviewee noted that given the scale and cost of transit mega projects, attention to timing and coordination of environmental review and preconstruction activities such as property acquisition were critical.

Interview No. 4

Interview 4 was conducted with the former senior official for a state transit agency and covered a transit mega project. Topics that were covered included: project funding and financing; project delivery structure; and procurement processes. The interviewee described the innovative (for the time) structure for the mega project, which included a precursor to availability payments now common under P3 projects. The interviewee explained how the combination of one contract for both design/build and operations and maintenance allowed the public project sponsor to spread payment out to the project contractor beyond the period of construction, which would otherwise have been prohibited under state law. Such payment structures, which are now more common, are more important for transit mega project because the scale of the project often means that the cost cannot be paid for within the construction period. The interviewee also discussed the importance of properly allocating risk through the procurement and project delivery structure, and to ensure the public sponsor has an adequate understanding of the risks involved and clearly define the scope of work and allocation of responsibilities in the procurement documents. Because of the size and risk associated with mega projects, the likelihood of claims and disputes is higher.

Interview No. 5

Interview 5 was conducted with three attorneys for a metropolitan transit entity with experience in transit mega projects. Topics that were covered included project funding and delivery method; project coordination; intergovernmental jurisdiction over public utilities; and liability issues. The interviewees discussed the entity's choice among delivery methods, including the use of procurement methods that allowed the contractor to participate earlier in the design process for projects involving more novel technical issues. The interviewees also discussed challenges raised by jurisdictional authority to relocate public utility lines. Interviewees stressed the benefits of having attorneys involved in mega projects early in order to interact with technical and executive teams in a solution-oriented manner.

Interview No. 6

Interview 6 was conducted with a senior official for a state transit entity covering two transit mega projects. Topics that were covered included project delivery method; project funding; jurisdictional issues regarding property and licensing; condemnation authority; risk allocation; dispute resolution; environmental review; and procurement (including Buy America requirements). The interviewee described specific issues regarding questions that came up during construction and in anticipation of operation, including jurisdictional authority of the public sponsor to construct and operate transit service on the street of a local government, and the form of state licensing required for vehicle operators. Both of these examples came up as a result of opposition from local jurisdictions seeking to limit or challenge the public sponsor's authority to construct and operate the transit mega project. The interviewee noted that Buy America/Buy American requirements can create challenges in securing the property equipment and materials necessary for a project. The all-encompassing scope of such requirements and the size of transit mega projects can mean that complying with such requirements may slow down the development process and could result in contractor claims if determined not to be the contractor's fault. The interviewee reflected on experience with pre-development due diligence regarding existing conditions, noting in their opinion, for instance with respect to subsurface projects, "the more borings, the better." If a public sponsor does not adequately document its pre-design investigations, a public sponsor may not be able to easily challenge a contractor claim. However, the interviewee also acknowledged the limitations to obtaining accurate preconstruction information in urban areas, particularly for subsurface projects, and noted the tension between obtaining preconstruction and pre-contracting information and disturbance to existing communities. The interviewee also noted the importance of intergovernmental coordination and cooperation and advised public sponsors to retain government affairs staffing to ensure that the correct agreements and communications occurred between the public sponsor and other public entities.

Interview No. 7

Interview 7 was a follow up interview conducted with a senior attorney for a metropolitan transit entity. The interview covered preliminary engineering and investigations and dispute resolution and contractor claims. The interviewee described their experience with contractor claims that arose after commencement of construction of a light rail line project for which the public entity decided not to conduct extensive subsurface investigations, a decision that was made to avoid disrupting existing urban communities. Because the construction contractor encountered unexpected conditions, the project was delayed. The interviewee also described the public sponsor's process for dispute resolution, noting in their experience that arbitration and dispute resolution panels were often costly and did not expeditiously resolve issues. The interviewee favored an escalation process where disputes were progressively raised to next levels of authority within the respective organizations, followed by an option for mediation, the outcome of which may generally be admissible in state court litigation. The interviewee's experience was that dispute resolution panels were most valuable for the significant experience that their panelists had in the industry, which could lead to insights regarding negotiated solutions. However, for intractable disputes, the judicial process was a better means of resolution because judges were less prone to "splitting the baby" as often seemed to be the case in arbitration decisions. The interviewee did not believe that contractors held an advantage in jury trials, and therefore did not believe that public sponsors needed to avoid jury trials if they believed that they had a viable claim against a contractor. The interviewee also advised that public entities should insist on terms that require contractors to provide timely (e.g., 7 days) notice of claims encountered, so that the public sponsor has time to investigate and dispute if necessary, and to avoid allowing the contractor to wait until the end of the construction to make new claims. This issue becomes much more important as the project size and cost increase.

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