

Guidelines for Risk Allocation and Management in Long Term Highway Development Agreements

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BUILD AMERICA CENTER

INNOVATIVE FINANCING AND DELIVERY
OF TRANSPORTATION INFRASTRUCTURE



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Guidelines for Risk Allocation and Management in Long Term Highway Development Agreements

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Executive Summary

Very few public agencies that have the authority to implement long term highway development agreements (LTHDAs) such as public-private partnerships (P3s) have their own guidelines or manuals. Consequently, these guidelines, which are based on multiple avenues of investigation including case studies of Central 70 in Colorado, I-4 Ultimate in Florida, and SH-288 in Texas, are timely and pertinent. They can aid public agencies in their development of a guideline/manual document. Specifically, these guidelines illustrate strategies and practices for partner engagement, risk management, and contractual design, formation & administration for an overall P3 program and for P3 project preparation, procurement, and implementation & operations. These strategies and practices are summarized in Table 1. Risk sharing options are also presented and discussed: deductible and threshold schemes, allowances, escalation methods and risk pools. Deductible, allowance, and escalation methods are fairly common in P3s, but risk pools deserve greater consideration. The consultative processes evident in conventional P3 procurements suggest that risk pools might be a feasible alternative. Additionally, the contractual provisions in the case projects provide samples of contractual treatment of key issues and risks – such as reliance on reference information documents and utilities coordination and relocation – given a project's context and circumstances. Further, these case project contractual provisions were compared with recent guidance published by AIAI and were found to be well-aligned.

The guidance provided does not identify “best practices” since strategies and practices for aligning public and private perspectives of risks and allocating risks are highly dependent on the context of each project – its type, jurisdiction, and stakeholders. Rather, these guidelines describe such strategies and practices as a means to inform decision-making about risk allocation and management by public agencies when employing LTHDAs/P3s.



Table 1. Summary of the Guideline’s Strategies and Practices for LTHDAs/P3s

Category	Area/Phase			
	<i>Programmatic</i>	<i>Project Preparation</i>	<i>Project Procurement</i>	<i>Project Implementation & Operations</i>
Partner Engagement	<ul style="list-style-type: none"> • Periodic Industry Workshops • Project Pipeline 	<ul style="list-style-type: none"> • Industry Forums • RFI Process • One-on-One Meetings (General) • Stakeholder Identification & Engagement 	<ul style="list-style-type: none"> • One-on-One Meetings <ul style="list-style-type: none"> ◦ General ◦ Targeted • ATC Process • Stakeholder Coordination Plan • Third-Party Coordination Plan 	<ul style="list-style-type: none"> • Partnering • Alternative Dispute Resolution Methods
Risk Management	<ul style="list-style-type: none"> • P3 Manual or Guidelines 	<ul style="list-style-type: none"> • VfM Analysis • Risk Workshop • Preliminary Risk Register 	<ul style="list-style-type: none"> • Updated VfM Analysis • Risk Register Update & Exchange • Roles & Responsibilities Matrix 	<ul style="list-style-type: none"> • Project & Asset Management Plans
Contractual Design, Formation & Administration	<ul style="list-style-type: none"> • Baseline Conditions • Term Sheets • Standard Contract(s) 	<ul style="list-style-type: none"> • Project Term Sheet • Draft Project Contract • Reference Documents 	<ul style="list-style-type: none"> • Contract Revisions • Final Contract 	<ul style="list-style-type: none"> • Interpretations Process • Escalation Process

1. Introduction

The Infrastructure Investment and Jobs Act (IIJA) requires public procuring agencies to evaluate key terms, major compensation events and risk allocation during planning and implementation of projects using long term highway development agreements (LTHDAs) such as public-private partnerships (P3s). Over roughly the last 15 years, a number of state agencies in the US have planned and implemented such projects that include various practices for risk allocation and management. In Phase I of this project, a state-of-practice report identified various practices for risk allocation and sharing in LTHDAs as well as practitioner perspectives of strengths and weaknesses of these practices. Building off this report, Phase II develops guidelines to improve how public transportation agencies allocate and manage risks during preparation, procurement and implementation & operation of LTHDA/P3 projects.

These guidelines identify both strategic and tactical practices that agencies can employ to better align public and private sector perspectives of risks that can enhance their allocation and management. For the purpose of these guidelines, *risk management is defined as a project planning and control function where proactive efforts are made to identify, mitigate and control risks throughout the project delivery process.* Whereas, *risk allocation is defined as a process that assigns risks to a project party or shares risks among project parties.* Finally, *risk assessment is a process to determine the risks to a project's success or goals and the significance (often likelihood and impact) of such risks* (MDOT 2022).

Multiple avenues of investigation were followed to develop the guideline: (1) identification of existing P3 guidelines/manuals and review of their content, (2) consideration of specific issues, risks and recommendations identified in Phase I, (3) review of existing reports about LTHDAs/P3s that address alignment of interests and risk allocation and management between the public and private sectors, and (4) examination of how case projects handled risk allocation and management during project preparation, procurement and implementation. The findings from these avenues of inquiry form the basis of a guideline that public transportation agencies can follow to both structure and implement a risk allocation and management program for LTHDAs/P3s. Such a program will better align public and private perspectives of risks, improve how risks are allocated and managed, and enhance the delivery and outcomes of LTHDA/P3 projects.

The guidelines presume that projects identified as LTHDA/P3 candidates will: (1) be structured as design-build-finance-operate-maintain (DBFOM) arrangements, (2) employ either revenue risk or availability payment (AP) models and (3) be procured competitively following a two-step approach where best-value methods are used for selection of a preferred proposer. Further, the guidance provided does not identify “best practices” since strategies and practices for aligning public and private perspectives of risks and allocating risks are highly dependent on the context of each project – its type, jurisdiction, and stakeholders (just to name a few). Hence, the guidelines describe such strategies and practices as a means to inform decision-making about risk allocation and management by public agencies when employing LTHDAs/P3s.¹

2. Key Findings from Phase I Study

Phase I resulted in the publication of: *Risk Allocation and Sharing in Transportation P3s: State of Practice Report*. This report uncovered how risks have been allocated in P3 transportation agreements and shared perspectives of practitioners in the US about current risk allocation practices as well as more general issues in P3s.

¹ These guidelines will use terms long-term highway development agreement (LTHDA) and public-private partnership (P3) interchangeably through the balance this document.



1.1 Contract Analysis

An assessment of 26 P3 surface transportation project contracts determined how 30 general, construction and operation risks were allocated.² These P3 projects had DBFOM or DBFM structures and were evenly split between revenue-risk or availability payment arrangements; the vast majority involved highway/bridge assets. Not surprisingly, risks related to construction (*design, performance*), finance (*financing, refinancing*), operation (*availability and service, operation expenses, maintenance*), project company ownership (transfer) and project handback (*handback*) were predominantly transferred to the private sector. The public sector predominantly retained only two risks (*changes by public authority and interest rates pre-financial close*). These results confirmed the risk transfer tenet of P3s. Nearly a third of the risks were treated by either relief, compensation or delay events (supervening events), and these mechanisms were often associated with *socio-political opposition, change in law, site geology/conditions, network modifications* and *latent defects* risks. Risk sharing was also employed, and common sharing methods included: (a) external reference (such as referencing to a pricing index), (b) deductible schemes (a contracted party bears a risk up to a threshold amount), (c) proportion/proration techniques (sharing losses/gains on a proportional or pro rata basis), and (d) maximum reimbursement (monetary compensation up to an agreed value). The prevalence of supervening events has important implications: the contractual parties do not know ex-ante who will bear a risk and to what extent; moreover, the developer/contractor bears the burden of establishing entitlement to relief. Additionally, the procedural nature of the supervening event provisions will require the parties to expend considerable effort ex-post to assess and resolve associated risks.

1.2 Practitioner Perspectives

Interviews with 14 experienced practitioners enhanced the results of the contract analysis. By far, risks related to *geology/site conditions* and *third-parties* such as utilities were identified as the most problematic risks in P3s. The prevailing concern was the potential for such risks to be uncapped. Without provisions to mitigate this possibility, developers and DBJV members will include significant contingencies in their proposals or, more significantly, withdraw from a procurement. Other problematic risks cited were *sociopolitical, changes in law, right-of-way, and latent defects*.

Risk sharing methods such as allowances or deductibles as well as timely decision-making and dispute resolution were suggested as risk mitigation strategies. Interviewees also raised a number of general issues such as the fixed price, date certain structure of P3s and project preparation. Many interviewees noted that the fixed price, date certain structure causes problems particularly when risks transferred cannot be efficiently managed or potentially have significant consequences. Likewise, a number of interviewees commented that too many projects proceed to procurement without adequate due diligence by public agencies. Multiple interviewees described challenges with a lack of reliance on information or data provided by owners; oftentimes, project-related information is provided for reference purposes only without any warranty of its accuracy.

When asked for top recommendations to improve the market, the vast majority of interviewees recommended more open and transparent communication about risks among involved parties with such communication starting prior to procurement through industry forums or one-on-one meetings. Additional recommendations included: (1) greater consideration of progressive or collaborative development approaches, (2) more equitable and timelier dispute resolution, and (3) improved due diligence and project preparation by public agencies.

² Appendix 1 lists and defines the 30 key risks.



3. Phase II Investigation

The overall objective of Phase II was the development of guidelines for risk allocation and management in long-term highway development agreements. The guideline was formed through: (1) identification and analysis of existing guideline documents, (2) consideration of issues, risks and recommendations identified in Phase I, (3) review of pertinent literature and reports based on Phase I outcomes, and (4) examination of how case projects handled project preparation, procurement and implementation & operations as well as the treatment of key risks identified in Phase I.

Figure 1 illustrates the activities that are typical in project preparation, procurement and implementation & operations for LTHDAs. This figure delineates the tasks or activities that are common in each phase in the lifecycle of an LTHDA/P3 project, which effectively concludes at the end of the contract term (certainly the facility/asset developed will have a lifespan beyond the contract term, but this is the effective end of the project arrangement).

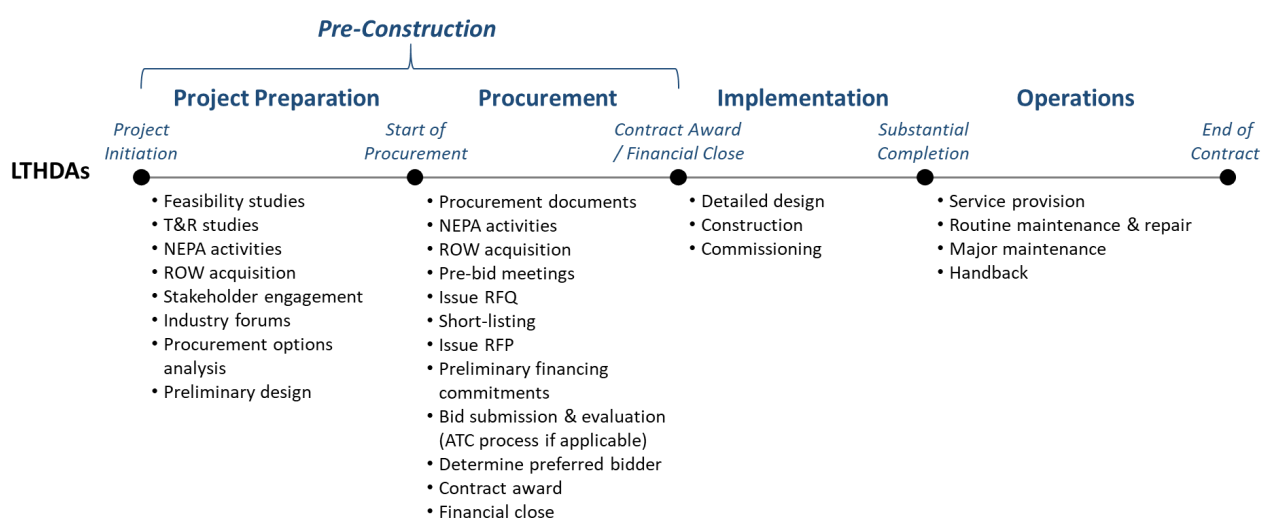


Figure 1. Phases and Activities for Typical LTHDAs

1.3 Identification of Existing Manuals/Guidelines

A desk-top review of LTHDA/P3 manual/guidelines was initiated by searching the web-sites of DOTs (or comparable units) in all US states and territories using keywords and examining web-pages of relevant divisions/offices. Consequently, a manual or guidelines of some form were found in the following state/territory DOTs; the year of publication or last update is shown:

- Arizona Department of Transportation (ADOT) - 2022
- Colorado Department of Transportation (CDOT) - 2020
- Georgia Department of Transportation (GDOT) - 2022
- Indiana Department of Transportation (INDOT) - 2013
- North Carolina Department of Transportation (NCDOT) - 2014
- Pennsylvania Department of Transportation (PennDOT) - 2022
- Virginia Department of Transportation (VDOT) - 2017

As depicted, only seven guidelines were identified. Hence, only about 20% of the states with the authority to implement LTHDA/P3s for highway infrastructure have guidelines readily available. Further, several are rather dated; however, they were still included in the review to examine what information was conveyed



regarding LTHDAs/P3s at that time, and these manuals/guidelines remain posted on the corresponding DOT website.³

Table 1 summarizes the purpose statements from the DOT P3 Manual/Guidelines. While these purpose statements are similar, several highlight the importance of conveying information about program policies and procedures to key stakeholders from the public and private sectors. In addition, most of these manuals and guidelines had additional statements about the general nature of these guidelines and how particular processes or terms might be altered to fit the circumstances and conditions of each P3 project.

Table 2. Summary of the Purpose of DOT P3 Manuals/Guidelines

DOT	Purpose of P3 Manual/Guidelines
ADOT	<p>The purpose of these Guidelines is to document a clear, consistent, efficient, and transparent management of innovative project delivery. These Guidelines will be available for reference by the public, the private sector, and other governmental entities on ADOT's website.</p>
CDOT	<p>The High-Performance Transportation Enterprise (HPTE) Public-Private Partnership (P3) Management Manual provides a framework for both HPTE and the Colorado Department of Transportation (CDOT) for the development, implementation, and oversight of P3 projects. This manual addresses P3 program development and management, and walks through the different stages of project development and defined roles and responsibilities to ensure timely and responsive actions between HPTE and CDOT to address common needs of P3 projects. The manual is divided into four sections:</p> <ol style="list-style-type: none"> 1) P3 Program Development and Management 2) Project Planning and Developmental/Pre-Procurement Phase 3) Project Procurement Phase 4) Project Implementation and Operations Phases <p>The manual is meant to supplement existing laws, policies, and guidance already in place by CDOT for traditional projects and also by HPTE for P3 projects. The manual will not replace existing procedures for traditional projects, but specifically addresses additional guidance and processes for P3 projects. The manual incorporates appropriate laws and applicable HPTE/CDOT policies, manuals, and guidance, and provides direction for the HPTE P3 Program and P3 projects that the HPTE Board approves to move forward.</p>
GDOT	<p>The Georgia Department of Transportation (GDOT) intends this Public-Private Partnership (P3) Manual (Manual) to provide a general framework, process, and structure for the delivery of its P3 program, in order to facilitate the implementation of the P3 program in a manner consistent with the P3 Legislation, P3 Rules, and P3 Guidelines. The Manual outlines processes for key elements of the P3 procurement and delivery process. It is intended for GDOT staff, as well as the industry, including, but not limited to Developers, contractors, and consultants.</p> <p>The purposes of this Manual are to:</p> <ol style="list-style-type: none"> a. Describe the statutory authority and rules that govern P3 delivery at GDOT.

³ Some states had policy or regulation documents on-line, but these lacked the structure and detail typical of guidelines or manuals.

DOT	Purpose of P3 Manual/Guidelines
	<ul style="list-style-type: none"> b. Describe pre-advertisement activities such as project screening, concept development, environmental planning, costing plans development; and risk assessment and allocation strategies. c. Describe P3 procurement activities, including the advertisement process, evaluation method, selection, and awarding process. d. Define roles and responsibilities. e. Provide guidance to GDOT’s project management staff in carrying out their pre-let duties on P3 projects.
<p>INDOT</p>	<p>The purpose of this document is to be a resource for the private sector and stakeholders of the P3 Program to assist in delivering needed projects that provide value to the State of Indiana. This introduction outlines Indiana’s objectives for its P3 Program, presents the project delivery guidelines, and provides additional considerations affecting the P3 process.</p> <p>Indiana has organized its P3 Program as a partnership between the Indiana Department of Transportation (INDOT) and the Indiana Finance Authority (IFA). The partnership allows the State to leverage the core competencies and unique capabilities of each agency. The IFA will be the procuring agency for P3 projects. IFA will work closely with INDOT.</p>
<p>NCDOT</p>	<p>This document establishes the Department’s process for soliciting, evaluating, selecting, procuring and administering contracts that include a partnership with one or more private entities that wish to develop, design, establish, enhance, finance, construct, operate, and/or maintain a transportation facility. The primary purpose of public private partnerships is to leverage public funds or other resources with private investment to accelerate, enhance, or otherwise improve the delivery, operation, or maintenance of public transportation infrastructure.</p> <p>This policy is not intended to supercede or replace Department policies enabling private or public entities from funding transportation projects with no further financial interest upon completion of the project.</p>
<p>PennDOT</p>	<p>The P3 Implementation Manual & Guidelines (“Implementation Manual”) provides guidance regarding Public-Private Transportation Project development and implementation in the Commonwealth. This guidance applies to both solicited and unsolicited Transportation Projects across all modes including multi-modal and intermodal. The Public-Private Transportation Partnership Board approves this Implementation Manual for use in the Commonwealth. The processes outlined in this document shall be followed by all Public Entities that seek to advance a P3 project.</p>
<p>VDOT</p>	<p>The processes outlined in the Manual and Guidelines are specifically designed for use by VDOT and DRPT (Department of Rail and Public Transportation), and may also be used by other agencies as a basis to adopt their own PPTA guidelines. Please note a number of the specific changes made in 2017, affect VDOT / DRPT alone.</p> <p>The Manual and Guidelines should be used by members of the private sector interested in submitting Proposals for P3 projects to VDOT or DRPT.</p>

1.4 Consideration of Findings from Phase I

As discussed previously, the Phase I report provided important insights about LTHDA/P3 implementation and practices. The P3 contract analysis revealed that nearly 50% of 30 key risks (such as inflation, design, performance and maintenance) are predominantly transferred to the private sector while 30% are typically handled as supervening events. Consequently, the private partner in a LTHDA/P3 will either bear the potential impacts or rely on contractual resolution - through the relevant supervening event process - of the vast majority of key risks.

Practitioners indicated that particular risks were consistently problematic:

- Geology/site conditions
- Third parties such as utilities, railroads or local jurisdictions
- Sociopolitical
- Changes in law
- Right-of-way
- Latent defects

Additional key issues identified were the:

- fixed price, date certain structure of P3s
- limited reliance granted by owners for information and data provided
- lack of due diligence by public agencies

Finally, key recommendations for improving P3s included: (1) more transparent and open dialogue about project risks among involved parties, (2) greater consideration of collaborative approaches, (3) improved project preparation and (4) more effective and timelier dispute resolution.

1.5 Review of Pertinent Reports

Surface transportation and highway P3s are obviously not a new phenomenon. Hence, reports published from sources such as FHWA, NCHRP and DOTs have addressed P3 topics such as risk assessment and allocation, project planning, and procurement processes. Selected reports were reviewed to identify content relevant to the development of this guideline. Table 2 lists these reports.

Table 3. Pertinent Reports about P3 Processes and Practices

Title	Date	Source (Author(s) if indicated)
<i>Establishing a Public-Private Partnership Program: A Primer</i>	2012	FHWA
<i>Risk Assessment for Public-Private Partnerships: A Primer</i>	2014	FHWA
<i>Successful Practices for P3s</i>	2016	FHWA
<i>Report on Highway Public-Private Partnership Concessions in the United States</i>	2016	FHWA (Perez, Giordano, Woodhouse, Thompson)
<i>Early Involvement of Private Developers in the Consideration of Long-Term Public-Private Partnership Concession Options: A Discussion Paper</i>	2017	FHWA (Greene, Amos, Vandegriff, Omay, Frawley and Henkin)



Title	Date	Source (Author(s) if indicated)
<i>Public-Private Partnership (P3) Procurement: A Guide for Public Owners</i>	2019	FHWA & FTA (Smith, de la Peña, Kussy (Nossaman), Sethi (Leidos), Wheeler, Gifford (George Mason) and Ybarra)
<i>PPP Risk Allocation Tool 2019 Edition – Transport</i>	2020	Global Infrastructure Hub in collaboration with Allen & Overy
<i>Risk Management Best Practices: Final Research Report</i>	2022	Michigan DOT (Keetley, Goldstein (RS&H))
<i>An Honest Conversation in Search of Balance in: Risk: Finding the Right Balance</i>	2023	P3 Bulletin (Davies)
<i>Design-Build-Finance-Operate-Maintain First Principles of Risk Allocation and Certain Key Commercial Terms Best Practices</i>	2024	Association for the Improvement of American Infrastructure

Each of these reports or articles emphasizes various aspects of P3s. For instance, FHWA's Primers, published in 2012 and 2014 respectively, cover fundamental considerations for initiating a P3 program and conducting risk assessments whereas MDOT's 2022 report on risk management practices provides in-depth guidance for implementing a risk management program to improve project delivery, particularly when alternative delivery methods are being used. FHWA's 2016 Report about successful practices in P3s identifies a variety of practices that support P3 success during tasks such as project development, project evaluation and performance monitoring. FHWA's 2017 Discussion Paper about early involvement of private developers in P3s identified and evaluated various methods for engaging the private sector during a P3 project's lifecycle such as industry forums and collaborative risk workshops. FHWA's 2019 P3 Procurement Guide for public owners gives comprehensive information and guidance about conducting procurements from the pre-procurement phase through selection to commercial and financial close.

Consequently, several of these reports provide a basis for considering what practices that a guideline for P3 risk allocation and management should include. Considering the three project phases of preparation, procurement and implementation & operations, Table 3 identifies such practices by phase:

Table 4. Potential P3 Practices to Improve Project Preparation, Procurement and Implementation

Phase	Potential Practices
Preparation	<ul style="list-style-type: none"> • Identification and screening of candidate P3 projects • Process for risk identification, analysis and assessment to include development of risk registers and conduct of risk workshops • Process for conducting Value for Money (VfM) analyses • Identification of industry engagement opportunities such as forums, market soundings or one-on-one meetings • Availability of standard term sheets or contract documents
Procurement	<ul style="list-style-type: none"> • Process for iterative review/comment on procurement and contract documents • Identification of industry engagement opportunities such as one-on-one meetings



Phase	Potential Practices
	<ul style="list-style-type: none"> ● Process for Alternative Technical Concepts (ATCs) ● Identification of risk alignment opportunities such as risk workshops
Implementation & Operations	<ul style="list-style-type: none"> ● Identification of relational practices such as partnering ● Identification of communication/escalation protocols ● Identification of alternative dispute resolution methods

These potential practices can help to align interests of the public and private sectors and should promote better risk allocation and management.

Additionally, Davies (2023) also reported concerns from practitioners about finding the right balance for risks. He explained:

The balancing act cuts to the core of P3s: why should an authority pursue the model if the risk transfer is diminished? But again, why would a contractor take on the work that's too risky when IJJA, CHIPS and IRA have sent forth a tidal wave of projects, allowing contractors to pick and choose what they consider to be the best ones.

Davies further argues that many in the industry believe that “a rebalancing, or new approach is in order.” One experienced public sector official noted:

At some point, we have to take accountability and be honest. The industry got overly aggressive and mispriced, we all got things wrong. And at the same time as the public sector needs to say, ‘we transferred more than we should’, the private sector needs to admit that they took it. We’re in this mess together. We’ve got to hit a reset at some point. The industry has to be honest about the ability to take on risk. Because if things have changed, we need to have a frank conversation about it.

Davies concludes his article emphasizing the need for a renewed emphasis on ‘partnerships’ between the public and private sectors, a view shared by a senior representative from a developer/concessionaire:

We don’t want either side of the partnership to look at the other and just say it’s their problem and walk away. The public and private sectors need to work together to solve problems, and to proactively mitigate risks and maximize opportunities; this is the power of P3s.

Recently, the Association for the Improvement of American Infrastructure (AIAI) released its DBFOM First Principles of Risk Allocation document that provides perspectives of “best practices” for risk allocation and commercial terms in P3s that were developed through “consultation with private-sector equity investors, lenders, contractors, designers, and operation/maintenance providers and their public-sector counterparties, including various current and former public owners and their advisors.” The document is intended to “describe first principles of appropriate and reasonable risk allocation and commercial terms for certain key issues on DBFOM projects, which may be used to inform the development of projects and provide a common basis from which parties may discuss these issues in the context of a particular project.” The document presents its best practices in several key areas:

- Site Issues – Reference Information, Site Conditions and Acquisition
- Utilities, Third-Party Coordination and Government Approvals
- Changes and Modifications
- Supervening Events
- Operations and Maintenance
- Handback Requirements
- Performance Requirements



- Financing Risks and Refinancing
- Equity Requirements
- Insurance and Indemnity
- Defaults and Termination
- Key Personnel and Subcontracting

This document is similar in purpose and scope to the *PPP Risk Allocation Tool for Transport (2019 Update)* developed by the Global Infrastructure Hub, which recently became the global knowledge platform of the World Bank's Public-Private Infrastructure Advisory Facility (PPIAF). This risk allocation tool, however, is geared more toward developing regions of the world. Still, it is another resource for examining global perspectives of risk allocation in P3 arrangements.

Collectively, Davies' article and AIAI's First Principles document reinforce several key issues raised in the Phase I State-of-Practice Report. Particularly, they reiterate public and private sector concerns that a "course correction" for P3s is necessary, there is a need for more open dialogue between the public and private sectors about risk allocation, and an emphasis on several problematic risks such as third-parties is critical. Consequently, both confirm the continued necessity for better risk allocation and management in P3s. Further, the AIAI First Principles document offers a baseline for the treatment of multiple risks in P3s.

1.6 Analysis of Existing P3 Manuals/Guidelines

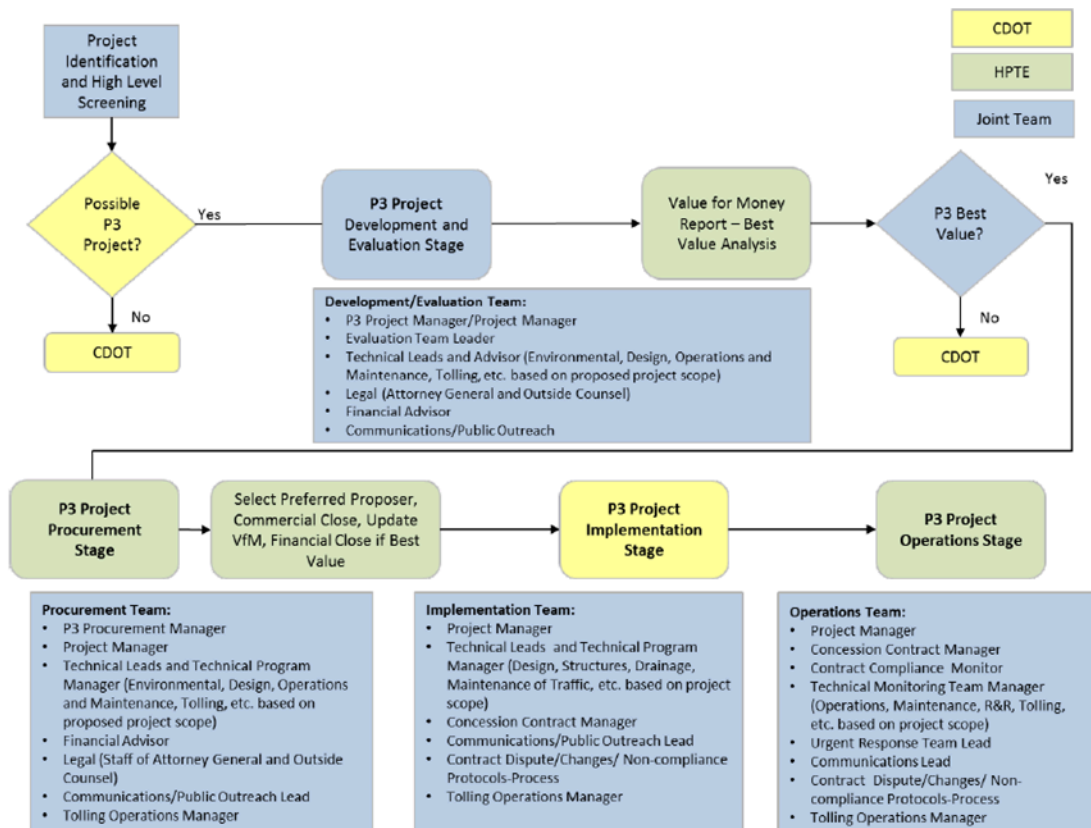
The content of the seven existing P3 manuals/guidelines was reviewed to determine what aspects of preparation, procurement and implementation & operations were covered. The meta-structure of each guideline/manual was assessed based on its table of contents and individual sections were then reviewed.



Based on content, CDOT’s P3 Management Manual⁴ and GDOT’s P3 Manual were quite comprehensive. For instance, CDOT’s manual includes a flowchart (Figure 2) that illustrates the process a P3 project follows from identification through operations as well as the public entities responsible for different aspects of the process.

Additionally, it covers details about: (1) project identification and screening; (2) pre-procurement planning such as risk analysis, value for money (VfM) analysis, and industry outreach; (3) procurement activities such as risk assessment and allocation, the two-phase procurement process and a final VfM analysis; and (4) implementation and operations activities such as the project management team, project and document control and claims processing.

GDOT’s manual includes many of the same elements for project identification and screening, project development (i.e. pre-procurement planning), and procurement; it does not cover implementation & operations activities. One interesting feature of GDOT’s manual is its “pre-advertisement work activities” such as pre-solicitation industry forums and one-on-one meetings with interested parties to gauge market interest. This section of the manual also includes tabular listings of: (1) activities considered in project development and (2) third party agreements. Such tables contain information that can help in risk allocation and management since they establish GDOT’s “baseline” for particular items such as geotechnical investigation and utility agreements. Excerpts are provided in Table 4 and Table 5.



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Table 5. Excerpts from GDOT's Work Plan Activities Considered in Project Development

Activity	Action
<p>Concept Layout and Concept Report</p>	<p>The concept layout and approved concept report is the basis for the development of the costing plans. The concept report is developed in accordance with GDOT's Plan Development Process (PDP) and defines the basic parameters for the design and construction of the project.</p> <p>The Developer may modify the preliminary horizontal and vertical alignments as long as they meet the requirements set forth in the environmental document and the RFP. In most cases all design changes must remain within the existing/proposed right- of-way as designated in the concept layout, approved concept report and approved environmental document. If changes are proposed by the Developer that require additional right-of-way or easements, or that are not cleared in the original approved environmental document, then the Developer bears the risk associated with additional time and money necessary to acquire right-of-way and/or obtain the necessary environmental documentation. The RFP will provide clarification of the Developer's risk related to right-of-way and environmental clearance.</p> <p>For P3 delivery, the Office of Alternative Delivery Project Manager (OAD-PM) must pay close attention to constructability when developing or revising the concept report, the need for Design Exceptions (DE) or Design Variances (DV) and identifying potential opportunities for innovation.</p>
<p>Environmental</p>	<p>If possible, the RFP should not be advertised until after the environmental process has concluded or is near conclusion. The OAD-PM should establish a P3 procurement schedule based on this assumption.</p> <p>In some cases, the RFP may be advertised prior to the conclusion of the environmental process. GDOT's current practice is that the Project will not be awarded until the environmental process has concluded, unless otherwise approved by the Chief Engineer.</p> <p>In the event GDOT determines that the P3 project will be procured and awarded prior to the approval of the environmental document, the requirements set forth in 23 CFR Part 636.109 will apply. In this case, the RFP will include a provision that prevents the Developer from proceeding with right-of-way acquisition, final design or construction activities prior to the approval of the environmental document, pursuant to 23 CFR 771.113(a). In addition, the RFP will include a provision ensuring that no commitments are made to any alternative being evaluated in the environmental process and that the comparative merits of all alternatives presented in the environmental document (including the no-build alternative) will be evaluated and fairly considered. Finally, the RFP will include a termination</p>

Activity	Action
	<p>provision in the event the no- build or no action alternative is selected at the end of the environmental process.</p> <p>23 CFR 636.109 allows the agency to proceed with pre-qualifications, industry review and a Shortlist process before the environmental process is complete.</p> <p>The following are considered as environmental document approval: Categorical Exclusion (CE) classification, Finding of No Significant Impact (FONSI), or Record of Decision (ROD) along with GDOT’s authorization to proceed.</p> <p>The environmental document is a critical component of the delivery process.</p> <p>GDOT must communicate via the RFP the importance of this document, its contents and the risks associated with any changes that could result in an environmental re-evaluation.</p>
<p>Right-of-Way</p>	<p>The OAD-PM will coordinate with GDOT’s Office of Right-of-Way as early as possible to identify all potential right-of-way impacts, determine acquisition schedule, determine Phase I/II site assessment needs, and to discuss the entity, State or Developer, best suited to acquire the right-of-way. Sufficient right-of-way must be acquired to accommodate the Project. The acquisition</p> <p>of right-of-way and easements are traditionally the responsibility of GDOT, but this responsibility may be transferred to the Developer when necessitated by the project schedule.</p> <p>In the event that GDOT will acquire the right-of-way, the RFP must include the date(s) whereby GDOT anticipates obtaining title and possession. This approach will mitigate</p> <p>the potential schedule risk to the Developer and will allow the Developer to plan the work adequately. GDOT may delegate responsibility for right-of-way acquisition to the Developer. The Developer will be required to develop right-of-way plans and other pre-acquisition</p> <p>information necessary to complete a Right-of-Way package, as well as complete an appraisal of all impacted parcels. Legal work (such as closings and condemnation filings) will be conducted by the assigned Special Assistant Attorney General (SAAG).</p> <p>However, the Developer will be responsible for retaining the court coordinator to assist the assigned SAAG.</p>
<p>Utilities</p>	<p>The OAD-PM will coordinate with GDOT’s Office of Utilities as early as possible to identify potential utility impacts and risks and discuss a timetable to obtain Subsurface Utility Engineering (SUE) plans and the utility Memorandum of Understanding (MOU) from each of the utility owners. In the event that</p>

Activity	Action
	the likely impact to utility owners is low for the project, GDOT’s Office of Utilities may grant a SUE waiver in which case GDOT’s “white lining” specification will be required.
Geotechnical Investigation	GDOT should obtain as much geotechnical investigation data as possible prior to the RFP advertisement, and provide this data to Proposers as Reference Information Documents (RID). GDOT should also provide to Proposers as information only all existing and readily available soils reports, Bridge Foundation Investigations (BFIs) or (Wall Foundation Investigations) WFIs from prior projects that were in the project’s vicinity. GDOT should not provide interpretive reports except for the final pavement design. If feasible, Proposers should be allowed to perform additional borings during the procurement process to further minimize risk.

Table 6. Excerpts from GDOT's P3 Third Party Agreements

Activity	Action
Utility Agreements, Memorandum of Understanding, Utility Analysis Preliminary Routing Report and Coordination	<p>Utility coordination must be performed in accordance with GDOT’s Utility Accommodation Policy and Standards Manual (UAM). GDOT should contact utility owners during the development of the RFP to plan activities, discuss the project, discuss risks and possible mitigation strategies, and to obtain MOUs. SUE should be conducted for all P3 projects prior to the advertisement of the RFP.</p> <p>This preliminary SUE data will provide the Proposers information necessary to assess the risk and determine an appropriate strategy to avoid or relocate an impacted utility.</p> <p>Once the preliminary SUE plans are approved by GDOT, GDOT will facilitate a utility coordination meeting (referred to as a utility workshop) with all utility owners within the project limits. The goals of the utility workshop include:</p> <ul style="list-style-type: none"> ● Discuss the scope of the project ● Distribute SUE plans to all utility owners within the project area limits ● Distribute the Preliminary Utility Status Report (PUSR) to utility owners and ask that they provide additional information to supplement the MOU ● Distribute the Memorandum of Understanding (MOU) to each utility owner and explain how it should be filled out <p>GDOT will follow up with utility owners to execute MOUs, and to collect the Utility Analysis (UA), which is additional information regarding an affected utility, from each</p>

Activity	Action
	<p>utility owner within the project limits. The executed MOUs and the UAs will be included in the RFP.</p> <p>The GDOT's Public Interest Determination Policy and Procedure applies to all P3 projects. Therefore, each MOU will identify the entity that is responsible for the design and construction of the utility relocation(s). The UAPRR is used to provide Proposers with additional information not included in the MOU, such as estimated costs for design and construction, material requirements, and the estimated number of days to complete the relocation.</p> <p>On P3 projects, the Developer is responsible for utility coordination and completing most tasks typically performed by the District Utilities Engineer for Design-Bid-Build projects. Utilities are one of the most critical risks on P3 Projects. It is important that GDOT provide as much clarity in the RFP to identify the scope requirements of the Developer. In addition, it is essential that Proposers understand the related risks during the RFP Phase, and evaluate options to avoid utility impacts. The Developer may modify the preliminary horizontal and vertical alignments as long as they meet the requirements set forth in the environmental document and the RFP. In most cases all design changes must remain within the existing/proposed right- of-way as designated in the concept layout, approved concept report and approved environmental document. If changes are proposed by the Developer that require additional right-of-way or easements, or that are not cleared in the original approved environmental document, then the Developer bears the risk associated with additional time and money necessary to acquire right-of-way and/or obtain the necessary environmental documentation. The RFP will provide clarification of the Developer's risk related to right-of-way and environmental clearance.</p> <p>For P3 delivery, the OAD-PM must pay close attention to constructability when developing or revising the concept report, the need for Design Exceptions (DE) or Design Variances (DV) and identifying potential opportunities for innovation.</p>



The content of the guidelines from ADOT, INDOT, NCDOT, PennDOT and VDOT was analyzed similarly. Table 6 presents a summary of the content in all seven guidelines.

All of the guidelines provided information about how candidate projects are screened and identified as P3s; this is an important indicator of the attributes that a project should have from each DOT's perspective to qualify as a P3. Generally, the guidelines addressed essential considerations for projects such as size, complexity, accelerating development, advantageous risk transfer and innovation opportunities. Five of the seven identified the use of VfM-type analyses; PennDOT and VDOT described these analyses as Best Value Analysis and Public Sector Analysis & Competition.

With respect to risk assessment, six of seven at least address this process. However, only CDOT and VDOT explicitly describe the employment of risk registers and risk workshops throughout the preparation and procurement phases of a project. Six of seven guidelines described industry engagement practices during the preparation phase that include:

- Requests for information (RFI) or market soundings: issuing a call to relevant industry participants for input about interest and feedback for a prospective project;
- Industry forums: open/general sessions where information about pending specific projects is shared and industry participants provide feedback; and
- One-on-one meetings: closed sessions with interested private parties to exchange more detailed information about a pending specific project.

Generally, these same practices are followed in the procurement phase, but these exercises become more specific and detailed about the project under procurement; six of seven guidelines described such practices. Similarly, six of seven guidelines describe some form of iterative review and comment on procurement documents and/or the draft contract. However, the details and approaches associated with these processes varied. For instance, PennDOT's guidelines describe "Industry Review Meetings" that:

are intended to share information regarding RFP-related documents (Instruction to Proposers, Technical Provisions, Public-Private Transportation Partnership Agreement Term Sheet) and are either open to all interested Private Entities or restricted to prequalified or shortlisted Private Entities in order to obtain feedback, comments and suggestions from such Private Entities regarding draft documents, key project components and technical, financial and legal issues.

Such meetings are meant for informational purposes only and are not intended for negotiations or reaching agreement between the counterparties.

Alternatively, CDOT's manual explains an industry review process for a project's RFP:

It is important to note that the RFP is developed as a draft and there is input received from industry through various mechanisms throughout the RFP phase. The interaction with industry will allow for the exchange of information that should provide HTPe with sufficient information to finalize the RFP. It is expected that feedback from industry will lead to an RFP that will continue to maximize the competition while providing value to the state. Formalized processes will be identified in the ITP, including dates and times...

Interactions may include: a pre-proposal conference, one-on-one and ATC meetings with proposers, pre-proposal submittals, and comments/questions.

Only three of seven (ADOT, CDOT and GDOT) guidelines identified ATCs as part of the procurement phase, and ADOT simply indicated that it may choose to include an ATC process that would be described in the RFP. Certainly, the other agencies may elect to include ATCs in their procurements, but their absence from their guidelines/manuals does not signal whether ATCs are part of their typical practice or not.

Finally, only CDOT's manual addresses the implementation phase in any detail. It describes the utilization of an "Executive Oversight Committee" that was established for the pre-procurement and procurement phases that will be re-evaluated for membership during project implementation. This committee provides



policy direction, dispute resolution and guidance to the project delivery team. Additional details related to areas such as project management, technical support and project and document controls are also covered.

Overall, the analysis of this set of P3 manuals or guidelines indicates that some are far more comprehensive than others, most do not include many details about risk assessment and allocation, and the implementation phase of P3s is not covered in any significant detail. The latter circumstance is not necessarily surprising since attention over the last decade or so has been focused on the planning and procurement of P3s, i.e. selecting a preferred proposer and reaching commercial and financial close, rather than implementation. Additionally, many contemporary P3s are only a few years into their implementation phases.



Table 7. Summary of Practices in P3 Guidelines & Manuals

Practice	ADOT	CDOT	GDOT	INDOT	NCDOT	PennDOT	VDOT	Comments
Describes P3 project identification and screening	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Identifies use of VfM analyses	Yes	Yes	No	Yes	No	Yes*	Yes*	*PennDOT describes a Best Value Analysis; VDOT describes a Public Sector Analysis & Competition methodology
Describes overall risk assessment process	Yes	Yes	Yes	Yes*	No	Yes*	Yes	*INDOT and PennDOT list as a potential planning or scoping activity
Identifies use of risk registers, risk workshops or similar practices	No	Yes	No	No	No	No	Yes	
Identifies <i>preparation phase</i> industry engagement such as industry forums	Yes	Yes	Yes	Yes	No	Yes	Yes	
Describes process for review/comment on procurement and contract documents	Yes	Yes	Yes	No	Yes	Yes	Yes	
Identifies <i>procurement phase</i> industry engagement such as one-on-one meetings	Yes	Yes	Yes	No	Yes	Yes	Yes	

Practice	ADOT	CDOT	GDOT	INDOT	NCDOT	PennDOT	VDOT	Comments
Identifies ATCs as part of <i>procurement phase</i>	Yes*	Yes	Yes	No	No	No	No	*ADOT describes that ATCs may be used, but lacks process details
Identifies relational practices such as partnering	No	Yes*	No	No	No	No	No	*CDOT employs Executive Oversight Committee
Identifies dispute resolution methods	No	Yes	No	No	No	Yes*	No	*PennDOT indicates its contract is required to specify dispute resolution procedures



4. Case Examples

Three case projects were identified to examine how project preparation, industry engagement and key issues and risks were addressed during planning, procurement and implementation of these projects. The Central 70 project in Denver, CO, the I-4 Ultimate in Orlando, FL and the SH-288 Toll Lanes in Harris County, TX were selected based on the following criteria:

- Two LTHDs employed design-build-finance-operate-maintain (DBFOM) with availability payment (AP) models and one employed DBFOM with a revenue risk/toll concession model.
- The projects are comparable in:
 - Scope – all three involve construction/reconstruction of interstate highway corridors with the addition of express lanes in the median with contract values of over \$1.2 billion for Central 70, over \$2.8 billion for I-4 and over \$1 billion for SH-288.
 - Contract Duration – Central 70: 30-year agreement following design and construction completion; I-4: 40-year agreement inclusive of design and construction; and SH-288: 52-year agreement inclusive of design and construction.
 - Era – Central 70: construction commenced in 2018; I-4: construction commenced in 2015; SH-288: construction commenced in 2016.
 - Experience of Procuring Authority – the High Performance Transportation Enterprise (HTPE)⁵ in Colorado, the Florida Department of Transportation (FDOT) and the Texas Department of Transportation (TxDOT) have planned, procured and implemented multiple LTHD projects.
- Different by:
 - Jurisdiction
 - Compensation model: Central 70 and I-4 are AP arrangements while SH-288 is a revenue risk arrangement.

The similarities and differences in the projects provide a basis for examining how HTPE, FDOT and TxDOT prepared, procured and implemented these projects as P3s to identify common and distinct practices for: (1) due diligence, (2) alignment of public and private sector interests and perspectives of risks, and (3) contractual treatment of key issues and risks.

1.7 Overview of Case Projects

A summary of the characteristics of the case projects is provided in Table 7.

Table 8. Summary of Case Projects

Item	Central 70	I-4 Ultimate	SH-288
<i>Location</i>	Denver, CO	Orlando, FL	Houston, TX
<i>Project Type</i>	Express Lanes	Express Lanes	Express Lanes
<i>Length</i>	10 miles	21 miles	10.3 miles
<i>Contract Value</i>	\$1.2 billion	\$2.8 billion	\$1.06 billion

⁵ Recall that HTPE is now known as the Colorado Transportation Investment Office (CTIO)



Item	Central 70	I-4 Ultimate	SH-288
LTHD Model	DBFOM Availability Payment	DBFOM Availability Payment	DBFOM Revenue Risk
Contract Duration	30-years After completion of construction	40-years Inclusive of design and construction	52-years Inclusive of design and construction
Commercial Close	November 2017	September 2014	March 2016
Financial Close	December 2017	September 2014	May 2016
Operational Status	<ul style="list-style-type: none"> Opened to traffic in 2022 Construction completed in July 2023 	Completed in February 2022	Completed in November 2020

1.8 Project Preparation and Procurement

Examination of how HTPE, FDOT and TxDOT implemented project preparation and procurement activities is instructive to better understand these agency's processes for due diligence and alignment of public and private sector interests in P3 projects.

1.8.1 Central 70

Overview

I-70 was constructed in the 1960s, and a portion of it runs through the northern area of Denver, CO. Growth in population and economic activity caused significant traffic increases along I-70 in the greater metropolitan area of Denver. In 2003, CDOT began an EIS study to examine the future of the I-70 East Corridor between I-25 and Tower Rd. This segment serves as a key east-west route and included a viaduct that was constructed in the early 1960s. This corridor had significant safety concerns as well as projections of up to 270,000 vehicles per day by 2035. CDOT proposed adding one HOT lane in each direction within the median for 10-miles between I-25 and Chambers Rd., removing the existing viaduct and lowering the highway in this region, constructing a four-acre park over the lowered highway, and other improvements such as restriping.

P3 Delivery Decision

Given the scale of the project and potential funding shortfalls, the Colorado Transportation Commission in July 2014 instructed HPTE to consider P3 alternatives for delivering the needed improvements. A VfM study completed in February 2015 compared DB, DBOM and DBFOM delivery options and concluded that either DBOM or DBFOM approaches were suitable, but DBFOM afforded more risk transfer and certainty in outcomes (HPTE 2015). Subsequently, CDOT and HTPE elected to use a DBFOM model.

Procurement

In early March 2015, HPTE held an industry forum to introduce and obtain feedback from prospective industry participants. Shortly thereafter, it issued its RFQ. Five submissions were received in June 2015,



and four teams were short-listed. In September 2015, HPTE issued a draft RFP, which included its Instructions to Proposers (ITP) and draft Project Agreement. The ITP identified a four-phase process for engaging with its qualified proposers to receive input on the draft RFP and conduct its ATC process:

- First Draft RFP Process (Phase 1 – anticipated through December 2015):
 - Deadlines for proposers to submit commercial/legal comments and technical comments
 - One-on-one meetings to address commercial/legal comments
 - One-on-one meetings to address technical comments and ATC submissions
 - Deadline to submit supplemental due diligence requests⁶
- Second Draft RFP Process (Phase 2 – anticipated through February 2016):
 - Issue second draft RFP
 - Deadline to submit comments
 - One-on-one meetings to address comments and ATC submissions
 - Initial Conceptual Design (IDP) presentations by proposers
- Third Draft RFP Process (Phase 3 – anticipated through April 2016)
 - Issue third draft RFP
 - Deadline to submit comments
 - One-on-one meetings to address comments and ATC submissions
- Final RFP Process (Phase 4 – anticipated through September 2016)
 - Deadline for ATC submissions
 - Issue final RFP
 - Deadline to submit comments
 - Final one-on-one meetings as needed to address comments and ATC submissions

Concurrent with the RFP process, CDOT was pursuing environmental approval of the project and expected publication of the FEIS by January 2016 with a Record of Decision (ROD) by July 2016. This environmental process was delayed, so the 14-year environmental approval process concluded when the ROD was issued on January 19, 2017 (HPTE). Consequently, the final RFP was not issued until March 2017, and administrative/technical proposals and financial proposals were received on June 1, 2017 and August 1, 2017 respectively. On August 24, 2017, the Enterprises selected Kiewit Meridiam Partners (KMP) as the preferred proposer. Commercial close was reached on November 15, 2017 and financial close was achieved on December 21, 2017. Design and construction activities commenced in January 2018, and the project was completed in July 2023.

Implementation

The project experienced some challenges with cost and schedule overruns, which were primarily rooted in the lengthy negotiations between KMP and Union Pacific Railroad over the design and construction of a replacement railroad bridge that crosses I-70 (Murray 2021). KMP originally claimed nearly \$140 million in additional costs, but the two sides settled the dispute for \$12.5 million in December 2020. This amount was within CDOT's construction contingency fund, and a condition of the settlement was refinancing of the project's TIFIA loan at a lower interest rate; HPTE agreed to support KMP in this process (Murray 2021). In September 2021, the refinancing was successful where a direct loan of \$464.96 million replaced the original \$416 million (plus capitalized interest) TIFIA loan. The additional principal defrayed most of KMP's additional costs (USDOT 2021), and the refinancing demonstrated how the parties found a unique solution to resolve the claim. The project's completion, however, was delayed by approximately 11 months from the original schedule (Murray 2021).

⁶ Proposers could submit requests to HPTE for supplemental physical due diligence at any time prior to the deadline



1.8.2 I-4 Ultimate

Overview

I-4 runs through downtown Orlando, FL and opened to traffic in 1965 with a capacity of 70,000 vehicles per day. With significant growth in the region, this capacity was quickly exceeded, so the route was widened to three or four lanes in each direction over time. The I-4 Ultimate project is the result of planning studies that began in the 1980's and continued through the early 2000s to address increasing congestion. By 2005, a plan to widen the highway to six general purpose lanes and two high occupancy vehicle (HOV) lanes in each direction with additional accommodations for light-rail in the median had received environmental approval. This plan was later modified in 2007 to convert the HOV lanes into high occupancy toll (HOT) lanes (FHWA 2016a).

P3 Delivery Decision

On the heels of its success with the I-595 Express Lanes project, FDOT began to consider delivering planned improvements in the I-4 Corridor in the Orlando area as a P3. FDOT estimated that delivering the improvements through conventional pay-as-you-go funding would require 27 years to complete the project whereas delivery by a P3 would take less than seven years (FHWA 2016a). While traffic and revenue studies indicated that the project had a good revenue stream, the toll revenues were only sufficient to cover about 50% of the project's cost, but funds from the state's Strategic Intermodal System program were available to make up a portion of this shortfall (FHWA 2016a).

FDOT completed a VfM study in 2012 that indicated a cost savings of \$1.375 billion (approximately 35% of estimated project costs) over a 40-year period between design-build (DB) and DBFOM (PFAL 2016). Subsequently, Florida Governor Rick Scott and the Florida Legislature approved procurement of the I-4 Ultimate Project as a P3.⁷

Procurement

In early March of 2013, FDOT held an industry public information session to provide an overview of the project and to solicit industry feedback. By mid-March, FDOT issued its RFQ, and seven team responses were received in April. In May, FDOT short-listed four teams to continue in the procurement. Shortly thereafter, it issued a draft RFP, which included Instructions to Proposers (ITP), the Concession Agreement, Technical Requirements, Additional Mandatory Standards and Reference Documents. The ITP included an expected procurement schedule that included all key events leading up to award (Appendix 1), and it identified multiple engagements with the qualified teams prior to finalizing the RFP such as:

- One-on-one meetings (general): two rounds
- Utility coordination one-on-one meetings: one round
- ATC meetings: three rounds
- AFC (alternative financial concepts) meetings: one round

These meetings facilitated important exchanges between FDOT and its qualified teams where contractual, technical and financial modifications to the RFP were discussed. Moreover, FDOT modified its ATC process that normally incorporated approved ATCs into the final RFP to confidential meetings with each bidder; this was the first project in the state to do so (July 2017).

In October 2013, the final RFP was issued. Additional engagements with qualified teams were planned such as:

⁷ Florida's P3 legislation requires the Governor's approval and a 14-day legislative consultation and notification period for a developer/contractor-financed project.



- One-on-one meetings (general): two rounds
- ATC meetings: two rounds
- AFC meetings: one round

By March 2014, all four teams submitted proposals, and FDOT selected I-4 Mobility Partners, a special purpose company comprised of Skanska Infrastructure Development and John Laing Investments, as its preferred bidder. The agreement was executed and financial close was reached in September 2014.

Through the ATC process, the project's scope was modified to include an additional set of direct connector ramps, additional auxiliary lanes and a pedestrian bridge (FHWA 2016a). Construction started in February 2015 and the I-4 Ultimate opened to traffic in February 2022.

Implementation

The project has experienced some serious issues. Unfortunately, five fatalities occurred during construction (Judy 2019). The DBJV team – SGL (Skanska-Granite-Lane) – filed a claim in 2018 for a 245-day extension and \$100 million in compensation due primarily to drilled shaft failures (Moody's 2018). This issue resulted in Moody's revising the project's financing outlook to negative in June 2018 (Moody's 2018). FDOT and I-4 Mobility Partners ultimately negotiated a deal for \$125 million in additional compensation and a one-year time extension to complete the work. However, Lane filed a lawsuit against Skanska, alleging that it should have pushed for a termination of the agreement by I-4 Mobility Partners since the 245-day delay exceeded 180-days, which would allow the developer to exit the agreement (Judy 2021). Instead, Skanska made capital calls from its joint venture partners that eroded expected profits margins. US District Court Judge Roy Dalton ruled in June 2023 that Lane breached its joint venture agreement with Skanska and Granite when it stopped paying its shares of the capital calls; however, the extent of Lane's financial obligations and other claims made by Lane were pushed to a later trial (Leggate 2023). In May 2024, Dalton ruled that Skanska had not breached its fiduciary duties to its parties in SGL; consequently, Lane and its parent company WeBuild were ordered to pay \$79 million to Skanska and Granite (Leggate 2024).

1.8.3 SH-288

Overview

SH-288 is a 60-mile highway that runs from Houston, TX to Freeport, TX (just north of the Gulf of Mexico). By 1984, the highway consisted of two to four general purpose lanes in each direction. In the 1990s, communities in the northern area of the highway, particularly Harris and Brazoria Counties, experienced significant growth, which caused increasing traffic congestion. Traffic studies indicated that traffic would increase by 32% to 74% between 2011 and 2035 (FHWA 2016a). TxDOT and Houston's MPO initiated a project feasibility study between 2003-2005 to examine the entire 288 corridor that led to recommendation of the most feasible alternatives, which included the development of over 17 miles of HOT lanes (two in each direction) between US-59 and SH-6. In early 2007, TxDOT began preliminary design work on the proposed project. It planned to deliver the improvements in two phases, where phase one would add reversible lanes between US-59 and SH-6 and phase two would add an additional general purpose lane in each direction between I-610 and SH-8. The first phase estimates was around \$300 million over four years; the second phase estimate was \$1.4 billion with completion expected by 2035 (FHWA 2016a). Environmental approvals of TxDOT's plans were granted in 2013.

P3 Delivery Decision

During its planning, TxDOT recognized that tolling and privately-financed development could accelerate delivery of the proposed improvements to SH-288. In 2011, legislation that included a number of reforms to Texas' enabling P3 legislation authorized SH-288 to be developed as a DBFOM project as required by



the 2011 law. As required by law, Harris County ceded its right to develop the portion of the project within its county to TxDOT in April 2012; however, Brazoria County decided to develop roughly two-miles of the project within its county itself. Shortly thereafter, the Texas Transportation Commission granted permission to TxDOT to proceed with soliciting interest from the private sector to develop the project in Harris County (FHWA 2016a).

In 2013, TxDOT began preparations to deliver SH-288 as a P3. In accordance with prevailing law, an SB 1420 Committee was formed to assess the project and report to the TxDOT Executive Director. The Committee issued a report in April 2013 that included the results of a comparison of DB and DBFOM delivery where DBFOM could generate an upfront payment from the private sector while DB would require significant public investment (FHWA 2016a). In the report, the Committee concluded that under a DBFOM approach the private sector would retain project financial risks and the financing could rely solely on private sources (FHWA 2016a).

Procurement

TxDOT issued an RFQ in May 2013, which was followed by a pre-qualification workshop to explain the project and its conditions to prospective bidders. The RFQ included a term sheet that summarized key terms and conditions for the subsequent agreement, which stated:

This document is intended as a general description of the anticipated P3A (Public Private Partnership Agreement) terms and is subject to revision by TxDOT; however, TxDOT intends to limit revisions to the major business terms during the procurement. This term sheet will be superseded by the final P3A.

This term sheet also covered key issues such as differing site conditions, right of way and utilities. With respect to utilities, the term sheet indicated:

Developer will be responsible for ensuring that utility facilities impacted by the Project are protected in place or timely removed and/or adjusted, at no expense to TxDOT. A time extension will be allowed for critical path delays due to unreasonable delays in entering into utility agreements by utility owners unless Developer could have, by diligent action, avoided the delay. (See also Relief Events.) Developer will reimburse TxDOT for any administrative costs TxDOT incurs in providing assistance to Developer in obtaining cooperation or resolving disputes with utilities.

Three teams responded to the RFQ, and all three were shortlisted by September 2013. A draft RFP was issued in January 2014, which included ITP, the Comprehensive Development Agreement (CDA) Documents and Reference Information Documents. Similar to the I-4 project, TxDOT identified multiple engagements with the shortlisted teams:

- One-on-one meetings to discuss technical matters, including ATCs
- One-on-one meetings to discuss commercial matters
- One-on-one meetings to discuss financial matters, including TIFIA, PABs, bonds and insurance issues, business terms and AFCs
- One-on-one meetings to discuss TxDOT responses to ATCs

TxDOT also included an opportunity for final questions regarding the RFP roughly one month before the proposal due date. Initially, proposals were due in July 2014, but the submission date was delayed until January 2015. In February, TxDOT selected Blueridge Transportation Group (with equity partners of ACS Infrastructure, InfraRed Capital Partners and Shikun & Binui Concessions) as the conditional awardee and commercial close was reached in March 2016. Construction started in late 2016, and the Express Lanes opened to traffic in November 2020.



Implementation

In March 2024, the Texas Transportation Commission voted unanimously to start the process of terminating the agreement with Blueridge Transportation Group for convenience. Under the provisions of the contract, notification of termination requires six months, and the termination payment is the lesser of fair market value and a fixed amount set in the agreement; the fixed amount is far lower than the fair market value of the project (FitchRatings 2024). The pending action by TxDOT was seemingly in response to the success of the express lanes; State Senator Robert Nichols stated that now is an ideal time to reassert control over the project since “volumes of revenue are shooting through the roof.” (Hagan 2024). In October 2024, TxDOT terminated the contract at a buy back price of \$1.7 billion, just eight years into the contract (Lee 2024).

1.9 Summary

The case projects illustrate how three express lanes projects were advanced as P3s. In each example, the P3 model facilitated accelerated delivery of the improvements in the highway corridor. Two of the three (Central 70 and I-4) completed VfM analyses to support the P3 delivery decision while the SH-288 case executed a comparison of delivery options by a state-mandated committee. Additionally, the cases depict procurement processes that promoted industry engagement through multiple rounds of one-on-one meetings about both technical and commercial matters. Further, each procurement had a consultative structure where the public agency responded to comments and input from the proposers as the contract documents were finalized. Each case also included an ATC process that enabled consideration and implementation of technical enhancements. Additionally, the Central 70 project followed the actions and processes outlined in HPTE/CDOT P3 Manual rather closely.

Yet, these projects did experience issues during implementation illustrating that such large-scale and complex projects can encounter difficulties despite diligent project preparation and procurement efforts. In particular, the recent decision by the Texas Transportation Commission to terminate SH-288 for convenience highlights the significance of this provision and the related revenue sharing provisions in revenue risk P3s.

1.10 Contractual Treatment of Key Issues and Risks/Terms

Beyond the preparation and procurement processes followed in each case, all three project contracts were reviewed to examine how key issues and risks were treated. The issues and risks examined are based primarily on the findings from the Phase I state-of-practice report; however, the risks and terms associated with *termination for convenience* and *revenue sharing* were also included as a consequence of the pending termination of the SH-288 agreement.

The key issues examined include:

- Reliance
- Due Diligence
- Supervening Events
- Dispute Resolution

The key risks/terms reviewed include:

- Changes in Law
- Sociopolitical Opposition
- Geology/Site Conditions
- Force Majeure
- Utilities
- Right-of-Way



- Revenue Sharing
- Termination for Convenience
- Handback

Table 8 presents the results of the review of the project contracts. Generally, similarities among the contracts were found, but some differences also exist. Key similarities include:

- **Reliance** – generally, the reference information documents included in the RFP are discretionary and for information only.
- **Supervening events** – while Central 70 and SH-288 distinguish between compensation events (eligible for time extensions, performance relief and/or compensation) and relief events (eligible for time extensions and/or performance relief) and I-4 only includes relief events (eligible for time extensions and/or performance relief), the types of events that may qualify as supervening events and the processes for making event claims are comparable among the three contracts. Notably, I-4 includes a deductible of \$50,000 and delay costs equal to the first five days for each event without an aggregate cap with the exception of sinkhole events where the deductible is \$500,000 per event with an aggregate cap of \$5,000,000. Presumably proposers had sufficient opportunity to discuss and negotiate these deductible schemes in I-4 given the consultative process and one-on-one meetings conducted during its procurement.
- **Dispute resolution** – all three projects followed a “tiered” approach and employed dispute resolution boards/panels. SH-288 allowed mediation as an option as well.
- **Changes in law** – all three contracts offered relief from similar types of changes in law.
- **Geology/site conditions** – all three contracts limit the opportunities for claims for differing site conditions by granting limited to no reliance on the geotechnical reference information; further, the contracts specify conditions where supervening events might apply such as contaminated materials. In this regard, the I-4 and SH-288 contracts are somewhat stricter. All three contracts do, however, grant reasonable access to the site for proposers during the procurement period.⁸
- **Force majeure** – all three contracts treat similar events as relief events that eligible for time extensions and/or performance relief.
- **Handback** – all three contracts have comparable processes for handback, but the details about expected condition of assets differs.

Differences were most prominent for **utilities** and **right-of-way**. The standards, processes and relief among the three contracts varied. While the variances were not extreme, they are notable. This is not necessarily surprising since the circumstances related to utilities and right-of-way are highly dependent on a project’s context as well as a public agency’s preferences for involvement of a developer in matters such as utility agreements and right-of-way acquisition.

⁸ Despite this, each project was 10-20 miles long and included bridges and overpasses, which made any site and subsurface investigations challenging during the procurement period.



Table 9. Examination of Key Issues and Risks/Terms in Central 70, I-4 and SH-288 Contracts

Item	Central 70	I-4 Ultimate	SH-288	Comments
	<i>Key Issues</i>			
Reliance	<p>In section 3.1, contract <i>grants very limited reliance</i> on “Project Information” and “Reference Documents”. Section 3.1.d.i states: “Developer is not entitled to rely on any Project Information, except with respect to any Reference Document, to the extent such Reference Document is either expressly or implicitly and necessarily the basis for determining the occurrence of a Supervening Event or whether any risk, information, matter or thing was Known or Knowable.”</p> <p>The balance of the section further limits any relief for the Developer due to factors such as: accuracy, completeness, relevance, etc. of Project Information; interpretations or conclusions drawn from Project Information; failure by owner to update Project Information; failure by owner</p>	<p>In Section 1.6, contract <i>grants no reliance</i> on “Reference Documents” provided to Concessionaire. Section 1.6.1 states: “FDOT has provided the Reference Documents to Concessionaire. The Reference Documents are for information only, and are not mandatory or binding on Concessionaire, except to the extent information in the Reference Documents is expressly made a contractual requirement as part of the Technical Requirements. Concessionaire is not entitled to rely on the Reference Documents as accurately describing existing conditions, presenting design, engineering, operating or maintenance solutions or directions, or defining means or methods for complying with the requirements of the Contract</p>	<p>In Section 1.5, contract indicates that Developer “is not entitled to rely on the Reference Information Documents as presenting design, engineering, operating or maintenance solutions or other direction, means or methods for complying with the requirements of the CDA Documents, Governmental Approvals or Law.”</p> <p>Clause also states: “Except as expressly set forth in clause(s) of the definition of Relief Event, Developer shall have no right to additional compensation or time extension based on any incompleteness or inaccuracy in the Reference Information Documents.”</p>	<p>All contracts make it clear that reference materials provided are for information only and effectively use of these materials is at the discretion of the developer/concessionaire.</p> <p>The Central 70 and SH-288 contracts do provide the possibility that reference material may be used for determining whether a supervening event has occurred and whether a condition or circumstance was known or knowable. Hence, it is less strict regarding reliance than I-4.</p>

Item	Central 70	I-4 Ultimate	SH-288	Comments
	<p>to reference or make available project-related materials; and any causes of action or claims based on use or reliance on Project Information.</p>	<p>Documents, Governmental Approvals or Law.</p> <p>The balance of the section further limits reliance where FDOT is not responsible or liable for causes of action or claims based on use or reliance on Reference Documents and FDOT does not warrant completeness or accuracy of Reference Documents. Section 1.6.3 concludes by stating: “Concessionaire shall not be entitled to any Extra Work Costs, Delay Costs, time extensions or other relief on account of any incompleteness or inaccuracy in the Reference Documents, including any incompleteness or inaccuracies regarding the location, size, character and extent of Utilities, Contaminated Materials and subsurface conditions.”</p>		
<p>Due Diligence</p>	<p>Contract states in Section 3.2 that it is the responsibility of the Developer to conduct independent due diligence to satisfy itself as to: sufficiency of condition of</p>	<p>Contract does not have a specific “due diligence” clause, but the necessity for Concessionaire due diligence is noted in contractual definitions such as a “Force Majeure Event.”</p>	<p>Contract does not have a specific “due diligence” clause, but the necessity for Developer “diligence” is addressed in Article 27 – Relief Events; Compensation Events. Due</p>	<p>The specific clause in the Central 70 contract reinforces the obligations of the Developer to conduct the due diligence necessary for performance of the work specified in the agreement</p>



Item	Central 70	I-4 Ultimate	SH-288	Comments
	<p>right-of-way, assets, rights, etc. received; nature and extent of risks; sufficiency of opportunities to conduct due diligence in accordance with “Good Industry Practice”; and necessary precautions and methods to mitigate and reduce impacts on third parties. The section also indicates that the Developer shall not rely on unincorporated statements, representations or warranties not expressed in the contract.</p>		<p>diligence is also noted in contractual definitions such as a “Force Majeure Event.”</p>	<p>while the I-4 and SH-288 contracts indicate this expectation in various places throughout the contract.</p>
<p>Supervening Events</p>	<p>Contract identifies multiple events as a “Supervening Event” that may entitle Developer to relief:</p> <ul style="list-style-type: none"> • Compensation Event – occurrence may entitle adjustment in cost and time; includes events such as: breach of agreement by owner; failure by owner to provide developer possession of right-of-way parcels; discriminatory change in law; etc. • Relief Event – occurrence may entitle adjustment in time; 	<p>Contract identifies events that may qualify as a “Relief Event” that may entitle the Concessionaire to compensation and/or time adjustments. Such events are subject to a deductible of \$50,000 of extra work costs and an amount equal to delay costs for the first five days excluding certain events such as release of contaminated materials by a third-party, Utility Owner Delays and Unknown Utility Delays. A Sinkhole Event has its own deductible (Section 4.17.1.1) of first \$500,000 of Extra Work</p>	<p>Contract identifies events that may qualify as a “Compensation Event” or a “Relief Event.”</p> <p>Compensation Event – occurrence of events may entitle Developer to being restored to “same economic position in which it would have been if the Compensation Event not occurred...”; this includes cost impacts and toll revenue impacts; includes events such as: discriminatory change in law; discriminatory action; TxDOT-Caused Delay;</p>	<p>Central 70 and SH-288 distinguish between compensation and relief events while I-4 treats all events as relief events. Further, I-4 has deductibles associated with general relief events <i>without</i> an aggregate cap while sinkhole events also use a deductible scheme with an aggregate cap. SH-288 includes events that may impact toll revenues such as unplanned competing facilities.</p> <p>Specific clauses/articles that address a Supervening</p>



Item	Central 70	I-4 Ultimate	SH-288	Comments
	<p>includes events such as: force majeure event; fire or explosion, geomagnetic storm or earthquake; any weather event manifesting severe and historically unusual wind and/or liquid precipitation; etc.</p> <ul style="list-style-type: none"> • Delay Relief Event – occurrence of specific events: Unexpected Railroad Delay; Unexpected Governmental Approval Delay; and any breach by City of Denver of the Denver IGA (an intergovernmental agreement among CDOT, HPTE, BE (X) and City of Denver) • Force Majeure Event – occurrence of certain events that qualify as a Relief Event such as war, civil war, etc.; act of terrorism; nuclear, chemical or biological contamination or emissions; etc. 	<p>Costs and an amount equal to delay costs of the first five days of delay; this deductible is subject to an aggregate amount of \$5,000,000.</p> <p>Force Majeure Events qualify as a Relief Event such as: war, invasion, armed conflict, etc.; act of riot, insurrection, civil commotion, etc.; nuclear explosion, radioactive or chemical contamination of the Site, etc.; fire, explosion, earthquake, floods caused by natural events, etc.; named windstorm; etc.</p>	<p>TxDOT’s suspension of tolling; material adverse effect of the operation of an Unplanned Revenue Impacting Facility; etc.</p> <p>Relief Event – occurrence of events may entitle Developer to an adjustment in time as well as relief from performance obligations and noncompliance points due to and during relief event; includes events such as: force majeure event; fire, explosion, flood, earthquake, hurricane, etc.; change in law; discriminatory action; TxDOT Change; TxDOT-Caused Delay.</p>	<p>Event in I-70 (Section 15), Relief Event in I-4 (Article 10) and Relief Events; Compensation Events (Article 27) are lengthy and procedural in nature – in other words, these sections of the contract describe the processes for such matters as notification, determination, entitlement and adjustments in cost/time for event claims.</p>

Item	Central 70	I-4 Ultimate	SH-288	Comments
<p>Dispute Resolution</p>	<p>Contract describes a tiered dispute resolution process in Appendix 25.</p> <ul style="list-style-type: none"> The first tier is “amicable dispute settlement” among the parties prior to escalation. The second tier is referral to “Designated Senior Representatives” by either party for their consideration; if resolution is reached, then the representatives “shall memorialize the resolution by executing a written memorandum or similar document.” The third tier is referral of an unresolved dispute to “Dispute Review Panels” – one technical panel for technical issues and one commercial panel for financial, commercial and/or legal matters. Each panel is comprised of three members who are independent and free of conflicts of interest. The designated dispute review panels shall hear and review evidence related to the 	<p>Contract describes a dispute resolution process where FDOT is the initial arbiter of any written protests to FDOT decisions, actions or orders submitted by the Concessionaire. FDOT will render written decision to such protests. If unacceptable, then the dispute is referred to a Disputes Review Board. The nature and timing of the dispute will dictate whether the referral is to the project’s Disputes Review Board, the Regional Disputes Review Board, or the Statewide Disputes Review Board. The parties agree that referral of a dispute to a Disputes Review Board is a <i>precedent condition</i> to litigation.</p> <p>Section 25.1.1.1 states: “with respect to any decision, determination, judgment or other action of FDOT that is <i>expressly provided in the Contract Documents as being subject to FDOT’s sole or absolute discretion</i>, which decision, determination, judgment or other action shall be final,</p>	<p>Contract specifies dispute resolution procedures in Article 30. Any adverse change in law affecting the dispute resolution procedures shall not be given effect or applicable to the CDA Documents. Section 30.1.4 identifies matters ineligible for dispute resolution such as matters that the CDA Documents expressly state are final, binding or not subject to dispute resolution.</p> <p>Informal Dispute Resolution procedures are a condition precedent to a formal dispute or claim. These procedures are multi-faceted.</p> <ul style="list-style-type: none"> Claiming party first gives notice to the responding party’s designated agent. Dispute may be a “Fast-Track Dispute” – any claim or dispute that Developer and TxDOT mutually agree merits expedited resolution – which accelerates notice and response timeframes. 	<p>All three projects have tiered dispute resolution processes where negotiations among project representatives is the first step in resolution. Central 70 and SH-288 then refer unresolved matters to designated senior representatives or executive leadership respectively. In Central 70, mediation is also an option. Each includes the option for referral to a dispute review board. Central 70 does not indicate that following the dispute resolution process is precedent to litigation.</p> <p>All require the developer/concessionaire to continue to perform work that is the subject of a dispute.</p>



Item	Central 70	I-4 Ultimate	SH-288	Comments
	<p>dispute and render a decision in writing to the parties. The parties may then accept and “memorialize” the decision or not. A dispute may be brought to one or both of the panels for an “advisory opinion” by the parties at any time prior to a formal referral.</p> <p>The Developer will continue with the work of the project, including any work that is the subject of the dispute, while the dispute resolution process is underway. Each party shall bear its own costs and expenses related to dispute resolution.</p>	<p>binding and not subject to dispute resolution and shall not constitute a basis for any claim for Extra Work Costs, Delay Costs, compensation under Section 10.2.1, 10.2.2 or 10.2.3, time extension or any other relief; and to the extent expressly otherwise provided in the Contract Documents.”</p> <p>The Concessionaire shall continue performing work, including any work that is the subject of the dispute, as directed by FDOT.</p>	<ul style="list-style-type: none"> • If responding party does not agree with claiming party’s position and proposed resolution, then CEO of Developer and Executive Director (or qualified designee) shall meet to seek resolution. If resolved, it will be memorialized. • If parties are unable to resolve, then they may mutually initiate mediation. However, parties may opt to refer matter to Disputes Board or any other relief available in district court if matter is not timely resolved by informal procedures or parties decide not to initiate mediation. • Disputes Board is governed by Disputes Board Agreement and other relevant contractual provisions. <p>Developer and all Contractors will continue performance of work inclusive of disputed work.</p>	

Item	Central 70	I-4 Ultimate	SH-288	Comments
	<i>Key Risks</i>			
Changes in Law	<p>Contract states that treated as a Compensation Event if Discriminatory Change in Law or Qualifying Change in Law where the former is defined as: a change in law that only applies to the Project or Similar Project or the Developer or any Principal Subcontractor (excluding responses to breaches of law, approvals, willful misconduct, etc.) and the latter is defined as: a change in law requiring the Developer to incur additional capital expenditure (in accordance with GAAP) that is connected to performance of O&M work after construction or change in federal law related to Unexpected Groundwater Contamination Conditions or Unexpected Hazardous Substances requiring additional capital expenditure (in accordance with GAAP) that is connected to performance of</p>	<p>Contract states that treated as a Relief Event if change is made after 30 days prior to proposal due date and is related to: (a) adoption of any state law, (b) any change in any state law or its interpretation, (c) any change in applicable utility adjustment standards, (d) any change in federal environmental law or its interpretation or application that is materially inconsistent with laws or adjustment standards in effect 30 days prior to proposal due date, excluding federal or state laws passed or adopted but not effective as of 30 days prior to proposal due date, any change in adjustment standards that qualify as a betterment, any change in state labor laws, and any change in state tax laws of general application.</p>	<p>Contract states that treated as a Compensation Event if a Discriminatory Change in Law and as a Relief Event if a Change in Law.</p> <p>Discriminatory Change in Law is any change in law during the contract term that is “principally directed at and the effect of which is principally borne by the Developer or private toll road operators in the State” except where change is: in response to breach or failure to perform under CDA Documents, applicable laws, etc.; a directive by US Dept. of Homeland Security or comparable state agency; or otherwise expressly permitted by CDA Documents.</p> <p>Change in Law is adoption of any law after setting date or any change, amendment to, repeal of, change in interpretation, etc. after setting date that is materially inconsistent with laws at time of setting date except</p>	<p>Central 70 and SH-288 include descriptions of changes in law that are discriminatory and general in nature where the former impact the project or comparable projects and the latter are changes in effect or passed that are materially different or inconsistent with prevailing laws at the time of the setting date. Both treat discriminatory type changes as compensation events and more general changes as relief events; SH-288 includes imposition of new or additional taxes on tolls as a compensation event.</p> <p>I-4 only includes specific changes that are more general in nature; these are treated as relief events.</p>

Item	Central 70	I-4 Ultimate	SH-288	Comments
	<p>O&M work after construction.</p> <p>Contract treats as Relief Event if it is a Change in Law (which excludes discriminatory or qualifying changes), which is defined the adoption, change or interpretation of a law by a governing authority that is materially different or inconsistent with prevailing law at time of setting date (a specific date is given in contract that is prior to proposal due date) so long as it was not pending, passed or adopted as of the setting date and it not a change in a federal law (other than any public safety order), state or local labor law or state or local tax law.</p>		<p>change or new law that causes change in or new Adjustment Standards (standard specifications, standards of practice and construction methods that a Utility Owner customarily applies to facilities) or any change or new law passed/adopted but not effective as of setting date. Also includes any change in law that imposes new or added federal, state or local taxes on tolls or gross toll receipts.</p>	
Sociopolitical Opposition	<p>Contract does not explicitly address sociopolitical opposition. It does address “extreme” cases such as acts of terrorism or sabotage, which are force majeure events.</p>	<p>Contract does not explicitly address sociopolitical opposition. It does address “extreme” cases such as acts of riots, civil commotion or sabotage, and terrorism, which are force majeure events.</p>	<p>Contract does not explicitly address sociopolitical opposition. It does address “extreme” cases such as any act of terrorism or sabotage, riot and civil commotion, which are force majeure events.</p>	<p>Limited protections afforded for more likely forms of opposition such as lawsuits, political backlash, etc.</p>
Geology/Site Conditions	<p>Contract includes Section 3.3 “Limitations on Site</p>	<p>Contract states in Section 3.2.2 that “Except as set</p>	<p>Contract addresses in Section 6.1 – Preliminary</p>	<p>These specific sections of the contract as well as the</p>



Item	Central 70	I-4 Ultimate	SH-288	Comments
	<p>Conditions Claims” that restricts claims to limited exceptions provided for in the contract and the clause.</p> <p>Preliminary subsurface investigations conducted by owner are provided in Reference Documents. The Developer is responsible for any additional geotechnical and subsurface investigations it considers necessary.</p> <p>Compensation Event for specific and defined “unexpected” conditions: Geological Condition, Groundwater Contamination Condition, Hazardous Substances, Historically Significant Remains, and Utility Condition</p>	<p>forth in Sections 4.10, 4.15, 4.17, 10.1 and 10.2, Concessionaire shall bear the risk of any incorrect or incomplete review, examination and investigation by it of the Site and surrounding locations and of any incorrect or incomplete information resulting from preliminary engineering activities conducted by Concessionaire, FDOT or any other Person. FDOT makes no warranties or representations as to any surveys, data, reports or other information provided by FDOT or other Persons concerning surface conditions and subsurface conditions, including information related to Utilities and Contaminated Materials, affecting the Site or surrounding locations. Concessionaire acknowledges that such information is for Concessionaire's reference only.”</p> <p>Section 4.10 addresses Contaminated Materials and</p>	<p>Planning and Engineering Activities; Site Conditions. Section 6.1.1 states that Developer shall perform or cause to be performed all engineering activities “appropriate for development of the Project and the Utility Adjustments...”</p> <p>Section 6.1.2 states that except to extent that Developer is entitled to relief under Relief Event or compensation under Compensation Event or risk allocation for Hazardous Material or archeological and paleontological resources, then Developer bears risk of any incorrect or incomplete review, examination and investigation of site; all conditions occurring on, under or at the site including physical conditions of an unusual nature, changes in surface topography, variations in subsurface moisture content, utility facilities, presence or discovery of Hazardous Materials, discovery of archeological,</p>	<p>section that address reliance on reference documents make it clear that the information provided about geology and more general site conditions are for information only for the Developer/Concessionaire and it is the responsibility of the Developer/Concessionaire to conduct additional investigations deemed necessary during RFP period.</p> <p>Contracts grant reasonable access to site for conduct of such investigations.</p>

Item	Central 70	I-4 Ultimate	SH-288	Comments
		<p>Undesirable Materials Management</p> <p>Section 4.15 addresses Structural Latent Defects</p> <p>Section 10.1 addresses Relief Events</p> <p>Section 10.2 addresses Delayed Payments; Other Relief; Mitigation; Insurance</p> <p>Sinkholes are treated as a Relief Event</p>	<p>paleontological or cultural resources or threatened or endangered species.</p> <p>Section 6.1.3 states that TxDOT makes “no warranties or representations as to any surveys, data, reports or other information provided by TxDOT or other persons concerning surface conditions and subsurface conditions..Developer acknowledges that such information is for Developer’s reference only and has not been verified.”</p>	
Force Majeure	See Supervening Events	See Supervening Events	See Supervening Events	Generally, all three contracts cover common force majeure events.
Utilities	Schedule 10, Section 4 of contract covers Utilities in detail. The Developer assumes responsibility for coordinating and cooperating with the Enterprises and the Utility Owners to ensure that all Utility Relocations and all Utility Work (whether done by Utility Owner or Developer) is completed according to the applicable	Section 4.5 Utility Adjustments of contract addresses utilities. Section 4.5.1 states that Concessionaire is responsible for coordinating with Utility Owners for all utility adjustments “necessary for timely construction, operation and maintenance of the Project in accordance with Contract Documents and Project	Article 11 – Utility Adjustments addresses utilities. Section 11.1 states that the Developer “is responsible for causing all Utility Adjustments necessary to accommodate construction, operation, maintenance and/or use of the Project...Developer shall coordinate, monitor, and otherwise undertake the necessary efforts to cause	In all three contracts, the Developer/Concessionaire is responsible for coordinating and conducting activities related to utility identification, work and relocation in accordance with contractual requirements. In Central 70, the Enterprises have entered into URAs with publicly and privately owned utilities in the project area,



Item	Central 70	I-4 Ultimate	SH-288	Comments
	<p>utility relocation agreement (URA) and Utility Work Order. URA's are existing utility relocation agreements between CDOT and publicly owned utilities and private utility owners (except Sprint where a Sprint Reimbursement Agreement is in place).</p> <p>Section 4.2.11.b addresses the "Developer's Responsibility to Perform" and states: "The Developer shall be responsible for coordinating with Utility Owners in relation to the performance of all Utility Work by the Developer and the performance of all work relating to Utility Relocations by Utility Owners."</p> <p>Section 4.5 addresses "Failure of Utility Owner to Cooperate and Timely Perform" and states that Developer shall use "reasonable efforts" to obtain cooperation of each utility owner to carry out utility work. In the event that utility owners are not cooperating or performing,</p>	<p>Schedule." Concessionaire is responsible for negotiating, preparing and executing Utility Agreements that are acceptable to FDOT and other conditions.</p> <p>Section 4.5.3.1 states: "Except for Betterment costs which are the responsibility of the Utility Owner, Concessionaire is responsible for all costs of the Utility Adjustment Work after deducting therefrom any salvage value derived from the old Utility. Concessionaire shall fulfill this responsibility either by performing the Utility Adjustments Work itself at its own cost, or by reimbursing the Utility Owner for the Utility Adjustment Work. Except for any disputed amounts, Concessionaire shall reimburse costs of any Utility Adjustment Work performed by a Utility Owner within 90 days of receipt of an invoice from the Utility Owner for same. Concessionaire is solely responsible for collecting directly from the Utility</p>	<p>Utility Owners performing Utility Adjustment Work to perform such work timely, in coordination with the Work, and in compliance with the standards of design and construction and other applicable requirements specified in the CDA Documents."</p> <p>Section 11.2.1 states that "the Developer is responsible for preparing, negotiating and entering into Utility Agreements with the Utility Owners." While Section 11.2.2 states that TxDOT agrees to cooperate reasonably when requested by Developer to pursue Utility Agreements. The clause indicates that "Developer shall not enter into any agreement with a Utility Owner that purports to bind TxDOT in any way, unless TxDOT has executed such agreement as a party thereto."</p> <p>Section 11.3 address Utility Adjustment Costs. Developer is responsible for all costs of Utility Adjustment Work whether costs are incurred by Developer or</p>	<p>and the Developer is responsible for coordinating activities subject to URA as well as all other necessary utility work. A qualifying delay is treated as a compensation event.</p> <p>In I-4 and SH-288, the Concessionaire is responsible for all utility coordination, agreements and adjustments. In I-4, qualifying delays are treated as a Relief Event and delays are subject to an aggregate deductible of \$5,000,000 for all such relief events. In SH-288, qualifying delays are treated as a Relief Event.</p>



Item	Central 70	I-4 Ultimate	SH-288	Comments
	<p>the Developer shall notify the Enterprises.</p> <p>Compensation Event when an “Unexcused Utility Owner Delay” occurs: any breach of a URA or Utility Work Order by a Utility Owner; any unexcused delay by a Utility Owner in performing work or reviewing and approving any deliverable for third party review; any unreasonable withholding.</p>	<p>Owner any reimbursement due for Betterment costs or other costs for which the Utility Owner is considered responsible under applicable Law.”</p> <p>Concessionaire is entitled to extra work costs, delay costs, compensation, etc. for a Relief Event as long as specific conditions are met such as: a qualifying utility agreement exists; the utility adjustment is necessary; Concessionaire has provided utility owner and FDOT sufficient notice of impact of a Utility Owner Delay; and Concessionaire has pursued all commercially reasonable options to avoid Utility Owner Delay.</p> <p>Relief Event that qualifies as Utility Owner Delay or an Unknown Utility Delay are each subject to an aggregate deductible of \$5,000,000 of all such events.</p>	<p>Utility Owner. Developer shall perform utility adjustment work at its own cost or reimburse the Utility Owner for its utility adjustment work. Any betterment costs are to be collected directly from the Utility Owner.</p> <p>Section 11.6 addresses Failure of Utility Owners to Cooperate. Developer must use diligent efforts to obtain cooperation from utility owners for utility adjustments. Developer shall notify TxDOT if it is unable to enter into a Utility Agreement in a reasonable time, if Utility Owner is not cooperating, if a dispute arises, etc. Section 11.6.2 indicates that Developer may request TxDOT’s support to resolve such matters so long as Developer has exercised proper diligence. TxDOT may resort to issuing a Directive Letter to Developer if Utility Owner is not cooperating.</p> <p>Unreasonable or unjustified delay by Utility Owner with whom Developer has been</p>	



Item	Central 70	I-4 Ultimate	SH-288	Comments
			<p>unable to or has been able to enter into a Utility Agreement is a Relief Event so long as “conditions to assistance” in Section 11.6.2 have been satisfied.</p>	
<p>Right-of-Way</p>	<p>Contract addresses in Schedule 18. Enterprises will provide Developer with possession of each ROW Parcel and Additional ROW Parcels. Appendix A identifies ROW Parcels that Enterprises will acquire while Developer is responsible for acquiring any Additional ROW Parcels. Contract allows early access and use with approval/acceptance by Enterprises. For Additional ROW Parcels, Developer coordinates relocation and if Developer is unable to acquire, then notify Enterprises and will proceed with condemnation.</p> <p>Compensation Event if failure by Enterprises to provide Developer with any ROW Parcel by “date first available for possession.”</p>	<p>Contract addresses in Section 4.4. FDOT shall acquire project right of way identified in project right of way maps at no cost to developer and by the “Project Right of Way Certification Deadline.” Concessionaire may request additional Project Right of Way and Concessionaire will be responsible for all costs incurred by FDOT for acquisition and bear the sole risk and cost of any time cost impacts to the work.</p> <p>Relief Event if acquisition of right of way is result of FDOT Change or FDOT-Caused Delay.</p>	<p>Contract addresses in Article 10. If any Project Right of Way is not already owned by state and available for project, then Developer shall acquire Project Right of Way and Additional Properties. Developer shall be responsible for all costs and expenses associated with Right of Way and Additional Properties such as acquisition costs, condemnation proceedings, etc.</p> <p>TxDOT shall review and approve acquisition and condemnation packages and undertake eminent domain proceedings as necessary.</p> <p>Compensation Event if TxDOT lacks sufficient title to any parcel in Project Right of Way or following NTP2 any title reservation, condition, etc. that adversely</p>	<p>Responsibilities for ROW acquisition are similar but not identical among contracts. Central 70 and I-4 have identified parcels that agency will provide by particular deadline. SH-288 indicates that any ROW not already owned and available by state will need to be acquired by Developer. Similarly, Central 70 and I-4 make it the responsibility of the Developer/Concessionaire to acquire any additional parcels deemed necessary for project.</p> <p>Central 70 treats failures in acquisition as Compensation Event. I-4 treats ROW acquisition issues as a result of FDOT Change or FDOT-Caused Delay as Relief Event. SH-288 treats issues with ROW titles as</p>



Item	Central 70	I-4 Ultimate	SH-288	Comments
			affects performance of work or imposition of tolls.	Compensation and/or Relief Events.
Revenue Sharing	N/A	N/A	Contract states in Section 4.2 Revenue Payments that TxDOT will receive revenue payments calculated as of December 31 st in the year of the 3 rd anniversary of first service commencement date and every December 31 st through the end of the term of the agreement. The payment is equal to a percentage of cumulative toll revenues at each calculation date where the percentage varies from 12.5% to 75% and is applied against defined floor and ceiling amounts.	Revenue sharing is based on defined percentages that are applied to defined floor and ceiling amounts at each calculation date. For instance, the first calculation date will occur on December 31 st in the 3 rd anniversary year following commencement of service and if cumulative toll revenues are ≤ \$30,736,503, then 0.00% applies; if \$30,736,504 ≤ cumulative toll revenues ≤ \$39,086,019, then 12.50% applies and so on.
Termination for Convenience	<p>Contract states in Section 33.1.2 that Enterprises may terminate Agreement at their discretion at any time on or before the Expiry Date with notice.</p> <p>Enterprises shall pay “Termination Amount to Developer” as determined in Section 1 of Schedule 7, which is:</p> <ul style="list-style-type: none"> Equity market value minus 	<p>Contract states in Section 20.1.1 that FDOT may terminate the agreement if “the Secretary” determines that doing so is in FDOT’s best interest with notice. FDOT will pay compensation to Concessionaire in amount equal to either:</p> <ul style="list-style-type: none"> Backward Looking Termination for Convenience Amount -or- Forward Looking 	<p>Contract states in Section 31.1.1 that TxDOT may terminate the agreement in whole, but not in part, by notice if it determines that a termination is in TxDOT’s best interest.</p> <p>Developer will be entitled to Termination Compensation that is equal to the least of:</p> <ul style="list-style-type: none"> Applicable Termination Compensation amount in Exhibit 20 -or- 	<p>All three contracts grant the owner/public agency the right to terminate the contract for convenience if owner/agency determines such is in their interest.</p> <p>Central 70 and I-4 involve calculation of equity market value or distributions due to equity plus relevant expenses (such as lender liabilities and subcontractor breakage) and minus</p>



Item	Central 70	I-4 Ultimate	SH-288	Comments
	<ul style="list-style-type: none"> Costs and expenses to determine equity market value Plus or minus an amount equal to lenders' liabilities + subcontractor breakage costs + developer employee redundancy payments - account balances - termination insurance proceeds - any termination deduction amount 	<p>Termination for Convenience Amount</p> <ul style="list-style-type: none"> As selected by Concessionaire <p>Concessionaire selected the "Backward Looking Termination for Convenience Amount" which is:</p> <ul style="list-style-type: none"> Project debt termination amount; plus Amount of all distributions to equity members or their affiliates anticipated to be paid between the early termination date until the expiration of the term, each amount discounted back at the initial equity IRR; plus Redundancy payments for employees of concessionaire; plus Any eligible losses incurred; minus All credit amounts of any concessionaire bank account. 	<ul style="list-style-type: none"> The greater of: (1) the fair market value of the Developer's Interest as of the Valuation Date or (2) the Senior Debt Termination Amount + amount to reimburse out-of-pocket costs of third-party and Affiliate Contractors to demobilize and terminate contracts + Developer's costs to demobilize + incremental increases in eligible developer costs - all borrowed cash and credit balances – cost of renewal work required before termination date, etc. 	<p>relevant credits due (such as bank account balances and insurance proceeds.</p> <p>SH-288 gives TxDOT the choice of the lesser amount of: (1) predetermined termination amounts that range from an initial amount of \$1,331,074,460 to a high of \$4,896,315,581 (commencement to before the 30th anniversary of commencement) to a final amount of \$617,136,521 (between 46th and 48th anniversary) or (2) the greater of the fair market value or a calculated value of the senior debt termination amount plus relevant expenses (third-party and developer demobilization) and relevant credits (borrowed cash and cost of required renewal work)</p>
Handback	<p>Addressed by Schedule 12. General requirements: At Expiry Date:</p> <ul style="list-style-type: none"> for each Element the applicable Target is met or exceeded; 	<p>Addressed by Section 6.9 and Section 5. Upon termination date, concessionaire will transfer project and any upgrades to</p>	<p>Addressed by Article 20 and Section 19.4 of Technical Provisions. On termination date developer shall transfer Project including all upgrades to TxDOT at no</p>	<p>All three contracts have similar handback requirements. Each requires that developer return/transfer assets at the end of the term in the</p>



Item	Central 70	I-4 Ultimate	SH-288	Comments
	<ul style="list-style-type: none"> for each Residual Element, the Residual Life at Handback meets or exceeds its Residual Life Minimum Requirement; For each Element, all Renewal Work identified in the most recent Accepted Renewal Work Plan is completed as required; For each Renewal Element, Developer has demonstrated through final Handback Inspection Report that from last reconstruction, rehabilitation, etc. such element has a useful life that exceeds baseline requirement. <p>Handback schedule with deliverables and activities is specified in Table 12. Developer is responsible for creating handback schedule and Residual Life Methodology (which must include evaluation and calculation criteria for determining residual life of each Residual Element, comply with good industry practice, include scope of</p>	<p>FDOT at no charge and in the condition specified.</p> <p>Inspections occur as specified and renewal work done on basis of renewal work schedule resulting from inspections and analysis.</p> <p>Handback Requirements Reserve Account established four full years before the end of the term and funded as specified by the 36th month prior to the termination date. Concessionaire may withdraw funds from the reserve account to pay for renewal work required by the renewal work plan. At termination, amounts in reserve account will be paid to concessionaire less any costs FDOT expects to incur to perform work to meet handback requirements. Letter(s) of credit may substitute for reserve fund.</p> <p>Handback renewal work plan will be submitted by concessionaire to FDOT five full calendar years prior to end of term. The work plan will establish processes for:</p>	<p>charge in the condition meeting all of the requirements for residual life as specified.</p> <p>Parties will conduct inspections at the times and according to terms and procedures specified to: (a) determine and verify the condition of all elements and their residual lives; (b) adjust to the extent necessary element useful lives, ages, residual lives, estimated costs and timing of renewal work; (c) revising and updating the renewal work schedule; (d) determining the renewal work required prior to reversion of project to TxDOT; (e) verifying that renewal work has been properly performed and as specified; and (f) adjusting the developer's funding of the Handback Requirements Reserve so that it is funded as specified.</p> <p>Developer shall complete all renewal work prior to the termination date (if transfer of project is to occur at the expiration of full term) or as close as possible to the</p>	<p>condition specified. Some time prior to the end of the contract term – Central 70 = 70 months, I-4 = five full calendar years, SH-288 = five full calendar years – the handback process commences for each project by following specified requirements such as establishing a handback reserve account, development of handback plans and schedules, funding the handback reserve account, inspections of the project assets, etc. In all cases, letters of credit may substitute for reserve account funds. While specific details among the processes differ slightly, they are quite similar. The one area where greater variance exists is the standards expected for assets at handback. Central 70 specifies residual life and a residual life methodology for each asset, I-4 identifies specific handback criteria for each asset, and SH-288 specifies residual life requirements for each asset. Hence, the criteria in I-4 are</p>

Item	Central 70	I-4 Ultimate	SH-288	Comments
	<p>any residual life inspections, and address requirements for the Residual Life Methodology report as specified) at 70 months prior to end of term. Inspections, reports and calculation of handback reserve amount occur three times until end of term. Staff training is also required. Developer funds handback reserve amount until Handback Certificate issued or Termination Date (if earlier). Letter(s) of credit may substitute for funding of reserve account.</p> <p>If handback requirements have not been met, then Enterprises retain amounts necessary to complete remaining handback work and balance is issued to developer or if requirements have been met, then the entire balance is issued to developer.</p> <p>Residual life requirements for travelled way roadway pavement is 10 years at handback; the residual life methodology for such pavement must be capable of: (a) calculating residual life for any 0.1 mile of the</p>	<ul style="list-style-type: none"> Assessment of condition, performance and residual life of project assets at least 60 days prior to termination date. Renewal work through maintenance, repair, reconstruction, etc. so that assets meet acceptance criteria specified at end of term; Plan for transition of O&M work responsibilities to FDOT and acceptance by FDOT of project assets and O&M responsibilities Training of FDOT staff <p>Annual updates of the handback renewal work plan are required. Table 5.1 lists handback requirements for various assets such as asphalt pavement, rigid pavement, guardrail, etc.</p> <p>Handback criteria for asphalt pavement: "For pavements from 36 to 60 months old, no 0.1 mile section of any lane shall have rut depth greater than .25 inches. For</p>	<p>early termination date. If developer despite diligent efforts is unable to complete such work prior to early termination, then instead of completing the work termination compensation can be paid based on (i) fair market value that takes into account non-completion and (ii) other than fair market value adjusted as specified.</p> <p>The Handback Requirements Reserve account will be established five full calendar years before the end of term. Letter(s) of credit may substitute for the reserve. Funding of the reserve shall begin in the first calendar quarter of fifth full calendar year before end of the term in an amount equal to one-fourth of the amount necessary for the funds to be sufficient by the first day of each of the last four years of the term to pay the estimated cost of renewal work for each element listed in Table 19-2 of the Technical Provisions as specified.</p>	<p>arguably more objective than those in Central 70 and SH-288.</p> <p>Reserve account funds remaining at the end of the contract term are either retained by the public agency to pay for remaining renewal work or returned to the developer.</p>



Item	Central 70	I-4 Ultimate	SH-288	Comments
	<p>road pavement and (b) of the thickness and stiffness of the pavement layers, the pavement loading history in equivalent standard axles as calculated from the traffic volume reports and the forecast traffic volumes, measured in equivalent standard axles, for the following 15 years.</p>	<p>pavements from 60 to 96 months old, no 0.1 mile section of any lane shall have a rut depth greater than 0.30 inches. Measurements for rutting shall be in accordance with the FDOT Flexible Pavement Conditions Survey Handbook or its successor.</p> <p>For pavements from 36 to 60 months old, no 0.1 mile section of any lane shall have a ride number less than 4.0. For pavements from 60 to 96 months old, no 0.1 mile section of any lane shall have a ride number less than 3.7.”</p>	<p>At expiration or any earlier termination of the term all funds in the Handback Requirements Reserve will transfer to TxDOT. If the reserve has any shortfalls, then developer shall pay any such amounts or TxDOT may release any excess amounts to developer.</p> <p>Residual life requirements examples:</p> <ul style="list-style-type: none"> • Reinforced concrete = 50 years • Main line road pavement = 10 years • Culverts = 50 years 	



5. Guidelines for Risk Allocation & Management in P3s

Based on the findings from the Phase I state-of-practice report, the content analysis of existing P3 manuals and guidelines, the review of pertinent reports and articles, and the case examples, guidelines are presented to improve how public transportation agencies allocate and manage risks during preparation, procurement and implementation & operations of LTHDA/P3 projects. These guidelines include recommendations for both strategic and tactical practices that agencies can employ to better align public and private sector perspectives of risks that can enhance their allocation and management.

The guidelines include: (1) guiding principles, (2) recommended strategies and practices, (3) risk sharing options and (4) examples of contractual treatment of key issues and risks. These are presented as a means to improve how public agencies approach risk allocation and management within P3 arrangements. Importantly, alignment of interests and expectations between a public agency and its prospective private sector partners is viewed as a pre-requisite to effective risk allocation and management. Hence, the guidelines include strategies and practices for this purpose.

1.11 Guiding Principles

During planning and preparation, procurement and implementation & operations of P3s, public agencies should follow several principles that should enhance the alignment of public and private sector interests.

- **Signal Intention:** Public agencies should signal their intentions for their P3 program and projects clearly and through multiple mediums. For instance, the publication and routine update of a comprehensive P3 manual or guideline is a distinct and positive indication of a public agency's intentions about its overall program.
- **Engage Early and Frequently:** Public agencies should engage with their private sector counterparts as early and as frequently as possible. An additional consideration is the type and depth of the engagement; Phase I interviews with private practitioners indicated that focused or separate interactions afford a richer exchange of information and ideas.
- **Balance Openness, Confidentiality and Fairness:** Productive engagements between the public and private sectors require candid interaction and dialogue. Yet, these engagements must be: (1) confidential to facilitate candidness and proprietary security and (2) fair to safeguard their propriety.
- **Utilize Consultative Processes:** Exchanges between the public and private sectors must result in productive input, responses and outcomes. Both private sector feedback and public sector comments/responses should be received and acted on from a position of collaboration rather than confrontation.⁹ Such processes should extend to additional stakeholders as well.
- **Promote Transparency:** To the greatest extent possible, information about P3 projects and processes should be available to interested parties and presented in a manner that is clear and thorough. Doing so improves the legitimacy of an overall P3 program and its projects and outcomes.

1.12 Strategies & Practices

Strategies and practices that will support alignment of public and private sector interests and improve risk allocation and management in P3s are proposed in the following categories:

⁹ This is an ideal that certainly faces pragmatic challenges. Yet, Phase I interviews emphasized the importance of dialogue and understanding the perspectives of counterparties.



- **Partner Engagement:** Approaches for engaging prospective and contractual partners in the preparation, procurement and implementation & operation of P3s.
- **Risk Management:** Methods that promote improved identification and assessment of and better alignment about risks among public agencies and private sector participants in the preparation, procurement and implementation & operation of P3s.
- **Contractual Design, Formation & Administration:** Means for enhancing the design, formation and administration of contracts in the preparation, procurement and implementation & operation of P3s.

Table 9 presents an overview of the identified strategies and practices in four areas: (1) programmatic, (2) project preparation, (3) project procurement and (4) project implementation & operations. Partner engagement strategies or practices involve specific interactions or exchanges of information between the public and private sectors. Risk management strategies or practices include particular actions, primarily taken by the public agency, to enhance risk identification, assessment & mitigation for P3s. Contractual design, formation & administration involve certain documents or processes that a public agency can generate to support or execute P3s.

Table 10 presents a detailed explanation of the Partner Engagement Strategies and Practices. A number of these strategies and practices were observed in the case projects. All three cases employed an industry forum; Central 70 and I-4 conducted one just prior to the start of their procurement processes and SH-288 conducted one just after the release of its RFQ. None held one-on-one meetings with interested private parties during the project preparation phase; the Phase I state-of-practice report made it clear that practitioners were highly supportive of such meetings prior to the start of procurement since they allow more candid and rich dialogue between the parties. However, all three case projects held one-on-one meetings during the procurement phase; Central 70 held separate technical and commercial & legal meetings while I-4 held one round of meetings focused on utility coordination. All three cases employed an ATC process while I-4 also allowed for alternative financial concepts (AFCs). Additionally, all three cases used partnering practices during implementation. Finally, all three had a dispute resolution board/panel available as an alternative dispute resolution approach while SH-288 permitted mediation among the parties.

Table 11 depicts a detailed explanation of the Risk Management Strategies and Practices. Again, the case projects illustrate a number of these. CDOT is the only public agency among the three with a published P3 manual, which it followed closely in the Central 70 project. Both Central 70 and I-4 conducted typical VfM analyses to help to justify the decision to deliver these projects as P3s. In SH-288, a state committee did a comparison of P3 and conventional delivery. Central 70 updated its VfM Analysis once proposals were received to confirm that the anticipated value for money was sustained. Finally, all three cases required the developer to submit and update project & asset management plans (or comparable plans) during the term of the project.

Table 12 provides a detailed explanation of the Contractual Design, Formation & Administration Strategies and Practices. While baseline conditions were not present in any of the cases, GDOT's P3 Manual provides examples of these as shown previously in Table 4 and Table 5. TxDOT issued a project term sheet when it issued the RFQ for SH-288. All three public agencies prepared and issued draft contracts with their RFPs, and all cases utilized a consultative process for contract revisions during procurement. All three cases included Reference Information documents in their RFPs and established that such documents were primarily for information only and for use at the discretion of the developer. While several Phase I practitioner interviewees challenged the limited reliance granted by public agencies with such documents, the RFPs, at least, made the purpose of the reference documents clear. Finally, all three cases included interpretations and escalation processes in their contract's dispute resolution procedures.



Table 10. Summary of Strategies and Practices for Partner Engagement, Risk Management and Contractual Design, Formation & Administration by Area/Phase

Category	Area/Phase			
	<i>Programmatic</i>	<i>Project Preparation</i>	<i>Project Procurement</i>	<i>Project Implementation & Operations</i>
Partner Engagement	<ul style="list-style-type: none"> • Periodic Industry Workshops • Project Pipeline 	<ul style="list-style-type: none"> • Industry Forums • RFI Process • One-on-One Meetings (General) • Stakeholder Identification & Engagement 	<ul style="list-style-type: none"> • One-on-One Meetings <ul style="list-style-type: none"> ○ General ○ Targeted • ATC Process • Stakeholder Coordination Plan • Third-Party Coordination Plan 	<ul style="list-style-type: none"> • Partnering • Alternative Dispute Resolution Methods
Risk Management	<ul style="list-style-type: none"> • P3 Manual or Guidelines 	<ul style="list-style-type: none"> • VfM Analysis • Risk Workshop • Preliminary Risk Register 	<ul style="list-style-type: none"> • Updated VfM Analysis • Risk Register Update & Exchange • Roles & Responsibilities Matrix 	<ul style="list-style-type: none"> • Project & Asset Management Plans
Contractual Design, Formation & Administration	<ul style="list-style-type: none"> • Baseline Conditions • Term Sheets • Standard Contract(s) 	<ul style="list-style-type: none"> • Project Term Sheet • Draft Project Contract • Reference Documents 	<ul style="list-style-type: none"> • Contract Revisions • Final Contract 	<ul style="list-style-type: none"> • Interpretations Process • Escalation Process

Table 11. Partner Engagement Strategies or Practices

Partner Engagement Practice	Description	Comments
<i>Programmatic</i>		
Periodic Industry Workshops	Public agency regularly meets with industry groups or industry leaders/firms to discuss P3 program as well as issues and possible solutions	Such exchanges provide the opportunity for public and private sector representatives to identify good practices and address common issues
Project Pipeline	Public agency develops, maintains and disseminates information about prospective P3 projects	The organization and publication of projects that the agency is considering for P3 delivery gives all stakeholders and particularly industry participants an indication of the scope, scale and timing of potential projects. It also signals the agency's commitment to its program.
<i>Project Preparation</i>		
Industry Forums	Public agency holds an informational meeting about a pending P3 project to present details and to receive general feedback	Forums give the agency an opportunity to present known information about a pending project, receive general input and gauge general market interest.
RFI Process	Public agency solicits industry/market input regarding scope, terms, conditions, etc. of a pending P3 project through a formal process. Also known as a market sounding.	This process gauges market interest while also identifying specific or particular issues that may need to be addressed in the procurement or contract documents.
One-on-One Meetings (General)	Public agency holds one-on-one meetings with industry firms or prospective teams interested in a pending project to dialogue about its scope, terms, conditions, etc. Such meetings typically are less formal and may or may not be confidential.	One-on-one meetings during preparation provide a more intimate setting where the public agency has the chance to convey richer information about a pending project while also likely receiving more candid feedback from interested firms.

Partner Engagement Practice	Description	Comments
Stakeholder Identification & Engagement	Public agency identifies interested and impacted stakeholders beyond NEPA requirements to provide information and obtain input/feedback about a pending project.	Identifying and engaging stakeholders provides an agency a strong sign of the levels of support or opposition for a pending project, which can guide future engagement activities as well as how a project is shaped, framed and procured.
<i>Project Procurement</i>		
One-on-One Meetings: General	Public agency holds confidential meetings with proposers about improving value and addressing issues.	Important opportunity for public agency and proposers to discuss project opportunities and challenges. Probity (aka integrity and fairness) in these meetings is crucial to ensure all proposers are treated comparably.
One-on-One Meetings: Targeted	Public agency holds confidential meetings with proposers about specific areas of a project where complex or challenging issues are present such as utilities.	Important opportunity for public agency and proposers to address specific issues in a project and to develop strategies or methods for managing such issues.
ATC Process	Public agency includes a process whereby it will accept, review and approve or reject technical deviations/variances to project standards or conditions from proposers.	Important opportunity for proposers to identify technical enhancements that can add value to a project. Confidentiality in this process is critical to protect the original/proprietary concepts proposed. Most often, approved ATCs are incorporated into individual proposals. In some cases, an approved ATC results in a global change to RFP. Process may be extended to novel/alternative financial concepts, i.e. AFPs.
Stakeholder Coordination Plan	Public agency develops a plan for exchange of information (dissemination and receipt) with key stakeholders who are impacted or have an interest in project as well as party (or	Opportunity for public agency and proposers to devise strategies and methods for conveying value of project and to address key

Partner Engagement Practice	Description	Comments
	parties) responsible for such coordination; adapts plan based on input received from proposers.	issues to coalesce support or to mitigate opposition.
Third-Party Coordination Plan	Public agency develops a plan that depicts responsibilities and expectations for coordinating with third-parties who will or may have an impact on the project’s planning and implementation; adapts plan based on input received from proposers.	Opportunity for public agency and proposers to identify key third-parties and to clarify responsibilities for coordination and action.
<i>Project Implementation</i>		
Partnering	Process where project representatives of the public agency and developer/contractor define the purpose of the project and follow practices designed to promote strong relationships and “best for project” behavior/actions.	Partnering is well-established within the industry and provides a structured approach to aligning expectations, establishing relationships and communicating about project implementation opportunities and challenges. Ideally, it helps to maintain decisions about the project within the project team without engaging third-parties.
Alternative Dispute Resolution (ADR) Methods	Methods delineated in the contract that engage neutrals to facilitate resolution of disputes through avenues such as mediation or dispute review panels/boards.	ADR methods are typically more efficient and less costly than binding resolution (such as arbitration) or litigation. Such methods afford neutral parties to work with public agency and developer/contractor representatives to settle disputes.

Table 12. Risk Management Practices

Risk Management Practice	Description	Comments
<i>Programmatic</i>		
P3 Manual or Guidelines	A published document that describes and outlines a public agencies policies and practices for the planning/preparation, procurement and implementation of P3s.	A manual or guideline provides a public agency a means to communicate and disseminate how it plans and manages P3s from inception through implementation. Such documents promote consistency and reliability within public agencies, which is extremely important for any project but particularly P3s that often involve multiple stakeholders and are complex and large-scale undertakings.
<i>Project Preparation</i>		
VfM Analysis	Public agency completes preliminary VfM analysis to determine whether the P3 delivery option is more suitable than the public delivery option.	VfM analysis is important not only to justify a P3 delivery but it also complements the risk identification and assessment process since the analysis requires that principal risks must be allocated to private sector, retained by the public sector, or shared between the two.
Risk Workshop	Public agency holds risk workshops with staff (and consultants) to identify and evaluate potential project risks.	Opportunity for the public agency to engage key staff and consultants in a discussion about risks, their likelihood and their impacts.
Preliminary Risk Register	Public agency identifies principal risks and develops a preliminary risk register	Opportunity for public agency to identify risks, their initial allocation, estimate their likelihood and impacts, and any mitigation strategies.
<i>Project Procurement</i>		
Updated VfM Analysis	Public agency updates VfM analysis once proposals are received to confirm that the preferred P3 proposal is more suitable than the public delivery option.	Opportunity to revisit the VfM analysis and confirm that preferred proposal remains more suitable than a public delivery option as well

Risk Management Practice	Description	Comments
		as revisit any changes in risk allocation during procurement.
Risk Register Update & Exchange	Public agency updates its preliminary risk register and exchanges key information from it with proposers for their input and feedback.	Opportunity to revisit the preliminary risk register and share the information and allocation with proposers. Feedback received can be utilized to modify a risk’s allocation, mitigation strategies, etc.
Roles & Responsibilities Matrix	Public agency develops a roles & responsibilities matrix for project implementation that is inclusive activities such as third-party coordination; matrix should identify whether a party takes lead, support or shared role relative to any responsibility; adapts matrix based on input received from proposers. ¹⁰	Opportunity to consider various actions and responsibilities for project implementation and assign lead, support or shared responsibility to public and private sector. Such a matrix delineates which party has responsibility for tasks such as obtaining utility agreements.
<i>Project Implementation</i>		
Project & Asset Management Plans	Public agency defines requirements for development of project and asset management plans that the developer must submit periodically over the life of the contract.	These plans provide a comprehensive perspective of how the developer expects to deliver the project, meet service and performance expectations, and repair & maintain assets over time. Periodic renewal and submission of these plans afford some flexibility to both public agency and developer to adjust plans as conditions and circumstances evolve.

¹⁰ A “RACI Matrix” (Responsible, Accountable, Consulted and Informed) is a comparable practice/tool. NCHRP Report 850 describes a RACI matrix.

Table 13. Contractual Design, Formation & Administration

Contractual Practice	Description	Comments
<i>Programmatic</i>		
Baseline Conditions	Public agency describes baseline conditions for P3 activities and potential risks such as reliance on reference documents, site conditions, utilities coordination, right-of-way acquisition, etc. in a manual or guideline document that typically indicate how commensurate risks will be allocated and managed.	Such baseline conditions establish standards of typical treatment and practice for important activities and issues in P3 projects. Such conditions are important indicators for public agency staff and prospective private sector developers/contractors.
General Term Sheets	Public agency publishes standard terms and provisions for key areas and risks in typical P3 projects.	Like baseline conditions, general term sheets establish standards of typical treatment for important terms in a P3 contract document; term sheets will typically be more specific than baseline conditions. Such term sheets are similarly important for establishing how key issues and risks are normally provisioned and allocated in an agency's P3 projects.
Standard Contract(s)	Public agency publishes a standard contract template for P3 projects. Template may be tailored to P3 model or project type.	Like baseline conditions and term sheets, standard contract templates provide the baseline contract for an agency's P3 project that can be tailored to a project's context. Such templates, however, are comprehensive and make it clear how issues and risks are provisioned and allocated in a typical P3 project.
<i>Project Preparation</i>		
Project Term Sheet	Public agency prepares a term sheet for a particular project that addresses key terms and conditions based on project's context.	Term sheets are often included in RFQ documents and give prospective proposers an indication of how key terms and provisions will be addressed and structured.



Contractual Practice	Description	Comments
Draft Project Contract	Public agency prepares a draft contract for a particular project that will serve as the basis for feedback and negotiation.	Draft project contracts are often included in RFP documents and become the basis of a consultative process between the public agency and proposers.
Reference Documents	Public agency prepares reference documents for a particular P3 project.	Reference documents are often included in RFP documents. The public agency typically makes it clear to what extent developers/contractors can rely on the accuracy or reliability of the information provided. Oftentimes, such reliance is limited. Still, these documents are quite important for developers/contractors to evaluate and determine whether additional investigations, information, etc. is necessary during procurement or following award. Further, they inform discussion about risk allocation and potential risk exposure.
<i>Project Procurement</i>		
Contract Revisions	Drafts of the project contract are revised based on input received during the procurement process.	Opportunity for public and private sector to address key issues, provisions and risks in the contract as procurement process unfolds and partner engagement opportunities such as one-on-one meetings occur.
Final Contract	Final version of the project contract upon which proposals will be based.	Public agency typically issues the final version of the contract during the final stages of the procurement.
<i>Implementation</i>		
Interpretations Process	Contract should specify how matters requiring interpretation will be handled.	Inclusion of provisions related to contract interpretation can delineate this process and representatives or designees of the public

Contractual Practice	Description	Comments
		agency or the contractual parties involved in interpretations – for instance, an executive committee or dispute review board/panel can provide an advisory opinion. Specifying such can possibly lead to timelier and fairer decisions.
Escalation Process	Contract will typically specify escalation process for issues and disputes during project implementation.	Inclusion of a clear and typically tiered process for escalation of issues or disputes affords the contractual parties opportunities to address such matters within the project team. Greater consideration needs to be given to funding additional work or work in progress if such work is the subject of a dispute.

1.13 Risk Sharing Options

1.13.1 Overview

The P3 manuals/guidelines and contracts reviewed as well as the case examples illustrated multiple risk sharing options that public agencies may adopt to apportion risks in contract documents.

Some of the most prominent sharing approaches are described below:

Deductible or threshold schemes: In a deductible or threshold scheme, one party (often the developer or contractor) bears a risk up to the established deductible (\$) or threshold (quantity) amount (tier one). Beyond the deductible or threshold amount, the parties may share a risk up to a second deductible/threshold amount or the public agency may bear the risk at this point (tier two). If a sharing approach is adopted beyond the initial threshold amount, then often a third deductible or threshold amount is established beyond which the public agency bears the risk (tier three). Table X depicts two deductible/threshold approaches. In theory, there is no limit to the number tiers that contractual parties may adopt. In the I-4 case example, a sinkhole event had a deductible scheme where the first \$500,000 of extra work costs and an amount equal to delay costs of the first five days of delay were borne by the developer; beyond this, FDOT was responsible for additional costs and delays. The deductible was subject to an aggregate amount of \$5,000,000. This aggregate cap is an important feature of such a scheme since it limits liabilities.

Table 14. Risk Sharing by Deductible/Threshold Amount Schemes

Level	Approach One	Approach Two
Tier One	$0 < \text{Cost/Quantity} \leq X$; risk borne by Party A	$0 < \text{Cost/Quantity} \leq X$; risk borne by Party A
Tier Two	$X < \text{Cost/Quantity}$; risk borne by Party B	$X < \text{Cost/Quantity} \leq Y$; risk shared by Parties A and B
Tier Three	N/A	$Y < \text{Cost/Quantity}$; risk borne by Party B

Allowances: Allowance schemes are similar to deductible/threshold approaches except that a cost amount is established (the allowance) for a particular risk and a developer/contractor will draw from the allowance up to this amount. Once this amount is reached, then the public agency is typically responsible for any additional valid costs. None of the case examples used allowances for risks identified in Appendix 1.

Escalation Methods: Escalation methods often link the price/cost of commodities and materials to an appropriate index to reduce contingencies that a contractual party might include in a proposal or bid due to uncertainties about price/cost fluctuations over time. Escalation methods are not limited to commodities and materials. For instance, the Central 70 case example includes indexation of the base capital performance payment (i.e. a component of the overall “availability payment”).

Risk Pools: The use of risk pools is less common in P3s. Typically, risk pools are used to apportion particular risks into “pools” where those apportioned into the developer/contractor pool are borne by the developer/contractor, those apportioned into the shared risk pool are shared by the public agency and the developer/contractor, and those apportioned into the owner pool are borne by the owner. The risks in the developer/contractor and owner pools are ones where the respective parties are best positioned to manage and control the risks. Those in the shared risk pool are ones where there are degrees of uncertainty that can drive up contingency pricing, but the developer/contractor is still in a position to



manage or mitigate the risk. The amounts of contingencies in the shared risk pool and the payment specifications (such as unit price) are established for the shared risk items. If the amounts for shared risks are exceeded, then a public agency may choose to cap the fund or increase it. If the amounts for shared risks are not met, then the parties share the savings at agreed percentages. None of the case examples employed risk pools.

1.13.2 Advantages and Disadvantages of Sharing Options

Each sharing approach has its advantages and disadvantages. Deductible or threshold schemes assign a risk to a party up to a level or levels, then the counterparty either assumes the risk's impact or shares it. Such schemes can incentivize the party initially bearing the risk to minimize the costs and/or delays associated with a risk and may preclude spurious claims for impacts to a project. Some distinct disadvantages of such schemes are: (a) establishing the threshold amounts and (b) effects on pricing strategies. Threshold amounts should reflect the likelihood and the expected time and cost impact of a risk; however, estimating such parameters is not without its challenges and is typically subject to negotiation during a procurement. Interviewees in Phase I indicated that such thresholds were often set based on precedents in the market that may or may not apply to a project given its context. A complementary issue is the effect on pricing; if a P3 proposer judges the threshold as too high, then it may elect to reduce its price since it has exposure protection should this judgment prove false. If a P3 proposer judges the threshold as too low, then it may elect to increase its price to provide itself a contingency; however, its competitiveness is affected, and an owner may pay a higher price than necessary if the proposer's judgment proves false (presuming its proposal is accepted). Regardless, establishing threshold amounts for these schemes requires a thorough assessment of the risks shared in this manner. Allowances face similar challenges.

Escalation methods can reduce contingent pricing for certain items, but the choice of the indexing method becomes more challenging for items that are less common to appropriately account for fluctuations in item costs. Finally, risk pools are more frequently used in collaborative project delivery approaches such as Construction Manager/General Contractor (CM/GC) or progressive design-build where risks are typically more thoroughly negotiated. However, the prevalence of one-on-one meetings observed during the procurements in the case example projects suggests that this approach may be viable in P3s, particularly if the public agency has developed a risk register and exchanged it with proposers.

1.14 Contractual Provisions for Risk Allocation

With respect to contractual provisions for risk allocation, the intent of these guidelines is to present how key issues and risks may be treated in contractual provisions through examples rather than recommending how particular risks should be allocated or treated by contractual provisions. The rationale for this approach is to provide public agencies and private parties with *samples of contractual treatment of key issues and risks given a project's context and circumstances*.

Previously, Table 8 presented in detail how the case projects – Central 70, I-4 and SH-S88 – addressed key issues and risks, and Section 4.3 described similarities and differences found in the cases. Table 14 compares the treatment of key issues and risks in the case projects with the recently issued guidance from AIAI in its *First Principles of Risk Allocation and Certain Key Commercial Terms Best Practices* document. The comparison indicates whether the alignment between the case projects and the AIAI guidance is strong, moderate or weak. Alignment for all of the key issues and risks follows:

- Strong
 - Reliance
 - Due Diligence
 - Supervening Events



- Dispute Resolution Methods (case examples followed industry practices described in guidance)
- Handback
- Moderate
 - Changes in Law
 - Geology/Site Conditions
 - Force Majeure
 - Utilities (considered Moderate/Weak)
 - Right-of-Way
 - Revenue Sharing (considered Moderate/Strong)
 - Termination for Convenience (considered Moderate/Strong)
- Weak
 - None

Hence, the three recent case projects are well-aligned overall with the AIAI guidance. Those issues/risks with strong alignment are more global in nature, so better alignment is expected; in other words, these are issues or risks that are less affected by a project's characteristics or conditions. Similarly, the issues/risks with moderate alignment are generally more dependent on project attributes and conditions. One might expect stronger alignment of force majeure and termination for convenience since these are more global in nature; the variance here reflects experience and considerations in the AIAI guidance that was not included in the case example contracts. For instance, pandemics were not necessarily contemplated prior to COVID nor were extended force majeure events. Further, the SH-288 provision for termination for convenience differs from the guidance.¹¹

Together, Table 8 and Table 14 depict multiple ways to handle key issues and risks in P3 contracts. Some are very similar while others are more distinct. This variety should help public agencies and private parties consider contractual provisions that may be suitable for a jurisdiction's circumstances and a project's characteristics.

¹¹ Recall that TxDOT exercised this contractual right in SH-288 and terminated the contract in October 2024 at a price of \$1.7 billion; estimates put the market value of the project at nearly \$4 billion (Lee 2024).



Table 15. Key Issues and Risks: Comparison between Case Examples and AIAI Guidance

Issue or Risk/Term	Summary of Central 70, I-4 and SH-288 Provisions	Summary of AIAI Guidance	Alignment (Strong, Moderate, Weak)
Reliance	All contracts make it clear that reference materials are provided for information only and use of such materials is at the discretion of the developer. Central 70 and I-4 state that reference material may be used to determine if a supervening event has occurred. SH-288 does not explicitly indicate this.	Owner should provide proposers with relevant documents available to assist proposers in developing their proposals and understanding the risks of the project. Reference information is generally provided for informational purposes. However, such information provided before the setting date (“disclosed documents”) should be used for determination of differing site conditions or differing conditions related to utilities, right-of-way, etc. that may qualify as compensation events.	Strong All three contracts are consistent with guidance that reference information is for discretionary use. Central 70 and I-4 are consistent with use for determination of compensation events.
Due Diligence	Central 70 has a specific clause that reinforces the developer’s obligation to conduct due diligence necessary for the performance of the work. I-4 and SH-288 only reference the due diligence standard in specific areas of contract such as its relation to a force majeure event.	Developer’s reliance on disclosed documents does not diminish its obligation for diligence and reasonable investigation of the project site independent of reference information.	Strong All three contracts are consistent with guidance.
Supervening Events	Central 70 and SH-288 distinguish between compensation and relief events while I-4 treats all events as relief events. Further, I-4 has deductibles associated with general relief events <i>without</i> an aggregate cap while sinkhole events also use a deductible scheme with an aggregate cap. SH-288 includes events that may impact toll revenues such as unplanned competing facilities. Specific clauses/articles that address a Supervening Event in I-70 (Section 15), Relief Event in I-4 (Article 10) and Relief Events; Compensation Events (Article	Project agreement will delineate clearly between categories of supervening events and relief available to developer: <ul style="list-style-type: none"> • Compensation Events – events where developer may be entitled to an extension of time, performance relief and/or compensation • Relief Events – events where developer may be entitled to an extension of time and/or performance relief but not compensation. 	Strong While some variance exists among the case contracts themselves and between the contracts and the guidance, the nature and principles of supervening events are comparable. The

Issue or Risk/Term	Summary of Central 70, I-4 and SH-288 Provisions	Summary of AIAI Guidance	Alignment (Strong, Moderate, Weak)
	<p>27) are lengthy and procedural in nature – in other words, these sections of the contract describe the processes for such matters as notification, determination, entitlement and adjustments in cost/time for event claims.</p>	<p>Project agreement will include a list of specific compensation events where developer may seek to claim one or more of the following depending on the impact of the relevant event:</p> <ul style="list-style-type: none"> • Extension of time; • Performance relief; and • Compensation <p>Project agreement will include a list of specific relief event where developer may seek to claim one or more of the following</p>	<p>one exception is the use of deductibles in relief event claims in I-4 project; however, this possible use of deductibles is not inconsistent with the guidance.</p>
<p>Dispute Resolution</p>	<p>All three projects have tiered dispute resolution processes where negotiations among project representatives is the first step in resolution. Central 70 and SH-288 then refer unresolved matters to designated senior representatives or an executive leadership respectively. In Central 70, mediation is also an option. Each includes option for referral to a dispute review board. Central 70 does not indicate that following dispute resolution procedures is precedent to litigation.</p>	<p>No preferred dispute resolution provisions are included since these are always jurisdiction, local law and owner specific. However, a multi-phased dispute ladder is often seen in the market where disputes are first managed by the project team, then referred to senior representatives of the parties with an option for mediation. Subsequently, alternative dispute resolution methods such as a disputes review board and/or binding arbitration are employed.</p>	<p>N/A</p> <p>However, strong alignment with prevailing practices in market</p>
<p>Changes in Law</p>	<p>Central 70 and SH-288 include descriptions of changes in law that are discriminatory and general in nature where the former impact the project or comparable projects and the latter are changes in effect or passed that are materially different or inconsistent with prevailing laws at the time of the setting date. Both treat discriminatory type changes as compensation events and more general changes as relief events; SH-288 includes imposition of new or additional taxes on tolls as a compensation event.</p>	<p>Developer may seek claim to Compensation Event for Qualifying Change in Law which is either a Discriminatory Change or one that requires capital expenditure or a change in the design or developer’s method, manner or sequence of executing the work. Changes to labor laws and tax laws are not qualifying changes. Developer should always be protected from discriminatory changes.</p>	<p>Moderate</p> <p>Central 70 and SH-288 are comparable to guidance but SH-288 varies with respect to taxes on tolls. I-4 affords limited protection from changes in law.</p>

Issue or Risk/Term	Summary of Central 70, I-4 and SH-288 Provisions	Summary of AIAI Guidance	Alignment (Strong, Moderate, Weak)
	I-4 only includes specific changes that are more general in nature; these are treated as relief events.	More general Changes in Law are introduction or repeal of, amendment, alteration, etc. of any law or standards, practices or guidelines issued or published by any governmental entity that are either binding on developer or if non-binding are typically complied with as a matter of good industry practice. Such changes should be shared with owner or possibly retained by owner.	
Geology/Site Conditions	In all three projects, specific sections of the contract as well as the sections that address reliance on reference documents make it clear that the information provided about geology and more general site conditions are for information only for the Developer/Concessionaire and it is the responsibility of the Developer/Concessionaire to conduct additional investigations deemed necessary during RFP period.	See “Reliance” for overall treatment of site conditions. Includes commentary about “Undisclosed Site Conditions” and indicates that owner should retain the risk of unknown site conditions that could not be reasonably identified or anticipated by proposers during RFP period. Such a circumstance would trigger a Compensation Event.	Moderate General alignment with respect to reliance on reference information. None of the three projects specifically addresses undisclosed conditions.
Force Majeure	Considered among the more general category of Supervening Events and common events such as war, riot, civil unrest, terrorism, named storms, etc. are force majeure events.	Considered as a Relief Event. An extended force majeure event may entitle a party to terminate the agreement. Includes common events such as war; nuclear, chemical or biological explosions; terrorism; strikes, etc. Does include a “ <u>Pandemic Event</u> ”, which is defined as “occurrence of an epidemic or pandemic in the State or directly affecting the State where: (1) such occurrence is the subject of a Change in Law, including any Federal or State emergency declaration, travel	Moderate Pandemic Event not named in any of the three contracts nor is an extended force majeure event addressed.

Issue or Risk/Term	Summary of Central 70, I-4 and SH-288 Provisions	Summary of AIAI Guidance	Alignment (Strong, Moderate, Weak)
		<p>restriction or other order, decree, directive or requirement regarding public conduct in response to such epidemic or pandemic; and (ii) such Change in Law results in the inability of the Work on the Developer to perform a substantial part of the Work on the project site or the prohibition of travel to or from the project site. A Pandemic Event will only exist while the relevant Change in Law remains in effect and will not include impacts that extend beyond the period governed by the Change in Law.</p>	
<p>Utilities</p>	<p>In all three contracts, the Developer/Concessionaire is responsible for coordinating and conducting activities related to utility identification, work and relocation in accordance with contractual requirements. In Central 70, the Enterprises have entered into URAs with publicly and privately owned utilities in the project area, and the Developer is responsible for coordinating activities subject to URA as well as all other necessary utility work. A qualifying delay is treated as a compensation event.</p> <p>In I-4 and SH-288, the Concessionaire is responsible for all utility coordination, agreements and adjustments. In I-4, qualifying delays are treated as a Relief Event and delays are subject to an aggregate deductible of \$5,000,000 for all such relief events. In SH-288, qualifying delays are treated as a Relief Event.</p>	<p>Developer will be responsible for obtaining all utilities necessary for the Project and for all utility relocations necessary to accommodate the design and construction of the Project. The Developer will coordinate, monitor and otherwise undertake the necessary work to ensure that utility owners are performing utility relocations in a timely and coordinated manner.</p> <p>Owner should enter into any utility agreements with utility owners that are necessary for the Project. Generally, the Developer will not be required to enter into utility agreements with the utility owners but will be provided with these agreements and required to comply with them.</p> <p>Owner should establish “utility benchmarks” for schedule and scope for coordinating with utilities for the project; utility benchmarks establish the time for entering into utility agreements, utility coordination and completing utility adjustment work. The Developer will bear the risks of deviations from utility benchmarks</p>	<p>Moderate/Weak</p> <p>Alignment between the contracts and guidance is strong relative to the overall responsibilities of the developer to provide necessary utilities and to relocate utilities as necessary. Differences exist regarding: (a) the role of the developer and entering into utility agreements and (b) the use of utility benchmarks. In Central 70, the owner entered into utility relocation agreements while in</p>



Issue or Risk/Term	Summary of Central 70, I-4 and SH-288 Provisions	Summary of AIAI Guidance	Alignment (Strong, Moderate, Weak)
		<p>to the extent caused by the developer failing to comply with its obligations. For deviations not caused by the developer, it may claim a compensation event. The owner may provide assistance with utility owner coordination upon the developer’s request.</p> <p>The developer may seek to claim a compensation event if it has complied with its obligations but there is a delay due to an uncooperative utility owner.</p>	<p>I-4 and SH-288 the developer is responsible for entering into utility agreements. None of the case project contracts employ “utility benchmarks”.</p>
<p>Right-of-Way</p>	<p>Responsibilities for ROW acquisition are similar but not identical among contracts. Central 70 and I-4 have identified parcels that the agency will provide by a particular deadline. SH-288 indicates that any ROW not already owned and available by state will need to be acquired by Developer. Similarly, Central 70 and I-4 make it the responsibility of the Developer/Concessionaire to acquire any additional parcels deemed necessary for project.</p> <p>Central 70 treats failures in acquisition as Compensation Event. I-4 treats ROW acquisition issues as a result of FDOT Change or FDOT-Caused Delay as Relief Event. SH-288 treats issues with ROW titles as Compensation and/or Relief Events.</p>	<p>Generally, the owner should bear the risk (in terms of time and price) for acquiring additional parcels of property that are necessary for the project proceed. However, the owner may require the developer to provide certain acquisition services, and in such circumstances the developer will share the risk by way of being accountable for its performance of those services.</p> <p>The owner will acquire the required parcels and make them available to the developer by a deadline indicated in the acquisition schedule included in the project agreement. If the owner fails to make the parcels available by the applicable deadline, then the developer (subject to any applicable deductible) may seek a Compensation Event claim for such delays.</p> <p>The developer will bear the risk of the acquisition of additional parcels beyond those necessary for the project.</p>	<p>Moderate</p> <p>Some variance exists among the case contracts and between the contracts and the guidance. This is not surprising given that ROW circumstances and requirements for each project and owner will vary.</p>

Issue or Risk/Term	Summary of Central 70, I-4 and SH-288 Provisions	Summary of AIAI Guidance	Alignment (Strong, Moderate, Weak)
<p>Revenue Sharing</p>	<p>In SH-288, revenue sharing is based on defined percentages that are applied to defined floor and ceiling amounts at each calculation date. For instance, the first calculation date will occur on December 31st in the 3rd anniversary year following commencement of service and if: (a) cumulative toll revenues ≤ \$30,736,503, then 0.00% applies; if \$30,736,504 ≤ cumulative toll revenues ≤ \$39,086,019, then 12.50% applies and so on.</p>	<p>Developer will share with the Owner a portion of the excess revenue, being revenues that would otherwise result in windfall profits to Developer compared to those projected in its base case financial model.</p> <p>Calculation of excess revenues will be based on either the gross revenue mechanism or equity IRR mechanism.</p> <p>The revenue sharing mechanism will be consistent with:</p> <ul style="list-style-type: none"> • Revenue sharing will commence only after substantial completion is achieved and revenue generation commences; • It will use a banded approach so that the higher the amount of excess revenues available for sharing the higher the percentage that is shared; and • The calculation of excess revenues and the Owner’s share will be considered on a cumulative basis to allow the developer to recoup financial underperformance on a cumulative basis before sharing “excess revenues” that would otherwise be payable for the relevant year 	<p>Moderate/Strong</p> <p>SH-288 generally follows the guidance since revenue is based on cumulative gross revenue and a banded approach is followed.</p> <p>Unable to assess whether annual banding amounts in SH-288 are taken from base case financial model.</p>
<p>Termination for Convenience</p>	<p>All three contracts grant the owner/public agency the right to terminate the contract for convenience if owner/agency determines such is in their interest.</p> <p>For compensation amount, Central 70 and I-4 involve calculation of equity market value or distributions due to equity plus relevant expenses (such as lender liabilities and subcontractor breakage) and minus</p>	<p>Owner may at any time terminate the Project Agreement for convenience upon notice to the Developer, on a specified day a minimum of 30 days after the Developer receives notice.</p> <p>Upon termination for convenience, the Owner will pay termination amount on same basis as termination for Owner Default. See below:</p>	<p>Moderate/Strong</p> <p>All three are consistent with guidance about right to terminate for convenience. For compensation</p>

Issue or Risk/Term	Summary of Central 70, I-4 and SH-288 Provisions	Summary of AIAI Guidance	Alignment (Strong, Moderate, Weak)
	<p>relevant credits due (such as bank account balances and insurance proceeds).</p> <p>SH-288 gives TxDOT the choice of the lesser amount of: (1) predetermined termination amounts that range from an initial amount of \$1,331,074,460 to a high of \$4,896,315,581 (commencement to before the 30th anniversary of commencement) to a final amount of \$617,136,521 (between 46th and 48th anniversary) or (2) the greater of the fair market value or a calculated value of the senior debt termination amount plus relevant expenses (third-party and developer demobilization) and relevant credits (borrowed cash and cost of required renewal work)</p>	<p><u>Availability Payment Projects</u></p> <ul style="list-style-type: none"> ● 100% of lender liabilities; plus ● [fair market value (determined by independent valuer) or [NPV of distributions to be made from date of termination to the end of term, discounted using the equity IRR (being the base case equity IRR less a specified percentage(s) if the termination occurs after substantial completion)]; plus ● Subcontractor breakage costs; plus ● Balances of Developer’s accounts; minus ● Insurance proceeds; minus ● Committed equity investments that were never funded; minus ● Any deductions that had accrued but had not been taken into account in calculation of any Availability Payment previously paid. <p><u>Revenue Risk Projects</u></p> <ul style="list-style-type: none"> ● The greater of: <ul style="list-style-type: none"> ○ Project Value (determined by independent valuer, and ○ 100% Lender Liabilities; plus ● Subcontractor breakage costs; plus ● Developer’s costs with respect to its employees as a result of terminating the agreement; minus ● Balances in developer’s accounts; minus ● Insurance proceeds; minus ● Committed equity investments that were never funded; minus 	<p>amounts, Central 70 and I-4, which are AP arrangements, are basically consistent with guidance. However, SH-288 has a different compensation amount approach where TxDOT can choose the lesser of predefined values or greater of fair market value and a calculated value involving senior market debt amount plus various expenses and minus various credits.</p>

Issue or Risk/Term	Summary of Central 70, I-4 and SH-288 Provisions	Summary of AIAI Guidance	Alignment (Strong, Moderate, Weak)
		<ul style="list-style-type: none"> Any non-compliance payments or liquidated damages that had accrued but not been paid. 	
<p>Handback</p>	<p>All three contracts have similar handback requirements. Each requires that developer return/transfer assets at the end of the term in the condition or functionality specified. Some time prior to the end of the contract term – Central 70 = 70 months, I-4 = five full calendar years, SH-288 = five full calendar years – the handback process commences for each project by following specified requirements such as establishing a handback reserve account, development of handback plans and schedules, funding the handback reserve account, inspections of the project assets, etc. In all cases, letters of credit may substitute for reserve account funds. While specific details among the processes differ slightly, they are quite similar. The one area where greater variance exists is the standards expected for assets at handback. Central 70 specifies residual life and a residual life methodology for each asset, I-4 identifies specific handback criteria for each asset, and SH-288 specifies residual life requirements for each asset.</p> <p>Reserve account funds remaining at the end of the contract term are either retained by the public agency to pay for remaining renewal work or returned to the developer.</p>	<p>Technical provisions of the project agreement will include clear and objective handback requirements for the assets, which prescribe the required condition of the various elements of the asset at the end of the term and the residual life of those elements.</p> <p>The technical provisions should also include a detailed process for inspecting and measuring compliance with handback requirements, including valuing the expected cost of any necessary work.</p> <p>The process will be conducted over the final [3-5] years of the term, so that relevant assessments can be made and any necessary work can be scheduled and completed by the end of the term.</p> <p>At the start of the handback period, the developer shall establish and fund a handback reserve account, which will function as the Owner’s security that the developer will comply with its handback obligations.</p> <p>In lieu of depositing funds into the handback reserve account, the developer may provide letters of credit.</p> <p>For AP projects, the owner will be entitled to withhold amounts from AP payments if the</p>	<p>Strong</p> <p>While some details among the requirements and processes described differ slightly, the handback requirements and processes in the contracts are very similar to the guidance.</p>



Issue or Risk/Term	Summary of Central 70, I-4 and SH-288 Provisions	Summary of AIAI Guidance	Alignment (Strong, Moderate, Weak)
		<p>developer fails to fund the reserve account as required.</p> <p>For revenue risk projects, the owner may terminate the agreement after a suitable cure period.</p> <p>At the end of the term, a final assessment will be conducted. The owner will be entitled to the portion of the reserve account necessary to cover the cost of requirements not met. The balance will be returned to the developer.</p>	

6. Summary and Conclusion

These guidelines are based on multiple avenues of investigation that included examination of three case projects, Central 70 in Colorado, I-4 Ultimate in Florida and SH-288 in Texas. The cases help inform the guidelines with real-world applications of the strategic and tactical practices presented, which public agencies can employ to better align public and private sector perspectives of risks that can enhance their allocation and management. Specifically, these guidelines illustrate strategies and practices for partner engagement, risk management, and contractual design, formation & administration for an overall P3 program and for P3 project preparation, procurement and implementation & operations. These strategies and practices are summarized in Table 9. Risk sharing options are also presented and discussed: deductible and threshold schemes, allowances, escalation methods and risk pools. Deductible, allowance and escalation methods are fairly common risk sharing approaches in P3s, but risk pools deserve greater consideration; the consultative processes evident in conventional P3 procurements suggest that risk pools might be a feasible alternative. The contractual provisions in the case projects provide samples of contractual treatment of key issues and risks given a project's context and circumstances. Further, these case project provisions were compared with recent guidance published by AIAI and were found to be well-aligned.

Given that very few public agencies that have the authority to implement LTHDAs/P3s have their own guidelines or manuals, these guidelines are timely and pertinent. They can aid a public agency to develop not only a guideline/manual document but also its P3 program. Future work can examine strategies and practices related to the implementation phase of P3s as more current projects get beyond design and construction and deeper into operations & maintenance.

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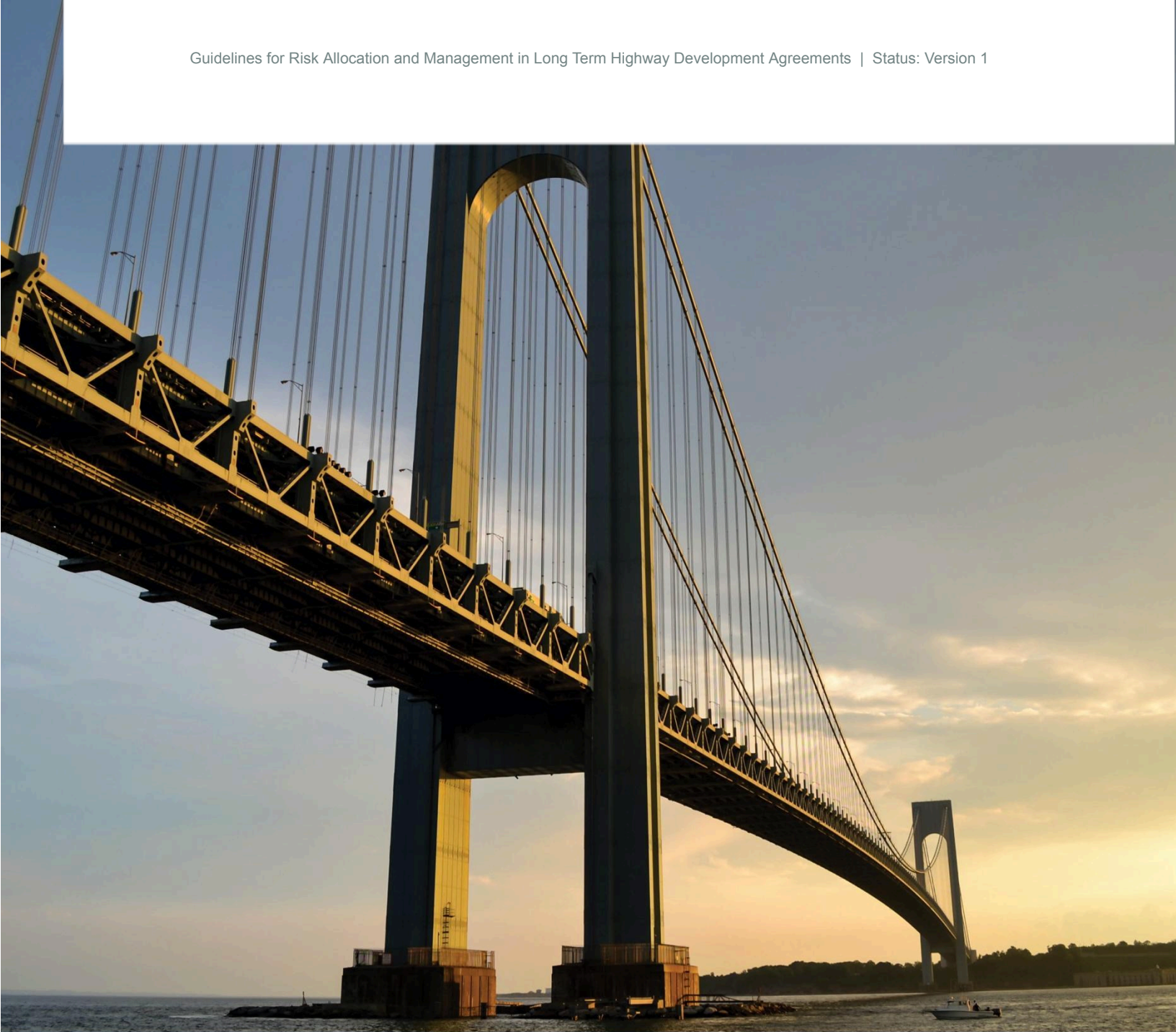
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Appendix 1 – LTHDA/P3 Risks Investigated in Phase I

Risk	Category	Description
Financing	General	Arranging financial investors and/or favorable terms for the project developer and/or the sponsor for capital needs during a project's lifecycle.
Socio-political opposition and protesters		Opposition to the project by government agency or citizens, e.g., political issues, protests, strikes.
Change in law		(a) the adoption of any law after the contract's effective date, or (b) change in any law or in the interpretation or application thereof by any governmental authority after the effective date. Discriminatory change in law is differentiated from other changes in law since a discriminatory change only affects the project or comparable projects or the project developer/contractor.
Refinancing		Conditions that the project developer and/or the sponsor may face when they want to change their current financial structures or agreements to better suit their needs (e.g. changes in interest rates, stricter agreement).
Inflation		Inflation drives up the cost of construction and operation while it reduces the real value of money.
Interest rates pre-financial close		Changes in interest rates after commercial close but before financial close.
Design	Construction	Inadequate or defective design impacts may emerge in the construction and operation phases.
Right of way & easements		Difficulties in acquiring necessary right of way (ROW) and easements for the project.
Additional properties		Any difficulty in acquiring properties outside of ROW but deemed necessary for the project.
Site geology/conditions		Site geology may be different from what is known by the project developer and/or sponsor at the time of commercial close. The differences can among other things increase costs and cause delays.

Risk	Category	Description
Environmental risks		Presence of known or unknown environmental conditions (e.g., hazardous materials, contaminated site); these are exclusive of more general site geology conditions.
Archaeology, fossils, or protected species		Discovery of important archaeology, fossils or endangered species on the project site that may seriously delay construction or require revisions of the construction plans.
Access and adjustment to utilities		Difficulties in coordinating with third parties during utility adjustments and relocation, permitting, etc. throughout the project.
Permits		Difficulties and delays in getting general permits from authorities or other third parties.
Environmental (non-NEPA) permits		Difficulties and delays in getting environmental (non-NEPA) permits from authorities.
Commodity prices		Changes in commodity (i.e. materials, fuel, etc.) prices over time.
Changes by the Public Authority		Changes in project specifications, scope, schedule, etc. made by the Public Authority after financial close.
Performance		Project fails to meet milestones or fails to perform as specified.
Usage/demand risk	Operation	Demand may be lower than projections due to factors such as inaccurate forecasts of demand elasticity, onset of economic recession, or changes in local population/demographics.
Network modifications		Unplanned or planned changes in transportation network (e.g., the building of competing roads) that may affect usage or performance of the project.
Payment for services		Failure of public authority to make timely payments according to contractual obligations (e.g. due to shortage of budgetary funds).
Availability and service		Facility fails to meet specified availability or service standards/measures.
Operation expenses		Increase in actual operation expenses.

Risk	Category	Description
Maintenance		Unscheduled maintenance that impairs availability or higher than expected maintenance costs.
Latent defects		A fault in the facility that is not patent, i.e. the fault could not have been discovered ex ante through reasonable investigation.
Transfer of ownership/ contractual rights		Changes in organizational or financial structure of parties to the contract (e.g., change in ownership).
Project Company default		Termination due to project company default.
Force majeure		Unusual events that cause temporary interruption or irrecoverable damages to the project.
Hand-back		At end of contract duration, the facility (quality or value) does not meet specified requirements.



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