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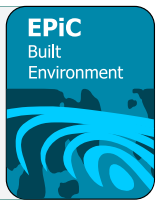

A Comparison of Contract Requirements for Design Professional Liability Insurance in Design-build Highway Projects

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In the transportation design-build (DB) industry, the responsibility of the design is transferred to the design-build team from the owner. One of the critical issues for state departments of transportation (DOTs) is design professional liability. To cover designers' professional negligence, design professional liability insurance (DPLI) should ensure satisfactory coverages in DB projects for state DOTs. The objective of this study is to identify the variability of the DPLI policy requirements that are found in DOT DB projects. This study conducts content analysis and comparative analysis of 15 DOT archival data that consist of design-build agreements and requests for proposals. This study determines six common elements of DPLI requirements: (1) types of DPLI, (2) indemnifying party, (3) coverage amount, (4) extended reporting period, (5) retroactive date, and (6) supplemental policies. The results show that these DPLI policy elements depend on the available customizable options and requirements. Some DOTs tend to explicitly state all six elements, while other DOTs require a few of these six elements. The findings also explain the significant characteristics and implementation of each policy element. Its findings contribute to a better understanding of DPLI requirements and provide opportunities for decision-makers to reduce issues related to insurance coverage gaps.

Key Words: Design professional liability insurance, errors and omissions insurance, design-build, transportation infrastructure

Introduction

Design-build (DB) is no longer considered an experimental project delivery method. The number of projects in the transportation infrastructure industry procured with DB in the United States increased 600 percent from 2002 to 2016 (DBIA, 2016). In 2018, the FMI Corporation reported that DB spending was anticipated to increase by 18 percent in the nonresidential construction market between 2018 and 2021. As of August 2021, DB had been fully authorized in 30 states and the District of Columbia, widely permitted in another 5 states, and authorized with certain limitations in 11 additional states, while only four states do not have the authority to use DB in highway programs (DBIA, 2021). In the DB environment, a single entity, a design-builder, can overlap design and construction activities and even initiate its construction work before the design phase is complete to save cost and time (Ashuri et al., 2013). However, in this alternative method, more roles and

responsibilities have shifted from state departments of transportation (DOTs) to design-builders, and this change can create problems in determining liability when a dispute arises between the owner and design-builder and between the design-builder and design professional (Loulakis et al., 2015).

One critical risk factor in the delivery of highway projects is design liability (Ashuri et al., 2018; Gad et al., 2015; Kraft & Molenaar, 2015; Lee et al., 2020). State DOTs require a design professional liability insurance (DPLI) policy to cover designers' professional negligence, commonly known as an errors and omissions (E&O) policy. A few of the literature has identified several elements in DPLI policies in DB. Rowings, Federle, & Rusk (2000) asserted the importance of reviewing contractual responsibilities, insurance, and obligations because most of the liability is passed through to the designer in the DB team. They found two very common practices in DB electrical projects: using project-specific professional liability insurance and modifying the corporate design professional liability insurance to allow participation in DB projects. They found that 69 percent of electrical contractors obtained additional professional liability insurance for individual projects, while 49 percent of them stated their firm had modified the policy to allow DB projects (Rowings et al., 2000). Stephen Wichern (2004) studied three approaches for protecting the owner in DB projects against the design liability risk by providing comprehensive insurance coverage. The first approach is to demand the minimum standards in the designer's E&O insurance coverage, including appropriate insurance minimums, long-term protection, retroactive coverage, and even excess E&O coverage. The second approach is to require the contractor to purchase a standalone professional liability policy to cover the design liability exposure of the project. The third suggested approach is owner-controlled insurance programs (OCIPs), a type of project-specific DPLI purchased by the owners. This policy is typically employed on large and complex construction projects involving numerous parties.

Mayssa, Abdul-Malak, & Srour (2018) provided comprehensive research on multi-tiered professional liability coverage in DB. The research identified different insurance policies for construction projects, including designers' practice professional liability indemnity, contractors' professional liability, owners' protective professional indemnity, contractors' protective professional indemnity, project-specific professional liability insurance, and mitigation of loss/damages. The researchers proposed a process model that illustrates the considerable insurance-coverage claim path and explains how various coverages can be triggered. They concluded that the increasing complexity of projects and integration between design and construction in design-build make professional liability risk the most challenging issue to ensure (Kalach et al., 2018).

The literature has identified several elements in DPLI policies in DB. However, previous research on the practice of design professional liability insurance in design-build has been scarce, and only a few previous studies have been found in the area. A gap remains regarding the state of practice of DPLI across the U.S., and the underlying thought process for selecting the E&O policy requirements has not been fully identified. Therefore, this study aims to identify the fundamental elements of DPLI policies commonly required by state DOTs for transportation DB projects and characterize each policy element and implementation.

Research Methodology

This study conducted a comparative content analysis of DOT procedures using a mix of qualitative archival data to develop a systematic understanding of contract requirements for DPLI in design-build highway projects. We sampled public archival data that consisted of design-build agreements (DBAs) and requests for proposals (RFPs) that specify the insurance requirements for specific projects. Based on the availability of public information in the documents, we sampled from three DBAs and 14 RFPs from 15 DOT documents. DPLI requirements show great variations in policy elements depending on the available customizable options. This study provides the foundation on the variability of contractual policy requirements and the emerging trend of state DOTs' practice of DPLI.

Results

Key Elements of DPLI Policy Requirements

This study found that state DOTs require design-builders to meet the minimum requirements for the DPLI policy, and the language of DPLI requirements varies from state to state. The insurance section from state DOT RFPs and DBAs shows several elements of DPLI policy requirements that are commonly used under the DPLI policy language. Table 1 shows the six elements in DPLI policies: (1) types of DPLI, (2) indemnifying party, (3) coverage amount, (4) extended reporting period, (5) retroactive date, and (6) supplemental policies. Some DOTs tend to explicitly state all six elements in their RFPs or/and DBAs, while other DOTs require some of these elements. This research also found the similarities and differences in describing each element among state DOTs. This study attempts to present the state-of-the-art practices in fundamental elements of DPLI requirement from state DOTs that are actively using DB programs and determine significant characteristics of each policy element.

Table 1

Fundamental elements in state DOT's DPLI requirement section

	DPLI type	Indemnifying parties	Coverage amount	Extended reporting period	Retroactive date	Supplemental policies
Arkansas DOT	X	X	X	X	X	X
Caltrans	X		X	X	X	
Colorado DOT			X	X	X	
Connecticut DOT	X		X	X		
Florida DOT	X		X			
Georgia DOT	X		X	X	X	
Idaho DOT			X	X		
Maine DOT			X			
Massachusetts DOT		X	X	X	X	
Mississippi DOT			X	X		
Missouri DOT	X		X		X	
Montana DOT			X			
Ohio DOT	X		X	X	X	
South Carolina DOT			X	X	X	
Texas DOT	X	X	X	X		X

Types of DPLI

Engineering firms can purchase a DPLI policy either on an annual basis or for specific projects. The most common policy that covers all ongoing projects of the firms if the policy is renewed every year is annual-based DPLI, also known as "practice policy" or "corporate policy." Annual-based DPLI is for the named insured—the engineering firm only—and the coverage amount is shared by all the projects performed by the engineering firm during the coverage period. In contrast to the annual-based policy, project-specific DPLI is purchased to cover design liability for a specific

project. The rationale for purchasing this type of policy for a specific project is whether or not the coverage has already been exhausted by other projects under the same annual-based policy of the engineering firm (Hickman, 2013).

Based on content analysis of requests for proposal and design-build agreements from 15 DOTs, the study found that the requirements regarding types of DPLI show variations in three ways, shown in Figure 1. First, some DOTs do not specify the types of DPLI in their insurance requirements, as no such language is found in their insurance requirement sections of the DB contract documents. Example language from Massachusetts DOT is "[t]he DB Entity shall provide professional liability coverage with limits not less than $1,000,000 per claim and aggregate, protecting against any negligent act, error or omission arising out of design or engineering activities with respect to the Project […]." In such a paragraph of insurance requirements, required design professional liability insurance types are not mentioned. Idaho, Colorado, Maine, Massachusetts, Mississippi, Montana, and South Carolina DOTs are under this category.

Second, some DOTs require DPLI for a design-build project to be a project-specific policy. Per the project requirements, the project-specific policy must be purchased; providing annual-based practice design professional liability insurance will not be acceptable for these state DOTs' design-build projects. Example language from Georgia DOT is that "[s]uch policy is to be project-specific." Four out of fifteen DOTs show such requirements in their design-build documents: Connecticut, Florida, Georgia, and Missouri DOTs.

Lastly, state DOTs are open for either annual-based or project-specific policies. Design-build contract documents specifically indicate that design-builders can choose either annual-based or project-specific policies, showing that DOTs have been aware of the two types of policies used in current practice. They indicate their openness regarding the use of the two types of policies. Arkansas DOT, Caltrans, Ohio DOT, and Texas DOT use this type of requirement. Example language from Texas DOT is "DB Contractor may satisfy such insurance requirement via either a series of annual practice policies or a project-specific policy covering the period of design and construction." Ohio DOT is a bit different from the other DOTs mentioned above. They differentiate the design professional liability insurance requirement based on the size and complexity of the project. The Ohio DOT representative mentioned that, for large/complex projects, Ohio DOT requires project-specific DPLI for the design-build team and annual-based practice DPLI for a contractor's in-house design service. For other projects, Ohio DOT mentions annual-based practice DPLI only.

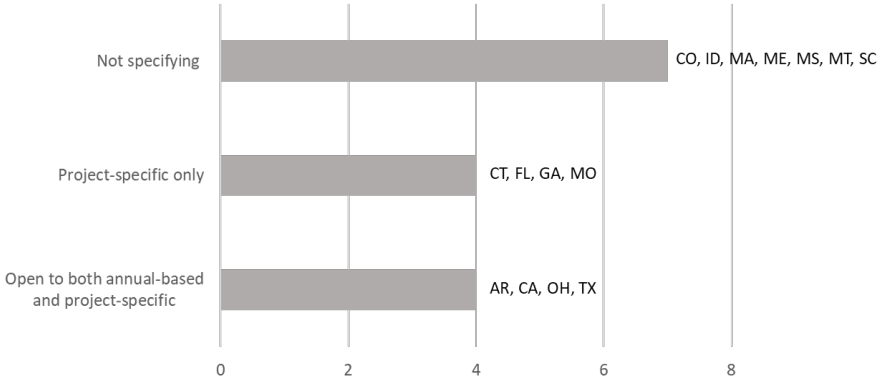

Figure 1. State DOTs' practices in the requirement for DPLI types

Coverage Amount

The coverage amount is the maximum amount of money that the insurance company provides the insured for coverage under DPLI. It is a typical term in all DPLI policies. State DOTs set the minimum amount of coverage the design-builder needs to provide or change minimum coverage requirements depending on project size based on their criteria size and cost.

For the first case, the coverage limit term usually is specified by a certain amount per claim and in aggregate in the policy. The coverage amount of DPLI shows wide variation depending on the requirement from the insured and the available options from the insurance company. A certain amount per claim and/or aggregate is always found as one of the DPLI requirements in their contracts. The results show that eleven DOTs usually specify a certain amount for the policy coverage. Table 2 shows the coverage variations among DOTs, ranging from $1M to $25M. Georgia DOT requires a coverage limit per claim only, and Idaho DOT requires only a coverage limit in aggregate. Aside from Georgia and Idaho DOTs, the other nine DOTs set the policy thresholds for each claim and aggregate amount.

Table 2

Typical minimum coverage requirements

State DOT	Limit per claim ($)	Limit in aggregate ($)
Arkansas	10M	10M
California	2M	2M
Colorado	1M	1M
Georgia	1M	-
Idaho	N/A	1
Maine	1M	1M
Massachusetts	1M	1M
Mississippi	3M	5M
Montana	1M	1M
South Carolina	10M	10M
Texas	5M	25M

On the other hand, four DOTs—Connecticut, Florida, Missouri, and Ohio—tend to change minimum coverage requirements depending on project size based on their criteria, such as project size and cost (see Table 3). Ohio DOT classifies DB projects based on their sizes (small or large) and specifies different minimum limits for DPLI coverage (per claim or in aggregate) for the project types. For small projects, Ohio DOT does not require the design-builder to purchase a project-specific policy, as mentioned in the previous section, and the minimum coverage requirements are $1M for each claim and in aggregate. Ohio DOT increases the minimum requirements for large projects and requires the design-builder to hold a project-specific policy. Ohio DOT requires increased liability requirements if the project has high-risk items, and large projects typically have higher risk items, so that the requirements need to be increased. The Ohio DOT representative explained that any project over $100M is typically considered a large project. For large projects, the minimum requirement for coverage is $10M per claim and in aggregate. Three other DOTs—Connecticut, Florida, and Missouri—require a project-specific policy only, and they classify the minimum requirements based on project cost. The study found that the main reasons to classify projects based on their size to specify DPLI depend on owner risk and project risk.

Table 3

Coverage requirements variation

	Project Size	Minimum Per Claim ($)	Minimum Aggregate Limit ($)
Connecticut DOT	- Under $25M	N/A	2M
	- Under $50M	N/A	3M
	- Under $100M	N/A	4M
	- Over $100M	N/A	5M
Florida DOT	- Under $30M	N/A	1M
	- Under $75M	N/A	2M
	- Over $75M	N/A	5M
Missouri DOT	- Under $50M	1M	1M
	- Over $50M	10M	10M
Ohio DOT	- Small projects	1M	1M
	- Large projects	10M	10M

Indemnifying Party

Indemnity endorsement is a term that specifies another party as the indemnifying party under the policy so that it holds the party harmless from any claims brought by a third party due to professional negligence. The annual-based policy does not allow the prime insured to indemnify any other parties. At the same time, indemnity endorsement can be added under a project-specific policy regardless of the purchaser of the project-specific DPLI.

The study found that the Texas, Massachusetts, and Arkansas DOTs include indemnity endorsement in their DBA. Texas DOT stated that "[s]uch insurance shall provide an indemnified party endorsement for the benefit of TxDOT." Massachusetts DOT stated, "[t]he policy must also indemnify MassDOT for any liabilities, damages or judgments, and reasonable attorneys' fees and related costs due to a Breach of Professional Duty of the Named Insured(s) and/or their subconsultants." Finally, Arkansas DOT stated that "[…] the Department and the parties listed in Section 9.2.6 as indemnified parties on such policies."

Extended reporting period

DPLI policy is written on a "claims-made" basis so that the coverage triggers when an actual claim is filed during the policy period (Hickman, 2013). Extended reporting period (ERP) provisions are commonly used on claims-made policies. ERP provisions do not mean the extension of the policy, but this allows the insured have additional time to file or present claims based on acts, errors, or omissions to the insurer after the policy period has ended (Hickman, 2013).

According to the content analysis of RFPs and DBAs, this research found that most DOTs have ERP provision in their DPLI section, as shown in Figure 2. Four DOTs—Florida, Maine, Mississippi, and Montana—do not require ERP in their documents. Three to five years of ERP were

required by eight DOTs. Ohio DOT has different ERPs based on the complexity of the projects. It requires 3-year ERP for small projects and 5 years for large/complex projects.

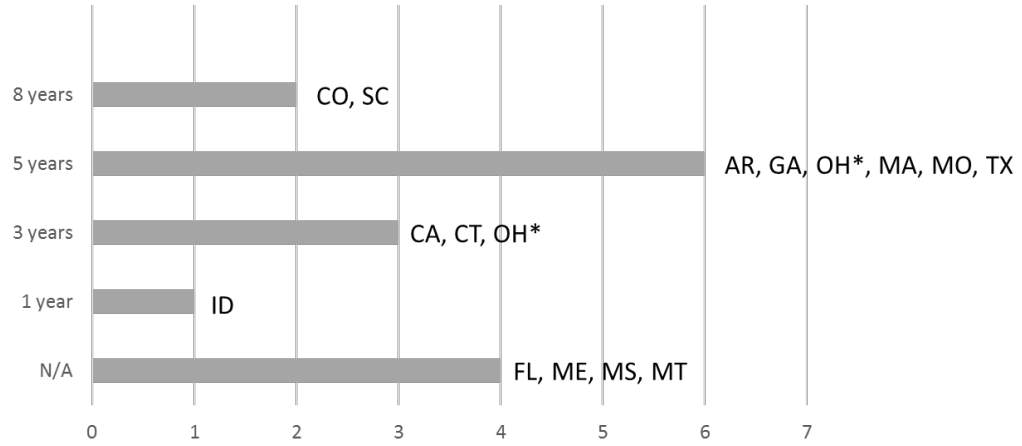

Figure 2. Requirements for the extended reporting period

Retroactive date

Similar to ERP, retroactive date provisions are standard in DPLI policies because of the nature of claims-made policies that limit coverage triggers during the policy period (Hickman, 2013). The policy can be covered after a designated date, called a retroactive date. Claims that arise out of acts, errors, or omissions could be covered under the policy if the claims occurred after the policy's retroactive date and before the policy's expiration date (Hickman, 2013).

Based on the content analysis of RFPs and DBAs from 15 DOTs, 8 out of 15 DOTs include retroactive date provisions, and the other seven DOTs do not include the provisions. These eight DOTs use different languages for the retroactive date since the retroactive date is a designated date that the policy coverage can be in effect. This date can vary depending on the choice of DOTs. The study found four types of example languages that are required under DPLI sections: (1) design work commencement, (2) contract execution, (3) exact date, and (4) final RFP issue. Their example languages regarding the retroactive date are shown below.

1. Design Work Commencement
   - Colorado DOT: "a retroactive date which covers the period in which the design work began"
   - Georgia DOT: "a retroactive date no later than the date that design services commenced"
   - Missouri DOT: "[t]he policy shall have a retroactive date of no later than the date the first design or engineering Activities have been conducted by the Designer"
2. Contract Execution
   - Arkansas DOT: "a retroactive date of no later than the date of execution of this Design–Build Agreement"
   - California DOT: "a retroactive date no later than the date of this contract execution"
   - South Carolina DOT: "any retroactive date under the policy shall precede the effective date of this Contract"
3. Exact Date
   - Massachusetts DOT: "[t]he policy shall have a retroactive date no later than the date hereof"
4. Final RFP Issue

- Ohio DOT: "the policy shall have a retroactive date no later than the date on which the final Request for Proposal documents are issued"

Supplemental policies

Some additional policies supplemental DPLI and provide extra protection regarding losses due to professional negligence. These policies aim to fill the potential gaps of the prime DPLI policy and provide the team with extra coverage. The contractor's protective professional indemnity (CPPI) is a policy that supplements the prime DPLI policy and provides additional protection for the design-builder. The policy provides the design-builder with excess coverage over the DPLI policy of design sub-consultants if the design-builder suffers losses due to professional negligence by its design sub-consultants. It also provides coverage for losses from professional negligence by the design–builder's self-performed design work. The owner's protective professional indemnity (OPPI) is another supplemental policy that provides additional protection for the owner. OPPI covers the professional negligence damages that exceed the DPLI policy coverage provided by the design-build team. It also protects the owner by indemnifying the owner against third-party claims arising from professional negligence, which can be an alternative to indemnity endorsement under the main DPLI policy.

The researchers found state DOTs' practices in these supplemental policies. Two DOTs out of the eleven DOTs being examined—Arkansas and Texas—specifically require CPPI as supplemental policies under the DPLI requirement section. None of the DOTs studied in this research has used OPPI. This may lack familiarity with this policy since only limited underwriters offer this coverage (Taylor, 2012).

Conclusions

In the current insurance market, various DPLI products are available following the growing number of DB projects and the increasing demand for customizable policy options. The study determines the fundamental elements in DPLI policies commonly required by DOTs. The study examined the DPLI requirement section from state DOTs' RFPs and DBAs and found six common elements: (1) types of DPLI, (2) indemnifying party, (3) coverage amount, (4) extended reporting period, (5) retroactive date, and (6) supplemental policies.

The authors found that the annual-based practice DPLI by the engineering firm is favorable as it has been in the industry for the most prolonged period. The engineering firms are typically required to hold the annual-based practice policy to perform design service in the highway industry. However, the annual-based practice policy has less flexibility of modifying specifically for one project because this policy is to cover all other projects in the engineering firm during the policy period, while the project-specific policy is designed for a specific project only. Inclusion of indemnifying parties, ERP, or retroactive date might be a hassle when using an annual-based practice DPLI because of its lack of policy flexibility, while it is common when a project-specific DPLI is used. Regarding the coverage amount, the authors found that the main reasons to classify projects based on their size so as to specify DPLI depend on owner risk and project risk.

The ways to elaborate DPLI requirements vary from state to state and project by project. Some DOTs tend to explicitly state all six elements in their RFPs or/and DBA, while other DOTs require some of these seven elements. This study also found the similarities and differences in describing each element among state DOTs. This study contributes to identifying the contractual requirements for design professional liability insurance, commonly required by state DOTs. It is anticipated that transportation professionals would benefit from the findings of this study through a better understanding of DPLI requirements. Its findings contribute to a better understanding of

professional liability insurance as a risk management tool and provide opportunities for decision-makers to reduce issues related to insurance coverage gaps.

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