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# Comparative Analysis of Construction Inspector Training Programs Across State Departments of Transportation

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Construction Inspectors (CIs) serve as critical agents in maintaining quality, safety, and compliance within transportation infrastructure projects. Despite their essential role, state Departments of Transportation (DOTs) in the United States continue to face difficulties in recruiting and retaining qualified personnel, primarily due to limited funding, retirements, and reduced interest from younger professionals. These challenges highlight the importance of implementing improved and standardized training programs to maintain a skilled and capable inspection workforce. This study conducts a comparative review of CI training programs across seven major state DOTs in the United States to identify standardized and state-specific training practices. The analysis explores different instructional modules, delivery modes, assessment mechanisms, and prerequisite coursework requirements. Findings revealed significant variation in training frameworks, reflecting differences in state priorities and instructional strategies. By synthesizing these practices, the study contributes to the development of a more standardized and competency-based approach to CI training, supporting the advancement of an adaptable and skilled inspector workforce across the nation's transportation sector.

Keywords: Construction Inspectors, Training Modules, Infrastructure, Department of Transportation, Education

## Introduction

Construction Inspectors (CIs) are often regarded as the "on-site eyes and ears" of transportation departments, with the responsibility to verify that materials, workmanship, and operations conform to design plans, specifications, and safety standards (Mohamed et al., 2025). Competent CIs contribute significantly to quality control through daily monitoring, material testing, and documentation to enhance the service life of road and bridge infrastructure while providing long-term value to public agencies and taxpayers (Eric Marks and Jochen Teizer, 2016). Despite this crucial role, many transportation departments across various jurisdictions are experiencing a significant and persistent shortage of qualified CIs. Recent studies indicate that this shortage is driven by multiple interrelated factors, including declining workforce productivity, gaps in vocational and higher education pipelines, large-scale retirements, competition with the private sector, and reduced interest in inspection careers among younger generations (Harper et al., 2023). In addition, state Departments of Transportation (DOTs) are confronted with persistent challenges in the recruitment and retention of CIs, primarily

driven by elevated attrition rates, funding constraints that affect both compensation levels and the number of funded inspector positions, and diminishing occupational interest among emerging generations (Singh et al., 2025).

Rigorous training and professional certification equip CIs with the specialized knowledge to detect deficiencies and ensure compliance with design, contractual, and safety benchmarks, skills that are essential to achieving quality assurance and regulatory compliance (Iordachescu et al., 2008). This underscores the need for structured and systematic training initiatives aimed at cultivating and sustaining a proficient next-generation inspector workforce. Many state DOTs have introduced structured CI training programs to bridge the workforce shortage and maintain high construction inspection standards. These programs were aimed at rapidly enhancing inspector skills and ensuring uniform performance. For example, Washington State DOT has developed a certification program whereby CIs must pass examinations in a variety of technical areas to foster consistency and expand their qualifications (WSDOT, 2022). Similarly, the Texas DOT initiated an Inspector Development Program (IDP) that incorporates classroom instruction with field experience to develop core competencies effectively (Texas Department of Transportation, 2017). These training programs vary widely in structure, delivery method, and assessment formats, indicating a need for a clear comparison of different training topics across the state DOTs. Targeted programs that incorporate current regulations and industry advancements enable new inspectors to quickly achieve competence while reinforcing quality assurance practices and maintaining the knowledge necessary to uphold the safety, reliability, and durability of transportation infrastructure.

Emphasized standardized and competency-based training for CIs, and understanding how different state DOTs design and deliver training programs can contribute to developing best practices nationally (Manideep Tummalapudi, Harper, 2024). Moreover, various studies indicate that inconsistencies persist in CI training and certification practices across transportation agencies, underscoring the need for systematic comparisons of state-level programs (Harper et al., 2023) . This study addresses this gap by presenting a comparative review of CI training practices across seven different state DOTs in the United States, examining aspects such as training structure, instructional modules, delivery methods, assessment approaches, and prerequisite coursework requirements. By examining the similarities and differences among these training contents, this study offers a descriptive overview of current practices and illustrates how training pedagogy influences the development of CI competencies and the overall effectiveness of transportation infrastructure inspections.

## Methodology

The research methodology adopted for this study involved conducting a comparative analysis of CI training practices to identify standardized and state-specific topics in CI training programs across seven state DOTs, including Texas (TX), California (CA), New York (NY), Florida (FL), Virginia (VA), Minnesota (MN), and Colorado (CO). These states were selected as representing some of the nation's largest and most diverse DOTs in terms of geographic conditions, project scale, and training system maturity, providing a comprehensive view of varying CI training approaches.

In this study, topics labeled as standardized represent foundational CI competency areas that are traditionally recognized as core to inspection practice (e.g., structural inspection, earthwork, concrete, contract administration) and reflect long-established responsibilities that are broadly expected of CIs across state DOTs, regardless of regional context. Topics labeled as state-specific represent supplementary or differentiated areas of emphasis (such as advanced materials Quality Assurance (QA)/ Quality Control (QC), digital documentation, or specialized roadway maintenance) that build

on these foundational topics and are more strongly shaped by each state's infrastructure needs and strategic priorities. This classification allows the analysis to distinguish between (1) common core competencies and (2) areas where states are tailoring their training, even when multiple states adopt some of these state-specific topics. The analysis involved retrieving CI training material across these seven states and examining the similarities and differences in the structure of CI training practices, including variations in training content, modes of delivery (synchronous or asynchronous), and the types of assessment formats (synchronous or asynchronous). Additionally, it explores the inclusion of prerequisite coursework required for certain modules, providing insights into the depth and progression of training frameworks across the assessed state DOTs.

## Results and Discussions

A detailed analysis of the CI training programs across seven state DOTs is presented, focusing on four key areas: (1) Training Topics, highlighting the standardized and state-specific topics covered during the training; (2) Mode of Delivery, comparing synchronous, asynchronous, and blended/hybrid learning delivery approaches; (3) Assessment Formats, examining how learning and competencies are evaluated across states; and (4) Prerequisite Coursework, identifying any prior knowledge or courses required before enrollment in the specific training topic. This structure provides a clear overview of both the commonalities and differences in CI training programs across selected DOTs.

### *Training Topics*

A comprehensive understanding of the scope and focus of CI training programs across selected states can be achieved by analyzing the training content emphasized in each state's framework. A comparative overview of CI training program topics offered across the seven state DOTs is presented in Table 1. The training topics are classified into standardized and state-specific training topics, demonstrating broad alignment regarding the essential skills expected of CIs. They also highlight strategic differences shaped by regional variations in infrastructure complexity, maintenance objectives, and levels of digital integration. Each standardized and state-specific topic is further subdivided into several modules, offering detailed guidance on procedures, materials, and performance standards within that area, thereby supporting both theoretical knowledge and practical field skills. The symbol "Y" signifies that a topic is incorporated into the state's training program, whereas "N" indicates its absence in Table 1.

Across the standardized training topic, there is a notable level of consistency in several foundational areas. Most state DOTs include Bridge Superstructure and Structural Connections, Foundation and Substructure Inspection, and Contract Administration and Project Delivery topics, reflecting similar focus areas across states concerning structural inspection, administering projects, and meeting contract regulatory obligations. The repetitive nature of these areas is indicative of the baseline skill sets and forms of competency expected of CIs to assure compliance with quality assurance measures and design specifications, as well as for the safety surrounding transportation infrastructure work. There are also technical areas that include Earthwork, Soils, and Aggregate Compaction and Portland Cement Concrete Inspection and Testing topics, which are implemented by the training programs of several state DOTs (notably TX, CO, and VA). These areas indicate an ongoing commitment to quality assurance at the field level and materials control, which are essential to pavements performing as intended for prolonged durability. In contrast, CA and NY state DOTs have a more selective approach to the technical areas, which could indicate the individualized training framework, strengths, or weaknesses in infrastructure. Additionally, Legal, Safety, and Environmental Compliance is a subject that appears in five of the seven states (TX, CA, NY, VA, FL), indicating that there is an

increasing emphasis on environmental stewardship and workplace safety within inspector roles. In comparison, Roadside Safety and Barrier Systems only appear in two states (VA and TX), indicating that this topic receives comparatively limited emphasis in CI training programs across the reviewed DOTs.

**Table 1.** Standardized and additional state-specific topics of the state DOTs training programs

| S. No | Standardized Training Topics | States | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **TX** | **CA** | **NY** | **CO** | **MN** | **VA** | **FL** |
| 1 | Bridge Superstructure and Structural Connections | Y | Y | Y | N | Y | Y | N |
| 2 | Construction Plans, Math, & Surveying | Y | N | N | Y | Y | Y | N |
| 3 | Contract Administration & Project Delivery | Y | Y | Y | N | N | Y | Y |
| 4 | Earthwork, Soils, and Aggregate Compaction | Y | Y | N | Y | N | Y | Y |
| 5 | Foundation and Substructure Inspection | Y | Y | Y | N | Y | Y | Y |
| 6 | Hot-Mix Asphalt Paving and Materials Quality Assurance (QA) | Y | N | N | Y | N | Y | Y |
| 7 | Legal, Safety, and Environmental Compliance | Y | Y | Y | N | N | Y | Y |
| 8 | Portland Cement Concrete Inspection and Testing | Y | Y | N | Y | N | Y | Y |
| 9 | Roadside Safety and Barrier Systems | Y | N | N | N | N | Y | N |
| | **Additional State-Specific Training Topics** | | | | | | | |
| 1 | Advanced Materials QA/Quality Control (QC) and Plant Operations | N | N | N | N | N | Y | Y |
| 2 | Advanced Structural & Geotechnical Systems | Y | N | N | N | N | N | Y |
| 3 | Digital Documentation & Specialized Systems | Y | Y | Y | N | N | Y | Y |
| 4 | Specialized Roadway Maintenance & Landscape | Y | Y | N | Y | Y | Y | Y |

*Note: Y = Topic Included; N = Topic Not Included*

The additional state-specific training topics tailored by individual states differ from the standardized topics, reflecting local priorities and the adoption of region-specific technologies. For example, the Advanced Materials QA/QC and Plant Operations focus area, which is only offered by VA and FL state DOTs, clearly demonstrates those states' strong emphasis on monitoring plant production and verifying advanced materials. Similarly, the Advanced Structural & Geotechnical Systems training subject offered by TX and FL state DOTs clearly highlights the need for specialized expertise to manage complex structural and subsurface conditions as needed. Moreover, the Digital Documentation and Specialized Systems focus area, listed by five states (TX, CA, NY, VA, FL), shows a drift towards the transition to a digital inspection management system for the well integration of electronic data on construction platforms. Finally, the Specialized Roadway Maintenance and Landscape component is found in most state DOTs (TX, CA, CO, MN, VA, FL), which suggests an increased awareness of post-construction asset management and environmental sustainability as a new element of inspector competency. Overall, these insights emphasize a strong national consensus concerning core competencies for the CI role. Nevertheless, state-specific adaptations enable training programs to respond to infrastructure needs specific to regions and municipalities, emerging technologies, and evolving priorities around safety, sustainability, and digital integration.

*Mode of Delivery*

The mode of delivery plays a crucial role in determining how effectively training content is communicated and retained by participants. The modes of delivery of the CI training modules utilized by the selected state DOTs are presented in Table 2. The delivery methods include synchronous (S) or instructor-led formats, asynchronous (A) or self-paced learning, and hybrid (S/A) approaches that combine both.

**Table 2.** Modes of delivery in the state DOTs training modules

| S. No | Standardized Training Topics | States | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **TX** | **CA** | **NY** | **CO** | **MN** | **VA** | **FL** |
| 1 | Bridge Superstructure and Structural Connections | S/A | S | S | - | S/A | S | - |
| 2 | Construction Plans, Math, & Surveying | S/A | - | - | A | A | S | - |
| 3 | Contract Administration & Project Delivery | S/A | S | S/A | - | - | S | S/A |
| 4 | Earthwork, Soils, and Aggregate Compaction | S/A | S | - | S | - | S | S |
| 5 | Foundation and Substructure Inspection | S/A | S | S | | A | S | S |
| 6 | Hot-Mix Asphalt Paving and Materials QA | S | - | - | S | - | S | S |
| 7 | Legal, Safety, and Environmental Compliance | S/A | S | S/A | - | - | S | S/A |
| 8 | Portland Cement Concrete Inspection and Testing | S/A | S | - | S | - | S | S |
| 9 | Roadside Safety and Barrier Systems | S/A | - | - | S | - | S | - |
| | **Additional State-Specific Training Topics** | | | | | | | |
| 1 | Advanced Materials QA/QC and Plant Operations | - | - | - | - | - | S/A | S/A |
| 2 | Advanced Structural & Geotechnical Systems | A | - | - | - | - | - | S/A |
| 3 | Digital Documentation & Specialized Systems | S/A | S | A | - | - | A | S/A |
| 4 | Specialized Roadway Maintenance & Landscape | A | S | - | A | A | S/A | S |

*Note: A = Asynchronous Delivery; S = Synchronous Delivery; S/A = Hybrid Delivery*

In terms of standardized training topics, most state DOTs exhibit a relatively even distribution of synchronous and asynchronous delivery modes. For example, TX and FL state DOTs consistently use blended methods (S/A) across the majority of their modules, which is intended to enhance understanding and retention, as it blends live, instructor-led training with digital training that can be taken independently. Other state DOTs, like CA, CO, and VA, focus almost exclusively on synchronous instruction for their uniform modules, stressing instructor-led teaching that is interactive, provides real-time feedback, and promotes collaborative learning. Similarly, NY and CO state DOTs are more selective, using synchronous or asynchronous delivery based on the content topic or difficulty. Notably, CA is the only state among the seven DOTs that delivers all its training modules exclusively through a synchronous mode, underscoring its emphasis on real-time interaction and guided instruction to support effective learning outcomes. CO state DOT, however, uses an asynchronous format for Construction Plans, Math, & Surveying topics, allowing learners to study

these technical subjects independently and at their own pace, which is more effective for reviewing detailed and calculation-based material.

For the additional state-specific training topics, there is a considerable amount of variance in the delivery method due to regional needs, which is, overall, more reflective of the adaptations of the state DOT systems to higher-tech or more advanced specialized topics. For example, both FL and VA state DOTs have incorporated some combination of synchronous and asynchronous delivery in advanced modules such as Advanced Materials QA/QC, Plant Operations, and Digital Documentation & Specialized Systems topics, thus showing a recognition of both technological advances and field specialization in the delivery of training. In a similar manner, utilization of asynchronous or blended delivery for Advanced Structural & Geotechnical Systems and Specialized Roadway Maintenance & Landscape topics in states like TX, MN, VA, CA, and FL would also suggest attempts to not only modernize training delivery but also use a medium that is flexible and incorporates technology. Overall, the delivery method comparison indicates that while synchronous delivery remains predominant for foundational and regulatory modules requiring direct instruction and interaction, there is an increasing shift toward asynchronous and blended formats.

### *Assessment Formats*

Effective assessment plays a vital role in training programs by verifying that participants not only complete the coursework but also achieve the intended learning outcomes and demonstrate required competencies. The selected state DOTs employ a combination of synchronous assessments (S), conducted in real time through live tests or instructor-led evaluations, asynchronous assessments (A), completed independently via online systems, and no formal assessments (N), as outlined in Table 3.

The comparison shows a greater variation of assessment practices among states. Some DOTs, for example, TX, CA, and NY, included many modules, but no formal assessments. Notably, NY and CA state DOTs reported no formal evaluations across any standardized topics, suggesting that competency may be verified through non-testing methods or alternative evaluation processes not specified in the available data. Alternatively, some state DOTs, like VA and FL, relied on more synchronous assessments. This was mostly across technically intensive modules such as Bridge Superstructure and Structural Connections, Hot-Mix Asphalt Paving and Materials QA, and Portland Cement Concrete Inspection and Testing. This indicates a specialized approach to assessment focused on live assessment of performance skills under the guidance of the instructor, which facilitated opportunities for observation of practice and immediate feedback on application.

Asynchronous assessments are not frequently utilized among the states covered, appearing only in selected instances, such as TX's Legal, Safety, and Environmental Compliance topic, suggesting minimal incorporation of self-paced or digitally administered testing within existing training frameworks. In contrast, assessment practices within additional state-specific training modules are most prominent in VA and FL state DOTs, where synchronous evaluations are implemented for advanced subjects such as Materials QA/QC, Plant Operations, and Specialized Roadway Maintenance & Landscape. These approaches underscore a commitment to upholding consistent evaluation standards for advanced, field-based competencies. Overall, the findings illustrate a diverse and non-standardized landscape of assessment methodologies across state DOTs. While synchronous assessments remain the predominant format where evaluations are implemented, the widespread absence of formal assessments in several states underscores the need for greater consistency in verifying inspector competency.

**Table 3.** Assessment formats in the state DOTs training modules

| S. No | Standardized Training Topics | States | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | TX | CA | NY | CO | MN | VA | FL |
| 1 | Bridge Superstructure and Structural Connections | N | N | N | - | S | S | - |
| 2 | Construction Plans, Math, & Surveying | N | - | - | S | N | S | - |
| 3 | Contract Administration & Project Delivery | N | N | N | - | - | S | S |
| 4 | Earthwork, Soils, and Aggregate Compaction | N | N | - | S | - | S | S |
| 5 | Foundation and Substructure Inspection | S | N | N | - | N | S | S |
| 6 | Hot-Mix Asphalt Paving and Materials QA | S | - | - | S | - | S | S |
| 7 | Legal, Safety, and Environmental Compliance | A | N | N | - | - | S | S |
| 8 | Portland Cement Concrete Inspection and Testing | N | N | - | S | - | S | S |
| 9 | Roadside Safety and Barrier Systems | N | - | - | N | - | S | - |
| | **Additional State-Specific Training Topics** | | | | | | | |
| 1 | Advanced Materials QA/QC and Plant Operations | - | - | - | - | - | S | S |
| 2 | Advanced Structural & Geotechnical Systems | N | - | - | - | - | - | S |
| 3 | Digital Documentation & Specialized Systems | N | N | N | - | - | N | S |
| 4 | Specialized Roadway Maintenance & Landscape | N | N | - | N | S | S | S |

*Note: A = Asynchronous Format; S = Synchronous Format; N = No Assessments*

*Prerequisite Coursework*

Prerequisites refer to the prior knowledge or coursework that CIs are required to complete before enrolling in particular training, ensuring they possess the essential foundational skills needed for effective learning and skill development. Understanding the prerequisite coursework for each module offers insight into how each state DOT organizes its CI training programs to ensure participants possess the necessary preparation. The prerequisite coursework requirements for the CI training modules across seven state DOTs are presented in Table 4, where (A) indicates that a prerequisite coursework is required by asynchronous medium, and (N) indicates that no prerequisite coursework is specified.

From Table 4, it is evident that the majority of state DOTs do not have established prerequisites for their CI training modules. VA, FL, CA, and NY state DOTs marked "N" across nearly all training topics, indicating that their programs are designed to accommodate a broad range of participants, including those entering the inspection field without prior coursework. Consequently, these training modules are likely structured as independent and comprehensive courses that cover all essential concepts within each topic. On the other hand, TX and CO state DOTs implement selective instances of prerequisite requirements for technically intensive training modules. For example, the TX state DOT provides prerequisites for modules such as Bridge Superstructure and Structural Connections, and Foundation and Substructure Inspection, allowing the participants to have some base knowledge of structural behavior, materials, and inspection techniques. Likewise, the CO state DOT similarly imposes prerequisites for Construction Plans, Math, & Surveying, as well as Portland Cement

Concrete Inspection and Testing, both of which employ a systematic approach to noted prerequisites for technically intensive modules.

**Table 4.** Prerequisite coursework in the state DOTs training modules

| S. No | Standardized Training Topics | States | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | TX | CA | NY | CO | MN | VA | FL |
| 1 | Bridge Superstructure and Structural Connections | A | N | N | - | N | N | - |
| 2 | Construction Plans, Math, & Surveying | N | - | - | A | N | N | - |
| 3 | Contract Administration & Project Delivery | N | N | N | - | - | N | N |
| 4 | Earthwork, Soils, and Aggregate Compaction | N | N | - | N | - | N | N |
| 5 | Foundation and Substructure Inspection | A | N | N | - | N | N | N |
| 6 | Hot-Mix Asphalt Paving and Materials QA | N | - | - | N | - | N | N |
| 7 | Legal, Safety, and Environmental Compliance | N | N | N | - | - | N | N |
| 8 | Portland Cement Concrete Inspection and Testing | A | N | - | A | - | N | N |
| 9 | Roadside Safety and Barrier Systems | N | - | - | N | - | N | - |
| | **Additional State-Specific Training Topics** | | | | | | | |
| 1 | Advanced Materials QA/QC and Plant Operations | - | - | - | - | - | N | N |
| 2 | Advanced Structural & Geotechnical Systems | N | - | - | - | - | - | N |
| 3 | Digital Documentation & Specialized Systems | N | N | N | - | - | N | N |
| 4 | Specialized Roadway Maintenance & Landscape | N | N | - | N | A | N | N |

*Note: A = Asynchronous Assessment Method; N = No Prerequisites Required*

Prerequisites are generally not common for the state-specific additional training topics, except in one state DOT. MN state DOT is the only state requiring a prerequisite for the Specialized Roadway Maintenance & Landscape topic, which may be due to advanced technical concepts and considerations unique to the region involving roadway preservation, landscape management, and environmental compliance. In all other states, no prerequisite coursework is mandated. Notably, in none of the states is the prerequisite coursework delivered synchronously, suggesting that when required, such training can be completed through asynchronous or flexible learning formats.

## Conclusion

CIs play a significant role in ensuring that infrastructure projects are executed in accordance with prescribed quality standards, recognizing that infrastructure development serves as a fundamental driver of national economic growth. Over time, however, a notable decline has been observed in the recruitment and retention of qualified inspectors, attributed to various factors such as the demanding

nature of inspection work, a significant wave of retirements, transitions of skilled professionals to the private sector, and limited interest among younger generations in pursuing inspection-related careers. These workforce challenges underscore the necessity of implementing more effective and standardized training programs to sustain a competent and capable inspection workforce, as CIs play a critical role in performing inspections to verify the quality and durability of constructed infrastructure. This study presents a comprehensive comparative analysis of CI training practices across seven state DOTs in the United States. The analysis encompassed both standardized and state-specific training topics, examined the delivery modes (synchronous or asynchronous), assessment formats (synchronous or asynchronous), and identified the prerequisite coursework requirements associated with specific training modules.

The training programs for CIs across state DOTs share a consensus on essential foundational topics like Bridge Superstructure, Contract Administration, Earthwork, and Foundation Inspection, underscoring their significance for quality assurance. However, a major finding is the lack of standardization in the overall training structure, primarily due to variations in state-specific content, regional factors, and the integration of emerging technologies like Digital Documentation. Instructional delivery is dominated by synchronous methods for foundational topics but shows a gradual shift toward asynchronous and hybrid formats (e.g., TX and FL) to enhance flexibility, though some states (e.g., CA) remain fully synchronous. Furthermore, assessment practices are highly inconsistent, ranging from synchronous performance evaluations (e.g., VA and FL) to reliance on course completion or supervisor evaluations (e.g., CA and NY), with limited use of asynchronous testing, highlighting the need for a unified framework for competency verification. Finally, prerequisite coursework is minimal and selectively applied, mostly to technically demanding modules in a few states (e.g., TX and CO).

In conclusion, the findings from the study presented the urgent need for standardized, competency-driven training frameworks that integrate flexible instructional methods, systematic assessments, and carefully applied prerequisites to strengthen workforce preparedness, ensure consistent validation of skills, and maintain quality assurance across state DOTs of the United States. While this study focused on seven selected states, similar analyses could be conducted for other states to gain a more comprehensive understanding of training practices nationwide. In addition, future research should incorporate direct feedback from CIs regarding their learning preferences, including preferences for synchronous, asynchronous, and hybrid learning modalities, as well as their perceived training effectiveness, to inform learner-centered training design. Investigating how CI training programs can align with emerging inspection technologies and region-specific infrastructure needs would further enhance inspector performance and support long-term workforce retention. Future research should also develop standardized technology-enhanced training and investigate its long-term effects on CI proficiency, career development, and workforce sustainability, providing evidence-based recommendations to inform national best practices in CI training programs.

## References

Christofer M. Harper, Jon Elliott, Paul Goodrum, Manideep Tummalapudi, Daniel Tran, Mamdouh Mohamed, Timothy R. B. Taylor, Hala Nasseradine, Ryan Griffith, Steve Waddle, David Hoyne, and J. K. (2023). Guide to Recruiting, Developing, and Retaining Transportation Infrastructure Construction Inspectors. https://www.nationalacademies.org/read/26878/chapter/1

Construction, W. (2022). Chapter 2 Earthwork - Construction Manual M 41-01. May, 1–26.

Eric Marks and Jochen Teizer. (2016). Training and Certification for Construction Inspectors: Final Report.

Iordachescu, M., Iordachescu, G., Scutelnicu, E., & Iordachescu, D. (2008). Quality of the vocational training for construction inspectors. The 5th International Seminar on Quality Management in Higher Education, January 2008, 1–6.

Manideep Tummalapudi, Christofer M. Harper, and J. E. (2024). Technical Competencies for Transportation Construction Inspection Workforce Development. Construction Research Congress 2024, CRC 2024, 4, 149–158.

Mohamed, M., Tummalapudi, M., Elliott, J., Harper, C., & Tran, D. (2025). Transportation Construction Inspector Education, Training and Certification: A Comparison of State Transportation Agencies and 3rd Party Consulting Firms. 6, 181–169. https://doi.org/10.29007/4rdr

Singh, R., Ph, D., & Bill, A. (2025). Investing in Engineering Talent Final Report. 0092.

Texas Department of Transportation. (2017). Inspector Development Program (IDP) Handbook. https://ftp.dot.state.tx.us/pub/txdot-info/cst/idp-handbook.pdf