

# JOINT TRANSPORTATION RESEARCH PROGRAM

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## Outsourcing of Laboratory Testing and Inspection Activities at State Transportation Agencies: Synthesis of Current Practices

### Introduction

Over the last several decades, state transportation agencies (STAs) have experienced continued growth in the volume of capacity improvement while in-house workforce levels have remained constant or declined.<sup>1</sup> The resulting lack of personnel to manage the additional work has led STAs to increase outsourcing of key project responsibilities to consultants, including testing and inspection.<sup>2</sup>

The Indiana Department of Transportation (INDOT) is committed to identifying and implementing effective ways to inspect, test, and verify the quality and placement of materials on transportation projects. INDOT recognizes the trend of increased outsourcing to the private sector and the lack of information available on the effects, challenges, and benefits of specifically outsourcing testing and inspection of materials. Therefore, INDOT commissioned this synthesis study (SPR-4105) to review current inspection and testing practices used by STAs across the United States and internationally to assist the department in determining where it should place its resources to get the best value and quality for testing and inspection. Additionally, the study seeks to compare the management and administration requirements of in-house testing and inspection activities with outsourced activities. Using a qualitative approach of surveys, interviews, and questionnaires with STAs and consultants, this study focuses on the following:

1. Factors/criteria for determining the basis for outsourcing inspections and testing
2. Factors influencing the motivation and decision to outsource testing and inspection

3. Documents and guidelines used for ensuring quality in outsourced tests and inspections
4. Benefits and advantages realized through outsourcing of testing and inspection

### Findings and Implementation

All STAs that responded to the inspection survey outsourced at least some inspection activities, while 80% of the respondents to the testing survey outsourced at least some testing activities. The primary decision factors for outsourcing were staffing capacity, lack of in-house expertise, and managing schedule constraints. Outsourcing of testing and inspection activities proved advantageous in handling increased workloads, especially during seasonal fluctuation, and provided the STAs flexibility in allocating in-house staff to field and administrative activities. The top two concerns or challenges with outsourcing of inspection and testing activities were the comparatively higher cost associated with outsourcing and consultants' lack of familiarity with STA procedures. The surveys and interviews strongly indicate that STAs with high volumes of outsourced inspection and testing activities have established strong prequalification requirements, clear conflict of interest policies, contract administration procedures, and consultant evaluation systems.

Five key strategies were identified from the surveys, interviews, and questionnaires to guide STAs with outsourcing of testing and inspection activities: (1) conduct strategic-level planning, (2) develop a system of record to track in-house versus consultant costs, (3) maintain a strong prequalification program, (4) consistently evaluate consultant performance, and (5) provide training to in-house staff and consultants. Application of these strategies can assist STAs in developing, sustaining, and guiding a quality testing and inspection outsourcing program.

<sup>1</sup>Warne, T. (2001). *Management consulting survey*. South Jordan, UT: Tom Warne and Associates.

<sup>2</sup>[http://www.dot.ca.gov/hq/esc/Translab/OSM/rpc\\_concrete\\_task\\_group/documents/Final\\_SHA-QA-Programs\\_Jun2011.pdf](http://www.dot.ca.gov/hq/esc/Translab/OSM/rpc_concrete_task_group/documents/Final_SHA-QA-Programs_Jun2011.pdf)

### Conduct Strategic Level Planning

STAs must create a strategic-level outsourcing plan for testing and inspection with input from the appropriate levels of management that clearly identifies the objectives and measures of effectiveness for directing the outsourcing program. The outputs of this planning must include a written policy that guides the STA in its outsourcing decisions as well as all administrative, procurement, management, and monitoring procedures for consultant contracts.

### Develop a System of Record to Track In-house Costs

STAs must establish a system of record that tracks the actual costs of completing inspection and testing by consultant versus in-house staff in order to drive the strategic-level planning. The system would assist in accurately determining which activities consultants can perform more efficiently than in-house staff and vice versa. The system would also provide the basis for allocating the right personnel resources to projects. The data required should include the following (for inspection):

1. Project scope (include the contractor, designer, and project schedule)
2. Total and itemized costs (as planned, final, change orders)
3. Funds paid to consultants by activity (include the qualifications/training/experience of each consultant employee assigned to the project)
4. Selected consultant's letter of intent
5. STA personnel, role, and costs (allocation of time on each project)
6. Performance evaluation of the consultants on the projects
7. Completed construction inspection reports
8. List of other STA resources used on the project (resources in addition to personnel—for instance, access to field office, access to STA-sponsored training and STA labs)
9. Administrative costs on the project (e.g., preparing the outsourcing RFP, evaluation of the Letters of Intent, contract creation and evaluation)

### Maintain a Strong Prequalification Program

STAs must maintain stringent prequalification requirements and procedures to ensure consultants selected for testing and inspection are reliable, fully qualified, and capable of quality work.

### Consistently Evaluate Consultant Performance

STAs must provide knowledgeable in-house personnel to monitor and manage consultants' work on projects to ensure compliance to standards, specification, quality, and any additional conditions specified in the contract. The STA must have established formal and informal processes to evaluate the performance of consultants providing inspection and testing services to the STA. Most important, the evaluations (positive or negative) must have an impact on future selection of the consultant on STA projects.

### Provide Training to In-house Staff and Consultants

STAs must be prepared to provide the necessary training to consultants to ensure they are familiar with STA processes and procedures. The more control and oversight the STA has over the training that consultants receive, the greater confidence the STA can have in ensuring that consultants working on STA projects are uniformly trained and qualified. STAs should also consider the importance of providing training to in-house staff on contract management and procurement to ensure appropriate experience with contract management.

### Recommended Citation for Report

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