

**PROCESS REVIEW
OF THE
OKLAHOMA DEPARTMENT OF TRANSPORTATION**

POST-CONSTRUCTION REVIEW

**BY THE
OKLAHOMA DEPARTMENT OF TRANSPORTATION
AND THE
FEDERAL HIGHWAY ADMINISTRATION**

September 29, 2000

POST-CONSTRUCTION REVIEW

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OVERVIEW

A team was established to develop procedures for carrying out reviews of completed projects. The purpose of these reviews would be to improve the Oklahoma Department of Transportation's (ODOT) design and construction processes by providing the designers and specialists the opportunity to review completed projects and to discuss aspects of the project with the construction personnel. These reviews should provide many benefits to the Department, including reducing recurring field changes and quantity overruns, improving the constructability and traffic sequencing of future projects, and providing cross-functional training to all participants.

Team Sponsors:	Pete Byers	ODOT Assistant Director of Operations
	Maiser Khaled	FHWA Engineering & Operations Team Leader

Team Members:	Steve Mills	FHWA Area Engineer
	Richard Jurey	FHWA Area Engineer
	George Raymond	ODOT Construction Engineer
	Brian Schmitt	ODOT Assistant Roadway Design Engineer

The team initially met on April 4, 2000, to begin developing recommendations for these reviews and met several times since then to discuss and work out details of the reviews. On June 13, 2000, the team met and agreed on our recommendations for the reviews. This report details our recommendations.

DISCUSSION

The size and scope of the post-construction reviews were discussed extensively. It was felt that a large scale review that included representatives from all involved ODOT divisions (including Planning and Right-of-Way) would be the most effective at bringing out process changes. However, due to the resources involved with this type review, only a limited number could be held each year. Conversely, a small scale review that involved only the principal designers and the construction personnel would require relatively few resources and a much larger number could be held each year. Also, an informal small scale review would likely be better at facilitating productive discussions on specific elements of the project.

Project selection was also discussed. It was agreed that for the large scale reviews, the more complicated projects with the highest cost should be selected. It was also agreed that for both the large and small scale reviews, the projects that have the highest potential for future cost savings should be selected. It was decided that projects that are part of multi-project corridor projects should be selected. Any recommendations from the review could be immediately implemented into future project within that corridor.

RECOMMENDATIONS

1. The team recommends that both large and small scale reviews be held as outlined in the Post-Construction Review guidelines in Attachment 1. We refer to the large scale reviews as Tier 1 reviews and the small scale reviews as Tier 2 reviews. Tier 3 reviews are discussed in Recommendation 7.
2. The team recommends that the Feedback Questionnaire developed by this team be completed at both the Tier 1 and Tier 2 reviews. The Feedback Questionnaire is included as Attachment 2.
3. The team recommends that a Post-Construction Review Coordinator be appointed and a Post-Construction Review Committee be established. We recommend that the duties and responsibilities of the Post-Construction Review Coordinator and the Post-Construction Review Committee be as follows:
 - a. The committee will meet yearly (January) to determine the projects that will meet the criteria for Tier 2 reviews in the upcoming year. The committee will then select two projects for Tier 1 reviews.
 - b. On a yearly basis, the Post-Construction Review Coordinator will inform each ODOT Field Division through the Construction Engineer of the projects in his/her division that will require a Tier 1 or a Tier 2 review according to the established guidelines.
 - c. For the Tier 1 reviews, the Post-Construction Review Coordinator will coordinate with the Field Division to determine the appropriate attendees for that specific review and ensure completion of the feedback questionnaire from both the Residency and the Contractor. The Post-Construction Review Coordinator will be responsible for coordinating, scheduling, and facilitating the Tier 1 reviews.
 - d. For completed Tier 1 reviews, the Post-Construction Review Coordinator will compile the completed questionnaires, prepare minutes of the meeting, and detail any recommendations made. This report will be distributed to all attendees, the ODOT Senior Staff, and the FHWA Division Administrator. The report will be completed and distributed within 14 days of the review being held.
 - e. On a yearly basis (August), the committee will meet a second time to review the status of the program. Completed questionnaires will be reviewed; recommendations from potential projects will be discussed and reported to the Senior Staff for further review and implementation. The number of completed and non-completed Tier 2 reviews will be reported for each Field Division, and any necessary changes to this program will be recommended.
4. The team recommends that the committee include the Post-Construction Review Coordinator, a representative from Roadway Design, a representative from Construction, and a representative from FHWA.

5. The team recommends that the projects for Tier 2 reviews be determined from set criteria and that the Field Divisions be accountable for ensuring that the required reviews are completed.
6. The team recommends that the Field Divisions coordinate, schedule, and lead the Tier 2 and Tier 3 reviews. For these reviews, the Field Division will forward the completed feedback questionnaires to the Construction Division for distribution. Tier 2 reviews will be distributed to all attendees, the Post-Construction Review Coordinator, the Assistant Director–Operations, the Assistant Director– Preconstruction, and the FHWA Division Administrator.
7. The team recommends that the Field Divisions should be encouraged to provide feedback to the Central Office on any issues that feel could be improved. The Feedback Questionnaire developed by this team should be used as a format for providing that feedback. We refer to the Field Division independently initiating and completing the Feedback Questionnaire as a Tier 3 review. Tier 3 reviews will be distributed to the Post-Construction Review Coordinator and the Roadway Design Engineer.

IMPLEMENTATION PLAN

- ▶ Senior Staff will establish a Post-Construction Review Committee with the responsibilities and duties as detailed above within 14 days after Sponsor Approval. Phil Loafman has been appointed as the Post-Construction Review Coordinator

- ▶ The committee should meet in October to determine the projects which meet the criteria for a Tier 2 review and select one project for a Tier 1 review for the current calendar year. Starting in October 2000, Tier 2 reviews should be performed on projects meeting the stated criteria.

- ▶ The Process Review Team will perform a follow-up review in March 2001.

SPONSOR APPROVAL

We concur with the seven recommendations and authorize the implementation of the plan proposed by the team.

Original signature on file

S. C. "Pete" Byers
Assistant Director of Operations
Oklahoma Department of Transportation

Date

Original signature on file

Maiser Khaled
Engineering & Operations Team Leader
Federal Highway Administration

Date

#16895

POST-CONSTRUCTION REVIEW GUIDELINES

Tier	Purpose	Project Criteria	Recommended Attendees	Format / Comments	Approximate Number
1	Process Changes	1. NHS corridor projects* with construction costs > \$10 million.	<ol style="list-style-type: none"> 1. Post-Construction Review Coordinator. 2. Field Division (Division Construction Engineer, Division Maintenance Engineer, Division Traffic Engineer, Resident Engineer and Inspectors). 3. Roadway Design (Assistant Design Engineer, Project Engineering Manager, and other involved designers and specialists as required. Selection of specialists should be based on feedback from field.). 4. Construction Division (Assistant Division Engineer). 5. Traffic Division (Project Engineering Manager). 6. Bridge Division (Project Engineering Manager). 7. Planning Division (Environmental Coordinator, if environmental commitments are involved). 8. Right-of-Way Division (Utility Project Coordinator, if significant utility concerns are involved.). 9. Design Consultant (As applicable). 10. FHWA (Area Engineer and specialists as required). 11. Others as requested by Field Division (Materials Division, Research Division, etc.). 	<ul style="list-style-type: none"> • Separate Post-Construction meeting to discuss the project in depth. • Should be coordinated and facilitated by the Post-Construction Review Coordinator. • Review to be held within 30 days of Final Inspection. • Contractor will complete feedback form prior to review. • Contractor attendance at review is not recommended. • Report completed by-Post-Construction Review Coordinator within 14 days of-review. 	<p>Two projects meeting the stated criteria will be selected each year.</p> <p>No more than one project per division per year will be selected.</p> <p>Selection will be made by the Post-Construction Review Committee.</p>
2	Project Specific Changes and Training	<ol style="list-style-type: none"> 1. Rest of NHS corridor projects.* 2. STP corridor projects.* 	<ol style="list-style-type: none"> 1. Field Division (Division Construction Engineer, Resident Engineer and Inspectors). 2. Roadway Design (Project Engineering Manager and involved designers at the Engineering Manager's discretion). 3. Design Consultant (As applicable). 4. FHWA. 	<ul style="list-style-type: none"> • Hold same day as final inspection. • Field Division and Roadway complete feedback form together. • Led by Division Construction Engineer or Resident Engineer. • Contractor will complete feedback form prior to meeting. • Contractor attendance at review is not recommended. • Feedback forms immediately forwarded to Construction Division upon completion of the review. 	<p>1-4 per Field Division per year.</p> <p>8-32 per year total.</p> <p>Projects will be determined by the Post-Construction Review Coordinator.</p>
3	Feedback from Field	<ol style="list-style-type: none"> 1. At Field Division's discretion. 2. As requested by Central Office. 	No meeting held.	<ul style="list-style-type: none"> • Resident completes feedback form and submits it to construction division for distribution. • Designers respond as necessary or when a response is requested. • Feedback forms can be submitted throughout a project's duration. 	No set criteria.

Projects with adjoining projects in 5-year plan.

#16453

Oklahoma Department of Transportation

Date: _____

To: **Construction Engineer**

From:

Subject: Post-Construction Review Feedback Questionnaire for:

Project No. and J/P: _____

Location and County: _____

Project Description: _____

Tier: 1 2 3

Attendees:

Signature: _____

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Attachment: Completed Feedback Questionnaire

Post-Construction Review Feedback Questionnaire

Tier: 1 2 3

This questionnaire is intended to provide constructive feedback to the designers on recently completed projects. For "YES" responses, provide complete explanations and suggestions on improving the process or preventing recurring problems. Attach additional pages if necessary.

Project No. and J/P:		County:		Division:	
				YES	NO
1	Were there any Change Orders on this project that will likely recur on future projects?				
2	Were there any significant quantity overruns or underruns on this project that will likely recur on future projects?				
3	Were there any delays on this project that will likely recur on future projects?				
4	Were any problems encountered in the use of the recommended sequence of construction or with construction traffic control?				
5	Did the intent of any plan notes or special provisions become points of contention with the contractor or inspection personnel?				
6	Will any of the project features create maintenance problems?				
7	Were there any distinguishing or unique features (such as Indian Issues, Wetlands, Hazardous Material, etc.) that could have been handled differently by design?				
8	Was anything handled differently on this project (such as a different method of payment for a particular item, or new special provision, special details, etc.)?				
Additional Comments:					
Name			Organization / Title		

#16442