



U.S. Department of Transportation  
**Federal Highway Administration**

FHWA Division Review of State Department of Transportation

# Research Management Process

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Except for any statutes and regulations cited, the contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide clarity regarding existing requirements under the law or agency.

## **INTRODUCTION**

The purpose of this document is to ensure consistent and efficient management of State Planning and Research, Subpart B (SPR-B) work programs by Federal Highway Administration (FHWA) division offices. It is intended to serve as a resource for FHWA division staff, illustrating how reviews of the research management processes can be flexible and open to different approaches.

# REGULATORY OVERVIEW

## Periodic Review of State DOT's Management Process

One of the key responsibilities of the FHWA division office SPR-B coordinator is to ensure State DOT research programs are compliant with 23 CFR Part 420. Specifically, 23 CFR 420.209(d) requires a periodic review of the State DOT research management process, as follows:

The FHWA division administrator shall periodically review the State DOT's research management process to determine if the State is compliant with the requirements of this subpart.

Generally, "periodically" in this sense means every 3–5 yr.<sup>1</sup> However, this review may be done more frequently, depending on the division's internal risk assessment. While there is no specific requirement for conducting and documenting this review, some divisions include this review as part of their formal program review process.

In accordance with 23 CFR 420.209(b), documentation of a State DOT's research management process and procedures for selecting and implementing research, development, and technology (RD&T) activities must be developed by the State DOT and submitted to the FHWA division office for formal approval. In addition, significant changes in the research management process must be submitted by the State DOT to the FHWA division office for approval. The State DOT must also make the documentation available, as necessary, to facilitate peer exchanges. The documentation may include project selection processes, performance measures, and university evaluations; all these topics are components to consider when reviewing State DOT research management processes.

The SPR-B research management process review should be done in close coordination and collaboration with the State DOT. It is also recommended that the FHWA division office initiate communication and notify the State DOT early in the review process. The State DOT should be prepared to answer specific SPR-B work program questions, share work program documentation, and so on. A research management process review checklist to assist with this effort can be found in the appendix. This checklist may be a good starting point for discussion with the State DOT and is a useful tool for documenting compliance with individual sections of the regulation.

After the management process review is completed, it is very important to clearly communicate your review findings with your State DOT research coordinator counterparts. This review should include both everything within the program that is working very well and what can be improved based on observations and recommendations. If improvements are needed, establish a reasonable time frame and follow up as necessary. The formality of the final report may

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<sup>1</sup><https://www.fhwa.dot.gov/publications/research/general/spr/subpartB/index.cfm>,  
<https://www.fhwa.dot.gov/publications/research/spr/10048/10048.pdf>

depend on the division. Some reviewers will write a very formal report that is like other division program reviews and share it with higher levels of management at the State DOT. Others may document findings informally and share them only with SPR-B program managers. This choice may depend on the formality of the review and your relationship with the State DOT. No matter the formality, ensure that you properly document the results to establish a clear history of the SPR-B research program's status for future SPR-B research coordinators.

# MAJOR COMPONENTS OF THE MANAGEMENT PROCESS

23 CFR 420.209(a)(1)-(7) identifies the required elements of a research management process. This list serves as the foundation of any State's research management process; it does not represent the maximum, nor does it limit any innovations or variations. It outlines what FHWA requires a research management process to cover and offers clear instructions on how to determine if a process is compliant. Many State DOT management processes are documented in the State's research manual, which is typically approved by the division office as part of the Stewardship and Oversight Agreement. A detailed breakdown of the regulations, their purposes, and how to approach reviewing them follows:

1. *An interactive process for identification and prioritization of RD&T activities for inclusion in an RD&T work program—23 CFR 420.209(a)(1):*

It is recommended that State DOTs not pick research projects in a vacuum but have an open and competitive process that compares submitted projects against State DOT objectives and needs. An interactive process includes discussing projects, convening a group with different professional backgrounds, and implementing a selection mechanism that treats all projects fairly and justifies outcomes.

2. *Use of all FHWA planning and research funds set aside for RD&T activities, either internally or for participation in transportation pooled fund studies or other cooperative RD&T programs, to the maximum extent possible—23 CFR 420.209(a)(2):*

Each State is provided a minimum of 25 percent of all SPR funds for research projects—23 U.S.C.505 (b)(1). State DOTs should not be accumulating large amounts of unused funds for any purpose. There may be some instances of accumulated funds for planned future use, but those situations should be understood and reasonable. The expectation is that all research funds get used within their period of availability. The funds are allocated to the States from the Highway Account of the Highway Trust Fund under contract authority, are subject to obligation limitation, and are available as stated in 23 U.S.C. 118(b) for a period including the current Federal fiscal year plus 3 additional years.

3. *Procedures for tracking program activities, schedules, accomplishments, and fiscal commitments—23 CFR 420.209(a)(3):*

A main component of the research management process is the tracking element. When projects are selected, it is important to document how a State DOT continues to monitor, track, and report on the project milestones and budget. The division office can check to see how the State DOT stores this information and makes it available. Do they

use a website to house progress tracking methods, or is there another way to obtain this information? If the information is too vague in describing progress, a conversation with the State DOT is warranted.

4. *Support and use of the Transportation Research Information Services (TRIS) database for program development, reporting of active RD&T activities, and input of the final report information—23 CFR 420.209(a)(4):*

At this time, State DOTs are expected to upload reports to the Transportation Research International Documentation (TRID) database, which compiles the records from the Transportation Research Board's (TRB) TRIS database and the Organisation for Economic Co-operation and Development's (OECD) Joint Transportation Research Centre's International Transport Research Documentation database. The link to the TRID website is <https://trid.trb.org/>. The website contains training materials, frequently asked questions, and further instructions to upload reports and navigate website materials.

Once the research is complete and a final report has been published, a best practice includes a State DOT-administered clearinghouse structure that can showcase reports and provide access to those interested. Electronic versions of the reports are preferred, but hard-copy versions can be distributed or housed in a State DOT library if one is available. Reports should not be removed or made inaccessible.

5. *Procedures to determine the effectiveness of the State DOT's management process in implementing the RD&T program, to determine the utilization of the State DOT's RD&T outputs, and to facilitate peer exchanges of its RD&T Program on a periodic basis—23 CFR 420.209(a)(5):*

Many disciplines have adopted performance-based approaches, and that extends to the research program. The effectiveness of a research program can be determined in different ways, but the key aspect is that funds are obligated (both timely and completely), projects get completed with published reports, and a State DOT cooperatively participates in national initiatives (including the National Cooperative Highway Research Program and TPF when appropriate). There are a variety of ways to monitor these procedures and agreeing on a preferred approach is left up to the FHWA division and the State DOT. This success can vary across State DOTs, and it is important to understand your State DOT's approach and intent. A common method to track success is by including research targets in stewardship and oversight agreement. This method can be modified and altered to best reflect the current practice at the State DOT.

Once research projects are complete and reports are published, how the State DOT uses that information to beneficially impact and support the agency is important to know.

6. *Procedures for documenting RD&T activities through the preparation of final reports: As a minimum, documentation must include data collected, analyses performed, conclusions, and recommendations. The State DOT must actively implement appropriate research findings and should document benefits—23 CFR 420.209(a)(6):*

This section identifies the minimum requirements for research project final reports. Generally, the report includes what is being tested, why it is being tested, what proposed benefits from the testing are expected, what happened, and how the findings can be implemented. If research projects are being completed and reports do not provide enough information on achievements and implementable findings, a conversation with the State DOT is appropriate. If a common theme of nonactionable results from research or a continuous lack of follow-through is observed, this observation should raise a flag. The purpose of research is to find innovative, cost-effective, and resource-effective approaches to transportation infrastructure, planning, and other areas. If the research being done is not achieving this, corrections must take place.

7. *Participation in peer exchanges of its RD&T management process and of other State DOT programs on a periodic basis: To assist peer exchange teams in conducting an effective exchange, the State DOT must provide to them the information and documentation required to be collected and maintained under this subpart. Travel and other costs associated with the State DOT's peer exchange may be identified as a line item in the State DOT's work program and will be eligible for 100 percent Federal funding. The peer exchange team must prepare a written report of the exchange—23 CFR 420.209(a)(7):*

The peer exchange is a cornerstone of the research program and occurs on a periodic basis (every 3–5 yr).<sup>2</sup> It allows State DOTs to use SPR funds at a 100-percent Federal share toward travel and other costs associated with the State DOT's peer exchange. The peer exchange can provide an opportunity for State DOT research management staff to evaluate the management process.

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<sup>2</sup>[https://www.fhwa.dot.gov/publications/research/general/spr/subpartB/spr\\_subpartB.pdf](https://www.fhwa.dot.gov/publications/research/general/spr/subpartB/spr_subpartB.pdf)



## REVIEW NOTES

- ✓ Ensure that the State DOT has documentation that describes the State DOT's research management process for the research program. The State DOT's research management process for selecting and implementing RD&T activities must be developed by the State DOT and submitted to the FHWA division office for approval.
- ✓ Confirm that the State DOT has documented procedures to determine the effectiveness of its research management process in implementing the research program.
- ✓ Confirm that the State DOT has written procedures for documenting research activities through the preparation of final reports. As a minimum, the documentation must include data collected, analyses performed, conclusions, and recommendations. The State DOT must actively implement appropriate research findings and should document benefits.
- ✓ Ensure that the State DOT has procedures for tracking program activities, schedules, accomplishments, and fiscal commitments.

# REVIEW OUTCOMES

## State DOT Is Compliant

If a State DOT is compliant with the management process, the division office can then approve FHWA planning and research funds for RD&T activities. Documentation that describes the State DOT's research management process and the procedures for selecting and implementing RD&T activities must be developed by the State DOT and submitted to the FHWA division office for approval. Significant changes in the research management process also must be submitted by the State DOT to FHWA for approval. The State DOT must make the documentation available, as necessary, to facilitate peer exchanges.

## State DOT Is Not Compliant

If the division determines during the periodic review (or sooner) that the State DOT is not complying with the requirements of 23 CFR 420.209 or that it is not performing in accordance with its RD&T research management process, then the following applies:

1. The division administrator may grant conditional approval. A conditional approval must cite those areas of the State DOT's research management process that are deficient and require that the deficiencies be corrected within 6 mo of conditional approval—23 CFR 420.209(c).
2. If the Division Administrator determines that the State is not complying with the requirements of 23 CFR 420.201-209 or is not performing in accordance with its RD&T management process, the Division Administrator shall issue a written notice of proposed determination of noncompliance to the State DOT—23 CFR 420.209(d):
  - a. The notice will set forth the reasons for the proposed determination and inform the State DOT that it may reply in writing within 30 calendar days from the date of the notice.
  - b. The State DOT's reply should address the deficiencies cited in the notice and provide documentation, as necessary.
  - c. If the State DOT and the Division Administrator cannot resolve the differences set forth in the determination of nonconformity, the State DOT may appeal to the Federal Highway Administrator, whose action shall constitute the final decision of the FHWA. An adverse decision shall result in immediate withdrawal of approval of FHWA planning and research funds for the State DOT's RD&T activities until the State DOT is in full compliance.

# METHODS OF REVIEW

- Process review—Some divisions accomplish their review of the SPR-B management process through a standard FHWA process review. This type of review typically includes staff from both the division and the State DOT and is typically more formal. A process review consists of developing a teamwork plan, documenting findings, and tracking follow-up activities. Keep in mind that conducting a formal process review can be quite extensive and may take longer than the other methods described below.
- Research program review—Many divisions perform a research program review, which typically takes a general look at the entire research program, rather than a focused process review. The National Highway Institute offers training on “Conducting Effective Program Reviews.”<sup>3</sup> A benefit of performing this type of review is that a holistic view of the general research program illustrates how different aspects interact with one another. This type of review also provides the opportunity to suggest improvements by understanding the research program risk.
- Planning-review combination—Some divisions accomplish the review of the SPR-B management process as part of the overall statewide planning process review (Part A). A short summary outlining regulatory requirements is provided to the State DOT; subsequently, a document outlining any needed corrective actions, commendations, or recommendations is provided.
- Peer exchange—Some divisions use peer exchanges to perform the review with other State DOTs. Other State DOTs offer different perspectives based on their own lessons learned and success stories. Sharing research management processes across State lines is a great way to generate new implementation activities or refresh programs. Peer exchanges are often held in person, so in many cases, the review of the research management process is streamlined. They also have the added value of potentially completing two research program requirements at the same time.

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<sup>3</sup>[https://www.nhi.fhwa.dot.gov/course-search?tab=0&key=program+reviews&sf=0&course\\_no=310120](https://www.nhi.fhwa.dot.gov/course-search?tab=0&key=program+reviews&sf=0&course_no=310120)

## Types of Documentation

- Action plan—Some divisions develop a review action plan that captures corrective actions, priorities, and completion goals at the conclusion of the review. This type of documentation is considered a best practice since it provides accountability for actions, sets a timeline, and provides a reporting tool for documentation and implementation.
- Spreadsheet—Some divisions provide a spreadsheet outlining how the State is complying with each part of the regulation. The spreadsheet includes a reference to the applicable regulation, a description, a “yes or no” box for compliance, and a “notes” field. This type of documentation is considered a best practice because it clearly conveys the findings from the review and the ultimate determinations if the division finds that the State DOT is meeting requirements.
- Annual summary—Some divisions provide a 1–2-page annual summary of the research program review. A bulleted list showcases how requirements for each of the regulations are met. Findings and suggested improvements are also noted in the summary, helping the State DOT improve conformity to regulations.

## Who Should Be Included?

- State DOT research staff—It greatly facilitates collecting information and providing recommendations when the State DOT is involved from the start.
- Division staff from your office—Including division staff provides an opportunity for fresh perspectives. This approach usually works well since the research program is not highly technical. For example, the division administrator has the approval authority for the State’s research management process, so it may be worthwhile to include upper management in the review. Finance staff can help navigate the complexity of equipment purchases, administration staff can help review researcher travel authorizations, and so on.
- FHWA Headquarters—They can provide a national perspective on minimum requirements and best practices and are willing and usually available to assist as needed.
- Research staff—Researchers on the review team can provide behind-the-scenes information on how well things are working.
- Persons implementing the research/field staff—Include the beneficiaries/users of the actual research project deliverables if possible. Involving someone from this group can help close the loop for the entire research cycle.
- Neighboring State DOT and FHWA division offices—These groups usually participate in peer exchanges, but they can also help to serve on review teams.

## Frequency

- Formal review should be completed periodically every 3–5 yr.
- Risk assessments can be a good tool for determining if more frequent reviews are necessary.
- Reviews can be considered when there are major changes to the research program or significant changes in staff as these aspects can influence the research management process procedures.
- Informal review of the State DOT research management process may occur through regular meetings with State DOT research staff and involvement on various research projects throughout the year and is highly recommended.

## Supporting Material for Review

The following list includes potential supporting material to review in the State DOT Management process:

- State DOT research manual.
- Annual Performance and Expenditure Report.
- SPR work plans (including amendments).
- State DOT annual research showcase publishing (if applicable).
- Sample quarterly and final reports from other research projects.
- Procedures and manuals from neighboring States.
- Previous management process review.
- Previous performance reports.

If you would like to see examples of division reviews of the management process or upload your State example, please see the [R&T Coordinator SharePoint site](#).

# APPENDIX: MANAGEMENT PROCESS REVIEW CHECKLIST

The following table is an example of how a division can document the review of the management process with their State DOT. The use of this table is not a requirement. There is a lot of flexibility in how each division reviews their State DOT’s research management process.

Prior to starting this worksheet, evaluate when the last division review of the State DOT’s research management process was, what its findings were, and what was recommended.

Required Elements	Questions To Consider	Division Assessment of Compliance YES/ NO	Division Comments
An interactive process for identification and prioritization of RD&T activities for inclusion in an RD&T work program (23 CFR 420.209(a)(1))	<ul style="list-style-type: none"> <li>Does the State DOT have a well-documented and clearly written research management process for SPR-B research oversight purposes?</li> <li>Does the State DOT have a research management process that addresses selecting and prioritizing RD&amp;T activities for division approval?</li> <li>Does the management process need to be updated with new staffing?</li> </ul>		
Use of all FHWA planning and research funds set aside for RD&T activities, either internally or for participation in TPF studies or other cooperative RD&T programs, to the maximum extent possible (23 CFR 420.209(a)(2))	<ul style="list-style-type: none"> <li>Does the State DOT use all the required funds set aside for their RD&amp;T program? (Not less than 25 percent of the funds set aside by 23 USC 505(a) each fiscal year shall be expended for RD&amp;T activities (23 CFR 420.107)).</li> </ul>		

Required Elements	Questions To Consider	Division Assessment of Compliance YES/ NO	Division Comments
<p>Procedures for tracking program activities, schedules, accomplishments, and fiscal commitments (23 CFR 420.209(a)(3))</p>	<ul style="list-style-type: none"> <li>• Does the State DOT have procedures for tracking program-related activities, monitoring fiscal expenditures, and noting accomplishments?</li> <li>• As part of the research management process, are there documented procedures for the review and for FHWA approval of modifications to the SPR-B work program?</li> <li>• Did the State submit an annual performance expenditure report within 90 d of the end of the fiscal year (23 CFR 420.117(b)(1))?</li> </ul>		
<p>Support and use of the TRIS database for program development, reporting of active RD&amp;T activities, and input of final report information (23 CFR 420.209(a)(4)).</p>	<ul style="list-style-type: none"> <li>• Is the State DOT using the TRIS database for program development, reporting of active RD&amp;T activities, and input of final report information?</li> </ul>		
<p>Procedures to ascertain the effectiveness of the State DOT's management process in implementing the RD&amp;T program, to determine the utilization of the State DOT's RD&amp;T outputs, and to facilitate peer exchanges of its RD&amp;T program on a periodic basis (23 CFR 420.209(a)(5))</p>	<ul style="list-style-type: none"> <li>• How does the State DOT measure the effectiveness of their management process toward the implementation of their research program?</li> <li>• How does the State DOT determine the benefits of the RD&amp;T program?</li> <li>• Does the State DOT facilitate periodic peer exchanges (every 3–5 yr)?</li> </ul>		

Required Elements	Questions To Consider	Division Assessment of Compliance YES/ NO	Division Comments
<p>Procedures for documenting RD&amp;T activities through the preparation of final reports: At a minimum, documentation must include data collected, analyses performed, conclusions, and recommendations. The State DOT must actively implement appropriate research findings and should document benefits (23 CFR 420.209 (a)(6)).</p>	<ul style="list-style-type: none"> <li>• Does the State DOT have a process for documenting final reports for each RD&amp;T activity?</li> <li>• Does the State DOT have documentation on how research projects are implemented?</li> <li>• Are the benefits of the research projects clearly documented?</li> </ul>		
<p>Participation in peer exchanges of its RD&amp;T management process and of other State DOT programs on a periodic basis: To assist peer exchange teams in conducting an effective exchange, the State DOT must provide to them the information and documentation required to be collected and maintained under this subpart. The peer exchange team must prepare a written report of the exchange (23 CFR 420.209(a)(7)).</p>	<ul style="list-style-type: none"> <li>• Does the State DOT conduct a peer exchange periodically (every 3–5 yr)?</li> <li>• How does the State DOT document the periodic peer exchange?</li> <li>• Does the State DOT participate in other State DOT peer exchanges?</li> <li>• When was the last peer exchange conducted?</li> </ul>		
<p>The State DOT must include a certification that is in full compliance with the requirements of this subpart in each RD&amp;T work program (23 CFR 420.209(c)).</p>	<ul style="list-style-type: none"> <li>• Does the State DOT include a certification of compliance in the SPR-B work program?</li> </ul>		