



Memorandum

Subject: INFORMATION: Planning and Research
Program Administration Guidance
(Revised)

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From: // Original signed by //
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Associate Administrator for Research,
Development, and Technology

Reply to: HRTM-10

To: Division Administrators
Directors of Field Services

The purpose of this guidance is to assist the Federal Highway Administration (FHWA) staff in implementing the regulations contained in 23 CFR Part 420, Subpart B Research, Development, and Technology (RD&T) Transfer Program Management. This guidance is an update to outdated guidance issued by FHWA dated November 3, 1994, Guidelines for Implementing 23 CFR Part 420, Subpart B. The guidance also provides information for processing, implementing, and managing RD&T activities.

For questions concerning the guidance, please contact Mr. Sidney Stecker at 202-493-3044, or Sidney.Stecker@dot.gov.

Attachment

**STATE PLANNING AND RESEARCH PROGRAM
RESEARCH, DEVELOPMENT, AND TECHNOLOGY
TRANSFER PROGRAM MANAGEMENT
GUIDANCE FOR
IMPLEMENTING 23 CFR PART 420, SUBPART B**

October 16, 2018

I. PURPOSE

The following guidance has been prepared to assist the Federal Highway Administration (FHWA) staff and State Departments of Transportation (DOT) in implementing the regulations contained in [23 CFR Part 420, Subpart B](#) Research, Development, and Technology (RD&T) Transfer Program Management. This guidance updates Guidelines for Implementing 23 CFR Part 420, Subpart B, dated November 3, 1994. The guidance provides references to existing Federal transportation law and regulation, includes information for processing RD&T activities, and discusses how to:

1. Implement a program of RD&T activities for planning, design, construction, and maintenance of highways and public and intermodal transportation systems in compliance with 23 CFR Part 420 Subpart A, which includes transportation planning and Subpart B, which is specific to RD&T.
2. Develop, establish, and implement a management process that identifies and implements RD&T activities expected to address high priority transportation issues in compliance with 23 CFR Part 420 Subpart B.
3. Conduct periodic peer exchanges of an RD&T program and participation in exchanges of other States' programs in compliance with 23 CFR Part 420 Subpart B.
4. Document a management process in compliance with 23 CFR Part 420 Subpart B.

Each State is permitted to tailor its process to meet State and local needs. However, the process must comply with the Federal laws and regulations applicable to the program. The guidance outlines considerations in determining a State's compliance.

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II. GOVERNING AUTHORITIES

The Fixing America's Surface Transportation Act (FAST Act), signed into law on December 4, 2015.

The Moving Ahead for Progress in the 21st Century Act (MAP-21), signed into law on July 6, 2012, made changes that affect Title 23, U.S.C., Section 505, State Planning and Research. In addition, several notable changes in Title 23, U.S.C. Sections 502 and 503 are pertinent to the State Planning and Research program and have a direct effect on Section 505. These changes direct and authorize the Secretary of Transportation to carry out a broader range of RD&T activities, which therefore broaden eligible activities of States using SPR Subpart B funds. Shown below are the references to the changes with significant sections underlined.

Applicability. 23 USC 502(a)(1) “*The research, development, and technology provisions of this section shall apply throughout this chapter.*”

Coverage. 23 USC 502(a)(2) “*Surface transportation research and technology development shall include all activities within the innovation lifecycle leading to technology development and transfer, as well as the introduction of new and innovative ideas, practices, and approaches, through such mechanisms as field applications, education and training, communications, impact analysis, and technical support.*”

Technological innovation. 23 USC 502(a)(9) “*The programs and activities carried out under this section shall be consistent with the transportation research and development strategic plan under section 6503 of title 49*”, which describes how the plan furthers the primary purposes of the transportation research and development program, which shall include—

- (A) improving mobility of people and goods;
- (B) reducing congestion;
- (C) promoting safety;
- (D) improving the durability and extending the life of transportation infrastructure;
- (E) preserving the environment; and
- (F) preserving the existing transportation system;

Use of funds. 23 USC 502(b)(5)(B) “...shall use funds made available to carry out this chapter to develop, administer, communicate, and promote the use of products of research, development, and technology transfer programs under this chapter.”

Research and Technology Development and Deployment

23 USC 503(a) “In General. ...shall carry out research, development, and deployment activities that encompass the entire innovation lifecycle; and ensure that all research carried out under this section aligns with the transportation research and development strategic plan of the Secretary under Section 6503 of Title 49.”

III. FUNDING

Pursuant to 23 U.S.C. 505(a), Federal funding for State Planning and Research programs are provided through a 2 percent set aside of the funds apportioned under 23 U.S.C. 104(b)(1) - (5). As a grantee or grant recipient, State DOTs may then use those funds to carry out transportation activities identified in their research program. State DOTs may sub-grant funds to or enter into contracts with universities and other entities to carry out the transportation research program and other eligible activities.

The basic funding requirements of Federal research, development, and technology transfer program grant administration under 23 CFR Part 420 (SPR) are:

1. Two (2) percent of each State’s Federal Aid apportionments of core programs is set-aside for State Planning and Research activities, after the apportionment to the individual States (includes both SPR Subpart A and Subpart B funding amounts). 23 U.S.C. 505(a).

2. Not less than 25 percent of the funds set aside by 23 U.S.C. 505(a) each fiscal year shall be expended by the State **for research, development, and technology transfer activities**. 23 CFR 420.107 (SPR Subpart B).
3. The Federal cost share is 80 percent, unless the Secretary determines that the interests of the Federal-aid highway program would be best served by decreasing or eliminating the non-Federal share. 23 U.S.C. 505(d). The authority to decrease or waive the non-Federal share for research programs is delegated to the FHWA Associate Administrator for RD&T. 23 CFR 420.119(d).
4. 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.

Additionally, SPR Subpart B funds may be used by States as the non-Federal share for the Local Technical Assistance Program under 23 U.S.C. 504(b) or the University Transportation Centers program (National Transportation Centers, Regional Transportation Centers, and Tier 1 University Transportation Centers) under 49 U.S.C. 5505(c).

IV. HIGHWAY RESEARCH AND DEVELOPMENT PROGRAM

The objectives of the Highway Research and Development Program remained the same under MAP-21 and the FAST Act. Under 23 USC 503(b)(1), in carrying out the highway research and development program, the Secretary, to address current and emerging highway transportation needs, shall:

1. Identify research topics;
2. Coordinate research and development activities;
3. Carry out research, testing, and evaluation activities; and
4. Provide technology transfer and technical assistance.

V. 2 CFR Part 200 REQUIREMENTS AND FHWA IMPLEMENTATION GUIDANCE

Included for reference are sections of the 2 CFR 200 and FHWA guidance implementing those requirement that apply to determine the appropriate use of SPR-B Funds.

The FHWA issued [guidance](#) on December 4, 2014, addressing the implementation of 2 CFR Part 200 and issued additional [2 CFR 200 Guidance](#) that specifically addresses SPR Subpart B overhead and indirect cost rate determinations for contracts and sub-grants.

The Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards in 2 CFR Part 200 includes new requirements applicable to State DOTs as direct recipients of Federal aid grants and sub-recipients as defined in 2 CFR 200.301. These new requirements include:

Performance measurement (2 CFR 200.301) - Recipients of Federal awards must relate financial data to the performance accomplishments of an award. Recipients must also provide cost information to demonstrate cost effective practices.

Greater focus on internal controls (2 CFR 200.303) - Organizations must establish and maintain effective internal controls over Federal awards to provide reasonable assurance that awards are being managed in compliance with laws and regulations. Non-Federal entities and their auditors will need to exercise judgment in determining the most appropriate and cost effective internal control for each circumstance. Non-Federal entities must also take measures to safeguard personally identifiable information.

Period of performance (2 CFR 200.309) - This is a significant change to the Federal-aid Highway Program because it imposes a set period when project costs can be incurred, which includes a project agreement "start date" and "end date". Current FHWA regulations stipulate that costs can only be incurred after the authorization date of a project unless otherwise authorized under 23 CFR 1.9(b). The provision requires an end date to be included in the agreement after which additional incurred costs are not eligible for reimbursement.

The period of performance must be based on the States' estimated project schedule, including required processes to ensure all Federal requirements have been satisfied. Divisions must ensure the estimated period of performance is in line with the States' established policies, procedures, and project schedules.

The agreement end date may be modified as necessary, based on documented revisions to project schedules or other circumstances.

Sub-recipient monitoring and management (2 CFR 200.330-331) - All pass-through entities (e.g., State DOTs) must ensure subrecipients comply with all Federal laws and regulations and monitor performance schedules to ensure they are achieved. Further, Federal award terms are required to be included in the terms of subawards. If applicable, pass-through entities must include (at the time of a subaward) an approved, federally recognized indirect cost rate negotiated between the subrecipient and its cognizant agency if one exists. Other subrecipients who intend to claim reimbursement of indirect cost must develop an indirect cost proposal in accordance with the requirements of the Uniform Guidance and maintain the proposal and related supporting documentation for audit. Where a non-Federal entity only receives funds as a subrecipient, the State DOT will be responsible for negotiating and/or monitoring the subrecipient's indirect costs.

Project closeout (2 CFR 200.343 through 200.345) - Recipients are required to submit all eligible incurred costs and required performance and financial reports or project records specified in the project agreement or stewardship and oversight procedures within 90 days after the agreement end date. The project should then be closed no later than one year after receipt and acceptance of all required final reports.

Cost principles (2 CFR 200 Subpart E and Appendix VII; and Appendices III and IV, if applicable based on the status of the non-Federal entity) - The Uniform Guidance is generally consistent with previous cost principles requirements (formerly OMB Circular A-87). The following are some of the changes affecting projects under 23 CFR 420 Subpart B:

- **Indirect costs (2 CFR 200.412 through 200.417)** - Under the new rules, Federal agencies and pass-through entities must accept a negotiated indirect cost rate if one exists, or negotiate a rate in accordance with Federal guidelines. There are exceptions when a statute or regulation requires it, or if the non-Federal entity receives \$35 million or less in direct Federal funding.
- **Narrative cost allocation methods Appendix VII(F)(3)**- In certain situations, State, Local and Indian Tribal governments, because of the nature of their Federal awards, may be required to develop a cost allocation plan that distributes indirect (and, in some cases, direct) costs to the specific funding sources. In these cases, a narrative cost allocation methodology should be developed, documented, maintained for audit, or submitted, as appropriate, to FHWA or their cognizant agency (defined in [2 CFR 200.19](#)) for review, negotiation, and approval.
- For State DOTs, the indirect cost allocation plan (ICAP) or Narrative Cost Allocation Method (NCAM), must be submitted, to FHWA for review, negotiation and approval. For all other non-Federal agencies, the ICAP or NCAM should be submitted as appropriate to their cognizant agency or pass-through entity.

VI. IMPLEMENTING 23 CFR PART 420 SUBPART B

A. State Program of RD&T Activities

In developing its program, a State may only include RD&T activities necessary for planning, design, construction, and maintenance of highway and public and intermodal transportation systems. It is not mandatory that a State include all areas in its RD&T program. However, when identifying and prioritizing its RD&T activities, the State should consider all areas. Each State should develop a program that addresses its highest priority transportation RD&T needs. Priorities will vary from State to State, depending on factors such as: the size of the State, State population, and the size and number of urban areas.

B. Required Minimum Funding for Research Waiver Request

In rare cases, a waiver may be granted if a State believes its total expenditures during the fiscal year for transportation planning will exceed 75 percent of the amount apportioned for the fiscal year. Per 23 CFR 420.107, the approval authority for a waiver of the 25 percent requirement has been delegated to the FHWA Associate Administrator for Research, Development, and Technology.

Prior to submitting a request for a waiver of the minimum research requirement under 23 CFR 420.107, the State must ensure that:

- The additional planning activities are essential and that there are no other reasonable options available for funding these activities;
- The planning activities have a higher priority than the RD&T activities in the overall needs of the State for a given year; and
- The total level by State in RD&T is adequate.

States should forward requests for a waiver along with supporting justification through the FHWA Division to the Associate Administrator for Research, Development, and Technology. In reviewing the State's request, the Associate Administrator's decision will be based on the following considerations, per 23 CFR 420.107(c):

1. Does the State have a process for identifying RD&T needs and for implementing a viable RD&T program?
2. Is the State contributing to cooperative RD&T programs, such as the Transportation Research Board activities and pooled-fund studies?
3. Is the State using SP&R funds for technology transfer and for transit or intermodal research and development to help meet the 25 percent minimum requirement?
4. If an exception is approved, can the State show that in the following year it will meet the requirement or substantially increase its RD&T expenditures toward meeting the requirement over a multi-year period?
5. Does the amount of Federal funds needed for planning for the program period exceed the total of the 75 percent limit for the fiscal year and any unexpended (including unused funds that can be released from completed projects) funds for planning from previous apportionments?

If the State's request for a waiver is approved, it is valid only for the fiscal year in which the waiver is approved. A new request must be submitted for subsequent fiscal years.

C. Develop a State Research Work Program

A State work program may be either annual or biennial. As required under 23 CFR 420.115(a), the work program, at a minimum, must include:

1. Summary listing of the major items and a cost estimate for each item.
2. Description of each activity (project) or individual research study to be accomplished during the program period and the planned date of completion.
3. Description of any agreements including identity of the office, sub-grantee, and/or contractor responsible for conducting the work.
4. Total costs for each activity including previous expenditures, current work program costs, and estimated future costs.
5. Financial summaries showing the funding levels and share (Federal, State, and other sources) for RD&T activities. The inclusion of 100 percent State-funded activities is encouraged.
6. Description of any cooperatively funded studies, including pooled fund studies and NCHRP contributions as required under 23 CFR 420.111 and 207.

The work program must be submitted to the FHWA Division Office for approval and authorization as required under 23 CFR 420.115(a). Additional informational copies may be submitted in accordance with the [Revised SPR Report Distribution Guidance found at the Federal-aid Highway Program Policy Center website](#).

Work Program Changes. Administrative requirements for grants and cooperative agreements to State and local governments are covered under 2 CFR Part 200 and 1201, which supersede 49 CFR Part 18.

Except for requirements listed under 2 CFR 200.308(c)(1), or if multiple funding sources are under obligation, in accordance with 2 CFR 200.308(d) and (e), a State may make budget transfers among individual RD&T activities without FHWA's prior approval unless the total of such transfers over the period of the work program will, or is expected to, exceed the larger of the Simplified Acquisition Threshold under 2 CFR 200.88 (\$150,000 as of August 5, 2017 but proposed to increase to \$250,000 for Federal Fiscal Year 2018) or 10 percent of the total approved work program budget. For example, for an RD&T work program totaling \$5,000,000, a State may transfer \$500,000 among RD&T activities included in the work program and the prior FHWA approval requirement may be waived. No transfer shall be permitted that would cause the funding to be used for purposes inconsistent with the appropriation.

A budget change that involves an increase in the total funds authorized for the work program still requires prior FHWA approval and authorization. Similarly, programmatic changes (adding a line item, contracting out, etc.) specified in 2 CFR 200.308 require prior FHWA approval.

Requirements for modifications to a SPR Subpart B research project per 2 CFR 200.308:

- Changes in principal investigator, project leader, project partner, or scope of effort must receive the prior written approval of the Federal awarding agency or pass-through entity.
- Recipients are required to report deviations from budget or project scope or objective, and request prior approvals from Federal awarding agencies for budget and program plan revisions, in accordance with this section.
- Change in the scope or the objective of the project or program (even if there is no associated budget revision requiring prior written approval).
- Change in a key person specified in the application or the Federal award.
- The disengagement from the project for more than three months, or a 25 percent reduction in time devoted to the project, by the approved project director or principal investigator.

After approval and authorization of the work program, it is not necessary for a State to submit to FHWA, individual, detailed work statements or proposals for review and approval. A State, at its discretion, may wish to submit specialized or highly technical proposals or work statements to FHWA for comments or technical assistance. These requests may be forwarded through the Division Office to the Associate Administrator for Research, Development, and Technology. The AA will coordinate the review with the appropriate RD&T Division.

A table entitled APPROVAL AUTHORITY is provided as **ATTACHMENT 3** to further clarify approval requirements.

D. Develop, Establish, and Implement a Research Program Management Process.

The specific details concerning a State's management process procedures need to be developed on a State-by-State basis. However, the following guidance is provided to assist in developing the management process.

Per 23 CFR 420.209, a State's management process, at a minimum, must include procedures for:

1. **An interactive process for identification and prioritization of RD&T activities for inclusion in an RD&T work program.** Include the procedure(s) for identifying and prioritizing RD&T activities in a work program.
 - a. The procedure for identifying RD&T activities should involve the other offices (highway, transit, intermodal) within the transportation agency, the FHWA Division Office, and the universities within the State. Within the State DOT, problems should be solicited from the various offices (design, construction, maintenance, etc.). It would be desirable to use a standard form to solicit problem statements (see, e.g., Attachment No. 1). Criteria for prioritizing the problem statements should be developed. A single committee or several committees (e.g., pavements, structures, traffic, safety, etc.) for States with large SPR programs can be used to prioritize and rank the problem statements. FHWA Division Office participation in this process and on the committee(s) is strongly encouraged.

- b. Problem statements selected for funding using the above process could then be expanded to add the research approach, time required, and cost estimate (Attachment No. 2). These expanded problem statements plus the financial summaries could be combined to constitute the projects of a State's work program.
- 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.
- 3. Tracking program activities, schedules, accomplishments, and fiscal commitments.** Documentation that describes the State's process and procedures for managing its RD&T programs, often identified as a research procedures manual, should be developed and maintained. The written documentation outlines:
 - a. The written procedures that the State follows, explaining how the process works,
 - b. Who is the responsible person for each phase, committee(s) makeup, and
 - c. An annual schedule of events.
 - d. Procedures for tracking program activities scope, schedules, budgets and accomplishments/deliverables.
 - e. An organizational chart and flow diagram may also be appropriate. Preferably, the process and procedures will be outlined in a "stand-alone" document. This would greatly facilitate peer exchanges and revisions to the management process and procedures.
 - f. Per 23 CFR 420.209(b), the documentation must be submitted to the FHWA Division Administrator for approval. In accordance with the FHWA Delegations and Organization Manual (Order M1100.1A) para. 5-3, the Division Administrator may further redelegate this action. If the Division Administrator further redelegates this action, appropriate segregation of duties must be retained between the staff qualified to review and recommend approval of the work plan review and the staff taking the approving action. Upon approval by the Division Administrator or his/her designee, the State may implement its management process for RD&T activities.
 - g. Significant changes in the management process require the Division Administrator's approval, in accordance with 2 CFR 200.308. Significant changes might include changing the scope, schedule or budget of a work activity, changes in the review/selection committees, or a plan to solicit external (outside the State and FHWA) input for the RD&T program. This FHWA approval assures Federal participation and transparency of eligible and allowable work activities.
 - h. After a State's management process for its RD&T program has been approved, the State will certify that it is complying with the requirements of 23 CFR Part 420, Subpart B. For those State's unable to meet full certification compliance, the regulations permit the FHWA Division Administrator to grant a conditional approval. Every effort should be made by the State and the Division Office to comply with management process certification before conducting its SPR Program supported research program. In those instances, where a State is unable to complete its certification, the FHWA Division Administrator will review the status of the State's efforts and may grant conditional approval of the RD&T management process. A conditional approval will cite those areas that are deficient. All deficiencies must be corrected as quickly as possible. A copy of the conditional approval should be forwarded to the Associate Administrator for Research, Development, and Technology per 23 CFR 420.209(b).
- 4. Using the Transportation Research International Documentation (TRID)**, a database for program development, reporting on current RD&T activities, and input of the final report information. All State transportation research work should also be posted in the Research in Progress (RiP) system. Both TRID and RiP are administrated by the Transportation Research Board (TRB).¹

¹ 23 CFR 420.203 and 420.209(a)(4) identify TRIS as the required submittal database. TRIS was combined with TRB's International Transport Research Documentation Database to form TRID.

The State should develop procedures for using the TRID data base when developing their work program to determine if similar work is underway or has been completed by someone else. A process for the timely entering of new studies, updating ongoing studies, and reporting completed studies also should be developed.

- 5. Determining the effectiveness of the State's management process in implementing the RD&T program and determining the use of the State's RD&T outputs.** Procedures are to be developed to determine the effectiveness of the State's management process in implementing the RD&T program and to determine the use of the State's RD&T outputs. Performance measurement of the effectiveness of an RD&T management process and program is required, per 2 CFR 200.328. The State's process must include periodic reviews and reports of the results of its RD&T program. This process also requires a follow-up process to determine if the RD&T results have been incorporated into a State's standard plans, specifications, practices, or procedures and the influence upon ways the State's strategic goals are met. A more detailed process may involve benefit/cost ratios or other effectiveness measures and may include development and distribution of an annual activities/achievement report.

2 CFR 200.328 and 23 CFR 420.117 require the State DOT (grant recipient) to submit performance and expenditure reports, including a report from each sub recipient, that contain at a minimum:

1. Comparison of actual performance with established goals;
2. Progress in meeting schedules;
3. Status of expenditures in a format compatible with the work program, including a comparison of budgeted (approved) amounts and actual costs incurred;
4. Cost overruns or underruns;
5. Approved work program revisions; and
6. Other pertinent supporting data.

- 6. Documenting RD&T activities through the preparation of final reports.** As noted above, a process is required to ensure that progress and final reports are prepared in a timely manner for each RD&T activity (specifically, research project). Per 23 CFR 420.209(a)(6), each report must document:

1. the data collected,
2. analyses performed,
3. conclusions, and
4. recommendations.

Use of the [AASHTO Technical Report Documentation Page \(TRDP\) Guidelines for Use with Original 1972 Form](#) is advised. It is also strongly recommended that a plan for implementing the research findings and documenting the benefits be developed.

The final report serves as evidence of work performed. Per 23 CFR 420.117 (e), as part of the review process for draft final reports, the FHWA Division Office must be provided an opportunity to determine if the contents of the report are supported by the work performed. If the FHWA Division Administrator determines that prior review is unnecessary, this requirement may be waived.

Draft final reports are not required to be submitted to the FHWA Office of RD&T for review and approval. The State, at its discretion, may request FHWA Office of RD&T review and comments. When a State requests a technical review of a report, copies should be forwarded through the Division Office to the Associate Administrator for Research, Development, and Technology (HRTM-10). HRTM-10 will coordinate technical review in the Washington Headquarters Office.

The State is responsible for submitting final reports to the National Technical Information Service (NTIS) and the Transportation Research Information Service Network (TRISNET) repositories. Addresses for NTIS and the

TRISNET repositories as well as other appropriate recipients of reports are included at the link shown in the paragraph below.

Each FHWA Division Office should identify the appropriate recipients of final reports needed for its use. Additional information copies may be submitted in accordance with the [Revised SPR Report Distribution Guidance found at the Federal-aid Highway Program Policy Center website](#).

Whether or not a prior review waiver, per 23 CFR 420.117 (e), is approved, appropriate reports that document work performed with FHWA planning and research funds must be prepared and include a credit reference and the following disclaimer statement:

"This material is based upon work supported by the Federal Highway Administration under SPR [insert work project]. Any opinions, findings and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the Federal Highway Administration."

Copies of the reports must be provided to the FHWA Division as evidence of work performed. 23 CFR 420.119(e).

7. **Documentation that describes the State DOT's 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 per 23 CFR 240.209(b). Significant changes in the management process also must be submitted by the State DOT to the FHWA for approval. The State DOT must make the documentation available, as necessary, to facilitate peer exchanges. Documentation that describes the State DOT's 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 management process also must be submitted by the State DOT to the FHWA for approval. The State DOT must make the documentation available, as necessary, to facilitate peer exchanges.
8. **Certification that the State is in full compliance with the requirements of 23 CFR 420 Subpart B in each RD&T work program** per 23 CFR 420.209(c). If the State DOT is unable to certify full compliance, the FHWA Division Administrator may grant conditional approval of the State DOT's work program. A conditional approval must cite those areas of the State DOT's management process that are deficient and require that the deficiencies be corrected within 6 months of conditional approval.

The FHWA Division Administrator shall periodically review the State DOT's management process (see item 10 below) to determine if the State is in compliance with the requirements of this subpart.

A copy of the State's certification should be forwarded to the Associate Administrator for Research, Development, and Technology.

9. **Participating in peer exchanges of its RD&T management process** and other State DOT programs on a periodic basis. The peer exchange is a practical and effective tool to foster excellence in R&T program management. It is important to note the peer exchange is not intended to be a compliance review but should be included in the management process. as described in 23 CFR 420.209.
The objective of a peer exchange program is to give State DOT a means to improve the quality and effectiveness of their research management processes. It is intended to help in identifying, reinforcing, and conveying effective program approaches across the country. It is intended to provide a nationwide sharing of successful practices and policies.

Each State should conduct a peer exchange of its RD&T program at least once every 5 years. The State is responsible for selecting and organizing the peer exchanges team. The peer review team may consist of other State highway agency research personnel; university researchers; FHWA Division and/or Office of RD&T (HRTM-10) staff; and AASHTO and TRB staff, if available. Host States should try to assemble a mix of participants to provide for a broad perspective in the peer exchange. The State may want to include new members of the national State transportation research community as a developmental activity.

It is the State's responsibility to initiate its peer exchange. The composition of the peer exchange team, the breadth of the issues covered, the duration of the peer exchange, and other issues are at the States' discretion. Generally, the visit should be scheduled to last at least three (3) days and allow for time to prepare a team report and conduct a "close-out" discussion. The State's program documentation and any other pertinent information should be made available to assist the peer exchange team.

At the completion of its peer exchange, the team should prepare a report of its findings and submit it to the host State. The State should forward, for information purposes, a copy of the report to the FHWA Division Administrator with a written response to the peer exchange findings.

- 10. Monitoring RD&T activities through performance reviews and reports.** A process is required to ensure that performance monitoring (e.g., ongoing, periodic reviews, and reports) is timely and covers key RD&T activities. Performance monitoring should be designed to be part of the normal course of the program operations. Ongoing monitoring includes regular Stewardship & Oversight activities such as program meetings and routine actions. Periodic reviews (no more than every 3 years) conducted by the Division Office enable the Division Administrator to be assured the RD&T work plan process continues to function as intended over time, or to make informed decisions to achieve program objectives and risk responses. Performance reports help provide the Division Administrator needed and efficient assurance that program objectives are being achieved. The Division Administrator must document the results of performance monitoring.

Performance reports submitted by the State DOT serve as evidence of work performed per 23 CFR 420.117 (e). Performance reports must document that RD&T activities achieved the program's stated objectives, research findings and benefits. Performance reports can also be prepared on an annual basis aligned with the annual work plan approved by the Division Administrator. An annual report can respond to each approved work activity's scope, schedule, budget, and deliverable (i.e., comparison between planned and actual work performed). The report should also provide the Division Administrator an evaluation of significant differences in an activity's scope, schedule, budget, or deliverable. The Division Administrator should use this information to determine if a more in-depth review is needed to respond to risks to achieving RD&T program objectives.

If the FHWA Division Administrator determines that prior review is unnecessary, this requirement may be waived.

- 11. Procedures for FHWA Withdrawal of SPR-B Approval for a State's research program.** The FHWA Division, at the discretion of the Division Administrator, will make periodic compliance reviews of the State's RD&T management process as required under 23 CFR 420.209(d).

If a State fails to comply with the requirements of 23 CFR Part 420, Subpart B, 2 CFR Part 200, or is otherwise not performing in accordance with its approved RD&T management process, the Division Administrator will issue a written notice to the State of a proposed determination of noncompliance. A copy should be forwarded to the Associate Administrator for Research, Development, and Technology.

The notice shall outline the reasons for the proposed determination and inform the State that it has 30 days to reply. The State's reply should address the deficiencies cited in the notice and should provide any necessary documentation. The Division Administrator will review the State's reply and, within 30 days of receipt, will make a determination of compliance.

If the State and the Division Administrator cannot resolve the differences, assistance from the Associate Administrator for Research, Development, and Technology should be requested. Every effort should be made to resolve any difference at the Division level. If the differences cannot be resolved, the State may request an appeal to the Federal Highway Administrator. Appeals should be submitted through the Division Office to the Federal Highway Administrator. The Federal Highway Administrator's action will constitute the final decision of FHWA.

An adverse decision results in immediate withdrawal of approval of FHWA planning and research funds for the State's RD&T activities until the State is in full compliance. Additional information on developing a research management plan is included in the NCHRP Report "Guide for Developing a State Transportation Research Manual" at <https://www.fhwa.dot.gov/publications/research/general/spr/2038guide/index.cfm#toc>.

E. Eligible Research activities funded under SPR Subpart B

Under 23 U.S.C. 505(a), all SPR (planning and RD&T) activities must be identifiable as one of the categories below. However, the required 25% set-aside for RD&T activities identified in 23 U.S.C. 505(b)(1) specifically limits the use of RD&T (SPR Subpart B) set-aside funds to "activities in subsection (a) relating to highway, public transportation, and intermodal transportation systems."

FHWA views the activities found in paragraphs 5. and 6. listed below as the only activities eligible for SPR Subpart B funds.

The activities listed in paragraphs 1-4 and 7 below, while eligible for SPR Subpart A funds, are not considered eligible for SPR Subpart B set-aside funds.

1. Engineering and economic surveys and investigations.
2. The planning of future highway programs and local public transportation systems and the planning of the financing of such programs and systems, including metropolitan and statewide planning under 23 U.S.C. 134 and 135.
3. Development and implementation of management systems, plans, and processes under 23 U.S.C. 119, 148, 149, and 167.
4. Studies of the economy, safety, and convenience of surface transportation systems and the desirable regulation and equitable taxation of such systems.
5. **Research, development, and technology transfer activities necessary in connection with the planning, design, construction, management, and maintenance of highway, public transportation, and intermodal transportation systems.**
6. **Study, research, and training on the engineering standards and construction materials for transportation systems described in paragraph (5), including the evaluation and accreditation of inspection and testing and the regulation and taxation of their use.**
7. The conduct of activities relating to the planning of real-time monitoring elements.

Definitions

Activities must also be determined to be consistent with the definitions of research, development, and technology transfer activities, contained in 23 CFR 420.203 as follows to be eligible for SPR Subpart B funds:

¹ **"RD&T activity** means a basic or applied research project or study, development and technology transfer activity."

"Research means a systematic study directed toward fuller scientific knowledge or understanding of the subject studied. Research can be basic or applied."

"Applied research means the study of phenomena to gain knowledge or understanding necessary for determining the means by which a recognized need may be met; the primary purpose of this kind of research is to answer a question or solve a problem."

"Basic research means the study of phenomena, and of observable facts, without specific applications towards processes or products in mind; the primary purpose of this kind of research is to increase knowledge."

"Development means the systematic use of the knowledge or understanding gained from research, directed toward the production of useful materials, devices, systems or methods, including design and development of prototypes and processes."

"Technology transfer means those activities that lead to the adoption of a new technique or product by users and involves dissemination, demonstration, training, and other activities that lead to eventual innovation."

RD&T activities cease to be eligible for SPR Subpart B funds upon completion of testing, evaluation, and dissemination under Technology Transfer as appropriate, and/or if they no longer meet the definitions listed above.

F. Determining eligibility of costs associated with SPR Subpart B RD&T activities

Costs will be eligible for FHWA participation provided that the costs:

1. Are for work performed for activities eligible under the section of title 23, U.S.C. 505 (a) (5-6), applicable to the class of funds used for the activities;
2. Are included in the approved work program or contract, or amendment thereto; and costs must also be allowable under the Uniform Guidance, 2 CFR 200, Subpart E.

2 CFR Part 200 Subpart E Cost principles

Under 2 CFR 200.401(a), cost principles must be used in determining the allowable costs of work performed by the non-Federal entity under Federal awards. These principles also must be used by the non-Federal entity as a guide in the pricing of fixed-price contracts and subcontracts where costs are used in determining the appropriate price. The principles include:

§200.403(a) Necessary and reasonable. Costs incurred by the State DOT or the sub-recipient are allowable provided the costs are necessary and reasonable for proper and efficient accomplishment of research program objectives.

§200.407 Prior authorization. State DOTs and sub-recipients shall not incur costs prior to FHWA's grant approval and funding authorization for SPR Part II Work Program.

§200.403(g) Verifiable. Incurred cost reimbursements must be verifiable from the State DOT or the sub-recipient's records.

§200.56 Indirect costs: Costs that cannot be assigned to a single program or objective and, rather, benefit multiple approved programs and objectives approved in the work programs. State DOTs, contractors, and sub-recipients may incur indirect costs if those costs are supported by a cost allocation plan and/or an approved indirect cost rate proposal as applicable.

§200.19 Cognizant agency: The cognizant agency is responsible for approving proposed indirect cost rate proposals and overseeing audits on behalf of all other Federal agencies. The cognizant agency is the Federal agency that provides the most Federal funding to a particular agency or grant unless there is a direct legal relationship that establishes a separate authority for determining the indirect cost. While FHWA is normally the cognizant agency for State DOTs, this status may not be applicable for some sub-recipients or contractors, such as universities.

§200.330(c) Relationship. In determining whether an agreement between a pass-through entity and another non-Federal entity creates a sub-recipient or a contractor relationship, the substance of the relationship is more important than the form of the agreement.

Examples of some unallowable costs, include:

§200.423 Alcoholic beverages. Costs of alcoholic beverages are unallowable.

§200.424 Alumni/ae activities. Costs incurred by Institutions of Higher Education (IHEs) for, or in support of, alumni/ae activities are unallowable.

§200.426 Bad debts. Bad debts (debts which have been determined to be uncollectable), including losses (whether actual or estimated) arising from uncollectable accounts and other claims, are unallowable.

§200.434 Contributions and donations. Costs of contributions and donations, including cash, property, and services, from the non-Federal entity to other entities, are unallowable.

§200.438 Entertainment costs. Costs of entertainment, including amusement, diversion, and social activities and any associated costs are unallowable, except where specific costs that might otherwise be considered entertainment have a programmatic purpose and are authorized either in the approved budget for the Federal award or with prior written approval of the Federal awarding agency.

§200.450 Lobbying. The cost of certain influencing activities associated with obtaining grants, contracts, cooperative agreements, or loans is an unallowable cost.

§200.467 Selling and marketing costs. Costs of selling and marketing any products or services of the non-Federal entity (unless allowed under §200.421 Advertising and public relations.) are unallowable, except as direct costs, with prior approval by the Federal awarding agency when necessary for the performance of the Federal award.

G. Additional Information

The FHWA hosts a Research and Technology web site at <https://highways.dot.gov/research> that includes information on the various facets of the program and related programs. Additional information regarding the FHWA Research Agenda may be found at <https://highways.dot.gov/rt-agenda/federal-highway-administration-fhwa-research-and-technology-agenda>.

FIRST STAGE RESEARCH PROBLEM STATEMENT

- 1. PROBLEM TITLE:**
- 2. PROBLEM STATEMENT:**
- 3. POTENTIAL IMPLEMENTATION AND BENEFIT:**
- 4. NAME OF SUBMITTER:**

RESEARCH PROBLEM STATEMENT

- 1. TITLE:** Brief, but descriptive.
- 2. PROBLEM STATEMENT:** Brief description of the problem to be solved.
- 3. ABSTRACT:** A concise description of study objectives, proposed research approach, etc.
- 4. DURATION:** Expected length of study.
- 5. FUNDING REQUIREMENTS:** Include total funds required and indicate whether a large percentage of the funds will be needed at any particular point in the study.
- 6. PERFORMING ORGANIZATION:** Staff effort or planned contract.
- 7. EQUIPMENT:** Identify equipment costing over \$5,000.
- 8. EXPECTED BENEFITS:** Briefly state what benefits may be derived from conducting the study.

APPROVAL AUTHORITY

ITEM	ACTION
Additional Federal Funds	Division Office Approval Required
Transfer of Funds Among RD&T Activities	Division Office May Waive Approval
Purchase of Equipment-Cost in Excess of \$5,000	Division Office Approval Required*
Revision of Scope or Objectives	Division Office May Waive Approval
Changes of Key Persons When Specified in the Work Program	Division Office May Waive Approval
Contracting Out, Sub-granting, or Otherwise Obtaining the Services of a Third Party	Division Office Approval Required*
Adding a New RD&T Activity	Division Office Approval Required
Prior Approval for Report Publication	Division Office May Waive Approval

* If not previously approved in the work program