



# RESEARCH MANUAL

# 2026

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April, 2026



**From:** Dr. Hao Yin, Manager of Research and Technology Transfer, Massachusetts Department of Transportation

**To:** David J. Mohler, Executive Director of the Office of Transportation Planning, Massachusetts Department of Transportation

**Subject:** Massachusetts Department of Transportation Research Manual

**Effective Date:** April 2026

**Contact:** Please contact the Massachusetts Department of Transportation's Research Section at [planning.research@dot.state.ma.us](mailto:planning.research@dot.state.ma.us) for more information regarding the Massachusetts Department of Transportation Research and Technology Transfer Program.

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## Executive Summary

The MassDOT Research and Technology Transfer Program supports the transportation research needs of MassDOT, the MBTA, and the broader Commonwealth community by advancing applied research that improves the safety, performance, and efficiency of the transportation system. The program also contributes to national and regional transportation research efforts through partnerships with academic institutions, state agencies, private-sector, and cooperative research programs.

This Manual establishes the policies, procedures, and controls necessary to ensure full compliance with 23 U.S.C. §505 and 23 CFR Part 420, Subpart B.

### Program Governance and Responsibilities

The Research Section shall be responsible for ensuring compliance with applicable federal and state requirements, including 23 CFR Part 420. The Section is led by a Research Manager, supported by transportation program planners serving as Research Project Managers. The Research Manager acts as the primary liaison with all funding sponsors, including the Federal Highway Administration (FHWA) and serves as the principal spokesperson for the Research and Technology Transfer Program both within and outside MassDOT.

Each research project is supported by three key roles:

- Principal Investigator (PI): Leads the technical research effort, delivers project tasks, submits required progress reports and invoices, and produces the final report. PIs are often university researchers.
- Project Champion (PC): A MassDOT staff member who identifies the research need, develops the problem statement, supports PI selection, and provides technical guidance throughout the project lifecycle.
- Project Manager (PM): A Research Section staff member responsible for financial oversight, scheduling, and ensuring projects remain on scope, on time, and within budget.

### Research Funding

The MassDOT Research and Technology Transfer Program is funded through a combination of federal and state sources. Under Title 23 U.S.C. §505(b)(1), at least 25 percent of a state's annual

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State Planning and Research (SPR) funds must be dedicated to research, development, and technology transfer (RD&T, SPR Part II). RD&T activities are driven by a goal of better understanding, supporting, or implementing an innovative approach toward transportation planning, project development, maintenance, and/or management. All research expenditures shall be allowable, allocable, and reasonable in accordance with 2 CFR Part 200 and applicable federal requirements. MassDOT research projects are typically funded with an 80 percent federal and 20 percent state match. Participation in national Transportation Pooled Fund (TPF) studies may be funded with 100 percent federal funds.

### **Research Project Lifecycle**

The research process begins with a solicitation phase, during which the Research Section invites MassDOT staff across all divisions to identify research needs and technical challenges. The Research Section conducts outreach for research needs through emails, intranet postings, presentations, and targeted solicitations, while remaining open to time-sensitive or emerging research proposals. Project selection decisions shall be documented and retained to demonstrate compliance with 23 CFR §420.113. All supporting records shall be maintained for audit purposes.

During the problem statement formulation stage, the Research Section assists MassDOT staff who have agreed to serve as the Project Champion in developing well-defined research proposals that articulate the issue, existing knowledge, anticipated timeline, and a plan for implementing results into policy or practice. Then, the Research Section staff together with the Project Champion identify a suitable researcher to serve as the Principal Investigator for the project.

Once a project is initiated, research project management focuses on administrative oversight, coordination of meetings, monitoring deliverables, and processing invoices. Following the issuance of a Notice to Proceed (NTP), the Research Section convenes a kickoff meeting with the PI and PC. Throughout the project, regular reporting requirements support progress tracking and accountability.

### **Evaluation and Implementation**

Completed research projects are evaluated for alignment with program goals and selection criteria. Implementation of research results is a core objective of the Research and Technology Transfer Program. Each research project's Final Report must include a standalone

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Implementation Plan describing how the research findings can be translated into practice. Implementation Plans shall include measurable performance indicators and documented follow-up evaluations to assess effectiveness. The Research Section continues to monitor completed projects to assess effectiveness and identify follow-on actions needed to support successful deployment of research outcomes.

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## List of Abbreviations and Acronyms

**AASHTO** American Association of State Highway and Transportation Officials

**CFR** U.S. Code of Federal Regulations

**DOT** Department of Transportation

**FHWA** Federal Highway Administration

**FFY** Federal Fiscal Year

**IP** Implementation Plan

**LTAP** Local Technical Assistance Program

**MassDOT** Massachusetts Department of Transportation

**MTS** MassDOT Highway Training Service

**NCHRP** National Cooperative Highway Research Program

**NTP** Notice to Proceed

**OTP** Office of Transportation Planning

**PC** Project Champion

**TPF** Transportation Pooled Fund

**PI** Principal Investigator

**PVF** Payment Voucher Input Form

**RD&T** Research, Development and Technology Transfer

**RFP** Request for Proposal

**SOW** Scope of Work

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**SPR** State Planning and Research Program

**SPR Part II** State Planning and Research Program Part 2

**TRB** Transportation Research Board

**TRID** Transportation Research Information Database

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## Certification of Compliance

I, David J. Mohler, Executive Director of the Office of Transportation Planning, at the Massachusetts Department of Transportation, do hereby certify that the Commonwealth of Massachusetts is in compliance with all the requirements of 23 U.S.C. 505 and its implementing regulations with respect to the research, development, and technology transfer program, and contemplate no changes in statutes, regulations, or administrative procedures which would affect such compliance.

A handwritten signature in blue ink, reading "David J. Mohler", is written over a solid black horizontal line.

David J. Mohler

May 6, 2026

Date



## Preface

The 2026 edition of the Massachusetts Department of Transportation (MassDOT) Research Manual represents the first comprehensive update to the MassDOT Research and Technology Transfer Program in more than ten years. While the overall structure and objectives of the program remain generally consistent with the previous edition, this 2026 edition incorporates significant enhancements to strengthen program performance, accountability, and stewardship of federal and state research funds, consistent with 23 CFR Part 420, Subpart B (Research, Development, and Technology Transfer Program Management). In addition, several process improvements are under development and scheduled for phased implementation within MassDOT's Research and Technology Transfer Program.

In alignment with 23 CFR §§ 420.205 and 420.207, which requires performance-based management, monitoring, and evaluation of RD&T activities in accordance with 23 CFR §§420.205 and 420.207. Key updates to the 2026 Research Manual include:

- Proactive coordination with MassDOT divisions to address time-sensitive and emerging research needs, including the use of out-of-cycle research requests, ensuring that research investments remain aligned with agency priorities and demonstrate measurable value.
- Hosting educational presentations and round-table discussions with agency staff and the research community describing MassDOT's streamlined new research solicitation and project development processes. Discussion topics include "how to" request new research and systematic review of existing practice and literature.
- A renewed focus on implementation of research results and implementation monitoring by requiring each project Scope of Work (SOW) to include an Implementation Plan that defines deployment steps, post-research monitoring activities, and technology transfer potential, consistent with federal RD&T objectives.
- Structured reporting, peer exchange, and program certification processes, including:
  - Submission of monthly and quarterly progress reports, financial invoices, and final project deliverables; and

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- Engagement in peer review and knowledge-sharing activities with state, regional, and national transportation research partners to ensure technical rigor and practical relevance; and
- Preparation of materials required for MassDOT's annual SPR Part II Work Program, which is subject to FHWA Division Office review and approval under 23 CFR Part 420, Subpart B.
- Expanded collaboration with public agencies, academic institutions, and private-sector partners to leverage expertise, avoid duplication of effort, and enhance practical applicability of research outcomes.
- Clear documentation of roles, responsibilities, and expectations to strengthen engagement and accountability with internal customers and external partners, along with systematic evaluation of research results.

These updates reinforce MassDOT's commitment to continuous program evaluation, fiscal responsibility, and effective management of its Research and Technology Transfer Program, while maintaining full alignment with federal RD&T requirements and best practices.

## Overview

Research plays a critical role in helping the Commonwealth address current and emerging transportation challenges. MassDOT conducts applied transportation research to strengthen and improve the agency's transportation program planning, design, construction, operations, and maintenance responsibilities. Well-designed and implemented research contributes to improved safety, greater efficiency, and more cost-effective use of public resources. For research findings to be effective, knowledge must move from researchers and subject-matter experts to the practitioners who can apply it. These interactions support technology transfer and create opportunities for innovation.

Title 23 of the Code of Federal Regulations (CFR), Part 420, requires each state department of transportation to maintain a research manual that is certified by the Federal Highway Administration (FHWA). This Research Manual documents the administrative processes MassDOT uses to manage its research and technology transfer activities.

## MassDOT Research and Technology Transfer Program

MassDOT's Research Section supports the research, development, and technology transfer (RD&T) needs for all MassDOT divisions, as well as the Massachusetts Bay Transportation Authority (MBTA). The program contributes to the safety, performance, and overall quality of the Commonwealth's transportation system.

The research and technology transfer program is administered in accordance with Title 23, United States Code, Section 505, which governs the State Planning and Research (SPR) Program, and applicable FHWA regulations and guidance. Research activities emphasize practical, implementable results and broad dissemination of findings to support informed decision-making and innovation. In accordance with 23 CFR Part 420.203(d), State DOTs are encouraged to cooperate with each other, the FHWA, and other agencies to achieve national RD&T objectives, develop technology transfer programs, and utilize pooled funds to address regional or national transportation issues.

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## Research Section Responsibilities

The Research Section is responsible for planning, managing, and administering all transportation research conducted at MassDOT. The Section is staffed by a Research Manager and transportation program planners who serve as Research Project Managers.

The Research Manager is responsible for organizing, directing, and overseeing Research Section staff and all research and technology transfer activities in compliance with federal and state requirements. The Research Manager also serves as MassDOT's primary liaison to research funding sponsors, including FHWA, and represents the Research Program internally and externally.

Under the direction of the Research Manager, the Research Section is responsible for:

- Soliciting research needs across MassDOT divisions
- Assisting Project Champions with the development of Research Problem Statements
- Executing new research projects and research-related activities
- Contracting with universities, colleges, and private-sector consultants
- Overseeing project deliverables, invoicing, and meetings
- Monitoring research progress, performance, and outcomes
- Supporting implementation and deployment of research products
- Contributing to regional and national transportation research initiatives
- Facilitating participation in pooled fund transportation studies

## SPR Part II Work Program

MassDOT's research and technology transfer activities are documented in its annual State Planning and Research (SPR Part II) Work Program, prepared by the Research Section. In accordance with 23 CFR Part 420, Subpart B, the SPR Part II Work Program, including any revisions or amendments, shall be submitted to FHWA<sup>1</sup> for review and approval prior to implementation, in accordance with 23 CFR §420.109. The Work Program includes:

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<sup>1</sup> Pursuant to Title 23 Section 505 of the United States Code (U.S.C.) - State Planning and Research Program Part 2, at least 25 percent of a state's annual federal SPR funds are to be expended for research, development, and technology transfer (RD&T) activities related to highway, public transportation, and intermodal transportation systems (Part II).

- A list of proposed research projects
- Project descriptions, including scope, schedule, cost, and expected outcomes
- Technology transfer activities
- Program certification materials and peer exchange documentation

### **Federal Highway Administration**

FHWA's mission is to improve mobility and safety on the nation's highways. FHWA encourages state DOTs to maintain RD&T programs that support efficient, cost-effective, and innovative transportation systems. FHWA reviews MassDOT's annual research and technology transfer program to determine funding eligibility and approve any significant changes to the approved SPR Part II Work Program.

### **Research Funding**

Funding for MassDOT research activities is provided through federal and state sources. Under Title 23 U.S.C. Section 505, at least 25 percent of a state's annual SPR funds must be used for research, development, and technology transfer (SPR Part II). Individual research projects are typically funded with an 80 percent federal and 20 percent state match. Transportation Pooled Fund studies may be funded at 100 percent federal participation.

### **Small, Quick Hit Research Projects**

Up to ten percent of the annual SPR Part II Work Program may be allocated to small, quick-hit research projects that seek to address emerging issues that require rapid analysis and short delivery timeframes. Approval for such small, quick-hit projects is granted by the Research Manager.

### **Research Project Development**

MassDOT's research project development process ensures that new research aligns with agency priorities and supports the effective, safe, and efficient operation of the transportation system. Project prioritization and selection shall be based on documented evaluation criteria to ensure transparency, consistency, and compliance with 23 CFR §420.113(b).

The Research Project Development process includes:

- Identifying MassDOT transportation research needs and developing Research Problem Statements
- Ranking and prioritizing Problem Statements

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- Conducting preliminary literature reviews
- Selecting research projects for approval and funding
- Developing project Scopes of Work
- Identifying and Selecting Principal Investigators
- Preparing research contracts and issuing Notices to Proceed

### **Research Solicitation and Problem Statements**

The Research Section solicits research needs and ideas from MassDOT staff across all divisions. Solicitation outreach activities may include email notices, intranet postings, presentations, and workshops. Research ideas may also originate from external organizations. All Problem Statements must identify a MassDOT staff sponsor who, if the project is selected, serves as the Project Champion.

The Problem Statement Application must document the specific research need, anticipated benefits, and potential implementation pathways. The Research Section provides guidance to Problem Statement applicants to ensure applications clearly define the research need and anticipated value.

### **Project Champions**

The Problem Statement applicant typically agrees to serve as the Project Champion (PC) if the problem statement is selected as a new research project. The PC actively supports the research project throughout its duration and works with the Research Section to clarify problem conditions, identify subject-matter expertise, assist in selecting PIs, and provide ongoing guidance.

### **Review, Prioritization, and Selection**

Problem Statements are reviewed and prioritized by MassDOT Division leadership based on factors such as potential impact, feasibility, urgency, cost, data availability, and alignment with agency objectives. The Research Section prepares recommended short and long lists of projects for consideration.

For short-listed projects, the Research Section may conduct preliminary literature reviews to identify existing similar research completed by others so as to reduce duplication. Selected projects are then aligned with the appropriate contracting and funding mechanisms.

Project selection decisions shall be documented and retained to demonstrate compliance with 23 CFR §420.113. All supporting records shall be maintained for audit purposes.

### **Scope of Work Development**

For each approved new research project, the Research Section works with the Project Champion to develop a detailed Scope of Work (SOW) that defines tasks, deliverables, schedules, and resource needs. A clear SOW establishes expectations and supports effective project oversight.

### **Selection of Principal Investigators and Contract Execution**

Principal Investigators may be selected from universities, colleges, private consultants, or other eligible entities based on past performance, qualifications, experience, and project requirements. The Research Section prepares project approval packages for FHWA review and coordinates contract execution. Upon contract execution, a Notice to Proceed is issued. All procurement and contracting activities shall comply with applicable state procurement laws and federal requirements under 2 CFR Part 200.

### **Research Project Management**

The Research Section provides administrative oversight for all MassDOT research projects. Research Project Managers (PMs) coordinate meetings, track deliverables, process invoices, and ensure compliance with contractual and federal requirements. The Project Champion (PC) serves as the technical lead and works closely with the Principal Investigator (PI) to maintain technical quality, ensure timely progress, and align project activities with MassDOT objectives.

### **Project Initiation**

Following the issuance of the Notice to Proceed (NTP), the Project Manager schedules a project kickoff meeting with the PC and PI to establish a shared understanding of goals and expectations including:

- Review of the approved Scope of Work (SOW)
- Confirmation of the project schedule, milestones, and deliverables
- Clarification of reporting, invoicing, and communication requirements
- Discussion of any questions or concerns raised by the PI, the PC or the PM

## **Reporting Requirements**

Reporting requirements shall comply with 23 CFR §420.115(a) and support FHWA oversight of research progress and expenditures. PIs are required to submit monthly and quarterly progress status reports for the duration of the project. All reports are reviewed by the PC and the Research Section to monitor progress, identify issues, and ensure alignment with the approved SOW.

### Meeting Reports

The PI must prepare meeting minutes for all project meetings. Minutes should document key discussion points, decisions, action items, and any clarifications or changes to the project approach.

### Monthly Reports

Monthly reports are due no later than the 15th day of the month following the reporting period and must include:

- A narrative summary of progress to date
- Work completed during the reporting period
- Work planned for the upcoming month
- An estimate of the percentage of project completion and budget expended, with an explanation of any variance

### Quarterly Reports

Quarterly reports follow the same submission deadline as monthly reports and include a summary of progress during the quarter, work completed, work planned, and estimated expenditures for the next quarter.

## **Draft and Final Reports**

Draft and final project reports are required deliverables. Unless otherwise agreed, the PI must submit a draft final report to the Research Section and PC at least 90 days prior to the contract end date. All reports must follow MassDOT's required format and comply with Section 508 accessibility standards. In addition, the Research Section submits a quarterly program-level report to FHWA summarizing SPR-funded research progress, milestones, project status, and budget information.

### **Mid-project Review Meeting**

Research projects may require adjustments after work has begun. Mid-project review meetings provide an opportunity for early feedback and course correction to ensure the project remains on track. The meeting typically includes the PC, PI, PM, and Research Manager. The timing of these mid-project review meetings is determined by the PI, PC and PM but should occur early enough to allow meaningful adjustments that support successful project completion.

### **Project Invoice Processing**

PIs must submit invoices on a monthly basis to the Research Section, accompanied by a completed Payment Voucher (PV) Input Form and Payment Voucher Approval Form. Invoices cannot be processed without both forms. All submissions must comply with the timing and requirements specified in the contract or Interdepartmental Service Agreement (ISA).

Invoices shall be reviewed and approved to ensure costs are allowable, allocable, and reasonable in accordance with 2 CFR Part 200 prior to payment. If needed, the Research Section may request written clarification from Principal Investigators (PIs) to make this determination. The Research Section may also consult with FHWA during its review and approval process.

### **Early Project Termination**

Termination decisions shall be documented, including justification and supporting evidence, to ensure appropriate stewardship of federal funds. If a project is clearly not progressing in a manner that would produce useful findings for inclusion in a final report, a Termination Without Report letter may be issued. This letter is issued by the Executive Director of the MassDOT Office of Transportation Planning with support from the Research Manager. The letter provides a concise summary of the project's status, including any data collected and analyses conducted, the reason for termination, and key lessons learned. It serves as a formal early conclusion of the research project.

### **Closeout Memorandum**

Upon the completion of a research project, the Research Section prepares a closeout memorandum addressed to the PI. Project closeout shall include verification that all deliverables have been received and that all financial obligations have been reconciled. The memorandum formally closes the project for fiscal and administrative purposes and may include invoicing records, final expenditures, and any outstanding balances.

## Research Project Evaluation and Implementation

### Project Evaluation

Research findings are anticipated to support management, policy, and funding decisions. As part of program oversight, the Research Section evaluates completed projects based on their alignment with the project selection criteria described earlier in this manual and the goals and objectives of the project as described in the project's Scope of Work.

### Implementation of Research Findings

Implementation is a critical component of the research process. The PI is required to include an Implementation Plan (IP) as a standalone chapter in the final report to discuss measurable performance indicators and follow-up evaluations to assess effectiveness. The IP typically includes:

- Project title and Project Champion
- Expected results and anticipated applications
- User groups and primary contacts
- Expected benefits to MassDOT
- Estimated implementation costs and potential funding sources
- Risks and barriers to implementation
- Strategies for addressing barriers
- Technology transfer methods (such as publications, training, pilot projects, or conferences)
- Implementation timeframe and milestones

### Monitoring the Implementation of Completed Projects

Completed projects are monitored to assess effectiveness and identify additional actions needed to support implementation of the research results. This monitoring helps ensure that research results translate into practice. PCs are required to answer evaluation questions include:

- Does the method or product perform as expected?
- Are user needs being met?
- Is the innovation being used? If not, why?
- Which barriers were overcome, and which remain?
- Are project objectives being met, and what benefits are evident?
- Were costs and timelines consistent with expectations?

- What improvements or follow-up actions are needed?

### **Five-Year Look Back**

Approximately five years after project completion, the Research Section conducts a retrospective review to assess long-term implementation outcomes and determine whether additional research is warranted. This review may include interviews with former Project Champions, current staff, and the PI.

### **Research Engagement**

Most MassDOT research projects are conducted by universities or consultants with oversight from the Research Section. Broad participation across MassDOT divisions and collaboration with external partners help ensure the research program remains relevant and innovative.

The effectiveness of MassDOT's Research Program depends on strong engagement with organizations that produce, apply, and share transportation research including local technical assistance and Training services, other State DOTs, national and cooperative research programs, Transportation Pooled Fund Programs, AASHTO and TRB.

### **Peer Exchange**

In accordance with 23 CFR 420.209, Peer Exchanges are required under FHWA's SPR regulations and are intended to improve the quality and effectiveness of state DOT research management practices. Peer Exchanges must be conducted at least once every five years.

The Research Section is responsible for:

- Initiating the Peer Exchange
- Developing the agenda and focus areas
- Selecting participants
- Coordinating with the FHWA Division Office

The Peer Exchange Team prepares a report summarizing discussions, findings, and recommended practices. The Research Section reviews the draft report before it is finalized and shared with the FHWA Division Office.

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## Technology Transfer

Technology transfer activities shall be conducted in accordance with 23 CFR §420.107(c) to ensure dissemination and application of research results. The Research Section supports technology transfer through the Local Technical Assistance Program (LTAP) and the MassDOT Highway Training Service (MTS), as well as through additional activities such as:

- Distribution of research reports and publications
- Submission of project information to the Transportation Research Information Database (TRID)
- Preparation of executive summaries

Participation in seminars, conferences, and exhibitions

Technology transfer occurs both within and outside MassDOT. The Research Section also identifies innovations from internal projects and external sources through ongoing technology scanning.

### National and Cooperative Research Programs

The Research Section serves as MassDOT's primary liaison for MassDOT's participation in national and cooperative research programs, including:

- American Association of State Highway and Transportation Officials (AASHTO)
- Transportation Research Board (TRB)
- Transportation Pooled Fund (TPF) Program

These engagements support research development, consensus building, and implementation across state transportation agencies.

### American Association of State Highway and Transportation Officials (AASHTO)

AASHTO represents state transportation agencies across all modes and provides national leadership on technical standards. Each year AASHTO and FHWA solicit, screen, and recommend research problem statements.

### Transportation Research Board (TRB)

TRB promotes innovation in transportation and supports information sharing among researchers and practitioners. TRB administers the cooperative research programs sponsored by the AASHTO member departments (State DOTs) and the FHWA, including NCHRP.

### Transportation Pooled Fund (TPF) Program

The TPF program is a Federal Highway Administration (FHWA) administered program in coordination with State departments of transportation (DOT)s. The TPF program creates an opportunity for partners to pool their funds, subject matter expertise, and resources to conduct high-priority research to meet a wide variety of shared transportation problems. Being able to pool funds allows participants to get more out of a study than if they conducted a study on their own.

### **Summary**

The 2026 MassDOT Research Manual documents MassDOT’s comprehensive research and technology transfer program that meets the intent and specific requirements of 23 CFR Part 420. Through defined governance, transparent project development and management processes, robust reporting, and active technology transfer, MassDOT ensures that SPR-funded research delivers practical, implementable results that support the Commonwealth’s transportation goals.



## Appendix: 23 CFR Part 420 Compliance Crosswalk

This appendix documents how the MassDOT Research and Technology Transfer Program complies with the requirements of Title 23 of the Code of Federal Regulations (CFR), Part 420. The crosswalk identifies each applicable regulatory requirement and the corresponding section(s) of the MassDOT Research Manual that demonstrate compliance.

The crosswalk is intended to support Federal Highway Administration (FHWA) certification of the MassDOT Research Manual and to provide transparency regarding how federal research, development, and technology transfer (RD&T) requirements are implemented in practice.

23 CFR Part 420 Requirement	Regulatory Focus	MassDOT Research Manual Reference	Description of Compliance	Evidence/Documentation	Responsible Office/System of Record
§420.101	Purpose	Overview; MassDOT Research and Technology Transfer Program	The manual establishes the purpose of MassDOT’s RD&T program and its role in improving safety, efficiency, and effectiveness across the Commonwealth’s transportation system.	Approved Research Manual; RD&T program overview materials; MassDOT website content	Research Section; Official Manual Repository
§420.103	Definitions	Not applicable	Standard federal definitions apply. No program-specific definitions are required for implementation.	23 CFR Part 420 reference documentation; internal guidance (if applicable)	Research Section; Regulatory Reference Files

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§420.105	Policy	Overview; Federal Highway Administration; Research Funding	MassDOT administers its RD&T program in accordance with Title 23 U.S.C. §505 and FHWA regulations, emphasizing practical research, accountability, and implementation.	Approved Research Manual; SPR Part II Work Program; internal policy guidance; FHWA correspondence	Research Section; FHWA Coordination Files
§420.107(a)	State DOT Research Program	MassDOT Research and Technology Transfer Program	MassDOT maintains an active, FHWA-certified research program that supports planning, design, construction, operations, and maintenance activities.	FHWA certification; approval records; SPR Work Programs; project lists; program documentation	Research Section; FHWA Records
§420.107(b)	Research Management	Research Section Responsibilities; Research Project Management	The Research Section plans, manages, and administers all SPR-funded research, with defined roles for the Research Manager, Project Managers, Project Champions, and Principal Investigators.	SOPs; project assignments; tracking system records; meeting minutes	Research Section; Project Tracking System
§420.107(c)	Technology Transfer	Technology Transfer; Implementation of Research Findings	MassDOT supports technology transfer through LTAP, MTS, publications, training, TRID submissions, and other dissemination activities.	training materials; publications; conference materials	Research Section; Training Program Records
§420.107(d)	Program Evaluation	Research Project Evaluation and	MassDOT evaluates completed projects, monitors implementation	Evaluation reports; implementation tracking logs;	Research Section; Evaluation Files

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		Implementation; Monitoring the Implementation of Completed Projects; Five-Year Look Back	outcomes, and conducts retrospective reviews to assess long-term benefits and identify follow-up needs.	Five-Year Look-Back analyses; performance metrics
§420.109(a)	SPR Part II Work Program	SPR Part II Work Program	MassDOT prepares an annual SPR Part II Work Program documenting proposed research projects, technology transfer activities, and certification materials for FHWA review and approval.	Approved Work Programs; amendment documentation; submission records  Research Section; FHWA Submission Files
§420.109(b)	FHWA Approval	SPR Part II Work Program; Federal Highway Administration	FHWA reviews and approves the SPR Part II Work Program and any significant program changes to determine funding eligibility.	FHWA approval letters/emails; concurrence documentation; meeting records  Research Section; FHWA Coordination Files
§420.111(a)	Use of SPR Funds	Research Funding	MassDOT uses at least 25 percent of annual SPR funds for RD&T activities and applies the required federal-state matching ratios.	Financial reports; FMIS records; budget tracking; match documentation  Research Section; FMIS; Budget Files
§420.111(b)	Eligible Activities	Research Project Development; Contracted Research and Partnerships	SPR funds are used for eligible research, development, technology transfer, and participation in pooled	Statements of work; contracts; pooled fund agreements; eligibility documentation  Research Section; Contract Files; Procurement System



funds and cooperative research programs.

§420.113(a)	Research Procedures	Research Project Development; Research Solicitation and Problem Statements	The manual documents standardized procedures for identifying needs, developing problem statements, prioritizing projects, and selecting research topics.	Solicitation materials; problem statements; evaluation criteria; tracking logs	Research Section; Document Repository
§420.113(b)	Project Selection	Review, Prioritization, and Selection	Projects are selected based on defined criteria including impact, feasibility, urgency, cost, and alignment with agency objectives.	Scoring sheets; prioritization matrices; selection records; decision memos	Research Section; Selection Records
§420.113(c)	Contracting	Selection of Principal Investigators and Contract Execution	MassDOT contracts with universities, colleges, and consultants using established procurement and contract execution processes.	RFPs; procurement records; executed contracts/ISAs; selection justifications	Procurement System; Research Section Files
§420.115(a)	Reporting	Reporting Requirements; Draft and Final Reports	Principal Investigators submit required monthly, quarterly, draft, and final reports in accordance with contract and federal requirements.	Progress reports; draft/final reports; submission logs; FHWA confirmations	Research Section; Document Repository
§420.115(b)	Financial Management	Budget and Invoice Processing; Closeout Memorandum	MassDOT tracks expenditure, processes invoices, and formally closes	Invoices; payment approvals; budget tracking; closeout memos; audit records	Research Section; Contract Files; FMIS



projects to ensure fiscal accountability and compliance.

§420.117	Peer Exchange Peer Exchange	MassDOT conducts FHWA-required peer exchanges at least once every five years and documents findings and recommendations.	Peer exchange reports; agendas; participant lists; action tracking	Research Section; FHWA Coordination Files
§420.119	Certification SPR Part II Work Program; Peer Exchange	MassDOT certifies compliance with 23 CFR Part 420 through its approved research manual, peer exchange process, and FHWA coordination.	Certification statements; approved manual; FHWA correspondence; peer exchange documentation	Research Section; FHWA Records