

NCHRP 20-111J

Successful Practices for State Transportation Research Office's Complying with 2 CFR 200

Implementation Guide

Prepared for:

AASHTO Research Advisory Committee

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1. Lessons Learned

The Office of Management and Budget's (OMB) Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards (2 CFR 200) [Uniform Guidance] is the cornerstone of Federal grants and financial assistance. This cornerstone provides a number of key lessons and improvements for managing and monitoring research activities. This chapter of the report highlights the primary lessons learned from the research team's assessments on State Transportation Research Offices based on the literature, interviews, and survey materials.

In the project's interim report, we provided benchmarking to address the key findings from the interviews. Low, moderate, and high benchmarks were identified for several of these key lesson areas. This chapter of the final report highlights some of these benchmarked activities but also expands upon other key lessons. We have grouped these lessons into six areas:

- Implementation and Understanding of 2CFR200,
- Sub-recipient determination and monitoring,
- Project closeout and administration,
- Risk assessments,
- Training needs, and
- Implementation barriers.

1.1 Implementation & Understanding of 2 CFR 200

As noted previously, there is some confusion about the applicability of 2 CFR 200 with respect to Federal funds administered by state agency transportation research offices.

Common Observation: Research is unique

While there remains a desire to consistently apply similar contract language across a university, contracted research – either to another state institution (i.e. a University) or a private firm – generally is viewed as a different type of purchase. The close relationships between state institutions and other public entities clouds this purchase environment. Many states reported that they viewed their research programs and contracting as exceptions to general rules for contracting in their states. States reported that their own internal contracting processes made exceptions for choosing in-state researchers or limiting competition. Nearly 70.0% of agencies interviewed reported that their transportation research office has procurement processes that are unique from other areas of their agency. Some agencies described these processes; one research office reported contracting with public universities within the state including master agreements that are approved by the Deputy Attorneys General.

One of the larger goals of the Uniform Guidance was to eliminate some discrepancies in contracting for services and purchases. Uniform Guidance was designed to bring research efforts in alignment with other contracted processes. In practice, from our survey and the interviews, a number of individualized processes and protectionist approaches remain in transportation research.

Common Observation: 2CFR200 does not apply to us

As noted previously, FHWA has issued an interpretation that State Planning and Research funding does not automatically carry pass through determinations. Contracted research provides a vendor relationship. As such, the processes provided for in the Super circular can be viewed as best practices for research management and not mandates. There is a limited application for contract services versus pass through awards in most state agencies. There are certain circumstances where the state transportation research office may provide funding with very few stipulations. In these cases, the funding would likely have the requirements of 2 CFR 200.

Another agency reported that for requests for proposals (RFPs), a dispensation from the State Procurement Bureau states that they only need to go through the DOT's procurement process and that the research office can award contracts to any public entity without restriction. Others reported having a master contract with a given university to administer and manage research program contracts. This partnership includes contracting with researchers within the university system and well as researchers across the country outside of the university. Many agencies that reported having unique procurement processes included work with a research university within their state.

Common Observation: Missing or insufficient documentation for policies and procedures across several agencies

Very few research programs have detailed knowledge of the reporting or documentation requirements for 2 CFR 200. In fact, most research manuals do not address the specifics. Many transportation research offices work collaboratively with contracting or purchasing units to maintain compliance. When working with private consultants, many states noted that contracts are generally done through another branch that will follow its own procurement process.

Of the states interviewed, 83% reported maintaining a written policy for procurement standards and 70% report addressing conflicts of interest (COIs) within these procurement policies. Still, at least 17% of respondents reported that while they do address COIs, this may not be sufficient to address the issues arising from conflicts of interest.

Common Observation: The research community already manages research well

Current practices in place have worked for many years. A collegial relationship between performing organizations and the state DOTs has emerged as a strong model for research management. Improved tools for tracking and monitoring research have also emerged as performance enhancers. The overall process has led to some improved practices. The Ahead of the Curve research management-training program and the AASHTO RAC mentoring process provide valuable resources for efficient and effective research management.

Commonality: There is a lack of data collection as it relates to 2CFR200

Data collection efforts, aside from small efforts associated with performance indicators and measurement is not a part of the research management culture (i.e., research managers and their supervisors do not rely broadly on data to make decisions) so therefore there is little collective

information on research delivery, compliance with established policies, no-cost time extensions, etc. There appears to be a lack of interest in collecting and storing data for these purposes.

Commonality: States are planning and building systems to collect information

Overlooking data opportunities while overemphasizing liabilities of this information is a common concern among states. Assessing research projects for their implementation success and identifying return on investment is a common theme in state agencies. However, there is limited effort currently to collect data and information – although this is rapidly changing as data becomes more accessible, and useful in management decision making.

1.2 Subrecipient Monitoring

Common Observation: Risk and Data Reviews are not common in the transportation research management community

Figure 1 shows states' use of risk assessments on sub-recipients and Figure 2 shows the frequency of completion of data quality reviews. Risk assessments and data reviews are not common features in research programs.

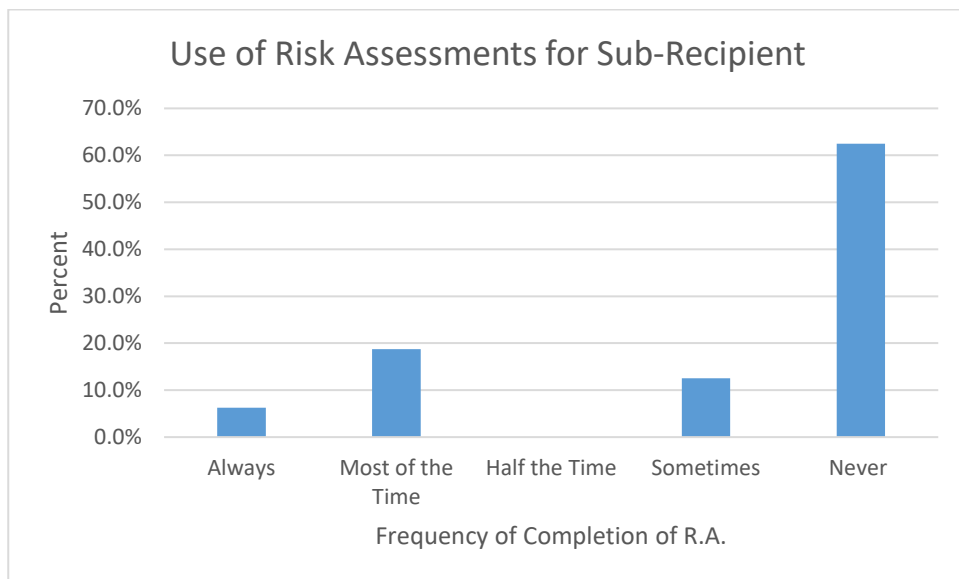


Figure 1: Frequency of Use of Risk Assessments on Sub-Recipients

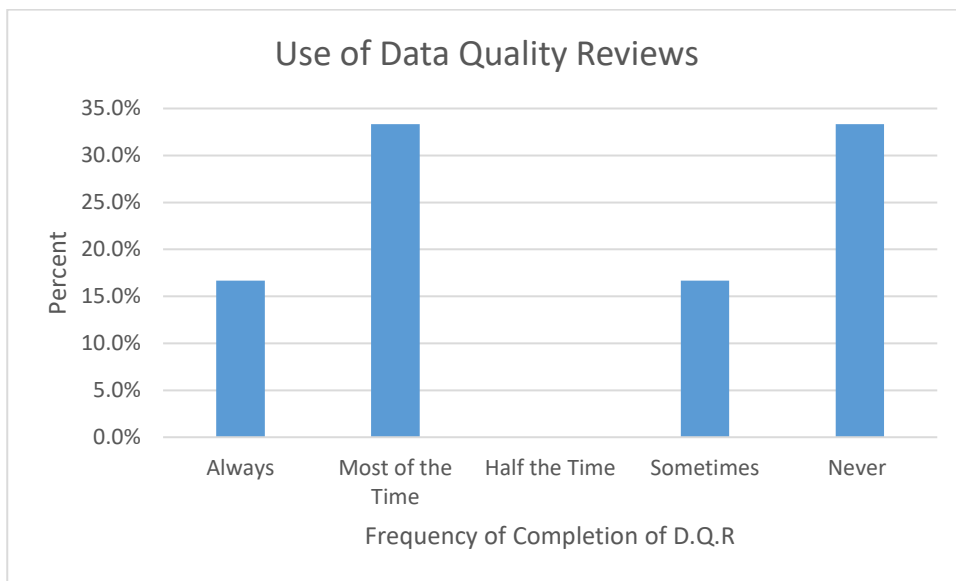


Figure 2: Frequency of Use of Data Reviews

In addition, reporting for sub-recipients are instituted approximately 75% of the time and site and desk reviews have been used by 37% of agencies interviewed. Only 20% of respondents reported having completed a compliance audit on a sub-recipient and only 25% of those surveyed reported having developed corrective action plans for use of one or more sub-recipients. States still have varied approaches to sub-recipient monitoring including requiring funding recipients to become licensed vendors as well as requiring completion of quarterly progress reports and reviewing data collected.

1.3 Project Closeout & Administrative Topics

A majority of states reported completing project closeout activities within 90 days of project completion. However, there remain several concerns with project closeout and administration in the context of 2 CFR 200.

Common Observation: Research is unique and can't be forced into a schedule

While it may seem repetitive, many subjects for this research noted that research cannot (and in some cases should not) be forced together with other acquisition or purchasing techniques and processes. Among the primary lessons that emerge from the interview conversations and survey is that many research managers view the unique nature of research as a feature that does not allow standardized processes for closeout and administration. Several lessons and common themes emerged along this line. However, there is a concurrent desire to have standardized approaches for contracting regardless of the subject.

Commonality: Project cannot be closed out if the university is waiting on invoices

One common cited problem with project closeout is that performing organizations are not typically responsive for final invoicing. As such, there is often a lag between the final report acceptance and final invoicing by university partners. Some states did report this was also an issue with private research organizations.

Common Observation: Processes are not too cumbersome to close in 90 days

As states are asked to close out projects more rapidly, many have made substantial improvements in closing their projects much more quickly. This approach has allowed the state agencies to effectively establish streamlined processes to ensure that paperwork and accounting issues are addressed within 90 days of the project's completion.

Commonality: FHWA approves our effort

Many states identified concurrence with the Federal Highway Administration processes as an indicator that their internal processes were sufficient. Division offices have generally accepted state research office procedures. The New Jersey peer exchange and review findings are the only published case where division recommendations were offered to make process improvements.

Common Observation: Our research manual provides for additional technical editing and readability enhancements

Some state agencies identified delays associated with advanced technical editing, implementation assistance, and additional technology transfer product development as potential barriers to administrative efficiency measured purely in terms of project time to completion.

Observation: There is inconsistency among the states with respect to closeout efforts

Several states noted that they have been offering multiple extensions on project activities. Some states reported that their PIs and project managers do not receive any closeout guidance, but that they are made aware of the final deliverables of the project. Others reported that no specific guidance about closeout exists, but some states are updating procedures and intend to address this in the updates.

Several practices ensure these guidelines include clear direction on addressing project closeout and time extensions. In particular, the following items are featured in the guide:

- Clear kickoff meeting procedures;
- Extend 6 month buffer on contracts;
- Document processes for no cost time extensions;
- Identify reasonable expectations for deliverable based invoicing;
- Establish progress reporting; and
- Follow through on penalties for late products.

1.4 Risk Assessment and Processes

Many state agencies are looking closely at risk management as a practice. Very few agencies conduct risk assessments or provide for risk-based approaches to project management as noted in the subrecipient monitoring information above.

Several risk assessment tools may be useful, depending upon the risk assessment. No listed tool is required nor is the list of tools available for risk and project management all-inclusive. Determination on which tools to use is a matter of judgment for the pass-through entity based upon its assessment of risk. (200.331(e))

Among the strategies that are included in the guide are:

- Providing subrecipient training and technical assistance;
- Performing on-site reviews; and
- Arranging for agreed-upon-procedures engagements under 200.425, Audit services [in Cost Principles].

These processes help minimize risk and develop a better approach to overseeing complicated projects and programs.

1.5 Training Needs

As with most change management activities, there are training and workforce development needs that should be considered. Some identified training needs included:

- Applicability of contracted research for compliance with 2 CFR 200;
- Definitions of terms and key tenets; and
- Managing throughout the lifecycle.

A lack of inter-department coordination between procurement, research, and consultant services, etc. provides other proof for training and development needs.

1.6 Barriers

The research team identified several barriers to enhanced implementation of 2 CFR 200 principles.

Barrier 1: General lack of interest in subject

Many of the state agencies have not viewed this as an impetus for substantial change. Many universities have established practices to remain compliant, but not because of state transportation funding, but rather as they are the recipients of other Federal grants.

Barrier 2: State IT Systems are not set up to track and monitor progress

Current practices in most states do not include project tracking activities nor do they use sophisticated database systems. As such, the triggers for certain practices are not well defined.

Barrier 3: Expectation that others in state agency will be responsible for compliance

Procurement, contracting, and other business units seem to be the preferred channels for administrative and fiscal compliance for the research enterprise.

Barrier 4: Legacy environments

Research has been engrained in standardized processes for many generations. It revolves around a partnership between state DOTs and universities. These legacy models provide some start differences with emerging regulations. Some examples include commonly allowable NCTEs, policies on travel and non-allocable costs, and slow invoicing and project closeout.

These barriers are presented as obstacles that a state may need to address to apply the principles and practices that 2 CFR 200 promulgates.

2. Guidance for State Transportation Research Offices

This subchapter provides a draft guide for State Transportation Research Offices. It is based on the findings of the project and includes the lessons learned and strategies developed by panel members. The research team has provided a general outline, approved by the project panel, for the guide.

2.1 Outline

The following outline was proposed for the guide. The remaining part of this chapter follows this guide.

Introduction & How to Use This Guide

Accountability Basics and Performance Measurement

- Performance Accountability and Federal Awards
- 2 CFR 200 overview and history
- Research Life Cycle
- Recent Developments, including Trump Administration modifications

Approaches to Performance Measurement

- Implementing a Performance Measurement System
- Data Collection and Analysis
- Reporting Performance
- Considerations for Performance Measurement

Procurement Focused Activities

- Source Selection and Identification
- Terminology and Application: Allowable, allocable, reasonable, permissible, necessary, and consistent

Agency, Program, and Award Planning

- Agency Responsibilities for Developing Performance Measures
- Aligning Program Goals, Objectives, and Measures to Agency Goals and Priorities

Pre-Award Requirements

- Pre-Award Performance Measurement Requirements Under 2 CFR 200
- Risk Assessment and Evaluating Recipient Capabilities

- Requirements for Pass-through Entities

Post-Award Requirements

- Post-Award Requirements in 2 CFR 200
- Time Extensions and Period of Performance
- Monitoring Responsibilities for Federal Awarding Agencies and Pass-through Entities
- Corrective Actions
- Auditing Performance Measurement and Reporting Systems

Closeout and Post-Closeout Requirements

- Closeout Requirements
- Recordkeeping and Post-Closeout Requirements

Glossary of Terms & Resources and Training Materials

2.2 Introduction and Purpose

This guide is designed to provide general direction and preferred practices to state transportation research offices for the successful management of federally funded projects. It provides roles and responsibilities of parties and describes regulations and requirements of federal grants. This guide designed to remain consistent with FHWA memoranda.

2.3 Fundamentals to Improve and Enhance Implementation

As with most efforts to implement new approaches and strategies, there are several things that an agency can do to facilitate effective implementation.

1. Consult with relevant stakeholders.
 - a. This step allows a research manager to develop strategies or policies that reflect multiple viewpoints. It also provides some sense of ownership for the research monitoring, reporting, and related activities.
 - b. This consultation will also allow a research manager to advise subrecipients of requirements imposed on them by federal laws, regulations, and the provisions of contracts or grant agreements as well as any supplemental requirements imposed by the grantee.
2. Tailor policies to the needs of your research office, including recognition of existing legacy practices and norms. The implementation of improved research management practices cannot be viewed as a one size fits all approach. Ultimately, the policies are not cut and paste jobs and are not lifted straight from a generic manual.
3. Document policies and procedures in writing and make them available to your entire workforce. Without a written and published guidance document, there is no clear and

consistent approach among all affected parties. The documentation effort also allows for easier interpretations when conflicts arise.

4. Provide training and workforce succession to both internal staff and your key performing organizations. Complying with these changes is likely to modify or create new business practices or management processes. At a minimum, new project tracking and reporting is required. Providing training also allows for new employees in the unit to quickly ascertain corporate culture and expectations.
5. Review policies periodically. As with many implementation practices, the ability to adopt continuous improvement philosophies creates improved practices and processes.
6. Enforce consistently. A research manager must ensure that a subrecipient or non-federal agency expending \$750,000 or more in federal awards during their fiscal year has met the audit requirements of 2 CFR 200 for that fiscal year in accordance with the provisions of Subpart F—Audit Requirements. They also need to be consistent in operations approaches with all sub-recipient partners. While not forbade in the 2 CFR 200 approach, several regulatory approaches have been used.
7. Act according to the new approaches. While monitoring and enforcing can be achieved without changing practices, this guide highlights the value in new approaches and practices that several states have adopted. The charge for research managers is to adopt new practices that help improve their own state programs, but also change the way vendors and contractors operate as well.
8. Monitor the activities as necessary to ensure that research funds are used for authorized purposes in compliance with laws, regulations, and the provisions of the contractor or subrecipient agreement and those performance goals are achieved.
9. Consider routine updates as needed to continually improve research program management practices.

2.4 How to Use this Guide

This guide is intended to help states comply with the 2 CFR 200 associated principles. The guide does not replace any FHWA direction or interpretation, but rather provides information for research managers to effectively align their agency practices to these policies.

This guide is divided into four primary chapters. First, there is some discussion on *accountability* basics, including an overview of the research life cycle and its importance related to 2 CFR 200. This first chapter also provides information on voluntary activities to achieve the accountability measures the government requests under Uniform Guidance.

The second chapter addresses *performance management* practices. This chapter provides details and steps to implement a performance and data-driven decision making process. It also provides general considerations for establishing performance measures associated with the TRO.

The third chapter addresses *procurement* practices and highlights the unique elements a transportation research agency must coordinate closely with other business units in the state transportation agency.

Fourth, the guide provides *agency, program, and project management* tenets. This chapter highlights general best practices for research project management, as well as highlighting practices targeting compliance and quality management. Both pre-award and post-award discussions follow, covering a range of options for addressing requirements for reporting, monitoring, and correcting projects. These activities are followed by project closeout best practices.

For each related tenet, the guide provides a general overview and description, some preferred practices or recommended processes identified in the literature or through other research, and implementation challenges that have emerged in that task area. The intent is to provide some level of resources and understanding for the implementation and compliance with 2 CFR 200 tenets.

The guide concludes with a basic glossary and training resources available.

2.5 Getting Started

It is recommended that state TROs use benchmarking (as shown in Table 1) as the first step to assessing their current progress. This is derived directly from the work performed to synthesize key principles, with the goal being to assess the maturity of each implementation effort in adhering to these 2 CFR 200 principles.

For each research lifecycle management component, several concepts have been identified to provide ideal implementation. We have categorized responses that primarily focus on:

- Completing and developing risk assessment practices for institutions of higher learning and other research performing organizations;
- Developing realistic project schedules to identify expected end dates and periods of performance;
- Project closeout activities to address timely invoicing and contract completion,
- Data collection and reporting information;
- Practices to ensure subrecipient monitoring;
- Procurement concerns and “sister-agency” expectations;
- Report project terminations; and
- Better linkage of financial information to research performance measurement and outcomes.

Table 1: 2 CFR 200 Benchmarking Assessment

2 CFR 200 Component	Low Benchmark	Moderate Benchmark	High Benchmark
Risk Management	No risk-based analysis is provided	Proposal review considers past performance Technical panels are tasked with review	Risk assessments on subrecipients Penalty for high risk performing organizations
Project Scheduling	Regular award of NCTE Unrealistic scheduling		All data stored Data stored in a functional data lake architecture Data stored as long as possible to support current and future analyses Data stored in a well-known, modern format
Closeout	Reports arrive on final day of contract Manual process for coordinating financial matters No documentation of processes	Automatic triggers upon receipt of final deliverables Inclusion in research manual or contract boilerplate	6 month lead times Expectations provided in kickoff meeting and separately documented
Data Collection/ Management	Little or no data collected Data collected is not relevant No data quality assurance performed No documented data collection procedures	Some, but not all, data collected Data collected is somewhat relevant Documented procedures are infrequently reviewed and updated	Most or all desired data is collected Data collected is used for decision making and performance tracking Process documentation is reviewed and updated
Reporting	Minimal reporting requirements Minimal time and effort used for review		Quarterly reports, supplemented by regular project reporting throughout the life cycle Financial progress monitored against research performance

Subrecipient Monitoring	No documented processes Reliance on self-monitoring		Regular review of subrecipients including site and desk reviews
Project termination	No project terminations.	Limited willingness to discontinue projects.	Accountability measures include termination activity
Linking Financial Information to Research Outcomes	No connection between financial tracking and research performance		Financial reporting included in progress and final closeout documentation Strict adherence to budget parameters as possible Good collaboration between financial offices and research unit
Training Needs	None identified. None offered.		Training regularly offered Training provided for research customers and research managers
General Advice	No documentation maintained No communication or outreach to performing organizations. No communication with division offices	Limited FHWA-division office communication	Developed relationships and network with principal investigators High level of interaction and familiarity with division office staff

2.6 Accountability Basics and Performance Management

2.6.1 Performance Accountability and Federal Awards

Performance measures provide useful baselines for assessing accountability. Many components of the Federal Government Performance Plan are required by the Government Performance and Results Act Modernization Act of 2010. The legislation creates a more defined performance framework by prescribing a governance structure and by better connecting plans, programs, and performance information. The law requires more frequent reporting and reviews (quarterly instead of annually) that are intended to increase the use of performance information in program decision-making. Further the implementation of the GPRA Modernization Act allows for a rebalance of compliance efforts with a focus on results for the American taxpayer; standardization of grant reporting data, and improved data collection to increase efficiency, promote evaluation, reduce reporting burden, and benefit the American taxpayer. Ultimately, a performance-based approach will provide a means to measure progress and share lessons learned and best practices to inform future efforts.

2.6.2 Research Life Cycle

The transportation research lifecycle includes several elements that work together to provide better, and UG affects every stage of the lifecycle. The Research Life Cycle is emphasized to provide clear categories where different activities are completed under the purview of the State TRO research manager. 2 CFR 200 influences activities and requirements of all components.

Identify

At the identification stage, principles associated with project selection under 2 CFR 200 and the efforts related to conflicts of interest need consideration.

Prioritize

During the prioritization stage, research managers need to be aware of conflicts of interest, expectations for pass-through versus contractor relationships, and associated items.

Select

Procurement and contracting provisions are represented in this stage. Processes need to be competitive or justified. If entities are determined to be pass through relationships, a host of additional selection criteria must be documented.

Research

Monitoring performance, payments, project closeout, and periods of performance align with these lifecycle elements.

Implement / Technology Transfer

As products move from research into practice, additional information on the ownership of intellectual property, project closeout, vendor selection, and performance reports is collected.

Measure

Identification of data collection and performance indicators is critical to the research and innovation lifecycle. While many of these elements have been set aside by the current administration, the identification of the right indicators and measures remain important for judging the overall health of the research program.

Evaluate

Overall performance based planning activities are considered for program quality improvement and continuous learning.

All of these elements are discussed in detail later in this guide.

2.7 Approaches to Performance Management

2.7.1 Implementing a Performance Measurement System

Description

There are currently no uniform metrics collected by a state TRO to assess performance of the research enterprise. In order to fully implement a performance measurement system, a state TRO needs to adopt overall performance reporting, monitoring, and management practice. A first step is to identify what data will be collected – and determine how that data fulfills broader agency goals and objectives. The identification of data to monitor and measure against objectives to achieve is a vital element of a performance measurement practice. Performance measures benchmark accomplishments against historical or international measures and advocate for particular actions. These measures show how programmatic improvement or decline occurs.

Example Practices

Nearly all state TROs have begun to collect performance measurement data. Data is collected to reflect how processes are working, and that information is used to drive decisions over time. Typically, performance is measured and compared to organizational goals and objectives. Results of performance measurement provide information on how an organization's current programs are working and how its resources can be allocated to optimize the programs' efficiencies and effectiveness.

Standard transportation research performance measures are divided into five different types:

Outcome: extent to which research project or product achieves desired results such as cost savings or reduced crashes.

Output: count the number of deliverable units related to a specific attribute (number of research projects that improve safety and the number of products from research projects that positively affect environment)

Resource allocation: capture the deployment of agency dollars, such as percent of research funding awarded to minority contracts or number of research projects being funded in attempts to improve safety

Efficiency: rates or ratios, which compare what is accomplished to the effort, expended (percentage of research products being implemented by the agency and the percentage of research projects being completed within budget).

Stakeholder: gauge the involvement of customers in the research process as well as their level of satisfaction. Percent of satisfied customers, number of participating agency personnel, number of project needs statements submitted are some examples.

The goal is to balance the performance measures used across the five types. A strong program will have measures across all the areas.

Preferred practice: use performance measurement to assess how to track the progress of strategies in place and use performance management to understand how to manage the strategy put into place.

Implementation Challenges

It is important to start with developing a common language and discussion. Performance *measurement* and performance *management* may sound similar, but while they are complementary to one another, they are entirely separate strategic practices. Performance *measurement* deals specifically with performance *measures*. These are the quantitative indicators a research manager puts in place to track the performance (or progress) of research program work against your strategy. Measures provide important information about the research unit's produces, services, and processes and tools to help understand, manage and improve.

2.7.2 Data Collection and Analysis

Description

State TROs collect a variety of data on the health and general direction of their programs. This data can include information on progress reporting, budget expenditures, personnel hours expended, implementation statistics, and a range of other leading and lagging performance indicators. Most of the data collection requested under Uniform Guidance is related to audit information.

Example Practices

States with a mixture of leading, lagging, and diagnostic measures and indicators can provide regular updates on the health of their overall program and its ability to comply with performance management practices espoused in 2 CFR 200. Leading data is focused on the future and measure the input that should be introduced to achieve better results. Lagging measures look at programmatic outputs. For example, past due research deliverables are an example of a lagging measure. Lagging measures tell stories about the current state of your research deliverables, but don't tell you how to change this state. Diagnostic measures help address internal programmatic issues (and not temporally focused). These diagnostic indicators include things like internal customer satisfaction and specifically 2 CFR 200 practices.

Preferred practice: use a variety of data measures and indicators in order to assess program healthy and compliance. Different types of data such as leading, lagging, and diagnostic measures allow for more varied analyses both internally and externally.

Implementation Challenges

As noted previously, OMB set aside many of the data collection and reporting requirements associated with 2 CFR 200 implementation. While many states proceed with data collection, implementation of specific performance indicators associated with the 2 CFR 200 compliance has been slow. In addition, there is a cost of compliance associated with collecting and maintaining regular inputs like this. Without the requirement to do so, implementation proceeds less rapidly.

2.7.3 Reporting Process

Description

Non-Federal entities are required to submit performance reports at the interval required by the Federal awarding agency or pass-through entity to inform improvements in program outcomes and productivity. Intervals must be no less frequent than annually nor more frequent than quarterly except in unusual circumstances, for example where more frequent reporting is necessary for the effective monitoring of the Federal award or could significantly affect program outcomes. Annual reports must be due 90 calendar days after the reporting period; quarterly or semiannual reports must be due 30 calendar days after the reporting period. If a justified request is submitted by a non-Federal entity, the Federal agency may extend the due date for any performance report.

In addition, non-Federal entities must submit performance reports using OMB-approved standard information collections when providing performance information. This information includes:

- (i) A comparison of actual accomplishments to the objectives of the Federal award established for the period. Where the accomplishments of the Federal award can be quantified, a computation of the cost may be required if that information will be useful.
- (ii) The reasons why established goals were not met, if appropriate.

- (iii) Additional pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit costs.

This reporting requirement allows for effective and regular controls for progress monitoring.

Example Practices

All of the state DOT TROs have some progress-reporting requirement. While some require monthly progress reports, the information contained in the reports is essential. The contractual requirement to submit this documentation regularly allows for mid-stream and interim adjustments as needed to mitigate any potential schedule slippage.

Preferred practice: regardless of the time periods addressed in progress reporting, the project manager needs to communicate directly with the performing organization principal investigator to address concerns or questions and circumvent potential disruptions to schedule or budget.

Implementation Challenges

Progress reporting is the research manager's opportunity to hold researchers accountable. Without a regular and mandated process, project performance and timeliness slips. Shifting to this process requires some organizational change and willingness to adopt new practices.

Progress reporting can be a time sink for increasingly stretched research customers in the agency. If reporting and accompanying approval processes are too frequent or cover too many projects, the value of reporting regularly is diminished.

2.7.4 Considerations for Performance Measurement and Management

Description

FHWA defines Transportation Performance Management as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals.

In short, Transportation Performance Management:

- Is systematically applied and is a regular ongoing process;
- Provides key information to help decision makers allowing them to understand the consequences of investment decisions across transportation assets or modes;
- Improving communications between decision makers, stakeholders and the traveling public; and
- Ensuring targets and measures are developed in cooperative partnerships and based on data and objective information.

It includes continual improvement throughout the life cycle.

Example Practices

Superior performance starts with project kickoff meetings. Well-defined project kickoff meetings help establish expectations, and can be used to address shortcomings on project plans/responses to RFPs. In addition, a well-designed and structured project kickoff meeting helps engage all parties early on to prevent surprises as the projects proceed.

Performance management continues throughout the life cycle and addresses the Plan-Do-Check-Act approaches as well. Activities can be well planned and measures selected to reveal programmatic success.

Preferred practice: use kickoff meetings as a jumping off point for establishing expectations, questions, and concerns about project plans and can help to engage stakeholders early on in the project progress.

Implementation Challenges

Time constraints, participant availability, and external obligations are the biggest implementation challenge. Support from executives is mandatory for a move to a performance-based program.

2.8 Procurements and Cost Principles

2.8.1 Source Selection and Identification

Description

Procurement provides for the transportation research office or state agency purchasing procedures. Procurement is a critical component of federal cost principle requirements. To address Uniform Guidance, all procurement procedures must be fair, open, and well documented. All purchases must follow specific written procedures and should be approved by an appropriate responsible party.

Following proper procurement protocol promotes cost reasonableness and ensures that research services are purchased in a way that is fair and transparent. A state TRO should require Notices of Funding Availability, requests for proposals, or formal sealed bids.

The general procurement standards under 200.318 include the following key expectations:

- Full and open competition is mandatory;
- Conflict of interest and procurement policies in place; contractors that develop draft specifications, requirements, statements of work and invitations for bids or proposals must be excluded from bidding. Scientific collaborations on research and development projects are generally not eliminators but should be disclosed;

- Subrecipients must avoid purchase of unnecessary or duplicative items; and
- The transportation research office must maintain proper documentation and records regarding procurements.

In practice, TROs must ensure their procurement activities are completed using permitted approaches. The following rules apply:

- Micro purchases < \$3,000;
- Small purchases <\$150,000;
- More than \$150,000 (primarily construction activities or larger installation projects): Competitive sealed bids with formal advertising;
- More than \$150,000 (general procurement): Competitive proposals; and
- More than \$150,000: Non-competitive proposals or sole source.

Most research will fit into either the small purchases or competitive proposal categories. When using the non-competitive proposal or sole source options, TROs will need to provide a well-documented justification for not seeking competitive proposals.

Example Practices

For both small purchases and more substantial procurements, grantees and sub-recipients must have written policies and procedures that describe how their organizations will procure goods and services, what information they will require when receiving a price or rate quote, and who will have approval authority. The agency must document an adequate number of price or rate quotations from qualified source when using small purchases.

State TROs can widely advertise availability of funding and solicit proposals.

Preferred Practice: Document potential conflicts of interest; collaborations can potentially include conflicts of interest, which are mitigated by the disclosure of these collaborations pursuant to agency requirements and to document this material.

Implementation Challenges

There are many concerns with respect to procurement.

The following situations are considered restrictive and as such, should not be used in the procurement:

- Placing unreasonable requirements on firms in order for them to qualify to do business;
- Requiring unnecessary experience, unreasonable insurance, or excessive bonding;
- Noncompetitive pricing practices between firms or between affiliated companies;
- Noncompetitive contracts to consultants that are on retainer contracts;
- Organizational conflicts of interest;

- Specifying a “brand name” product instead of allowing “an equal” product to be offered; and
- Any arbitrary action in the procurement process.

Subrecipients may contract for services that cannot be provided by staff employed by the Recipient. Generally, these services are for a short-term period and provide a specific and identifiable product or service. Subrecipients are responsible for ensuring their contractors/consultants comply with applicable federal regulations and requirements. Contracting out must not affect the Recipient’s overall responsibility for the management of the project, and the Recipient must reserve sufficient rights and controls to enable it to fulfill its responsibilities for the project. Recipients must establish and follow a documented procurement policy, which conforms to applicable federal law and reflects applicable state, local and tribal laws and regulations. Reference 2 CFR 200.318 for additional information on general procurement standards. Competitive Process Federal regulations require all procurement transactions be conducted in a manner providing full and open competition and consistent with the procurement standards of 2 CFR 200.317 – 200.326.

Some implementation challenges occur because of fear for disrupting the status quo. Non-Federal entities may conduct noncompetitive proposals (or, “sole source” procurement), by procurement through solicitation from only one source when one or more of the following circumstances apply:

- The item or service is available only from a single source;
- The public exigency or emergency for the requirement will not permit a delay resulting from competitive solicitation;
- DOJ or the pass-through entity expressly authorizes noncompetitive proposals in response to a written request from the non-Federal entity; or
- After solicitation of a number of sources, competition is determined to be inadequate. Sole Source procurement should be used only when use of competitive solicitation procedures like sealed bids, or competitive proposals are not applicable to the requirement or is impracticable. All sole source procurements in excess of the simplified acquisition threshold must receive prior approval from the grant-making component before entering into the contract.

Adhering to all elements of the list does provide additional challenges for this project.

2.8.2 Terminology and Application

Description

2CFR 200 does not change or modify any existing statute or guidance otherwise based on any existing statute. It does however, define and revise certain cost principles and terms used in award management. Allowable costs (for all non-Federal entities, other than for-profit entities and hospitals) are those costs consistent with the principles set out in the Uniform Guidance 2 CFR § 200, Subpart E, and those permitted by the grant program’s authorizing legislation. To be

allowable under Federal awards, costs must be reasonable, allocable, and necessary to the project, and they must also comply with the funding statute and agency requirements. For more information about specific factors that affect whether costs are allowable, refer to 2 CFR § 200, Subpart E, including the list of specific items of cost in 2 CFR § 200.420 through 200.475.

Example Practices

For the most part, state TROs have been effective at ensuring expenditures on their projects are allocable, necessary, allowable, reasonable, and consistent. The ability to provide firm parameters on allowable costs helps maintain a healthy relationship with contractors and subrecipients.

A State TRO must demonstrate strong internal controls. In accordance with 2 CFR 200.302, state agencies must have financial management systems in place that include written procedures for ensuring all expenditures conform the Uniform Guidance Cost Principles.

Purchases must meet all criteria to be considered compliant. Specific definitions of terms are provided in the Glossary. Table 2 provides general cost principles and changes or clarifications under UG.

Table 2: Cost Principle Definitions and Changes from Prior Circulars

Reference	Title	Additions or Changes from past circulars
200.425	Audit Services	Costs associated with audits not conducted in accordance with Single Audit requirements and audits that fall below the Single Audit threshold are unallowable.
200.428	Collection of improper payments	The costs incurred by a non-Federal entity to recover improper payments are allowable as either direct or indirect costs, as appropriate.
200.430	Compensation – personal services	Charges for employee compensation must be based on records accurately reflecting work performed; however, no specific types of documentation (e.g., personnel activity reports) are required.
200.432	Conferences	Requires conference hosts/sponsors to ensure that conference costs are appropriate, necessary and managed in a manner that minimizes costs. The costs of identifying, but not providing, locally available dependent-care resources are allowable.
200.433	Contingency Provisions	Allowable in limited circumstances, with appropriate methodology used to create estimates, and must be consistent with the cost principles and other requirements
200.435	Defense and prosecution of criminal and civil proceedings, claims,	Language streamlined for consistency and now specifically references Whistleblower Protection Act

	appeals and patent infringements	
200.436	Depreciation	Change to GAAP standards. Donated assets valued at time of donation and may be depreciated or claimed as matching but not both. Eliminates the use allowance method of recovering costs associated with recovering building costs
200.437	Employee health and welfare costs	Employee morale costs are unallowable
200.438	Entertainment	Unallowable unless costs have a programmatic purpose and are authorized in the approved budget for the Federal award or costs have prior written approval from the Federal awarding agency.
200.441	Fines, Penalties, and other settlements	Added Tribal law violations. Now states that “alleged violations” and not just “violations” are unallowable
200.449	Interest	Non-Federal entities may be reimbursed for financing costs associated with patents and computer software.
200.453	Materials and supply costs	Some minor additions
200.455	Organization Costs	Unallowable to all organizations unless specific approval by the awarding Federal agency
200.460	Proposal costs	Changed the language that allowed for other than indirect treatment of these costs, though rule remains that these costs should normally be treated as indirect.
200.461	Printing	Specifies allowable costs of an award
200.463	Recruiting	Clarifies that special emoluments, fringe benefits, and salary allowances that do not meet the test of reasonableness or do not conform to the established practices of the entity are unallowable
200.464	Relocation costs	Repayment of funds is required if employee resigns for reasons within the employee’s control within 12 months after hire date
200.465	Rental Costs	Revises policies specific to home office space
200.474	Travel costs	Provides that temporary dependent care costs that result directly from travel to conferences and meet specified standards are allowable.

These changes should be reviewed against existing policy and practices.

Implementation Challenges

Understanding the application of specific terms and cost principles is the responsibility of both the performing organization and the state TRO. There are a number of definitions that are refined or new in the move from the individual circulars to the updated UG. State TRO managers should ensure that the cost principles are addressed in research proposals and execution of project activities.

2.9 Agency, Program, and Award Planning

2.9.1 Accounting Responsibilities

Description

In order to properly maintain accountability and assure that funds are used for the transportation research purposes intended, a subrecipient needs to have certain policies and procedures in place that address budget, internal, and accounting controls. It is the responsibility of the state transportation research office to ensure these controls are in place. Accounting controls address the processes in place to track what money is taken in and what money is spent. Having accurate and comprehensive documentation of revenue and expenses is a regulatory requirement, and it is also a necessary part of a subrecipient's organizational responsibilities.

All accounting efforts should follow Generally Accepted Accounting Principles (GAAP). These uniform accounting standards exist to ensure consistency and transparency, and can be understood readily by many. Most basic accounting software will meet these minimum standards; however, most transportation research performing organizations will have extensive project management systems. Accounting records for funds expended must be supported by original source documentation.

Example Practices

To meet regulatory requirements, a sub-recipient organization's accounting system should include at least the following elements:

- Chart of accounts: A list of account names and the numbers assigned to them
- Journals: A chronological listing of when funds were received, in what amounts, and from what sources and how much was paid, when, and to whom payment was made.
- Payroll: A chronological listing of payroll amounts, benefits and payroll taxes
- General ledger: A comprehensive depiction, with details by account, of the activities recorded in each account of an organization. Entries transferred to the general ledger are cross-referenced to the applicable subsidiary journal or supporting documentation to permit the tracing of any financial transaction, thereby creating an 'audit trail.'

CONTRACTING PRINCIPLES

Contracting Do's

1. Provide for full and open competition consistent with the Procurement Standards.
2. Develop and incorporate clear and accurate descriptions for technical requirements, specifications, statements of work, or other required documents used in procurement transactions.
3. Ensure any prequalified lists of persons, firms, or products used in acquiring goods and services are current and include enough qualified sources to ensure maximum open and free competition consistent with the Procurement Standards.
4. Only make procurement contracts to responsible contractors that can perform successfully in accordance with contract terms and conditions.
5. Maintain records sufficient to detail the history of any procurement action.

Contracting Don'ts

1. Don't include unreasonable (or otherwise unjustifiable) requirements that would be restrictive of competition.
2. Don't require unnecessary experience or other unnecessary criteria or elements that cannot be justified or supported with procurement procedures and the Procurement Standards.
3. Don't allow for, engage in, or facilitate noncompetitive pricing between firms or affiliated companies.
4. Don't forget to include all applicable contract provisions described in Appendix II to Part 200 in any procurement contracts.
5. Don't require unreasonable time frames or performance.

Implementation Challenges

Several implementation challenges apply to smaller performing organizations. In general, states did not report issues with university partners and other consultants being unable to meet the provisions under this section.

2.9.2 Aligning Program Goals, Objectives, and Measures to Agency Goals and Priorities

Description

Agency Priority Goals are a performance accountability structure of the GPRA Modernization Act that provides agencies a mechanism to focus leadership priorities, set outcomes, and measure results, bringing focus to mission areas where agencies need to drive significant progress and change.

Example Practices

APG statements are outcome-oriented, ambitious, and measurable with specific targets set that reflect a near-term result or achievement agency leadership wants to accomplish within approximately 24 months. In some instances, agencies are also utilizing the APG structure to drive progress and monitor implementation of agency management reforms and priorities, a modification of the traditional APG statement format.

Implementation Challenges

There are a number of challenges that are evident in aligning TRO goals with overall agency goals. One such example is Copyright and Intellectual Property Consideration.

Under the Freedom of Information Act (FOIA), the awarding agency may be required to publicly release certain research data related to published research findings. In such cases, the awarding agency must request, and the non-Federal entity must provide to

the awarding agency, within a reasonable time, the research data requested. Research data means the recorded factual material commonly accepted in the scientific community as necessary to validate research findings, but not any of the following: preliminary analyses, drafts of scientific papers, plans for future research, peer reviews, communications with colleagues; trade secrets, commercial information, materials necessary to be held confidential by a researcher until they are published, or similar information which is protected under law; and personal and medical information and similar information the disclosure of which would constitute a clearly unwarranted invasion of personal privacy, such as information that could be used to identify a participant.

2.10 Pre-Award Requirements

2.10.1 Pre-Award Performance Measurement Requirements under 2 CFR 200

Description

A number of pre-award practices are provided together in this section of the guide. The pre-award practices stretch from activities cost analysis to project selection efforts.

Example Practices

Typical approaches to pre-award requirement include financial review to ensure that recipients and contractors are financially capable and have the financial integrity to administer Federal funds in a research project. As part of this review, a State TRO might take all of the following steps:

- Perform a cost analysis of the project
- Obtain cost breakdowns, verify cost data, evaluate specific elements of cost, and examine data to determine the necessity, reasonableness, allowability, allocability, and appropriateness of the proposed cost.
- Review the current indirect cost rates and if the indirect cost rate has expired, the rate must be renegotiated. A current negotiated cost rate may be extended for up to four years. Once the cognizant agency has approved the extension, the rate must be used for the entire agreed-upon time period. No further negotiations regarding indirect cost rates may occur until the extension has expired. At the end of the extension period, a new indirect cost rate must be negotiated. Subsequent one-time extensions for up to four years are permitted if a renegotiation is completed between each extension request.
- Determine the adequacy of the subrecipient's accounting system and operations to ensure that Federal funds, if awarded, will be expended in a reasonable manner.

Preferred practice: for non-Federal entities that have not received an award within the past 3 years be subject to additional financial review as part of the risk assessment exercise. State TROs can require subrecipients to include milestone plans with applications.

Implementation Challenges

One of the primary challenges to implementing this course of activities is staff time and availability. In order to review cost structures, substantial time needs to be devoted. In many cases, the performing organizations for the majority of project activities will be in university settings where the cost rates and structures are approved by other non-transportation Federal agencies. They also likely have large federal programs and are familiar with these practices. Many states have established formal maximum indirect rate structures that are approved through cooperative master agreements and/or through state wide approaches. As such, the expectation to review indirect cost rates should very rarely be placed on the TRO manager.

Other implementation challenges include review of monthly reporting information and its associated expectations. This review process should be formally documented and clearly outlined as a pay item in deliverable-based contracts.

2.10.2 Risk Assessment and Evaluating Recipient Capabilities

Description

Entities receiving federal awards are required to review and assess the potential risks presented prior to making an award (2 CFR § 200.205).

Example Practices

Risk assessments are rare in the transportation research community. As shown in the survey, less than one third of states responding had established a formalized process for evaluating capabilities formally. In many cases however, states have provided evaluation criteria that is dependent upon a performing organization possessing adequate facilities to perform the work.

Preferred Practice: State TRO managers should regularly meet with key personnel from performing organizations and their offices of sponsored programs. These site visits and risk assessments provide valuable information for all parties and clarify expectations. In addition, these partnerships provide forums to address minor problems before they turn into larger concerns.

Implementation Challenges

Adopting a full risk assessment and review process takes substantial time and effort. It also requires training in how to complete a risk assessment and what to do to enforce results.

2.10.3 Other Requirements

Description

Pass through entities are treated differently as subrecipients of Federal funding. The distinctions throughout the UG has been confirmed in FHWA interpretations. As such, pass-through entities must accept an indirect F&A cost rate negotiated with a federal agency, or notify the OMB as to why the negotiated rate is not accepted and make publicly available the criteria to support the deviation. In a state where there is a negotiated rate amount, it would only apply in cases where the university is performing contracted work. If the funding allows for substantial independent work, the state TRO would need to contact USDOT for additional guidance.

The System for Award Management (SAM) is the Official U.S. Government system that consolidated the capabilities of the Central Contractor Registration (CCR), Federal Agency Registration (FedReg), the Online Representations and Certifications Application (ORCA), and the Excluded Parties List System (EPLS). SAM collects, validates, stores, and disseminates data on organizations to assist agencies. SAM registrations must be updated or renewed at least once per year to maintain an active status. If an organization is new to doing business with the Federal Government, the initial registration in SAM takes up to 5 days to become active. Organizations must maintain an “active” registration in <https://www.sam.gov/portal/SAM/> for the entire period of the award.

Example Practices

In order to obtain the 10% de minimus rate, the subrecipient must have never had a federally negotiated indirect F&A cost rate. If a past rate has been established, a new rate subject to a cognizant federal agency signoff is required. Pass-through entities may not force a proposed subrecipient who lacks a negotiated rate to accept less than the 10% rate, regardless of past practices.

Develop a policy to document the rate agreed to for each pass-through award and the basis for the rate (negotiated, de minimus, federally negotiated, other). Particularly if the agreed-to rate is lower than what the sub-recipient might have been entitled to, document that the rate was voluntarily accepted by the subrecipient.

Preferred practice: become familiar with the SAM and ensure that performing organizations are included. Additionally, develop and document your organization’s policies and procedures for indirect cost rate negotiation.

Implementation Challenges

Some implementation challenges that emerged in this study are the general familiarity with the SAM tool and its use. State TROs rarely used this system. While many state TROs have formally documented processes with respect to overhead and indirect costs, few have substantial documentation on their exceptions and negotiated agreements.

2.11 Post-Award Requirements

2.11.1 Performance Measurement Requirements in 2 CFR 200

Description

There are multiple post-award requirements in 2 CFR 200. 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. Uniform Guidance did not change requirements for property records; requirements for property records ensure that non-Federal entities maintain an equipment inventory system.

Example Practices

Recipients and subrecipients must maintain records which clearly show the source, amount, and timing for all matched contributions.

In addition, if a recipient or subrecipient has included a match that exceeds the required matching portion within the approved budget, the records of those additional amounts must be included and maintained as if they are a part of the regular match amount.

The award recipient has primary responsibility for meeting the match requirement and for ensuring subrecipient compliance with the match requirements.

Recipients must maintain records that clearly demonstrate the amount, source, and when the funds were contributed.

Recipients are required to report match on the quarterly Federal Financial Report (SF-425/line i).

Preferred practice: maintain records showing sources, amounts, and timing for matched contributions. Records of matches that exceed required matching portions must be included and maintained.

Implementation Challenges

Implementation of these practices require a document management process and clear audit ready monitoring practices. Documenting potential matching funding often is outside the purview of the

state TRO and is a responsibility of the performing organization. This disconnect can sometimes cause challenges as the matching records are held near or in other facilities.

2.11.2 Time Extensions and Period of Performance

Description

Period of performance refers to the dates during which the non-Federal entity may incur new obligations to carry out the work authorized under the Federal award. The Federal awarding agency or pass-through entity must include start and end dates of the period of performance in the Federal award (see §§200.210 Information contained in a Federal award paragraph (a)(5) and 200.331 Requirements for pass-through entities, paragraph (a)(1)(iv)).

Due to the nature of the work to be carried out by the recipient, the usual periods of performance may not routinely be appropriate for research, evaluation, and statistics awards. Accordingly, a research, evaluation, or statistics award may exceed a 3-year initial period of performance (and/or a 5-year total period of performance, and more than two continuations awards), when appropriate under the particular circumstances of that project.

Example Practices

Generally, a no cost extension may be made:

- No more than one time to an award;
- Not to exceed 12 months;
- Only if the period of performance has not expired;
- Only for award recipients that have no significant performance or compliance issues;
- Only if justified by a “robust” narrative establishing that the extension is for the benefit of the government, and contains a plan and timeline for completion within the extension period; and
- For the benefit of the recipient or for the purpose of the enabling the recipient to use unobligated balances.

Preferred practice: build in a six month buffer to the period of performance to allow for delays and follow through on behaviors that consistently cause delay. Deliverables may still be scheduled within the windows as appropriate and preferred by the State TRO.

Implementation Challenges

Several practices will need to be addressed to ensure compliance. All processes need to be documented and published widely to avoid issues. Follow through on penalties for late products requires a clear understanding and considerable upper management support.

2.11.3 Monitoring Responsibilities for Federal Awarding Agencies and Pass-Through Entities

Description

The purpose of subrecipient monitoring is to ensure that the subaward is being used for the authorized purpose. In addition, monitoring processes ensure compliance with the program and grant requirements, laws, and regulations, and the subaward performance goals. All pass-through entities are required to monitor their subrecipients, regardless of whether or not your TRO has established a subrecipient or contractor relationship. The requirements for subrecipient monitoring can be found in 31 U.S.C. § 7502 and in Title 2 CFR § 200.

Example Practices

The pass-through entity must have written policies on subrecipient monitoring, as described in 2 CFR § 200.331. The pass-through entity is required to monitor the subrecipient's use of Federal funds during the program period. Risk assessments continue post-award.

The methods of monitoring may vary based on prior experience with the same or similar subawards and contracts. Prioritize monitoring on a risk-based approach – namely, the larger program awards and higher percentages of pass through provide greater need for subrecipient monitoring and larger awards are of greater risk. Some of the mechanisms that may be used to monitor subrecipient activities throughout the year include:

- Regular communication with subrecipients and contactors by phone and email;
- Appropriate inquiries concerning program level activities;
- Performing subrecipient site visits to examine financial and programmatic records;
- Observing overall operations; and
- Reviewing detailed financial and program data and information submitted by the subrecipient.

Preferred practice: maintain simple rules and easy to follow compliance requirements. Research has shown that complex rule and requirements for monitoring or reporting have a higher risk of non-compliance.

Implementation Challenges

If a subrecipient fails to comply with Federal statutes, regulations, or the terms and conditions of a Federal award, the pass-through entity may impose additional conditions. However, if it is determined that noncompliance cannot be remedied by imposing additional conditions, the State TRO may withhold disbursements or further awards; disallow cost; terminate award; or pursue civil or criminal prosecution.

2.11.4 Corrective Actions

Description

A corrective action plan is a set of actions to correct an issue, problem, non-compliance or underperformance. It is essentially a plan to improve performance and/or reduce risk. Corrective actions include actions taken by a contractor or subrecipient that corrects identified deficiencies. Corrective actions can be requested by the State TRO to provide improvements. Corrective action plans may be requested by the government following audits or other concerns.

A corrective action plan may be a response to an incident or failure. Several organizations have developed templates to assist non-federal entities in ensuring that the corrective actions are clear and specific, milestones/timetables for completion of interim and final activities are established, and follow up actions are identified particularly when repeat findings are involved.

Example Practices

When requesting corrective actions, state TROs should clearly document the expected outcomes and findings. This can be through a formal audit plan or for regular monitoring transactions. The TRO should require a corrective action plan be documented. In the case of incidents, the corrective plan should identify root cause analysis that highlights any underlying problems or actions that would cause a repeat offense.

Preferred practice: follow a plan-do-check-act cycle for issuing corrective action plans. Corrective action plans can be used to address both contractor and subrecipient issues and corrective action plans are outlined in 2 CFR 200 in response to audit findings.

Implementation Challenges

Responding to the results of an audit would not be the only time to address corrective actions. If adequate communications channels are open between the TRO and a performing organization, there will be limited opportunities for misunderstanding and little need for a formal corrective action.

Other implementation challenges identified in the literature and through interviews include: a small researcher pool, sister-agency concerns that allow performing organizations to avoid corrective actions or penalties, and inadequate training and monitoring processes to follow through on corrective action plans.

2.11.5 Auditing Performance Measurement and Reporting Systems

Description

Non-Federal entities that expend \$750,000 or more in Federal funds (from all sources including pass-through subawards) in the organization's fiscal year are required to arrange for a single organization-wide audit conducted in accordance with the provisions of Title 2 CFR Subpart F. Awards are subject to conditions of fiscal, program, and general administration to which the recipient expressly agrees upon acceptance of the award. See 2 CFR § 200.514.

The audit objective is to review accountability of funds and required non-Federal contributions to determine whether the recipient has done all of the following:

- Established an accounting system with adequate internal controls;
- Prepared financial statements, which are presented fairly and in accordance with generally accepted accounting principles.
- Submitted financial reports (including Federal Finance Reports (FFRs/SF-425s); cash reports; and claims for advances and reimbursements that contain accurate and reliable financial data
- Expended Federal funds in accordance with the terms of award agreements and those provisions of Federal law or regulations that could have a material effect on the financial statements or on the awards tested.

Example Practices

Best practices for audits include preparing documentation, responding to inquiries, providing adequate access, and responding to any findings.

It is the direct recipient's responsibility to ensure that subrecipient audit reports are received and that corrective actions on all audit findings have been implemented.

Preferred practice: prepare documentation, respond to inquiries, provide adequate access and respond to findings to ensure that subrecipient audit reports are received and any corrective actions are implemented.

Implementation Challenges

When subawards are made by the direct recipient to another organization or organizations, the direct recipient is responsible for making sure that subrecipients comply with the audit requirements set forth in 2 CFR § 200.331(f). In some cases, the TRO will not have the same level of access or knowledge necessary to provide this information.

2.12 Closeout and Post-Closeout

2.12.1 Closeout Requirements

Description

Project closeout refers to the systematic process by which the state TRO determines that all required technical work under a contracted agreement has been completed by the recipient and the TRO, and all applicable administrative requirements are met. The closeout period begins when final deliverables are accepted by the agency within the period of performance.

Example Practices

Several practices provide favorable direction on addressing project closeouts. In particular, the following practices have emerged as preferred and recommended activities to maintain compliance with UG provisions.

As noted previously, clear kickoff meeting procedures set the stage for project closeout and recordkeeping. Project kickoffs should clearly establish expectations.

To avoid unnecessary administrative extensions, include a 6 month buffer on contracts past the end of the period of performance yet maintain that research efforts hold in the original schedule.

Use progress reporting and review progress reports to demonstrate adherence to schedule as closeout processes come into play.

Once materials are submitted and acceptable to the technical committees, ensure that final invoicing happens quickly and any additional internal reviews are completed.

Document the workflow to close out projects and align the process with the 90-day window allowed under the Uniform Guidance.

Preferred practice: use a project management software package for tracking and monitoring research project management. Some examples include systems developed and in use for Utah or Minnesota. Other options include programs like Workfront, Asana, or Mavenlink.

Implementation Challenges

Meeting a 90 day closeout target has proven challenging for some states. This is mostly due to internal practices and delays associated with handoffs from the TRO to other units in the state agency.

2.12.2 Recordkeeping and Post-Closeout Requirements

Description

2 CFR 200.344 addresses post closeout adjustments and continuing responsibilities. The closeout of a Federal award does not affect the right of the Federal awarding agency or pass-through entity to disallow costs and recover funds on the basis of a later audit or other review.

Retention and accessibility of financial records, project records, and supporting documents is governed by 2 CFR 200.333 and 2 CFR 200.337. Recordkeeping mandates that financial records, supporting documents, statistical records, and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three years from the date of submission of the final expenditure report.

Example Practices

Records that must be retained include:

- Timesheets and records that reflect the total activity (including descriptions) for which each employee is compensated;
- Actual expenditure invoices of direct costs charged to pass through funding;
- Employee reimbursement claims including lodging, per diem and transportation receipts;
- Documentation supporting calculation or methodology to determine indirect costs; and,
- All other supporting documentation related to the agreement.

Support records retention and management functions with an appropriate level of resources.

Consider developing training that includes a records management acknowledgement. At the completion of the training, require employees and performing researchers to sign a document confirming their receipt of retention guidelines and detailing an understanding of records retention policies and procedures consistent with this practice.

As with other elements of project execution, the records retention elements should be included in contract language and in kickoff meeting discussions.

Preferred practice: keep electronic copies in searchable format. When scanning documents, ensure information is available with character recognition. While the cost for digital storage may be significantly lower than keeping hard copy documents, there is still a cost for e-storage.

2.13 Property and Equipment

Recipients must develop, complete, and maintain property records for scientific research equipment. This documentation should include a description of the equipment, a serial number or identification number, identification of the agreement under which the equipment was acquired,

the acquisition date, acquisition cost, percentage of Federal participation in the equipment cost, the location, use and condition of the equipment, and any ultimate disposition information.

If said scientific research equipment was purchased during the period of performance and has a fair market value of less than \$5,000 at the close of the grant agreement, it is no longer considered equipment and is not subject to the federal regulations governing equipment.

If the fair market value is \$5,000 or more at the close of the grant agreement, the use, management, and disposition of the equipment is subject to the provisions in 2 CFR 200.313. The state should prepare a Tangible Personal Property Report Disposition Report/Request (Federal form SF-428-C).

Implementation Challenges

Record Retention challenges include having to maintain three years of data and information – if the subrecipient is keeping the information, there is a risk to the state TRO. Developing a section of training and overview courses allows for broad input to the process but simultaneously forces the kickoff meeting into a series of protracted rules and guidance. To overcome this challenge, a state TRO manager may wish to prepare a handout highlighting these key elements that can be easily overlooked.

3. Glossary of Key Terms

Research Administrators need a clear understanding of the technical differentiation between contractors and subrecipients. To be effective, implementation of 2 CFR 200 requires:

- Accountability and ownership
- Transparency and traceability
- Data quality and trustworthiness
- Comprehensibility and flexibility
- Accessibility and collaboration
- Documentation

Without these elements, the research office cannot achieve its primary mission – advancing the state of the practice. Following these principles would result in business decisions based on incomplete data, free from understanding risks, which can be costly in revenue and loss of reputation, productivity, and missed opportunities. The following terms are commonly used in the Uniform Guidance and provide a meaningful snapshot of agency relationships.

ALLOCATION means the process of assigning a cost, or a group of costs, to one or more cost objective(s), in reasonable proportion to the benefit provided or other equitable relationship.

ALLOWABLE costs may be subject to limiting statutory requirements. When the maximum amount allowable under a limitation is less than the total amount determined in accordance with the principles in this part, the amount not recoverable under the Federal award may not be charged to the Federal award

AWARDING AGENCY is typically (depending on context) the Federal Government or the next highest authority, that is, the State agency administering the formula award or the Federal agency administering the discretionary award.

CLOSEOUT is a process in which the awarding agency determines that all applicable administrative actions and all required work of the award have been completed by the recipient and the awarding agency.

CONSISTENCY refers to costs. A cost may not be assigned to a Federal award as a direct cost if any other cost incurred for the same purpose in like circumstances has been allocated to the Federal award as indirect costs.

CONSULTANT is an individual who provides professional advice or services.

CONTRACT means a legal instrument by which a non-Federal entity purchases property or services needed to carry out the project or program under a Federal award. The term does not include a legal instrument, even if the non-Federal entity considers it a contract, when the substance of the transaction meets the definition of a Federal award or subaward. See 2 CFR § 200.22.

CONTRACTOR is an entity that receives a contract as defined in Contract

EXPENDITURE is a charge made to a project or program for which a Federal award was received.

INTERNAL CONTROLS means a process, implemented by a non-Federal entity, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: (a) Effectiveness and efficiency of operations; (b) Reliability of reporting for internal and external use; and (c) Compliance with applicable laws and regulations. See 2 CFR § 200.61.

MATCH is the recipient share of the project costs. Match may either be “in-kind” or “cash.” In-kind match includes the value of donated services. Cash match includes actual cash spent by the recipient and must have a cost relationship to the Federal award that is being matched. (Example: Match on administrative costs should be other administrative costs, not other matching on program costs).

MICRO-PURCHASE means a purchase of supplies or services using simplified acquisition procedures, the aggregate amount of which does not exceed the micro-purchase threshold. Micro-purchase procedures comprise a subset of a non-Federal entity’s small purchase procedures. The nonfederal entity uses such procedures in order to expedite the completion of its lowest-dollar small purchase transactions and minimize the associated administrative burden and cost. The micro-purchase threshold is set by the Federal Acquisition Regulation at 48 CFR Subpart 2.1 (Definitions). It is \$3,000 except as otherwise discussed in Subpart 2.1 of that regulation, but this threshold is periodically adjusted for inflation.

OMB means the Executive Office of the President, Office of Management and Budget.

PASS-THROUGH ENTITY means a non-Federal entity that provides a subaward to a subrecipient to carry out part of a Federal program.

PERFORMANCE GOAL means a target level of performance expressed as a tangible, measurable objective, against which actual achievement can be compared, including a goal expressed as a quantitative standard, value, or rate. In some instances (e.g., discretionary research awards), this may be limited to the requirement to submit technical performance reports (to be evaluated in accordance with agency policy).

PERIOD OF PERFORMANCE is the period for which implementation of a project is authorized. The project period may be equal to or longer than the budget period for an award, but cannot be shorter than the budget period.

REASONABLE means those costs that a prudent person would have incurred under the circumstances prevailing at the time the decision to incur the cost was made.

RESEARCH is defined as a systematic study directed toward fuller scientific knowledge or understanding of the subject studied. The term research also includes activities involving the training of individuals in research techniques where such activities utilize the same facilities as

other research and development activities and where such activities are not included in the instruction function.

SUBAWARD means an award provided by a pass-through entity to a subrecipient for the subrecipient to carry out part of a Federal award received by the pass-through entity. It does not include payments to a contractor or payments to an individual that is a beneficiary of a Federal program. A subaward may be provided through any form of legal agreement, including an agreement that the pass-through entity considers a contract.

SUBRECIPIENT means a non-Federal entity that receives a subaward from a pass-through entity to carry out part of a Federal program; but does not include an individual that is a beneficiary of such program. A subrecipient may also be a recipient of other Federal awards directly from a Federal awarding agency.

UNIFORM GUIDANCE supersedes OMB Circulars A-21, A-87, A-110, A-122, A-89, A-102, A-133, and the guidance in circular A-50 on Single Audit Act follow-up and provides a streamlined format that improves both clarity and accessibility. It is located in Title 2 of the Code of Federal Regulations (CFR), Part 200.

4. Resources and Training Materials

There are dozens of resources and training materials available for understanding the 2 CFR 200 policies and procedures. Accounting organizations, independent consultants, and some university programs offer day long training sessions. This section of the guide highlights two programs of interest.

Ahead of the Curve

The Ahead of the Curve: Mastering Transportation Research Program Management training program offers 17 courses in various elements of transportation research program management. The core course “Running the Transportation Research Program” includes a module discussing many of the implementation challenges and practices described above. This program is tailored specifically to research managers in the transportation discipline and is based on a cohort learning approach. For more information, visit

<https://sites.google.com/site/conductofresearchcommittee/strategic-plan/goal-5-service/ahead-of-the-curve-subcommittee>.

Uniform Guidance Fundamentals

A series of 10 short videos provided by the Office of Management and Budget detail requirements and common approaches to compliance. Available at <https://www.ecivis.com/omb-training-videos.html>. OMB also published Grants 101 Training for federal government employees, but provides eLearning modules as a resource for all Federal fund managers. This grants training is comprised of five modules, most of which contain multiple online lessons:

- Laws, Regulations, and Guidance
- Financial Assistance Mechanisms
- Uniform Guidance Administrative Requirements
- Cost Principles
- Risk Management and Single Audit

The training is accessed at <https://cfo.gov/grants/training/>.

4.1 Conclusions and Next Steps

Implementing new approaches to quality research management includes new practices across the research life cycle. This project developed a better understanding of these life cycle considerations and developed preferred practices for improving the process to comply with 2 CFR 200. Risk assessment and risk monitoring of research processes and projects is an emerging area that embodies all the compliance and quality improvement aspects of research management. Many agencies have not yet formed a concrete or established framework for accomplishing this risk based approach. Additionally, many states expressed concern or uncertainty over the period of performance regulations and how multi-year projects will be affected by this. Guidance is being provided for creating realistic project schedules while understanding the cost implications of any

work that would fall outside of the period of performance requirements. However, risk assessment can go much further.

This project has highlighted a number of opportunities for the research community to better assess the implementation of 2 CFR 200 policies.

- Several opportunities exist for working with the AASHTO RAC Management and Productivity Task Force to develop a handout and consistent approaches related to managing SPR funded work;
- Developing a graphically appealing, professionally set standalone guide for compliance that includes photographs, testimonials, and other elements to reinforce its messages;
- Hosting a multistate peer exchange on this subject and how states are advancing research management practices;
- Developing and refining the modules associated with Uniform Guidance in the Ahead of the Curve research program;
- Continued monitoring of FHWA interpretations with respect to pass through entities; and
- Preparing a basic overview for inclusion in AASHTO RAC 101 presentations.