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# BUREAU OF RESEARCH

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## Research Procedures Manual February 2023

**New Jersey  
Department of Transportation  
Bureau of Research**

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## INTRODUCTION

In accordance with Title [23 U.S. Code \(U.S.C.\) § 505](#), each state transportation agency administers a state planning and research program that includes research, development, and technology transfer activities. [Title 49 Code of Federal Regulations \(C.F.R.\) Subtitle A, Part 19](#) provides the following definitions:

*“Research, Development and Technology Transfer” means all research activities, both basic and applied and all development activities that are supported by the universities, colleges, and other non-profit institutions. “Research” is defined as a systematic study directed toward fuller scientific knowledge or understanding of the subject studied. “Development” is the systematic use of the knowledge and understanding gained from research directed toward the production of useful materials, devices, systems, or methods. Including design and development of prototypes and processes. The term research also includes activities involving the training of individuals in research techniques where such activities are not included in the instruction function. “Technology Transfer” means those activities that lead to the adoption of a new technique or product by users and involves dissemination, demonstration, training and other activities that lead to eventual innovation.*

The New Jersey Department of Transportation, (NJDOT) Bureau of Research (Bureau) provides research, knowledge, and technology transfer solutions for complex transportation challenges within the State of New Jersey. This work is accomplished through our Research Process, which ensures compliance with federal requirements including [23 U.S.C. § 505](#), [23 C.F.R. § 420](#), [2 C.F.R. § 200](#), and [NJ Statutes Title 52](#). This manual provides a detailed description of the entire NJDOT Bureau of Research program:

**Section 1:** Development of Annual Research Work Program

**Section 2:** Pre Award Activities

**Section 3:** NJDOT Research Project Activities

**Section 4:** Performance Tracking, Monitoring, Evaluation, and Reporting Work Program

**Section 5:** Research Implementation

**Section 6:** Project Closeout

**Section 7:** Technology Transfer Program

Approximate durations of each stage of the process, from research idea and need to close out, are illustrated in the NJDOT Research Project Activities flowchart (See [Appendix A](#)). This chart visually demonstrates the interdependencies and chronological order of the tasks performed by Federal Highway (FHWA), the Bureau Manager, Research Oversight Committee (ROC), Customers and the Research Project Mangers (RPMs), Contract Manager, Principal Investigator (PI), and Institution of Higher Education (IHE).

## **SECTION 1. DEVELOPMENT OF ANNUAL RESEARCH WORK PROGRAM**

### **Section Overview**

This section describes the typical NJDOT Research Work Program documents that are developed and submitted on an annual basis to FHWA for research program sponsorship.

### **Annual Research Work Program**

Annually, FHWA’s requirements for “Research, Development and Technology Transfer Program Management” are set forth in [23 C.F.R. § 420](#).

Each project activity sheet (commonly referred to as a “thumbnail”) includes the following fields of information: funding authorized, amount spent to date, goal of research project, anticipated accomplishments, schedule and comments regarding anticipated challenges. The project sheets are then compiled and submitted to FHWA for approval.

### **Budget Development of the FHWA Work Program**

The development of the annual work program is coordinated through the NJDOT State Planning & Research (SPR) program coordinator and administered under the approval of NJDOT/FHWA joint service standards. The Bureau Manager, RPMs, and financial staff work together as a team to develop an annual research budget that incorporates the cost of new projects, continuation projects, and other expenditures. The work program budget provides details of the sources of funding; whether federal State Planning and Research (SPR) funding or state Transportation Trust Fund (TTF) funding. When a draft work program budget is complete, the Bureau Manager may meet with the NJDOT SPR program coordinator and FHWA NJ Division to review the draft program and address modifications, as needed.

### **Components of the FHWA Work Program**

The summary of new and continuing research and technology and knowledge transfer activities are documented in a work program book that describes each project and provides details of the estimated funding requirements. Components include:

1. **Project Description**: The project description will include a project title, project number, a Research Project Manager, a purpose, objectives, tasks, and the proposed activities for the program year or period required.
2. **Research Staff Commitment**: Projects will contain summaries of in-house research staff efforts including the estimated person-month commitment. The estimates will include the research staff effort needed to conduct research, technology and knowledge transfer activities, and management of consultant or IHE research contracts.
3. **Consultant or IHE Commitments**: Each project conducted by a consultant or IHE will describe the work effort and note the estimated cost of the effort to be accomplished.
4. **Project Costs**: Each project will show eligible contractual cost, salary, fringe, materials/supplies, travel, services, printing, data processing, and preapproved extraordinary costs such as specialized equipment.

5. Summary breakdown of estimated funding levels may be divided by federal and state funding sources.

### **Revisions to the FHWA Work Program**

Assuming that adequate funds and personnel are available at the time the work plan is approved and that adequate time has been scheduled, the following reasons may be cited for requesting approval of revisions to the work plan:

1. Scope Modification - addition of program activities after the program is approved. This could be at the request of the sponsor, the result of information obtained during the course of the program, an increase or decrease in available funding or personnel, or other pertinent and pressing reasons.
2. Exceeding the original program activity cost estimate.  
This could be due to unexpected personnel salary changes, equipment costs, or unforeseen costs associated with completing work plan tasks or the addition of related tasks deemed necessary to complete project objectives.
3. Failure to maintain program activity schedule.

Examples include:

- a. Equipment failure or malfunction. Time lost shall be cited in weeks.
- b. Unsuitable weather conditions at data collection site(s). Because of the considerable distance to some sites, this implies that some trips will result in no data being collected. Time lost shall be cited in weeks.  
Unforeseen difficulties in data reduction, data analysis or coordination with external research. The time needed beyond that, which was scheduled, shall be cited in weeks.  
Unforeseen difficulties in implementation. The time needed beyond that, which was scheduled, shall be cited in weeks.
- c. Delays attributable to external causes that are beyond the control of the Research team members.

Requests for zero-dollar budget modifications and extensions of time (that do not affect the federal agreement end date) requires approval by the Bureau Manager, Director of the Division of Statewide Planning, and the Assistant Commissioner. In addition, a copy of the approval will be sent to the FHWA NJ Division for their records. Modifications that add federal dollars or have the effect of extending the federal agreement will be sent to FHWA NJ Division for their approval. In accordance with [2 C.F.R. § 200.308\(e\) \(2\)](#), only a single one-time extension of the period of performance by up to twelve months is allowed.

### **NJDOT Approval Authority Schedule for the FHWA-Sponsored Research Work Program**

The FHWA Approval Authority Schedule is adhered to during the conduct of the Research Work Program and the individual projects contained in that document (See [Appendix B](#)).

Unless otherwise noted in the Stewardship and Oversight Agreement among NJDOT and FHWA (Section 106 of Title 23), requests for changes cited above will be made (in letter format) from the Bureau Manager through the SPR Financial Manager to the Manager of Policy and Research at the FHWA NJ Division Office. Informal “concept” approval requests may be e-mailed from the Bureau Manager to FHWA for review.

## **SECTION 2. PRE AWARD ACTIVITIES**

In advance of executing an agreement with an outside entity that will provide goods and services to NJDOT, several pre award activities must be completed including defining the purpose and need, project prioritization, performing a risk assessment, scope or statement of work development, budget negotiation, stakeholder contract review and approval, identification of a funding source and the funding authorization request if applicable.

Information required for inclusion in a federal award or contract includes the following:

- (1) Recipient name (which must match the name associated with its unique entity identifier as defined at [2 C.F.R. § 25.315](#));
- (2) Recipient's unique entity identifier;
- (3) Unique Federal Award Identification Number (FAIN);
- (4) Federal Award Date (see [2 C.F.R. § 200.39](#) Federal award date);
- (5) Period of Performance Start and End Date;
- (6) Amount of Federal Funds Obligated by this action;
- (7) Total Amount of Federal Funds Obligated;
- (8) Total Amount of the Federal Award;
- (9) Budget Approved by the Federal Awarding Agency;
- (10) Total Approved Cost Sharing or Matching, where applicable;
- (11) Federal award project description, (to comply with statutory requirements (e.g. FFATA));
- (12) Name of Federal awarding agency and contact information for awarding official,
- (13) CFDA Number and Name;
- (14) Identification of whether the award is R&D; and
- (15) Indirect cost rate for the Federal award (including if the de Minimis rate is charged per [2 C.F.R. § 200.414](#) Indirect (F&A) costs).

## **SECTION 3. NJDOT RESEARCH PROJECT ACTIVITIES**

### **Section Overview**

This section describes the inception of a typical NJDOT research project from the solicitation of a research idea and need through the signatory distribution of a Task Order (TO) with an IHE for execution and project kick-off.

### **Solicitation of Research Ideas and Needs**

To ensure that all transportation problems and other new scientific and technical needs are adequately addressed, the Bureau annually solicits research ideas and needs utilizing several different strategies and platforms that include both the internal and external NJDOT websites, the Bureau's Technology Transfer website, as well as an email distribution list targeted to researchers.

### **Submission of Research Ideas and Needs**

Although the Bureau conducts formal solicitations, research ideas and needs can be submitted at any time by any individual. Research ideas and needs can cover any area that the submitter feels might benefit transportation in New Jersey. NJDOT staff and stakeholders can submit their ideas



at [New Jersey Transportation Research Ideas Portal \(Ideascale\)](#). The following information is requested: the date, submitter's name and email address, title of research need, Division/Bureau of submitter (if applicable), key contact person's name and phone number, Manager's name (if applicable), estimated time for results (weeks/months), anticipated benefits and potential yearly cost savings (if applicable). If the request is being made by internal NJDOT staff, the submitter's manager must concur that it is a NJDOT need.

### **Review, Clarify and Prioritize Research Ideas and Needs**

The Bureau strives to minimize duplication of research activities and seeks to optimize the use of Department resources. Therefore, all candidate research ideas and needs are categorized and presented to the Research Oversight Committee (ROC) for vetting and prioritization in accordance with the goals of the Department and individual units. See [Appendix C](#) for description of ROC. A research idea or need can be classified as one of the following Capital Investment Strategies (CIS) categories: Bridge Assets, Road Assets, Mass Transit Assets, Airport Assets, Transportation Support Facilities, Safety Management, Congestion Relief, Multimodal Support, and or System Support.

### **Rank and Fund Research Ideas and Needs**

ROC member votes are averaged and ranked to identify which research ideas and needs have been recommended by the committee for programming. Priority projects will be included in the work program after an assessment of funding availability.

### **Assign Research Ideas and Needs**

The Bureau Manager will assign the ROC-approved research ideas and needs to the RPMs for refinement and to initiate the Request for Proposal (RFP) development (See [Appendix D](#)), as described in the next section. The RPM will contact the original problem statement submitter for clarification and additional information. This refinement phase will assist the RPM when filling out the following fields within the Bureau's tracking system: problem statement, research objectives, subject category, official project title, abstract, anticipated benefits upon implementation, anticipated start date, implementation cost, savings, primary user or customer of the end product(s), tasks, deliverables, CIS category and target contract duration.

The above-listed information is needed for Bureau contract management, RFP development, FHWA reporting, and Transportation Research Board's (TRB) Research In Progress (RIP) and Transport Research International Documentation (TRID) databases.

### **Development of Request for Proposal**

1. The Bureau staff will discuss individual research idea and need to understand the circumstance and conditions under which a specific need or problem exists. The RPM will investigate the state of the art research and technical aspects of the research idea and need subject area for further clarification. If the RPM determines that the research idea and need warrants a formal scientific experiment or evaluation, a brief literature search will be conducted directly covering that aspect of the problem. The search will utilize all available resources to determine if sufficient previous or ongoing research already exists.
2. The Technical Advisory Panel (TAP) will meet to discuss and refine the research idea and need. The customer, their team of Subject Matter Experts (SMEs) and the RPM

- make up the TAP. A team of three (3) or more SMEs is preferable.
3. The TAP will collaborate until a consensus is reached and the research idea and need will be converted into a RFP. This includes determining whether oral presentations will be included as part of the proposal review process.
  4. The RFP will be posted on the NJDOT Research Bureau's webpage for final solicitation of proposals.

### **Research Contracting Process**

The Bureau develops and executes contractual agreements for research projects submitted for the RFP to be performed by IHEs, consultants, and other outside agencies. The processes used ensure that all applicable NJDOT, State of New Jersey, and federal laws, rules, and regulations are followed, adequate monitoring of contractor progress and invoicing are performed, and reports are appropriately documented, reviewed, distributed, and risks are identified and managed.

### **Research Contracts Using Basic Agreements and General Provisions**

Basic Agreements and General Provisions are pre-executed, legal instruments between NJDOT and the IHE to perform future research and planning projects. These projects must be compatible with the IHE's capabilities and be conducted in accordance with state and federal rules for contracting with IHEs. The Basic Agreement and General Provisions defines the cost principles, administration requirements, programs, procedures and processes and allows a Research contract to be executed efficiently. IHEs must have a Basic Agreement and General Provisions prior to submission of proposals.

### **Research Contracts Using Consultants**

On-call consultants are procured through the NJ Department of Treasury procurement process. These contracts are periodically competed/bid. These on-call contracts allow the Bureau to respond to emergent research needs. Typically, treasury contracted consultants are not IHEs. The treasury contract process for RFP, proposal preparation, final report guidelines is similar to the process used for IHEs.

### **Research Risk Assessment Protocol**

As per [2 C.F.R. § 200.331](#), NJDOT is responsible for monitoring activities of the award recipients and their subcontractors as necessary to ensure that the:

- sub award is used for authorized purposes
- sub award performance goals are achieved, namely deliverables and completion of the final report package, in accordance with contract language
- financial status reports are accurate, complete, and submitted in a timely manner
- final invoice with contract closure language is submitted within 90-days of the end of the contract
- completed projects are closed timely in the federal accounting system

All deficiencies pertaining to any award provided to the prime recipient and sub recipient through NJDOT's audits and on-site reviews must be addressed in a timely manner. The Bureau's Risk Assessment Process ([Appendix E](#)) was adopted using US Department of the Interior practices.

## **Guidance on Proposal Writing**

Proposal packages shall be prepared in accordance with the current Bureau's Proposal Preparation Guidelines (See [Appendix F](#)), which can be found on the [NJDOT Bureau of Research website](#). A complete package includes at a minimum a proposal, budget, list of other time commitments, Research team qualification, and a Pre Award Risk Form A. The Bureau may conduct blind proposal reviews. All identifying or affiliating informational proposals will be redacted prior to them being distributed for blind review. The budget shall be prepared in accordance with the Bureau's approved standard budget format (See [Appendix F](#)), and must be submitted in a sealed envelope, as per instructions on the RFP. This is done as the proposals are rated primarily on technical merit. The Pre Award Risk Form A shall accompany the proposal and shall be submitted by the date specified on the RFP posting.

Should there be a demonstrated interest by multiple institutions a preproposal meeting may be convened prior to RFP closing, interested IHEs may request a pre proposal meeting via phone call or email to the Bureau manager, to obtain further clarification on the RFP. This request must be made prior to the date specified within the RFP. Questions may also be directed to the Bureau Manager as described on the RFP and Q & A will be posted on the [Research Procurement](#) webpage prior to RFP closing.

## **Receipt, Distribution, and Rating of Proposals**

If proposals are hand-carried to the Bureau office, a written receipt may be provided for documentation purposes. Proposals may also be mailed, by any appropriate carrier including United Parcel Service, Inc. (UPS) or Federal Express Corporation (FedEx) that will ensure delivery by the RFP closing date and time. In addition to the hard copy, an electronic copy of the proposal must be submitted as per the guidelines provided in the RFP.

See [Appendix G](#) for the Responsibilities of the TAP during the Proposal Evaluation. The proposal rating form (See [Appendix H](#)) is distributed to the TAP members with instructions on how to complete the multistep evaluation process. The Bureau provides copies of the proposal to the FHWA NJ Division office for review.

If an oral presentation was required as part of the RFP, this score is factored into the proposal rating. See [Appendix I](#) for the oral presentation scoring sheet.

## **Proposal Selection**

After tallying the proposal and oral presentation (if applicable) scores, the RPM informs the TAP about which proposal was rated as the most technically sufficient to best meet the research needs as stated in the RFP. It is at this point the selected project's sealed budget is opened and reviewed by the RPM. However, the project award is contingent upon the RPM reviewing, negotiating, and accepting a final budget.

In the event that no proposal is considered technically sufficient to meet the needs of the research project, the RPM may repost the RFP after discussion and further refinement with the Bureau Manager and customer.

The IHEs that submitted proposals will receive letters indicating whether their proposal was successful in being selected as the most technically sufficient, based on technical merit. Those IHEs whose proposals were *not* successful may request a debriefing meeting within five business

days of receipt of non-award letter.

### **Debriefing**

The Bureau's policy is as such:

1. Debriefings of unsuccessful proposals may be done orally, in writing, or by any other method acceptable to the Bureau.
2. The Bureau chairs the debriefing session and TAP members who conducted the evaluations must attend to provide support.
3. The debriefing does not include point-by-point comparisons of the debriefed proposal with those of others. Moreover, the debriefing does not reveal any information, which may include
  - a. The number of proposals;
  - b. The identity of other proposals;
  - c. The content of other proposals;
  - d. The ranking of other proposals;
  - e. The evaluation of other proposals; or
  - f. Any other information that is prohibited for example the TAP members contact information and budget of the other proposals, etc.

### **Task Order (TO)**

Once the budget for the winning proposal is fully negotiated and approved by the Bureau, a task order (TO) is prepared by the Bureau's contract administrator and executed by the Bureau Manager. The TO, scope of work (SOW), budget, and the Basic Agreement work together as a contract package to define the task and contract activities required. A fully executed contract package and accompanying internal Department action slip (AD-12), authorizes the IHEs to proceed with the project. A written notice to proceed is granted when the contract is signed by ranking authority and executed.

### **Kickoff Meeting (Scope of Work, Budget and Performance Period)**

Once the Task Order has been fully executed, the RPM will arrange for a meeting with the customer and the Principal Investigator (PI) of the selected IHE to kickoff the research project. The TAP will discuss the SOW, tasks outlined in the proposal, the schedule, budget and performance period and any identified risk. The finalized SOW during the kickoff meeting obligates the consultant or IHE to accomplish the objectives and to complete the tasks within an agreed upon budget and period of performance.

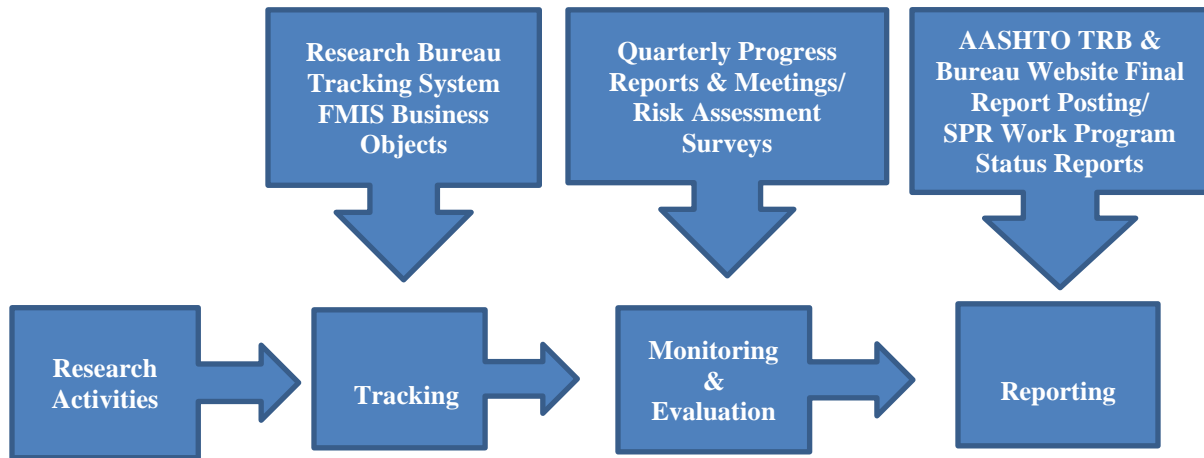
The PI must provide a realistic anticipated research study duration based on the proposed tasks. Consideration should be given to potential impediments so that adjustments are incorporated into the schedule, minimizing the need for one-time extension (upto12 months).

## **SECTION 4. PERFORMANCE TRACKING, MONITORING, EVALUATION, AND REPORTING WORK PROGRAM**

### **Section Overview**

This section describes the tools used by the Bureau to verify, monitor and report its FHWA sponsored Research Work Program in accordance with [49 C.F.R. § 18.40](#), and [23 C.F.R. § 420](#).

The Bureau is required to monitor all activities performed by its staff or by sub recipients to assure that the work is being managed and performed satisfactorily and that time schedules are being met. The Bureau must submit performance and expenditure reports that contain comparison of actual performance with established goals, progress in meeting schedules, status of expenditures in a format compatible with the work program, including a comparison of budgeted (approved) amounts and actual costs incurred; approved work program revisions; and other pertinent supporting data. Figure 1 depicts the primary tools used by the Bureau to measure performance.



**Figure 1: Performance Tracking, Monitoring, Evaluating, and Reporting Work Program**

### **Research Project Tracking**

The Bureau utilizes various tools to provide a uniform platform for NJDOT research projects, which includes data collection, sharing and reporting as well as an exchange of information among the RPMs. The Bureau also tracks project activity benchmarks and calculates performance measures such as completion time, product delivery timeliness and document processing efficiency.

### **Research Project Monitoring and Evaluation**

In accordance with the requirements of [23 C.F.R. § 420](#), the Bureau monitors and evaluates the research projects through quarterly progress meetings, reports and monthly updates (as needed)(See [Appendix J](#)).

### **Research Quarterly Progress Meetings**

Quarterly project progress meetings are conducted to provide a forum for the PI to discuss the project progress with the TAP and other interested parties. The discussion focuses on the activities of the last quarter, the planned activities for the next quarter, highlights successes and challenges, and any changes in scope, time, budget, schedule, or key staff. Key staff refers to persons essential to the work being performed under a project contract or individuals who contribute to the scientific development or implementation of a project in a substantive, quantifiable fashion. Prior to making changes to key staff or diverting any of the specified individuals to other projects, the IHE shall notify and submit the [Contract Modification Form](#) (See

[Appendix K](#)) with justification (including proposed substitutions) to the RPM immediately. The RPM will then request approval from FHWA–NJ. These are documented in the Quarterly Progress Report. During the quarterly meetings, a project evaluation form (See [Appendix L](#)) is circulated to the customer, which also helps to track and gauge the performance of the research team. Quarterly project progress meetings should be conducted within 30 days after the end of each quarter.

### **Research Quarterly Progress Reports**

Quarterly progress reports shall be provided by the PI to the RPM within 15 days after the end of each quarter. (See [Appendix M](#) – Quarterly Report Template or visit [Bureau of Research](#) website)

The research quarterly meetings and reports are scheduled to ensure the project is progressing, monitor expenditures, and address any delays or challenges. The information in the quarterly reports will be documented in the SPR work program report required by FHWA. A report listing the accomplishments of each project will be sent to the FHWA Division Office for their information.

### **Research Monthly Progress Reports**

More frequent reporting may be required at the request of the Bureau, TAP or FHWA Division Office to ensure that sufficient progress is being made and that the research efforts are progressing (See [Appendix N](#)).

### **Research Quarterly Invoicing**

Once the quarterly meeting has been held, the IHE must submit the draft invoice package along with supporting documentation for costs incurred to the RPM for review. Only when the RPM approves the quarterly report and the draft invoice package, the IHE shall submit the invoice package to the Bureau Secretary.

### **Research Final Invoicing**

The final invoice shall be submitted only after the Final Report, Tech Brief and all deliverables have been approved by the TAP and received by the Bureau. The final invoice must include the release clause.

### **Time Extensions**

Requests for time extensions will be considered but must be supported by adequate written justification in order to be processed. The justification must include an explanation of the reasons for the delay and details regarding how the remaining project funds will be used to meet the objectives within the extended Performance Period. Absent adequate justification, extension requests will not be processed. [Contract Modification Form](#) ( See [Appendix L](#)) must be submitted to the Bureau **90 days** prior to the original project end date. Task orders, having permissible justification, may be allowed a one-time extension of the period of performance by up to twelve months as described in [2 C.F.R. § 200.308\(e\)\(2\)](#).

Request for project extensions must be approved prior to the original project agreement end date. Modification of a project agreement end date after the authorized project agreement end date has

past will be disallowed as this would require special dispensation given only for extraordinary circumstances through the request for a FHWA waiver as required in [23 C.F.R. § 1.9\(b\)](#). Please note that costs incurred between the expiration of the project agreement end date and the modification date are ineligible for federal aid reimbursement and this will be disallowed. Justifiable reasons for requesting waiver may include: litigation, major customer driven research changes in design, environmental or permit issues, differing site conditions, pre-approved significant additional work, area-wide material shortages, labor strikes, unusually severe weather or other events which are outside the control of NJDOT.

### **Research Final Reports**

In accordance with the requirements of [23 C.F.R. § 420](#), the Bureau documents Research Development and Technology Transfer Program activities through the preparation and distribution of final reports. PIs are required to submit final reports for all research projects in accordance with the Bureau's specific [Final Report Guidelines](#) (See [Appendix O](#)). The PI shall submit 2 hard copies of the final report to the RPM for recordkeeping. The PI shall also send an electronic copy in PDF format to the Bureau Management Assistant. The customer will be given an electronic copy of the Final Report and any additional hard copy has a maximum limit of 3. Electronic copies of Final Reports are distributed by the Bureau to TAP members, the NJDOT Research Library, the State DOTs, the FHWA, the State Library, National Transportation Library, TRB, and University of California Berkeley Library in accordance with the current distribution plan. The electronic copies shall always be in PDF format. Bureau final reports are posted on: <https://www.njdottechtransfer.net/research/final-reports/> and TRID for public access.

## **SECTION 5. RESEARCH IMPLEMENTATION**

### **Section Overview**

This section describes how a typical NJDOT Research Work Program is implemented after it is approved and authorized by FHWA.

### **Implementation Plans**

An implementation plan, in accordance with [23 C.F.R. § 420.209](#), must be included in the State DOT's research management process. This plan must include procedures to determine the effectiveness of the State's management process in implementing the Research, Development and Technology Transfer Program (RD&T) and to determine the utilization of the State DOT's RD&T outputs.

#### **Project-Specific Implementation**

On a more project-specific level, the Bureau requests implementation plans at the RFP stage of each research project. Each plan should be realistic and detail the steps to successful implementation of the research products. The SOW for a research project would then address the schedule and resources required for the earliest use of the project results and how these results would be used, deployed and/or institutionalized by NJDOT. The SOW would also address whether there would be any foreseeable financial or institutional barriers to implementation of project products and outline the steps necessary for overcoming these challenges. Implementation could include specification

development, demonstrations, or training.

Additionally, the Bureau utilizes an implementation survey (See [Appendix P](#)) for each completed research project. The PIs, customers and other stakeholders are contacted and interviewed on project outcomes and gains that were attributed to their research projects. Based on the survey answers, the effectiveness of implementation of the research program will be measured and reported in an annual implementation report. Highly successful implementation may be documented further in articles, tech talks, and videos posted on the NJDOT's Tech Transfer website.

### **Program-Specific Implementation**

As part of the Bureau's Technology Transfer Program, Implementation Reports are generated to provide follow-up information on the implementation of past research projects by documenting qualitative and quantitative benefits of the Bureau's projects that were completed by their academic and consultant research partners. Of importance to the Bureau is the utilization of the research information in actual practice by the requesting customer, if applicable.

Research program implementation benefits will be measured on four levels: knowledge transfer; marketing efforts; adoption of change in policy, procedures, and/or process; and demonstration of technology to new audiences. Implementation benefits will be defined as enhancements, cost savings, economic impact-affecting equipment, labor, materials, revenue increases, improvement of safety, or reduction of labor time for the champions and/or requesting customers.

## **SECTION 6. PROJECT CLOSEOUT**

Projects must be closed within ninety days of the contract's completion date in accordance with federal and state requirements. All project deliverables and the final invoice inclusive of the release clause, all eligible incurred costs, and all performance reports must be submitted at that time. Failure to do so may result in a forfeiture of final payment. Federally funded projects are subject to final acceptance approval by the federal oversight agency.

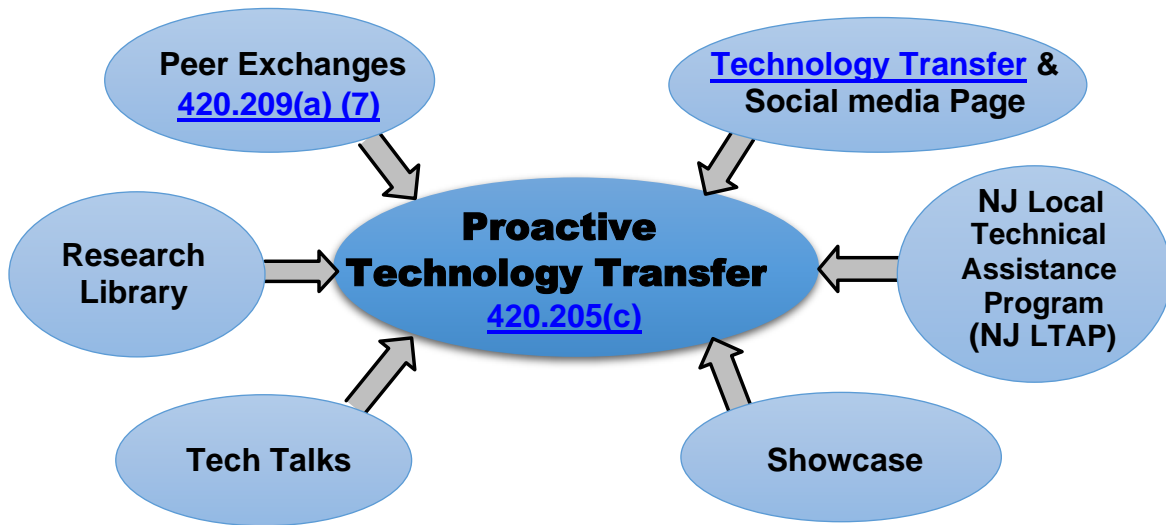
## **SECTION 7. TECHNOLOGY TRANSFER PROGRAM**

### **Section Overview**

This section describes the various technology transfer mechanisms that the Bureau utilizes for research programs. Figure 2 depicts many of these methods.

The Bureau has a technology transfer program, in accordance with [23 C.F.R. § 420](#) that improves the awareness and approach to problem solving of the State's transportation workforce. As a result of disseminating unbiased research results to potential users in a form that can be directly implemented, utilized and applied to transportation operations, the overall professional capability of the State's transportation workforce can be improved.





**Figure 2: Proactive Technology Transfer of Work Program**

### **Periodic Peer Exchanges**

Peer exchange is a periodic review of a state DOT’s RD&T2 program or portion thereof, by representatives of state DOTs, for the purpose of exchange of information or best practices. State DOTs may invite the participation of FHWA and other federal, state, regional or local transportation agencies; the Transportation Research Board and academic institutions, foundations, or private firms that support transportation research development or technology transfer activities.

### **Technology Transfer Projects**

The Bureau contracts with the IHEs to conduct special Technology Transfer projects. These projects enhance the outreach capability and responsiveness to the needs of both practicing professionals and interested citizens. Through these special Technology Transfer projects, the Bureau can promote an immediate and ongoing exchange of ideas through presentations at technical briefings; participate in regional transportation projects and advisory boards; be represented at major local and national transportation conferences; be instrumental in publishing research in technical journals; and foster community assistance, seminars, working papers, newsletters, report dissemination, and continual regional contact.

### **New Jersey Local Technical Assistance Program (NJ LTAP)**

The Federal Highway Administration created the national Local Technical Assistance Program (LTAP) in 1982 to provide local agencies with information and training programs to address the maintenance of local roadways and bridges. The NJ LTAP program has assisted all of the state’s municipalities, counties, and many State agencies with training, technical assistance, and distribution of resources.

As per [23 U.S.C. § 504\(b\)](#) the Bureau provides oversight and funding to NJ LTAP in order to conduct technology transfer activities that include the dissemination of information through newsletters, training programs, and clearinghouse activities. This ongoing effort provides public

works, engineering, planning, and law enforcement employees with training and information in the areas of design, maintenance, inspection, supervision, employee development, and other transportation related subjects.

### **Annual Research Showcase**

The goal of the Annual NJDOT Research Showcase is to familiarize NJDOT customers with the broad scope of ongoing research initiatives, technology transfer activities and academic research potential represented by IHEs, consultants and their associates. The intended purpose of this event is to provide greater awareness of the academic partnership opportunities between NJDOT and the IHEs, and the value of completed research projects funded through the NJDOT Research Bureau.

### **Tech Talks**

The Bureau organizes Tech Talks to meet the needs of, and address the various challenges faced by transportation professionals within state and local governments. By hosting Tech Talks, the Bureau can provide the following benefits to public transportation employees:

- Enhancing the overall intellectual and research environment of NJDOT.
- Serving as a catalyst for collaborations among the Bureau's staff, IHE, and distinguished scholars.
- Exposing NJDOT employees to research presentations from distinguished scholars.
- Enabling employees to interact, communicate, and network with distinguished scholars.
- Promoting interdisciplinary work by supporting visitors who span several disciplines.
- Helping Bureau's staff receive feedback on research studies by distinguished scholars.
- Displaying NJDOT's Bureau of Research-sponsored high-caliber research presented by distinguished scholars.

### **Research Library**

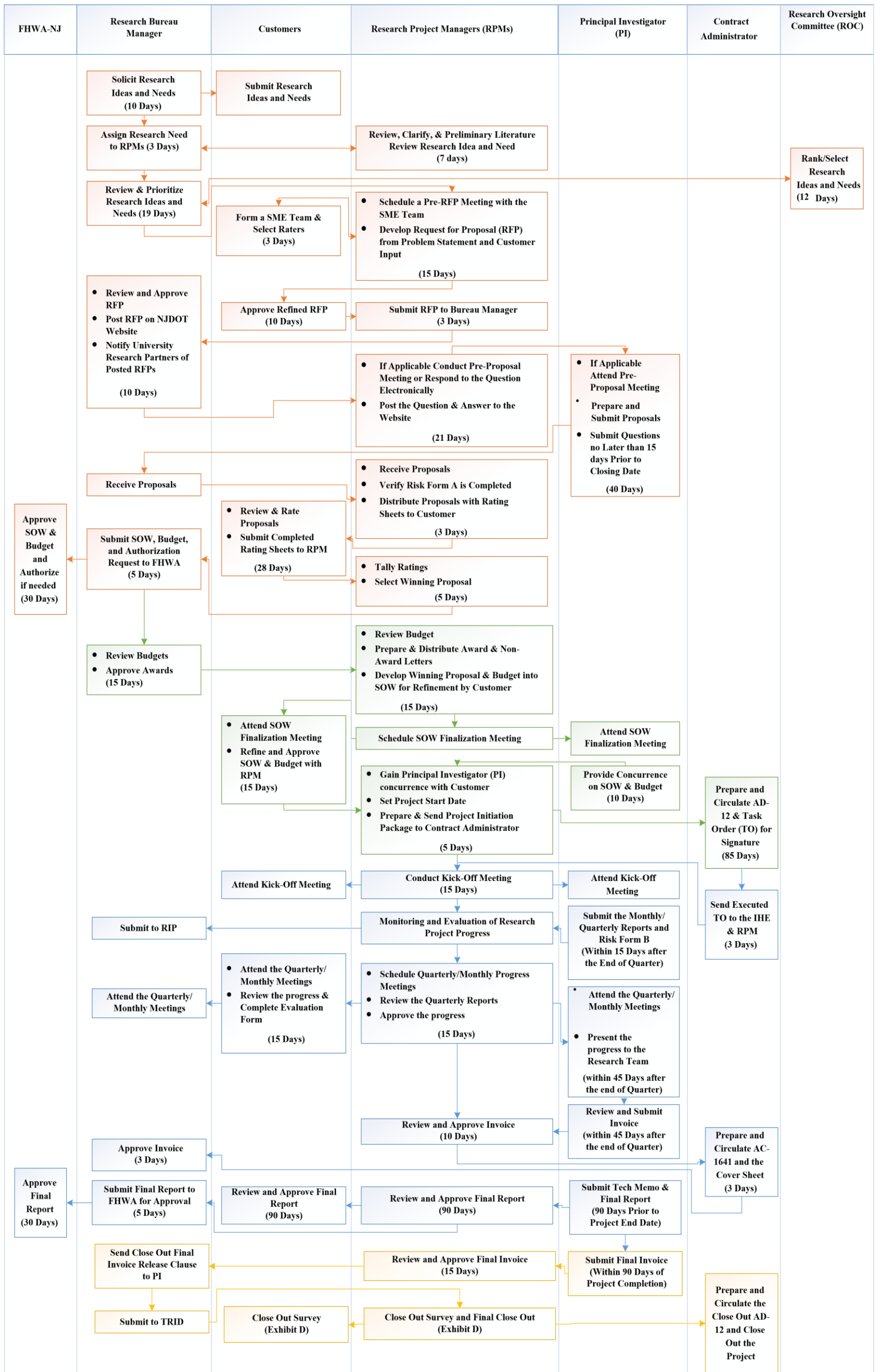
The NJDOT Research Library is funded by the FHWA State Planning and Research Program as a research activity. Located at the David J. Goldberg Transportation Complex at 1035 Parkway Avenue in Ewing, the Research Library provides services in full to New Jersey state employees, New Jersey state government employees, the public by appointment, and other libraries, organizations, and businesses.

The Research Library collects documents from a variety of sources including the TRB, AASHTO, FHWA, other state DOTs and NJDOT, particularly its Research Bureau. NJDOT Library staff provide reference and referral services, access to an online catalog and electronic documents, lending of materials from the collection or through interlibrary loan from other libraries, literature searches, and notifications of new materials and continuing education opportunities. More information can be found at [Library Resources - NJDOT Technology Transfer \(njdottechtransfer.net\)](http://LibraryResources-NJDOTTechnologyTransfer.njdottechtransfer.net).



# **APPENDIX**

## NJDOT Research Process Flowchart



# Appendix B



## FHWA Authority Approval Schedule

Item	Citation	Action
<b>Budgetary Changes</b>		
Additional Funds. Increase in federal funds in grant	2 C.F.R. § 200.308(c)(8) 49 C.F.R. § 19.25	FHWA Approval Required
Rebudgeting <sup>1</sup>	2 C.F.R. § 200.308(f) 49 C.F.R. § 19.25	FHWA Approval Required
Participant support costs <sup>2</sup>	2 C.F.R. § 200.308(c)(5) 49 C.F.R. § 19.25	FHWA Approval Required
Carryover <sup>3</sup>	2 C.F.R. § 200.308(e)(3) 49 C.F.R. § 19.25	FHWA Approval Required
Liquidation of obligations <sup>4</sup>	2 C.F.R. § 200.345(b) 49 C.F.R. § 19.25	FHWA Approval Required
<b>Programmatic Changes</b>		
Change in scope <sup>5</sup>	2 C.F.R. § 200.308(c)(1) 49 C.F.R. § 19.25	FHWA Approval Required
No-cost extension <sup>6</sup>	2 C.F.R. § 200.308(e)(2) 49 C.F.R. § 19.25	Notification to FHWA Required
Change in Principal <sup>7</sup>	2 C.F.R. § 200.201(b)(iii)(5) 48 C.F.R. § 35.015(a)(iv)	FHWA Approval Required
Change in key person <sup>8</sup>	2 C.F.R. § 200.308(c)(2) & (3) 49 C.F.R. § 19.25	FHWA Approval Required
Transferring work <sup>9</sup>	2 C.F.R. § 200.308(c)(6) 49 C.F.R. § 19.25	FHWA Approval Required
<b>Matching</b>		
Cost-sharing and matching <sup>10</sup> University Transportation Centers	2 C.F.R. § 200.308(c)(7) FAST Act section 6016 49 C.F.R. § 19.25	FHWA Approval Required
<b>Procurement</b>		
Procurement Methods <sup>11</sup>	2 C.F.R. § 200.317 2 C.F.R. § 200.318 2 C.F.R. § 200.319 2 C.F.R. § 200.320	FHWA Approval Required
Non-competitive contracts <sup>12</sup>	2 C.F.R. § 200.325(b)(2)	FHWA Approval Required
"Brand-name" contracts <sup>13</sup>	2 C.F.R. § 200.325(b)(3)	FHWA Approval Required

# Appendix B

Item	Citation	Action
Awards to other than the low bidder <sup>14</sup>	2 C.F.R. § 200.325(b)(4)	FHWA Approval Required
Contract modifications <sup>15</sup>	2 C.F.R. § 200.325(b)(5)	FHWA Approval Required
<b>Program Income</b>		
Addition or matching use of income <sup>16</sup>	2 C.F.R. § 200.307(e)(2) & (3)	FHWA Approval Required
<b>Other Actions</b>		
Information collection <sup>17</sup>	5 C.F.R. § Part 1320	FHWA Approval Required
Reporting <sup>18</sup>	2 C.F.R. § 200.328	FHWA Approval Required
Restrictions in the grant award <sup>19</sup>	implicit in all grants	FHWA Approval Required

1. *Rebudgeting. Cumulative transfers over 10% of the total budget among direct cost categories or among programs, functions or activities, and when the federal share exceeds Simplified Acquisition Threshold (\$150,000). (No requirement for prior approval for budget revisions in grants less than \$150,000.)*
2. *Participant support costs. Transfer of funds allotted for conference participation, or training allowances to other categories of expense (i.e. from direct payments to trainees to other expense categories).*
3. *Carryover. Carry forward unobligated balances to subsequent periods of performance. Federal awarding agency may waive prior approval, at their option.*
4. *Liquidation of obligations. Liquidation of all obligations more than 90 days after the end of the period of performance.*
5. *Change in scope. Change in scope or objectives of grant supported activities.*
6. *No-cost extension. The need to initiate a one-time extension for period of performance by up to 12 months. Supporting documentation and revised period of performance must notify the Federal awarding agency.*
7. *Change in Principal. The change in principal investigator or scope, or significant absence of the principal investigator from the project, defined as a three month absence from the program or a 25 percent reduction in time devoted to the project. Significantly reduced availability of the services of the principal investigator(s) named in the award instrument could be grounds for termination, unless alternative arrangements are made and approved in writing by the grant officer.*
8. *Change in key person. If the grant award specified a key person in the application or the Federal award, or the absence or disengagement by a key person or for the principal investigator in research.*
9. *Transferring work. Sub awarding, contracting or otherwise transferring of any work.*
10. *Cost-sharing and matching. Changes in the amount of approved cost-sharing or matching. This provision does not apply to supplies, materials, equipment or general support service.*
11. *Procurement Methods. States are to use their own procurement procedures. Sub recipients are to follow the state's procurement procedure; and local and Indian tribal governments who are direct grantees must follow the general procurement standards. The simplified acquisition threshold is currently \$150,000.*

# Appendix B

12. *Non-competitive contracts. The procurements are to be awarded without competition or only bid or offered in response to a solicitation.*
13. *"Brand-name" contracts. Procurements over the simplified acquisition threshold that specify a "brand-name" product.*
14. *Awards to other than the low bidder. Proposed contracts over the simplified acquisition threshold to other than the apparent low bidder under a sealed bid procurement*
15. *Contract modifications. A proposed contract modification changing the scope of a contract or increasing the contract amount by more than the simplified acquisition threshold.*
16. *Addition or matching use of income. Use of program income to meet cost sharing or matching requirements or to add to the funds already committed to the grant.*
17. *Information collection. Collection of information from others if they are told that the information is being collected for or on behalf of the Federal grantor agency.*
18. *Reporting. Any change in the prescribed frequency or due date of reports.*
19. *Restrictions in the grant award. Using funds for any purpose or type of cost that was expressly disapproved as a condition of the grant.*

**Note:** *Subject to change. Visit the FHWA website for the latest FHWA approval requirements.*

## Description of the Research Oversight Committee

The NJDOT Research Oversight Committee (ROC) is made up of transportation leaders such as the NJDOT Commissioner, Assistant Commissioners, Directors, Managers, and subject matter experts (SMEs) from NJDOT as well as NJ Transit and the Federal Highway Administration (FHWA). ROC members use their expertise and authority to make recommendations that help shape the future of NJDOT through valuable transportation research and the implementation of new and innovative technologies. The primary function of the ROC is to review and prioritize research ideas and needs, which are solicited annually by the NJDOT Research (BoR). As demonstrated in the flow chart below, the ROC is a key element in the life cycle of a research idea.

The goals of the Research Oversight Committee are:

1. To steer the Research Work Program to deliver a variety of new materials, methods, practices, and ideas to fulfill the Department's mission through the selection of value added, cost effective, customer driven and results oriented research activities that maximize the use of available resources.
2. To consider research ideas and needs from all areas of the Department which, through problem solving, innovation, and creativity, using prototypes, demonstrations, or tests, can act as catalysts for change to improve the Department's programs, methods, practices or products.
3. To recommend research projects that, within defined schedules, will yield useful, customer supported quick benefit results and products that can readily be integrated into the Department's programs and projects to improve overall quality and efficiency.
4. To prioritize, among competing needs, a recommended program to maximize the expected benefits from available resources.



# Appendix E

## Request for Proposal

**Project Title:**  
**Posting No.: YYYY-##**  
**Date of RFP Announcement: MM/DD/YYYY**  
**Closing Date: MM/DD/YYYY**

Proposals must be prepared in accordance with NJDOT's *Supplemental and Proposals guidelines*. Please visit <https://www.state.nj.us/transportation/business/research/guidelines.shtm> for the most current version.

All proposals must also have a corresponding online PreAward Risk Assessment form completed and submitted by the Principal Investigator (PIs) prior to the RFP closing date and time. This online form can be found at:  
[https://www.state.nj.us/transportation/business/research/risk\\_assessment\\_forms.shtm](https://www.state.nj.us/transportation/business/research/risk_assessment_forms.shtm)

### 1 - RESEARCH PROBLEM STATEMENT AND OBJECTIVES

#### 1.1 Problem Statement

Enter Problem Statement

#### 1.2 Research Objectives

Enter Research Objectives and Additional Deliverables

#### 1.3 Type of Contract

It is proposed that if the Issuing Office enters into a contract because of this Request for Proposal (RFP), it will be a **Cost Reimbursement, Deliverable-Based** contract containing the Standard Contract Terms and Conditions.

### 2 - BUDGET and CONTRACT TIME

The **TOTAL** project budget shall not exceed **###,### US Dollars**. Budgets will be evaluated separately, and only after a selection has been made as to which proposal is the most qualified based on technical merit.

The PI must provide the anticipated research study duration based on the proposed tasks. Consideration should be given to potential impediments so that adjustments are incorporated into the schedule minimizing the need for time extensions. Contract time shall include sufficient time for the procurement of subcontractors, as well as no less than three months for Final Report review and acceptance. Please be advised that going forward, new task orders having permissible justification will be allowed no more than a one-time extension with the advent of 2 CFR 200.

**A(n) ##-month total project duration is preferred.**

Please provide a Gantt Chart schedule, by month number (e.g., 1-24), showing tasks start/end, and deliverables. List corresponding deliverables below the chart.

### 3 - Oral Presentations

Oral online presentations may be requested as part of this RFP. If required, you will be notified by

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the Bureau of Research to schedule your oral presentation. They will be held at NJDOT headquarters in Trenton, NJ, attended by the Technical Advisory Panel (TAP), and be limited to no more than an hour, including time for questions and answers.

## 4 – Deadline

Proposals (no hard copies required) are due at the NJDOT Bureau of Research no later than **4:00 p.m. on Month DD, YYYY**. Electronic proposal documents (preferred pdf) shall be emailed to [Research.Proposals@dot.nj.gov](mailto:Research.Proposals@dot.nj.gov) with the subject: **RFP-202X-XX University – PI's name**.

**Approximate Start Date: MM/DD/YYYY**. The official start date is the date that the Bureau of Research obtains a signature from the Assistant Commissioner.

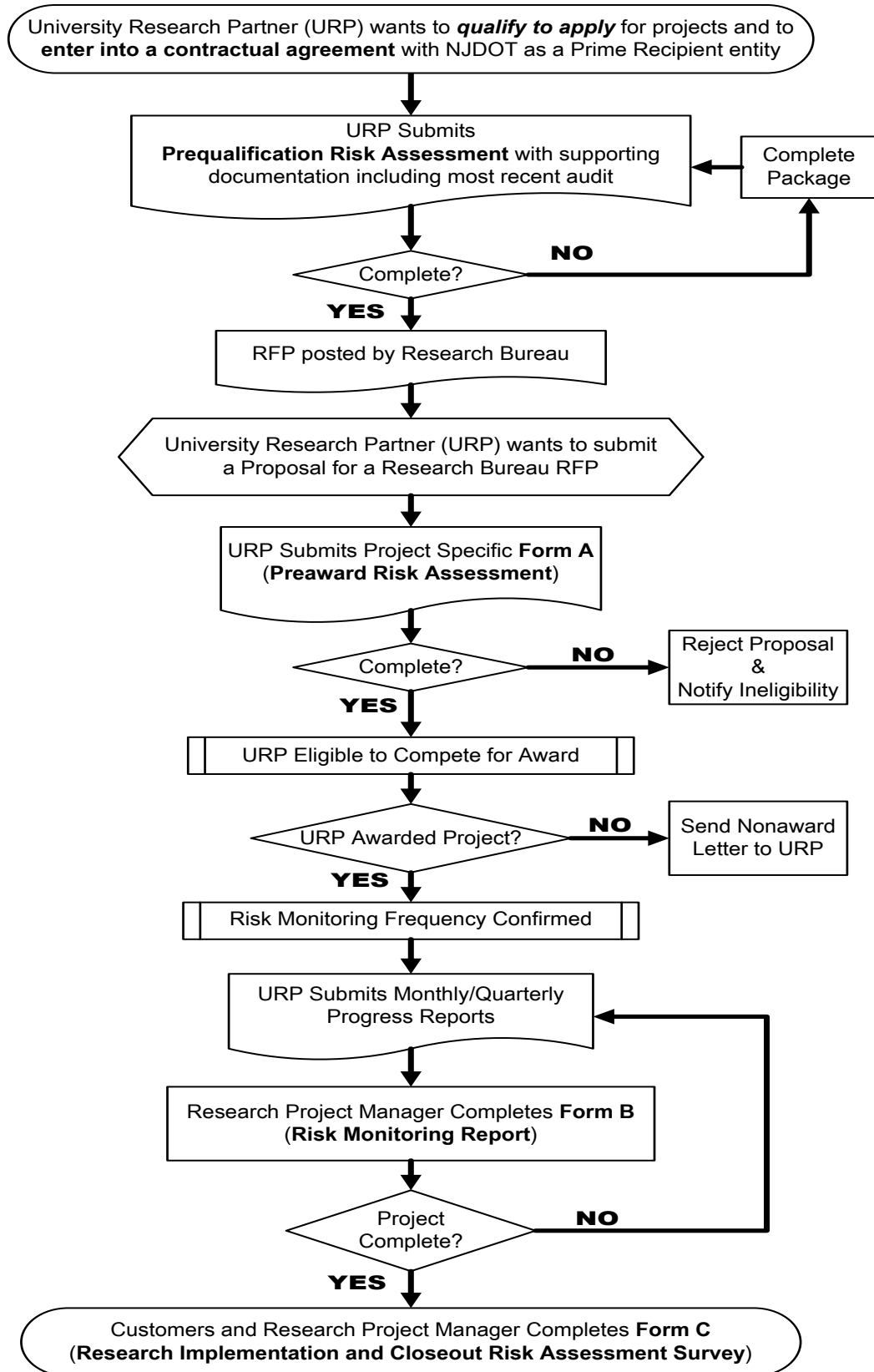
## 5 – CONTACTS

Interested parties shall send all questions related to this RFP to the Research Bureau Manager by sending an e-mail to [Amanda.Gendek@dot.nj.gov](mailto:Amanda.Gendek@dot.nj.gov) or by phone (609-963-2242). Questions on this topic **shall not** be directed to any Research Project Manager, Research Customer, or any other NJDOT person. All questions must be received **on or before MM/DD/YYYY in order to be answered**.

## PROPOSAL DELIVERY INSTRUCTIONS:

Electronic proposal documents (preferred pdf) shall be emailed to [Research.Proposals@dot.nj.gov](mailto:Research.Proposals@dot.nj.gov) with the subject: **RFP-202X-XX University – PI's name**. A confirmation of receipt will be sent via email.

## Risk Assessment Process Flowchart



# Appendix F

## Proposal Guidelines

### TECHNICAL PROPOSAL

Questions 1 through 16 of this proposal form must be answered. An incomplete proposal may be eliminated from consideration. In the proposal, the technical part (1-9) may not exceed **ten** pages (double sided) in length (maximum total 20 pages text), must be in font size 11 and single spaced. Technical Proposal, Appendix, and Budget (including budget justification) must be attached separately and emailed to [Research.Bureau@dot.nj.gov](mailto:Research.Bureau@dot.nj.gov) (in a single email).

Project Title:	
RFP Number:	
Total Project Duration:	
Date Submitted:	

#### 1. PROJECT TEAM

- Principal Investigator:
  - Name:
  - Position Title:
  - Organization/University:
  - Phone:
  - Email:
- Co-Investigator (if applicable):
  - Name:
  - Position Title:
  - Organization/University:
  - Phone:
  - Email:
- Subcontractor (if applicable; also see section 11):
  - Name:
  - Position Title:
  - Organization/University:
  - Phone:
  - Email:

#### 2. PROJECT ABSTRACT AND OBJECTIVE(S)

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Summarize the problem, the proposed approach and any anticipated impact, including financial, of the research (approx. 250 words).

### **3. WHAT IS THE VALUE OF THE PROPOSED RESEARCH?**

For your proposal, clearly define the qualitative/quantitative benefits that the state will receive from the results and conclusions of this research. Benefits might include the following:

- material cost savings
- labor savings
- user savings
- construction savings
- reduced life cycle costs
- reduced environmental impacts
- improved safety
- reduced risk
- user benefits

### **4. SUMMARY OF RESEARCH METHODOLOGY (SCOPE)**

Briefly describe the scope of work encompassed by this project.

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## 5. TASK DESCRIPTIONS, DURATIONS, SCHEDULED DATES, AND DELIVERABLES

Please use the following guidelines to list and describe the tasks that are needed to complete this proposed project.

- It takes roughly 10 to 12 weeks for a work plan to be processed into a signed contract. Please allow three months from the deadline of the Request for Proposal (RFP) as your desired start date for the research project.
- At a minimum, project tasks shall include literature search, research approach and anticipated results, implementation and training plan, and the value of research.
- Contract time shall include sufficient time for the procurement of subcontractors, as well as no less than three months for Final Report review and acceptance. Please be advised that new task orders having permissible justification will be allowed no more than one time extension with the advent of 2 CFR 200.
- All tasks require a summary report or deliverable. PowerPoint presentations are not considered deliverables and will not be accepted. These presentations can be provided as support of a summary report but are not a substitute.

For all general tasks, use the following format:

**Task #:** <Title>

- **Description:**
- **Anticipated Start Date:**
- **Target Date to Submit Draft Deliverable:**
- **Duration:** x months (*count from start date to final task approval*)
- **Deliverable:**

**Task #:** **Compile Report, Editorial Review, Technical Advisory Panel Review (TAP), and Revisions**

- **Description:** A draft final report will be prepared, following NJDOT Bureau of Research publication guidelines, to document project activities, findings and recommendations. This report will be reviewed by the TAP, updated by the Principal Investigator (PI) to incorporate technical comments, and then approved by the Research Project Manager (RPM) before this task is considered complete. If possible, a TAP meeting will be scheduled to facilitate the discussion of the draft report.
- **Anticipated Start Date:**
- **Scheduled Date to Submit Draft Final Report for TAP review:** *Must be three full months after Draft Report date, for TAP review and revisions.*
- **Scheduled Date for Final Report Approval:** *Must be submitted prior to end date.*
- **Duration:** x months including TAP review, discussion, and PI revisions
- **Deliverables:** A draft final report for TAP review, and a revised report that is technically complete and approved by the RPM for publication.

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## SUMMARY OF DELIVERABLES AND TARGET DATE

List any key milestones not provided above that may impact the project schedule, such as target dates for a project kickoff meeting and TAP meetings, workshops conducted as part of the project, beginning or end of field work, due dates for information to be provided by the Technical Liaison, and decisions or approvals needed from the sponsoring organization (NJDOT). Key milestones will be reviewed, discussed and modified, as necessary, at the first project TAP meeting and incorporated into the contract work order.

Task	Target Date	Deliverable
1. Literature Search		
2. Interim Reports		
<i>Add rows if necessary</i>		
Quarterly Reports		
Final Report		

## 6. IMPLEMENTATION AND TRAINING PLAN

The PI must meet with the TAP and other NJDOT units to present the findings and as appropriate train these personnel in the use of the project results. **The PI will develop an implementation plan as per the guidelines provided by the NJDOT Research Bureau. All training shall be provided by licensed personnel on the subject matter. The training hours should count toward PDHs where feasible.**

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## 7. AGENCY ASSISTANCE (NJDOT OR OTHER)

If the project requires specialized help or input including data, materials, equipment, facilities, traffic control, etc. List the agency, type of assistance requested, including timeline and contact person.

## 8. OVERVIEW OF PROJECT SCHEDULE AND EFFORT

Plot the dates of each task below. There should be one table per fiscal year; create additional tables if necessary.

FY													
	1 <sup>st</sup> Quarter			2 <sup>nd</sup> Quarter			3 <sup>rd</sup> Quarter			4 <sup>th</sup> Quarter			Effort Hours
Calendar Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Task #													
Task #													
Task #													
Task #													
<b>FY Total:</b>													

## 9. REFERENCES (OPTIONAL)

Please cite any publications and/or presentations that informed your proposal. References do not count against the ten-page proposal limit.

### APPENDIX

Submitted by (PI/University):	
Project Title:	
RFP Number:	
Date Submitted:	



# Appendix F

## 10. RESUMES FOR PI AND CO-INVESTIGATOR(S)

Please provide a resume for each PI and Co-Investigator included in your proposal with relevant work experience and describe how this project relates to other similar research relating to the proposal limiting one page per key staff. See 2 CFR 200 for definition of key staff.

## 11. SUBCONTRACTOR INFORMATION

In order to make use of a subcontractor, the project team must supply the following information:

- A letter from the subcontractor expressing their commitment to the project.
- Clarification in relevant task scopes (section 5) regarding the subcontractor’s role and responsibilities.
- If the prime team and subcontractor team will be responsible for whole tasks, please clarify which tasks will be completed by each team.
- If the prime team and subcontractor team will be collaborating on single tasks, please clarify which part of the task will be completed by each team.
- An org chart that establishes the relationship and communication methods between the prime team and subcontractor team

The cost for non-academic sub-consultants cannot exceed 50% of the total proposal budget.

## 12. OTHER COMMITMENTS

Proposals shall contain a listing of current organization and personnel commitments to other work in sufficient detail to indicate that the organization and all of the individuals assigned to the proposed project will be able to meet the commitments of the proposal. Staff-hour commitments and percentage of time committed to other work for each member of the proposed research team shall be specified.

Project Name	Project Duration	Effort Hours/Year
1.		
2.		
<i>Add rows if necessary</i>		

**CERTIFIED BY:** \_\_\_\_\_ **DATE:** \_\_\_\_\_  
SIGNATURE OF PRINCIPAL INVESTIGATOR

## 13. INDIRECT COST RATE AGREEMENT

Provide a full and complete copy of the most recently-negotiated indirect cost rate agreement with your respective cognizant agency. Documentation shall include the cost pools or groups, demonstrating which

# Appendix F

rate is appropriate for use while conducting transportation research. The Bureau of Research reserves the right to reject any budgets that do not provide reasonable justification for use of indirect cost rates.

## 14. EMERGENCY PREPAREDNESS

To support continuity of operations during an emergency, including a pandemic, the Department needs a strategy for maintaining operations for an extended period. One part of this strategy is to ensure that essential contracts that provide critical business services to the Department have planned for such an emergency and put contingencies in place to provide needed goods and services.

Please summarize (*limit your plan to no more than 5 pages*) how you anticipate such a crisis will affect your operations and describe your emergency response continuity of operations plan. Your response shall include:

- 1) Employee training (describe your organization's training plan, and how frequently your plan will be shared with employees).
- 2) Identify key employees (within your organization) and their essential business functions.
- 3) Identify contingency plans for:
  - (a) How your organization will handle staffing issues when a portion of key employees are incapacitated due to illness.
  - (b) How employees in your organization will carry out the essential functions if contagion control measures prevent them from coming to the primary workplace.
- 4) Explain how your organization will communicate with staff and suppliers when primary communications systems are overloaded or otherwise fail, including key contacts, chain of communications (including suppliers), etc.
- 5) Explain how and when your emergency plan will be tested, and if the plan will be tested by a third party.

## 15. RISK ASSESSMENT

If you have not yet been prequalified to submit proposals to NJDOT Bureau of Research, please submit an online Risk Prequalification Assessment Form prior to submitting a proposal. Also, please make sure that you have a current basic agreement with the Bureau of Research prior to submitting an online Risk Prequalification Assessment Form.

If you have already been prequalified, please submit an online PreAward Risk Assessment Form prior to the request for proposal (RFP) date and time deadline.

All Risk Assessment Forms can be found online at:

[https://www.state.nj.us/transportation/refdata/research/risk\\_assessment\\_forms.shtm](https://www.state.nj.us/transportation/refdata/research/risk_assessment_forms.shtm)

# Appendix F

# Appendix F

## BUDGET AND BUDGET JUSTIFICATION

Budgets will be evaluated separately, and only after a selection has been made as to which proposal is the most qualified based on technical merit. Place three (3) copies of the budget and budget justification for this project in a separate sealed envelope.

### Budget Breakdown Sheet

Name of the Research Study																			
Name of the Institution																			
				Task 1		Task 2		Task 3		Task 4		Task 5		Task 6		Task 7		Total	
A. Direct Labor	Title	Hrly Rate	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Total Hrs	Total \$	
A1. Faculty 1	Professor			\$0.00		\$0.00		\$0.00		\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$ -	
A2. Faculty 2	Associate Professor			\$0.00		\$0.00		\$0.00		\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$ -	
A3. Graduate Assistant	Supporting Role			\$0.00		\$0.00		\$0.00		\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$ -	
<b>Total Hours and Direct Labor Cost</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>B. Fringe Benefits:</b>		Rate																	
B1: Fringe Benefit rates 1		0																	
B2: Fringe Benefit rates 2		0																	
B3: Fringe Benefit rates 3		0																	
<b>Total Fringe Benefits</b>																			
<b>C. Other Direct Cost</b>		<b>Item Description</b>																	
Supplies		Needs separate sheets to show breakdown of costs																	
Equipment																			
Travel																			
Subcontract 1		Each Subcontractor needs to prepare taskwise breakdown like this sheet																	
Subcontract 2																			
<b>Total Other Direct Cost</b>																			
<b>Total Direct Expenses (A+B+C)</b>																			
<b>Total MTDC</b>																			
<b>Indirect Costs/Overhead (D)</b>		Rate = x%																	
<b>Grand Total (A+B+C+D)</b>																			

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**Budget Justification:** Use this section to provide any additional information regarding the budget. The following items require special justification language:

- If you added a task for Out-of-State Conference Travel, please explain the purpose of the trip and how attendance will benefit the project.
- If you added a task for travel, please explain the purposes of the trips, how attendance will benefit the project, and estimations of mileage to be reimbursed
- If you added a task for Equipment with a purchase price exceeding the threshold. Please explain how you plan for disposition of the equipment at the end of the project, and what the final location, transfer protocol, and training may be. This information needs to be determined prior to contract execution.
- If you have Supplies, a per unit breakdown shall be provided.

## **Technical Advisory Panel Responsibilities for Reviewing Proposals**

Each TAP member is individually responsible for safeguarding proposals and evaluation of materials and processes, and must adhere to the following:

- All questions to PI related to proposal shall be directed to the Bureau Manager.
- Only TAP members will have access to the proposals at any time. Materials will be secured and kept strictly confidential.
- The RPM must be included in any discussion and/or copied on e-mail correspondence related to the evaluation of the proposals. All e-mails related to the evaluation process and/or the proposals submitted are a part of the public record.
- TAP members shall not discuss any substantive element of the evaluation process (proposer's name, number of proposals, technical materials, and scoring), with anyone outside the team. All requests for information from non-team members shall be directed to the Bureau Manager.
- TAP members will not have any access to proposal's budget information prior to the completion of the technical scoring unless otherwise determined by the Bureau Manager.
- TAP members will make copies of their worksheets and deliver them to the RPM for tabulation. Evaluators will retain their originals for use during any future project meeting or debriefing (shared upon request by FHWA if required).
- All TAP members must return the proposals submitted for evaluation to the RPM after evaluation (within 2-3 weeks of time duration).
- All TAP members must attend proposal debriefing meetings and provide justification in the proposal evaluation.

# Appendix H

## Proposal Evaluation Form

The following form is to evaluate proposals. For each of the categories listed, assign the following points based on the review of the proposal. (Fill gray areas)

Rating: Excellent = 4; Above Average = 3; Average = 2; Below Average = 1; Not Covered = 0

Proposal Number: \_\_\_\_\_ Research team /University: \_\_\_\_\_

Name of the Reviewer: \_\_\_\_\_ Reviewer Signature: \_\_\_\_\_

Proposal Review	Rating	Weight	Score
<b>1. UNDERSTANDING OF THE PROPOSAL</b>			
1.1. Does the proposal presents clear understanding of the problem statement?		3.0	
<b>2. RESEARCH APPROACH AND PRINCIPLES</b>			
2.1. Are the scientific and practical techniques presented in the proposal shape clear research methodology?		4.5	
2.2. Do the proposed tasks effectively address all the objectives listed in the RFP?		4	
2.3. Does the proposal follow effective research principles		2.5	
<b>3. INNOVATION AND IMPLEMENTATION OF RESULTS</b>			
3.1. Are there any innovative ideas, techniques, materials contained in the proposal?		2.5	
3.2. Implementation plan		1.5	
<b>4. PROPOSED RESEARCH SCHEDULE</b>			
4.1. Is the time line shown appropriate for each task?		2	
<b>SCORE FOR THIS PROPOSAL</b>			
<b>MAXIMUM SCORE</b>	<b>80.0</b>		

**Note:** Although the scores are not released to universities, your comments and feedback can help improving future proposals.

Strengths: What did you like best in the proposal?

Aspects that could be improved: What was unclear, missing or confusing?

# Appendix H

## PI performance Evaluation Form

The following form is used to evaluate the proposals through oral presentations. For each of the categories listed assign the following points based on the presentation. (Fill gray areas)

Rating: *Excellent* = 4; *Above Average* = 3; *Average* = 2; *Below Average* = 1; *Not Covered* = 0

**Proposal Number:** \_\_\_\_\_ **Research team /University:** \_\_\_\_\_

**Name of the Reviewer:** \_\_\_\_\_ **Reviewer Signature:** \_\_\_\_\_

<b>Proposal Review</b>	<b>Rating</b>	<b>Weight</b>	<b>Score</b>
<b>1. THE EXPERIENCE, QUALIFICATION AND AVAILABILITY OF THE RESEARCH TEAM</b>			
1.1. Is the research team's background and experience relevant to the project?		2	
1.2. Availability/Other Commitments of research Team		1.5	
1.3. Principal Investigator Past Performance on NJDOT projects		1.5	
<b>SCORE FOR THIS PROPOSAL</b>			
<b>MAXIMUM SCORE</b>	<b>20.0</b>		

**Note:** Although the scores are not released to universities, your comments and feedback can help to improve future proposals.

Strengths: What did you like best in the presentation?

Aspects that could be improved: What was unclear, missing or confusing?



# Appendix I

## Proposal Oral Presentation Evaluation Form

The following form is used to evaluate the proposals through oral presentations. For each of the categories listed assign the following points based on the presentation. (Fill gray areas)

Rating: *Excellent* = 4; *Above Average* = 3; *Average* = 2; *Below Average* = 1; *Not Covered* = 0

**Proposal Number:** \_\_\_\_\_ **Research team /University:** \_\_\_\_\_

**Name of the Reviewer:** \_\_\_\_\_ **Reviewer Signature:** \_\_\_\_\_

<b>Proposal Review</b>	<b>Rating</b>	<b>Weight</b>	<b>Score</b>
<b>1. ORAL PRESENTATION</b>			
1.1. Effectiveness of the presentation for better understanding the submitted proposal		2.5	
1.2. Research team response to questions/comments		1	
1.3. Overall confidence in research team		1.5	
<b>SCORE FOR THIS PROPOSAL</b>			
<b>MAXIMUM SCORE</b>	<b>20.0</b>		

**Note:** Although the scores are not released to universities, your comments and feedback can help to improve future proposals.

Strengths: What did you like best in the presentation?

Aspects that could be improved: What was unclear, missing or confusing?

## Quarterly Report & Meeting Schedule

# Quarterly Report & Meeting Schedule

### 1<sup>st</sup> Quarter (January 1<sup>st</sup> to March 31<sup>st</sup>)

- DRAFT QUARTERLY REPORT** ~ DRAFT Quarterly Report and ESTIMATED expenditures/invoicing
  - April 1<sup>st</sup> – April 15<sup>th</sup>, the DRAFT Quarterly report with estimated expenditures/invoicing is due to the Research PM, no exceptions. Lateness will be documented.
  - The PI is responsible for submitting the DRAFT REPORT to both the Research PM as well as the Customer and only appropriate research team members at the institute of higher education (IHE) and NJDOT. ***FHWA, nor any other party shall receive the report directly from PIs.***
- QUARTERLY MEETING** ~ Research Project Manager, PI & Team, Customer
  - April 15<sup>th</sup> – April 30<sup>th</sup>, the Quarterly MEETING shall be held, no exceptions. Lateness will be documented.
  - The meeting is scheduled well in advance. NJDOT customers, Research PMs, and Research team members shall make adherence to these dates a priority.
  - Work conducted after the end of the 1<sup>st</sup> quarter (March 31<sup>st</sup>) shall NOT be discussed during this meeting.
- FINAL QUARTERLY REPORT** ~ Quarterly Report and FINAL expenditures
  - May 15<sup>th</sup> – May 31<sup>st</sup>, the FINAL Quarterly Report ***and*** FINAL expenditures/invoicing due to the Research PM, no exceptions. Lateness will be documented.
  - PI is responsible for making any and all revisions to the quarterly report, expenditures/invoices and submitting all FINAL documents to the Research PM to sign.



# Appendix J

## 2<sup>nd</sup> Quarter (April 1<sup>st</sup> to June 30<sup>th</sup>)

1. **DRAFT QUARTERLY REPORT** ~ Quarterly Report and ESTIMATED expenditures/invoicing
  - July 1<sup>st</sup> – July 15<sup>th</sup>, the DRAFT Quarterly report with estimated expenditures/invoicing is due to the Research PM, no exceptions. Lateness will be documented.
  - The PI is responsible for submitting the DRAFT report to both the Research PM as well as the Customer and only appropriate research team members at the institute of higher education (IHE) and NJDOT. FHWA, nor any other party shall receive the report.
2. **QUARTERLY MEETING** ~ Research Project Manager, PI & Team, Customer
  - July 15<sup>th</sup> – July 31<sup>st</sup>, the Quarterly MEETING shall be held, no exceptions. Lateness will be documented.
  - The meeting is scheduled well in advance. NJDOT customers, Research PMs, and Research team members shall make adherence to these dates a priority.
  - Work conducted after the end of the 2<sup>nd</sup> quarter (June 30<sup>th</sup>) shall NOT be discussed during this meeting.
3. **FINAL QUARTERLY REPORT** ~ Quarterly Report and FINAL expenditures
  - August 15<sup>th</sup> – August 30<sup>th</sup>, the FINAL Quarterly Report ***and*** FINAL expenditures/invoicing due to the Research PM, no exceptions. Lateness will be documented.
  - PI is responsible for making any and all revisions to the quarterly report, expenditures/invoices and submitting all FINAL documents to the Research PM to sign.



**2<sup>nd</sup> Quarter**

## 3<sup>rd</sup> Quarter (July 1<sup>st</sup> to September 30<sup>th</sup>)

1. **DRAFT QUARTERLY REPORT** ~ Quarterly Report and ESTIMATED expenditures/invoicing
  - October 1<sup>st</sup> – October 15<sup>th</sup>, the DRAFT Quarterly report with estimated expenditures/invoicing is due to the Research PM, no exceptions. Lateness will be documented.
  - The PI is responsible for submitting the DRAFT report to both the Research PM as well as the Customer and only appropriate research team members at the institute of higher education (IHE) and NIDOT. FHWA, nor any other party shall receive the report.
2. **QUARTERLY MEETING** ~ Research Project Manager, PI & Team, Customer
  - October 15<sup>th</sup> – October 30<sup>th</sup>, the Quarterly MEETING shall be held, no exceptions. Plan to schedule around any holidays. Lateness will be documented.
  - The meeting is scheduled well in advance. NIDOT customers, Research PMs, and Research team members shall make adherence to these dates a priority.
  - Work conducted after the end of the 3<sup>rd</sup> quarter (September 30<sup>th</sup>) shall NOT be discussed during this meeting.
3. **FINAL QUARTERLY REPORT** ~ Quarterly Report and FINAL expenditures
  - November 15<sup>th</sup> – November 30<sup>th</sup>, the FINAL Quarterly Report **and** FINAL expenditures/invoicing due to the Research PM, no exceptions. Plan to schedule around any holidays. Lateness will be documented.
  - PI is responsible for making any and all revisions to the quarterly report, expenditures/invoices and submitting all FINAL documents to the Research PM to sign.



**3<sup>rd</sup> Quarter**

## 4<sup>th</sup> Quarter (October 1<sup>st</sup> to December 31<sup>st</sup>)

1. **DRAFT QUARTERLY REPORT** ~ Quarterly Report and ESTIMATED expenditures/invoicing
  - January 1<sup>st</sup> – January 15<sup>th</sup>, the DRAFT Quarterly report with estimated expenditures/invoicing is due to the Research PM, no exceptions. Lateness will be documented.
  - The PI is responsible for submitting the DRAFT report to both the Research PM as well as the Customer and only appropriate research team members at the institute of higher education (IHE) and NJDOT. FHWA, nor any other party shall receive the report.
2. **QUARTERLY MEETING** ~ Research Project Manager, PI & Team, Customer
  - January 15<sup>th</sup> – January 31<sup>st</sup>, the Quarterly MEETING shall be held, no exceptions. Plan to schedule around any holidays. Lateness will be documented.
  - The meeting is scheduled well in advance. NJDOT customers, Research PMs, and Research team members shall make adherence to these dates a priority.
  - Work conducted after the end of the 4<sup>th</sup> quarter (December 31<sup>st</sup>) shall NOT be discussed during this meeting.
3. **FINAL QUARTERLY REPORT** ~ Quarterly Report and FINAL expenditures
  - February 15<sup>th</sup> – February 28<sup>th</sup>, the FINAL Quarterly Report ***and*** FINAL expenditures/invoicing due to the Research PM, no exceptions. Plan to schedule around any holidays. Lateness will be documented.
  - PI is responsible for making any and all revisions to the quarterly report, expenditures/invoices and submitting all FINAL documents to the Research PM to sign.



4<sup>th</sup> Quarter

# Appendix K



## Contract Modification

### NEW JERSEY DEPARTMENT OF TRANSPORTATION BUREAU OF RESEARCH

<b>Project Name:</b>			
<b>TIP#</b>		<b>Federal Project agreement</b>	
<b>Principal Investigator:</b>			
<b>NJDOT Contract ID # :</b>		<b>Task Order Number:</b>	
<b>University:</b>		<b>Center:</b>	
<b>Date of Request:</b>		<b>Contact Phone Number:</b>	
<b>Person Submitting Request:</b>			

Request for:
<input type="checkbox"/> Scope Change <input type="checkbox"/> Budget Modification
<input type="checkbox"/> Key Staff Change <input type="checkbox"/> Time Extension

#### Detailed Justification Statement:

Original Budget:	
Requested Revised Total Budget (indicate compliance with 2 CFR 200.308):	
Amount Expended to Date:	

# Appendix K



Percentage of the Tasks Completed:			
<b>IHE Concurrence:</b>			
Center/Department Concurrence:		Date:	
Univ. Grant Accounting Concurrence:		Date:	
ORSP Concurrence:		Date:	
<b>FHWA Approval:</b>			
<input type="checkbox"/> Approved <input type="checkbox"/> Not Approved <input type="checkbox"/> More Information Required			
FHWA Director:		Date:	
<b>NJDOT Approval:</b>			
NJDOT Research Project Manager:		Date:	
Manager, Bureau of Research:		Date:	
Director, Statewide Planning:		Date:	
Assistant Commissioner, Planning, Multimodal & Grants Administration:		Date:	

**\*Signatures certify that the changes comply with the administrative requirements and cost principles as per 2 CFR 200 as well as all pertinent program requirements.**





# Appendix K



**NEW JERSEY DEPARTMENT OF TRANSPORTATION  
BUREAU OF RESEARCH**

**Request for Budget Modification by Budget Line Item by year**

**Project Name:**

<b>Budget Items</b>	<b>Current Approved Budget</b>	<b>Requested Change</b>	<b>Revised Budget</b>
<b>A. Salary and Wages</b>			
1. Faculty (Summer)			
2. Release Time			
3. Graduate Student			
4. Hourly Staff			
5. Staff Support			
<i>Subtotal:</i>			
<b>B. Fringe Benefits (% FY XX)</b>			
A1 - X.X%			
A2 - XX.X%			
A3 - X.X%			
A4 - X.X%			
A5 - XX.X%			
<i>Subtotal:</i>			
<b>C. Direct Costs</b>			
Supplies			
Travel			
<i>Subtotal:</i>			
<b>D. Other Direct Costs:</b>			
Equipment			
Consultants (<=\$25K)			
Consultants (>\$25K)			
Subcontract Total			
<i>Subtotal:</i>			
<b>E. Modified Total Direct Cost*</b>			
<i>Subtotal:</i>			
<b>F. Overhead/Indirect Costs (XX% of MTDC)**</b>			
<i>Subtotal:</i>			
<b>TOTAL COST:</b>			

\* Modified Total Direct Cost includes all costs except equipment (>\$5,000), major subcontracts (>\$25,000).

\*\* University Cost Share Rate is XX% of MTDC, or \$XX,XXX for this requested budget modification.

# Appendix K



**NEW JERSEY DEPARTMENT OF TRANSPORTATION  
BUREAU OF RESEARCH**

**Request for Task Wise Budget Modification for the Research Team by Year**

**Project Name:**

Budget Items	Hourly Rate	Task 1		Task 2		Task 3		Task 4		Task 5		Task 6		Task 7		Task 8		Proposed Total	
		Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$	Hours	\$
A Salary and Wages																			
1. Faculty (Summer)																			
2. Release Time																			
3. Graduate Student																			
4. Hourly Staff																			
5. Staff Support																			
Total Hours and Direct Labor Cost																			

# Appendix L

New Jersey Department of Transportation- Bureau of Research

## Progress Evaluation Form

**Project Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Quarter No:** \_\_\_\_\_

**Evaluators:** \_\_\_\_\_  
 \_\_\_\_\_

(Note: This research progress evaluation is purely based on quarter to quarter)

To be completed by **Project Customer** only

Activity	Excellent (4)	Above Average (3)	Average (2)	Below Average (1)	Poor (0)
Execution of the work plan					
Quality of the work					
Work plan for next quarter					
<b>Total</b>					

To be completed by **Project Manager** only

Activity	Excellent (4)	Above Average (3)	Average (2)	Below Average (1)	Poor (0)
Budget management					
Research team performance					
Work plan for next quarter					
<b>Total</b>					

Comments:

<b>Grand Total</b>	
--------------------	--

# Appendix M

## Quarterly Progress Report

Quarter Ending <b>Month</b> Calendar Year <b>20XX</b>				
Project Title:				
Date Submitted:				
Schedule Status: (select one)	<input type="checkbox"/> On schedule	<input type="checkbox"/> On revised schedule	<input type="checkbox"/> Ahead of schedule	<input type="checkbox"/> Behind schedule
RFP #:		Task Order #:		
University/Research Partner:		Contract ID #:		
Principal Investigator(s):				
	Phone:		Email:	
Research Project Manager(s):				
Authorization Date: <i>Assistant Comm. Signature</i>		Project Start Date: <i>Same as Authorization Date or date of letter to incur cost</i>		
Original End Date:		Modified End Date: <i>Only use this when a time extension has been granted</i>		

## TECHNICAL NARRATIVE

### Section 1 Project Objectives & Abstract

Project Objectives:

*[Summarize in paragraph or two the project objectives]*

Project Abstract:

*[Summarize in paragraph or two the problem, research approach and expected outcome]*

### Section 2 Project Progress Current Quarter

Progress This Quarter:

*[Provide a narrative of what work was done, **per task**, during the **CURRENT** quarter here]*

# Appendix M

List of Deliverables This Quarter:

*[List the deliverables submitted during the **CURRENT** quarter in the table below, along with the submittal dates]*

Current Quarter List of Deliverables			
Deliverable Title	Original Proposed Due Date	Actual Submittal Date	Explanation of Deviation b/t Proposed & Actual Dates

Implementation & Training Activities This Quarter:

*[Summarize the work performed on implementation and training activities, **per task**, for the **CURRENT** quarter.]*

Problems & Recommended Solutions This Quarter:

*[Describe any problems encountered or anticipated this quarter that might affect the completion of the project within the time, scope, and fiscal constraints set forth in the contract, along with recommended solutions to those problems. **NOTING DIFFICULTIES IN THIS SECTION DOES NOT CONSTITUTE A REQUEST TO MODIFY THE PROJECT.** Requests for additional time, funding, or scope revisions must be submitted in a separate letter to the NJDOT Bureau of Research.]*

**Section 3 Proposed Progress Next Quarter**

Proposed Activities Next Quarter:

*[Summarize what work will be done, **per task**, during the **NEXT** quarter]*

# Appendix M

## PROJECT BUDGET AND SCHEDULE OVERVIEW

### Overall Project Progress:

Total Project Duration: **xx** Months

Total Budget	Total expenditures to date	% funds expended	% work completed to date	% time spent

### Current Programmed (TO) Year Status: **Month 20XX to Month 20XX** (Year 1, 2, 3 etc.)

*[In case research project in its first year, the dates should reflect the start and end date of the corresponding task order (TO). If applicable repeat this process for subsequent years]*

Programmed Budget	Total expenditures to date	% funds expended	% work completed to date	% time spent
Tasks		Programmed budget	Expended to date	
#1				
#2				
#3				
#4				
Total				

### Current Quarter: # **xx** and Year **20xx**

Tasks performed in this quarter	Planned funds for quarter	Expended funds in the quarter	Funding carry over to next quarter (difference b/t planned and expended)
Task # <b>x, x</b>			
Total			

# Appendix M

Next Quarter: # **xx** and Year **20xx**

Tasks to be performed	Programmed funds for quarter	Planned funds for quarter

Approved by:

\_\_\_\_\_  
NJDOT Research Project Manager

\_\_\_\_\_  
Date

# Appendix N

## NJDOT Research Monthly Report

**Project Name:**

### **1. Work Performed this Month:**

<b>Task Activity</b>	<b>Accomplishments this Month</b>
<b>1</b>	
<b>2</b>	
<b>3</b>	

### **2. Estimated Percentage Completion of Project:**

### **3. Problems Encountered/Delays in Project Completion:**

### **4. Anticipated Work for Next Month:**



# Appendix O



## Final Report Guidelines

Report number to be supplied by NJDOT Research Project Manager (RPM).

FHWA-NJ-20XX-00X



**BUREAU OF RESEARCH**

Logo to be 1.3" by 4.65" in order to preserve aspect ratio

Report Title to match title used on Task Order or Purchase Order Agreement.  
Title font shall be Arial, 14 point, normal spacing, bold with all capitals and centered on page.

### **Guidelines for Preparing NJDOT Research Final Reports and Tech Briefs FINAL REPORT**

February 2018

Submitted by

Jane Doe Ph.D.  
Professor of Engineering  
XYZ University

Co-Author

Bob Doe Ph.D.  
Professor of Engineering  
XYZ University

NJDOT Research Project Manager  
Name of Project Manager

All font on this page, except for the title and report number, shall be Arial 12 point, normal spacing, non-bold with initial capitals.

In cooperation with

New Jersey  
Department of Transportation  
Bureau of Research  
And  
U. S. Department of Transportation  
Federal Highway Administration

No page number on this page

# Appendix O

## DISCLAIMER STATEMENT

“The contents of this report reflect the views of the author(s) who is (are) responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the New Jersey Department of Transportation or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation. “

All font on this page, except for the title, shall be Arial 12 point, normal spacing, non-bold with full page justification.  
The title shall be Arial 12 point font, all capitals, bold and centered on page.

For projects being done for NJDOT this statement can be used verbatim.  
For projects being done for NJ Transit or NJ Motor Vehicles Commission the language must be adjusted accordingly.

No page number

# Appendix O



## TECHNICAL REPORT DOCUMENTATION PAGE

<b>1. Report No.</b> FHWA NJ-20XX-0XX	<b>2. Government Accession No.</b> <i>Leave Blank</i>	<b>3. Recipient's Catalog No.</b> <i>Leave Blank</i>	
<b>4. Title and Subtitle</b> <b>FINAL REPORT</b> Enter title and subtitle (use mixed case with initial caps for first word in title and subtitle) with volume and part numbers, if applicable.		<b>5. Report Date</b> Enter same date as report cover, month and full year: January 2017	
<b>7. Author(s)</b> Enter name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. Form of entry is first name, middle initial (if applicable), last name, and any additional qualifiers. Primary author is listed first.		<b>6. Performing Organization Code</b> Enter any/all unique numbers assigned to the performing organization, if applicable.	
<b>9. Performing Organization Name and Address</b> Enter the name and address of the organization(s) performing the research.		<b>8. Performing Organization Report No.</b> Enter any/all unique alphanumeric report numbers assigned by the performing organization, if applicable.	
<b>12. Sponsoring Agency Name and Address</b> Federal Highway Administration (SPR) 1200 New Jersey Avenue, SE Washington, DC 20590 New Jersey Department of Transportation (SPR) 1035 Parkway Avenue, P.O. Box 600 Trenton, NJ 08625.0600		<b>10. Work Unit No.</b> <i>Leave Blank</i>	
		<b>11. Contract or Grant No.</b> NJDOT Contract ID Number	
		<b>13. Type of Report and Period Covered</b> Final Report, Month Year – Month Year	
		<b>14. Sponsoring Agency Code</b> FHWA, NJDOT	
<b>15. Supplementary Notes</b> Conducted in cooperation with the U.S. Department of Transportation, Federal Highway Administration. Please provide Transportation Research Center information and volume information (subtitles, volume #, etc.), if applicable.			
<b>16. Abstract</b> Enter a brief factual summary of the most significant information, including the purpose, methods, results, and conclusions of the work. When appropriate, the abstract should include advice on how the results of the research can be used. For guidance, please see ANSI/NISO Z39.14-1997 (R2015) Guidelines for Abstracts ( <a href="http://www.niso.org/apps/group_public/project/details.php?project_id=124">http://www.niso.org/apps/group_public/project/details.php?project_id=124</a> ).  <b>For this page only, use 12 point font. Utilize 250 words or less for the abstract.</b> <b>In box 21. No. of Pages:</b> Please provide the total number of pages of the entire document including cover, front matter, body, references and appendix.			
<b>17. Key Words</b> Enter words, terms, or phrases that identify important topics in the report. When possible, terms should be selected from the Transportation Research Thesaurus (TRT) ( <a href="http://trt.trb.org">http://trt.trb.org</a> ) in addition to terms not found in the TRT.		<b>18. Distribution Statement</b> No restrictions.	
<b>19. Security Classif. (of this report)</b> Unclassified	<b>20. Security Classif. (of this page)</b> Unclassified	<b>21. No. of Pages</b> #	<b>22. Price</b> Leave blank

Form DOT F 1700.7 (8-72)

Reproduction of completed page authorized

Page number i not shown

# Appendix O



## ACKNOWLEDGEMENTS

The author(s) wish to acknowledge the customer(s), *list their name(s) here*, without whom this project would not have been possible.

All font on this page, except for the title, shall be Arial 12 point, normal spacing, non-bold with full page justification.

The title shall be Arial 12 point font, all capitals, bold and centered on page.

The acknowledgement may also include the names of students, other agencies, members of the Research Project Panel (RPP) members, managers of stakeholder bureaus, and FHWA participants.

Center page number 0.5" from bottom and use Arial 12 point font, non-bold. Please use lower case Roman numerals for page numbering materials prefatory to the beginning of the main body of the report.



# Appendix O



## TABLE OF CONTENTS

- FIRST-LEVEL HEADING** (all capitals, boldfaced)
- Second-Level Heading** (initial capitals, boldfaced) \*
- Third-Level Headings* (initial capitals, boldfaced, italic)
- Fourth-Level Heading (initial capitals)
- Fifth-Level Heading* (initial capitals, italic)

\* Indent 0.3” or 3 spaces for each level of header

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# Appendix O

## EXECUTIVE SUMMARY

The pages within this final report example, provide guidelines, for the creation of a NJDOT Research Final Report, Form DOT F 1700.7 (8-72) Technical Report Document Page (includes abstract) and Tech Brief. This guide provides consistence of style to the final reports and tech briefs that appear on the Research web site and are distributed throughout the State and across the Nation.

According to the principles of scientific or technical writing, the report must tell a story that summarizes the research effort. The Research Final report body should contain the following:

- **Executive Summary** – Complete, concise summation of the Background (problem), Objectives, Research Approach, Summary of work performed, data collected, and analyses performed and the distilled results, and Conclusions and Recommendations
- **Background** – A summary of the problem or reasons for conducting the research
- **Objectives** - the criteria of “success” for this particular research study
- **Introduction** – The research approach to the problem
- **Summary of the Literature Review** – what lessons from the review of the literature affected the research approach
- **Summary of the work performed** - data collected, analyses performed, and the distilled results or findings,
- **Conclusions and Recommendations** based on the work conducted, the results determined, and in support of the study objectives.
- **Implementation and Training** - conducted or recommended

The report must be concise. Get to the point quickly. The report must be crafted to take the reader the shortest time to understand the work performed and the results obtained. Time is valuable - report pertinent information that supports the conclusions. Move supporting information to the appendices. Avoid duplication of information.

All research projects are successful. They may not reach the desired results, but if the work is done according to proper scientific principles, the effort provides valuable information that was not known before the research was conducted.

Internal and external reviews of the report are important. The researcher may be too close to the work to be objective. A critical review by colleagues for technical content and by a technical writer or editor for grammar and style will enhance the final report, the research effort, and the researcher.

# Appendix O

## INTRODUCTION

The final report package will be prepared in accordance with the **Guidelines for Preparing Research Final Reports and Tech Briefs** and must include the following:

- An unbound black and white version of the final report and tech brief (for copying)
- Ten (10) copies of the bound final report and tech brief
- CD-ROM with the final report, abstract (Form 1700), and tech brief in the latest version of Microsoft Word and PDF versions. In addition, the CD-ROM shall contain copies of spreadsheets, databases, power point presentations made at quarterly meetings, digital photos, or other worksheets and documents as deemed important by the Principal Investigator and/or the Research Project Panel (RPP) members.
- All electronic files (quarterly progress report and final report package elements) must include *only* the following document properties:
  - Title: NJDOT Bureau of Research
  - Author: full name of the Principal Investigator(s)
  - Subject: task or purchase order agreement project title, type of document, date(s)
  - Keywords: task or purchase order agreement project title, type of document, date(s), RFP **or** purchase order number and job number, task order number
- All electronic files (quarterly progress report and final report package elements) must include the following naming conventions:
  - Quarterly progress reports: University/Consultant Abbreviated Name\_YEAR\_q#\_abbreviated project name.file ext
  - Final Report: FHWA or NJ-Report Number.file ext
  - Tech Brief: FHWA or NJ-Report Number-TB.file ext

Files that are included must be in the programs of origin, such as PowerPoint, Word, Excel, etc., so that these files can be modified or corrected and re-imported into the full-text file. Art must be produced in a program that can export an interchange file format that can be imported into the full text. Photos provided must be in TIF or JPEG format.

The draft final reports are due no later than three months prior to the project completion end date. The Research Project Manager (RPM) and Principal Investigator (PI) will formulate the schedule of section review with the Research Project Panel (RPP) members. The draft sections of the final report and tech brief will be provided in electronic format so that the changes can be tracked.



# Appendix O

## Final Report Package Length, Format, Fonts and Elements

The length of the final report, including cover, front matter, body, references, and appendices, shall not exceed 250 pages in a single volume. When the final report exceeds 125 pages, the submission must be double sided. All final reports shall have clear plastic front presentation cover with rounded corners, black card stock back cover with rounded corners and use a 19 ring comb binding spine (compatible with comb-style binding machines). The tech brief shall be one page double-sided in length.

Reports using single line spacing shall have single spacing between paragraphs. If one-and-one-half line spacing is used, please use double spacing between paragraphs.

Margins must be at least one inch on all sides, including those pages containing figures and/or tables.

Arial 12 point normal spacing font is to be used for all text contained in the Final Report, except on Form DOT F 1700.7 (8-72) Technical Report Documentation Page.

Right-hand margins should be justified. Color may be used in the hard copy and electronic version of the final Report and tech Brief.

Widows and orphans are to be avoided by not leaving a single line of text at the top or bottom of a page. Avoid breaking pages mid-sentence.

# Appendix O

## *Pagination*

Use lower case Roman numerals (e.g. ii, iii, iv, etc.) starting with page ii for the Acknowledgements page and continuing through the pages containing the Table of Contents, List of Figures, and List of Tables. The Technical Report Documentation Page (Form DOT F 1700.7 (8-72)) is always unnumbered page i.

The cover page will not show a page number, but shall be counted in the total number of pages of the report.

Front matter of the report includes the following pages: cover page, Disclaimer Statement page, Form DOT F 1700.7 (8-72) Technical Report Standard Title Page, Acknowledgements page, Table of Contents, List of Figures, and List of Tables.

The report body shall use Arabic page numbers (only one series), which shall be centered 0.5 in from the bottom edge of the page, use 12 point Arial non-bolded font and stand alone with no dash on either side of the number. Decimal numbers, hyphenated numbers, or numbers combined with letters for sections, or subsections are not permitted as page numbers.

Title pages for individual sections, appendices, etc., may be used and all appendices must include a page number.

The total page count, listed in block 21 of the Technical Report Standard Title Page Form DOT F 1700.7 (8-72), must include front matter, body of the report, references, and appendices.

Do not use number designations for appendices name. Please use one series of capitalized letters (e.g. APPENDIX A, APPENDIX B, APPENDIX C, etc.)

## *Headings and Subheadings*

Headings and Subheadings are to be typed as follows:

**FIRST-LEVEL HEADINGS** (all capitals, boldfaced, on a separate line)

**Second-Level Headings** (initial capitals, boldfaced, on a separate line)

***Third-Level Headings*** (initial capitals, boldfaced, italics, on a separate line)

Fourth-Level Headings (initial capitals, on a separate line)

*Fifth-Level Headings* (initial capitals, italics, on a separate line)

Note: Do not indent the first line of any paragraph.

## *Volume Format*

“Volume” designates an individually bound report. When a report exceeds 250 pages of reproduction copy, including front material, body, figures, tables, references and appendices, it should be divided into two or more volumes, each to be designated by a separate report number, and by an upper case Roman numeral (example: Volume I, Volume II, etc.) as part of the subtitle. Volume information should be listed in box 15 on the Technical Report Documentation Page (Form DOT F 1700.7 (8-72)) for all volumes.

Tables of contents, lists of figures, and lists of tables in multi-volume reports should cover the contents of all volumes with volume number designations for each part (i.e. TOC

# Appendix O

(Volume #), List of Figures (Volume #), and List of Tables (Volume #) listed in volume order. If previous volumes have already been published, later volumes should follow the same practice of a comprehensive table of contents listing, including page numbers, project objectives or executive summary section.

## *Table of Contents*

A table of contents is useful in most reports of more than 10 pages and is required in all reports of 10 or more pages.

Do not list front matter. List only the body of the report from page 1 through appendices. Font styles for the headings in the table of contents must match those used in the report. Each level of subordination must consistently use the particular font style used in the heading, such as all capitals, bold, etc. Wording and punctuation must also be the same in the table as in the body of the report.

Lists of figures and tables are required in reports of 10 pages or more containing any figures or tables. Entries in the lists of figures and tables must match the captions exactly in terms of capitalization, punctuation, and font style. Put the lists of figures and tables on the same page if both fit completely.

# Appendix O

## Figures and Tables

The following caption illustrates the standard style for figure and table captions.

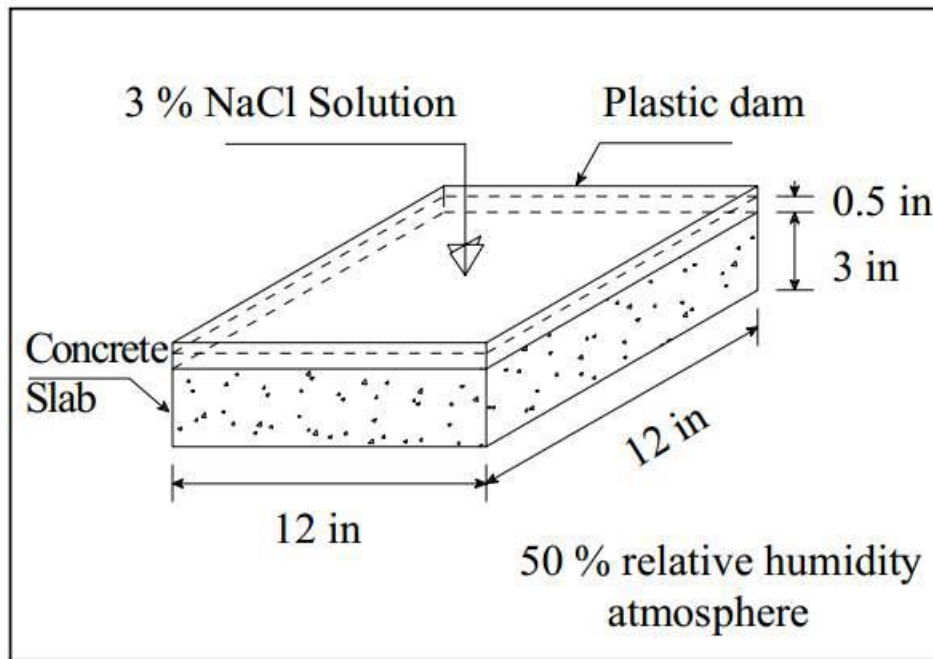


Figure 1. This is the correct form for punctuating, capitalizing, and centering for figure captions

Every figure must have a unique caption centered at the bottom. All captions must be in the same type style and size.

Table 1 - This is the correct form for punctuating, capitalizing, and centering for table captions

Font *		

\* Fonts in tables may be adjusted to fit the information in a legible manner (8 point or larger).

Every table must have a unique caption centered at the top. All captions must be in the same type style and size.

All figures and tables must be numbered in a single sequence from the beginning of the volume through the appendices.

All illustrations and tabular materials must be numbered and captioned as figures or tables. Place each after its first callout within the text.

## Lists

Lists should be bulleted unless the sequence of items is critical, in which case numerals followed

# Appendix O

by periods may be substituted for bullets.

Use a colon at the end of the preceding text sentence.

Use parallel rhetorical and grammatical structure in which each entry begins with a verb.

Begin each entry with a capital letter.

End each entry with a period.

## ***Numbers***

Numbers from one through nine, used within the text, are spelled out. Use numerals for numbers 10 and above. However, if a number 10 or above is in the same sentence with a lower number, use numerals for all.

Units of money, measurement, and time (actual or implied) are expressed in numerals. These do not affect, and are unaffected by other numbers in a sentence.

## ***Abbreviations, Acronyms, and Symbols***

Establish each abbreviation and acronym by spelling out the term the first time it is used followed by the acronym in parentheses, such as Federal Highway Administration (FHWA). In addition, if the report has many acronyms, a list of abbreviations may be included after the list of tables.

Use these abbreviations for units of measurement. Abbreviations used for units of measurement are the same for both singular and plural. Examples of some commonly used units follow:

mi for mile(s)  
mi<sup>2</sup> for square mile(s)  
mi/h for miles per hour (not mph)  
km/h for kilometers per hour  
in for inch(es)  
in<sup>3</sup> for cubic inch(es)  
m for meter(s)  
ft for foot (feet)  
ft<sup>3</sup> for cubic foot (feet)  
lb for pound(s)  
lbf/in<sup>2</sup> (not psi)  
in<sup>2</sup> for square inch(es)  
ft/s for square foot (feet) per second  
s for second(s)

Do not use periods after these abbreviations.

"Percent" should be spelled out in the text. However, the percent symbol "%" may be used in figures and tables.

## ***Footnotes***

Use superscript figures without parentheses or brackets for footnote references.

Text footnotes begin with 1 in each section.

# Appendix O

Footnotes must begin on the page carrying the footnote number. Avoid breaking a footnote between pages.

Footnotes should be single spaced. Indent the first line four spaces.

Footnotes to tables or figures begin with 1 for each table or figure. Use superscript numbers.

Asterisks may be used only when a numeral in a table or figure might cause confusion, such as being mistaken for an exponent.

## ***Punctuation***

Use a hyphen between the elements of compound numbers from twenty-one to ninety-nine (when they must be spell out) and in compound adjectives with a numerical first element. For example:

- 24-in ruler
- 8- by 12-in page
- 3-m-wide screen
- four-lane highway
- 3- to-1 ratio
- 1/2-in diameter pipe

When parentheses or brackets are used to enclose an independent sentence, the period falls inside. (See reference 1.) If the enclosed matter is part of a sentence, the period falls outside (when the enclosed matter completes the sense of the sentence).

Periods and commas should be placed inside quotation marks; semicolons fall outside quotation marks.

Use a comma after each member within a series of three or more words, phrases, letters, or figures used with "and," "or," or "nor."

Use semicolons to separate groups of items only when commas are already used within each group. For example, "He checked the streets, highways, and lanes; the subways, bus routes, and airlines; and the theaters, museums, and art galleries." In other instances in which intervening commas are used and confusion may result, use semicolons to separate elements containing commas.

## ***Equations***

Number equations with a single series of Arabic numerals through the appendices. Enclose each number in parentheses at the right margin on the last line of the equation. For example:

$$A = b + c \qquad (1)$$

All variables and/or constants in the equation must be identified or explained.

## ***Other***

Common nouns such as table 1, section 2, sample A, reference 4, appendix A, etc., should not be capitalized within the text.

The word "State" should be capitalized when referring to a geographic or governmental entity.

The words "Federal" and "Government" are capitalized, whether they appear together or alone, when referring to the Federal Government. The word "Nation" is capitalized when used as a synonym for the United States.

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The prefixes and suffixes listed below generally do not require a hyphen when joined with other words:

multi  
super  
pre  
micro  
under  
re  
like  
semi  
post

However, use a hyphen with the following in all cases in which they are used as reflexive prefixes: ex-, self-, and quasi-.

Keep numbers and units of measurement or words that depend on each other for meaning together on the same line of type. (For example: chapter 5, 25 percent, 31 mm.)

## ***References***

Reference numbers should be superscript numbers enclosed in parentheses. Place them after end punctuation. If there is more than one reference, separate them with commas, but no spaces. Example: XXXXXXXX.<sup>(2,3,9)</sup> For more than three reference numbers, use a separate sentence in parentheses. (See references 1, 5, 7, and 18.)

Use a single series of Arabic numbers beginning with 1 and continuing through the appendices.

Each reference should be cited within the main text. Materials not specifically cited may be listed in a bibliography placed at the end of the volume on the page(s) following the references. If a reference is cited more than one time in the text, repeat the number first assigned to the reference.

References must be consistent in punctuation and in the order of elements and with the same sequence numbers.

## Examples of References

### *TRB Publication*

V. Zahavi and J.M. Ryan. “**Stability of Travel Over Time.**” In *Transportation Research Report 750*, TRB, National Research Council, Washington, D.C., 1980, pp. 70-75.

### *Book*

D. Shinar, *Psychology on the Road: The Human Factor in Traffic Safety*. John Wiley and Sons, Inc., New York, 1978.

### *Periodical*

J. K. Jolliffe and T.P. Hutchinson. “A Behavioral Explanation of the Association Between Bus and Passenger Arrivals at a Bus Stop” (in Japanese) *Transportation Science*, Vol. 9 No. 3, (May

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1975), pp 248-282.

## Government Reports

B.J. Dempsey. *Climatic Effects of Airport Pavement Systems: State of the Art*. Report DOT2DRD-75-196. FHWA, U.S. Department of Transportation, 1976.

### ORDER OF ELEMENTS FOR FINAL REPORTS

Not all elements, from the following table, are necessarily used in all reports.

Section	Page #	Element
Front Matter	n/a	Front Cover
	n/a	Disclaimer Statement
	i	Technical Report Documentation Page, Form DOT F 1700.7 (8-72) <b>Counted as page i, but not shown on page.</b>
	ii	Acknowledgments
	iii	Table of Contents
	≥ iii	List of Figures
	≥ iii	List of Tables
Body of Report	1	<b>Executive Summary:</b> complete, concise summary of the background, objectives, research approach, summary of work performed, data collected, and analyses performed and the distilled results, and Conclusions and Recommendations
	≥ 1	<b>Background:</b> reasons for conducting the Research
	≥ 1	<b>Objectives:</b> criteria of “success” for this particular research study
	≥ 1	<b>Introduction:</b> the research approach to the problem
	> 1	<b>Summary of the Literature Review:</b> what lessons from the review of the literature affected the research approach
	> 1	<b>Summary of the Work Performed:</b> data collected, analyses performed and the distilled results or findings
	> 1	<b>Conclusions and Recommendations:</b> based on the work conducted, the results determined and in support of the study objectives
	> 1	<b>Implementation and Training:</b> conducted or recommended
References	> 1	References
	> 1	Bibliography
Appendix	> 1	Appendix (optional)



# Appendix P

## Implementation Survey

### Form C

#### **NJDOT BUREAU OF RESEARCH**

#### **RESEARCH IMPLEMENTATION AND CLOSEOUT RISK ASSESSMENT SURVEY (2 CFR 200)**

1. This form must be completed by the Customer and Research Project Manager (RPM) within 60 days of accepting the final report package from the Principal Investigator.
2. This document provides the NJDOT Bureau of Research with an evaluation by the customer and RPM of a research project, which may impact the future scores of any proposals submitted henceforth by the research team members noted in this survey.
3. Upon completion, this survey will be included in the NJDOT Research Bureau's project file.

**Project Title**

**Task Order #**

**Date Submitted to RPM**

#### **Customer Completing Survey**

Customer First and Last Name:

Customer Organization (Company Name, Unit, Division, Address, etc.):

Other Customers and Subject Matter Experts Involved:

If you are the Customer completing this survey, please skip to the Evaluation Questions and select this circle:

#### **NJDOT Research Project Manager (RPM) Completing Survey**

First and Last Name:

Date Completed by RPM:

#### **Principal Investigator**

First and Last Name:

#### **Research University / Consultant**

Organization Name:

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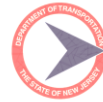
## Project Specifics

Project Start Date  Actual Project Completion Date  Original Project Completion Date

FHWA Project Report Number:

<b>EVALUATION METRIC:</b>	Poor	Below Average	Average	Above Average	Excellent
1. Principal investigator maintained effective communication throughout project:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. PI and project team were competent, understood and responded to customer needs:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Principal Investigator's (PI) quality of technical work:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Quarterly Progress Report timeliness:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Quarterly Progress Report accuracy:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Prequalification Risk Assessment and Preaward Risk Assessment form submission timeliness:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Prequalification Risk Assessment and Preaward Risk Assessment form accuracy:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Invoice submittal timeliness:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Invoice accuracy (complete and with backup paperwork):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Accuracy of original estimated budget:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Accuracy of original estimated schedule:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Project deliverable consistency (as outlined in the approved project work plan):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Overall quality of Principal Investigator's Contract Administration:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Final report was accurate and clearly written:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Overall project satisfaction:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Appendix P



16. Draft final report package submittal timeliness (submitted 3 months prior to the most current contract end date):

After 3 months  At 3 months  Before 3 months

17. Did the project result in establishing groundwork for NJDOT implementation or decision making?

No  Yes, please explain:

18. Was the customer able to use/implement the research findings or products in their organization/unit?

No  Yes, please explain:

19. Did the research study result in implementable changes with **quantifiable** benefits?

No  Yes, please explain:

20. Did the research study result in measureable **knowledge transfer** products?

No  Yes, please explain:

21. Did the research study result in implementable changes with **qualitative** benefits?

No  Yes, please explain:

22. Can the Bureau of Research provide further assistance in implementing the findings of this study?

No  Yes, please explain:

## Additional Information

Please provide details in this section about early project termination, project suspensions and **other pertinent details** not captured in the survey.

## Reference

There are several links for federal and state regulations cited in the manual. Websites may not have the most current versions of these documents. Visit below sites for the latest updates to the regulations.

**United States Code** (<https://www.govinfo.gov/app/collection/uscode>)

### **23 USC 505**

Title 23 – Highways  
Chapter 5 – Research, Technology and Education  
Section 505 - State Planning and Research  
Year – 2020

### **23 USC 504**

Title 23 - Highways  
Chapter 5 – Research, Technology, and Education  
Sec. 504 - Training and education  
Year - 2020

**Code of Federal Regulations** (<https://www.govinfo.gov/app/collection/cfr/>)

### **49 CFR 19**

Title 49 - Transportation  
Subtitle A - Office of the Secretary of Transportation  
Part 19 – Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and other Non-Profit Organizations  
Year – 2014

### **23 CFR 420**

Title 23 - Highways  
Chapter I - Federal Highway Administration, Department of Transportation  
Part 420 - Planning and Research Program Administration  
Year - 2021

### **2 CFR 200**

Title 2 - Grants and Agreements  
Part 200 – Uniform and Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards  
Year – 2021

### **2 CFR 25**

Title 2 - Grants and Agreements  
Subtitle A - Office of Management and Budget Guidance for Grants and Agreements  
Part 25 – Universal Identifier and System for Award Management  
Year - 2021

# Reference

## **23 CFR 1**

Title 23 - Highways  
Chapter I – Federal Highway Administration, Department of Transportation  
Part 1 – GENERAL  
Year – 2021

## **49 CFR 18**

Title 49 - Transportation  
Subtitle A - Office of the Secretary of Transportation  
Year - 2014

**New Jersey Statutes** (<https://codes.findlaw.com/nj/>)

**Title 52** - State Government, Departments and Officers  
Year - 2021

