

University Transportation Center Administration Manual

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University Transportation Centers

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Introduction

University Transportation Centers (UTCs) were established by the U.S. Department of Transportation (USDOT) in 1987. UTC's are part of an on-going federal government effort to improve transportation research, transportation education and to strengthen the country's competitiveness in the global transportation industry. The program is sponsored and coordinated by the USDOT Research and Innovative Technology Administration (RITA) office. Federal funding of UTCs is provided by two federal agencies in the U.S. Department of Transportation; FHWA and the Research Innovative Technology Agency (RITA). Federal grants must be matched with non-federal funds.

Additional information can be found at <http://utc.dot.gov/>.

1.1 MDOT UTC Participation

The Michigan Department of Transportation (MDOT) has financially supported and participated in University Transportation Centers (UTC) historically. UTCs have been located in both Michigan and in other states. However, MDOT support has only been forthcoming when a Michigan university has been a member of a UTC. MDOT support for UTCs has consisted of setting research priorities, providing technical advice, offering access to MDOT SPR II federal aid, assisting with setting project focus and supplying the administrative support necessary to meet federal funding requirements.

Universities requesting MDOT support may submit a request letter to the Engineer of Research. The letter should explain the reasons why MDOT UTC participation is beneficial to MDOT and the State of Michigan, in general. Funding requests should also be covered in the letter.

The MDOT UTC Coordinator will discuss the university request with the appropriate Focus Area Manager (FAM) and Research Advisory Committee (RAC) chair. The Research Executive Committee (REC) will make the final participation determination. UTC proposals, accepted by MDOT, will receive an MDOT letter of support that can be included in the UTC proposal to RITA.

1.2 Program/Project Development Overview

UTC programs may be supported by funding from RITA, the university and MDOT. Although funding comes from multiple sources, MDOT funding support is contingent upon MDOT having input in both UTC research priority setting and UTC project selection. Some UTCs are governed

by a Board of Directors who provide overall strategic direction for the UTC. An MDOT representative may be asked to provide direction to the board in order for MDOT needs to be sufficiently accounted for in the UTC activity prioritization process.

Successful UTC proposers, supported by MDOT, must be aware of the timelines necessary to receive an MDOT contract authorization to begin UTC activities. Each UTC will be funded with a single MDOT contract authorization.

UTC contract authorizations may fund multiple research projects. Federal matching requirements require a cost summary of proposed project costs broken down by work activity including a breakdown of contribution amounts by each supporting agency (RITA, MDOT, and university). This is necessary to confirm funding match requirements. The process can be time-consuming and should begin as soon as RITA notifies the university that the UTC proposal has been selected. The chart below illustrates the approximate timeline, commencing with RITA proposal selection and concluding with an MDOT project authorization.

Phase	Responsible Partner	Months						
		1st	2nd	3rd	4th	5th	6th	7th
RITA Solicitation Period	RITA							
Submit letter of interest to MDOT	UTC							
MDOT Decision on UTC support	MDOT REC							
RITA Proposal Selection	RITA							
Submit Project Concept Form	UTC							
Develop Problem Statement	MDOT PM							
Approval of SPRII funding	FHWA MI							
Submit Work Plan to MDOT	UTC							
Contract with RITA or UTC lead	RITA / UTC							
Contract with MDOT	UTC/MDOT							

Specific project concepts should be submitted to MDOT immediately after RITA selection of the UTC proposal. Delaying the submittal of project concepts to MDOT until after UTC award can significantly delay the initiation of research projects. Project concept meeting(s) will include the MDOT Focus Area Manager (FAM), the university UTC representative, MDOT UTC Coordinator and other staff as needed.

The FAM will submit the selected project(s) to the RAC for review. The RAC will recommend the projects to the REC for final approval. Subsequent to project(s) approval, the FAM will assign a Project Manager (PM) for each project. Each PM will recommend to the FAM whether a Research Advisory Panel (RAP) will be necessary for the project.

The PM will oversee the project for MDOT. The PM, working with the Principal Investigator (PI) will also ensure that the research remains focused on project tasks and objectives. The PM, with assistance from the MDOT UTC Coordinator, also will be responsible for various project administration roles including the following:

- Project selection
- Securing a project number and obligating funds
- Initiation and securing a contract or authorization
- Kickoff meeting
- Regular progress meetings
- Quarterly and annual reporting
- Invoice review and payment
- Changes to the contract or authorization
- Review of intermediate and final project deliverables
- Project close out

Sections 1.4 and 1.5 provide additional detail on project development and project management.

1.3 Roles and Responsibilities

MDOT staff play a key role in project selection, project management and project implementation. Research Administration encourages the formation of an MDOT RAP to oversee the project. The FAM decides if a RAP is needed or if the assigned PM will handle project oversight individually.

The RAP and/or an individual PM are responsible for assuring proper execution of the research project from project kickoff to final report acceptance. The RAP and/or PM ensure that the research remains focused on project objectives, tasks and deliverables. Several UTC projects may be authorized together. In this case, a single PM will be named by the FAM to manage all projects funded under one contract authorization.

The PM coordinates approvals needed for invoices, authorization changes, and the review and acceptance of project deliverables. The UTC Coordinator assists the PM or PMs to ensure that status meetings are timely, reporting requirements are met, and project cost, schedule and scope issues are properly addressed.

1.3.1 Project Manager

The PM assignment is made by the appropriate FAM. Typically, the PM is the subject area expert for the research topic and takes a leadership role, overseeing all aspects of the project and managing the project as follows:

- Reviews the UTC Project Concept form and makes recommendations to the FAM and RAC chair regarding research topic value and quality.
- Drafts problem statements for UTC projects accepted by MDOT.
- Recommends the RAP, if needed, .includes completing the RAP Advisory Panel Nomination Form (5314) Appendix A. RAP members are selected as outlined in Chapter 3 of the *MDOT Research and Implementation Manual*.
- Initiate the contract (authorization) and subsequent modifications.
- Schedule RAP meetings (project kickoff and regular progress meetings) in coordination with the UTC Coordinator.
- Manages project costs, schedule and scope.
- Review and coordinate the review and acceptance of project deliverables.
- Accept and/or reject invoices.
- Submits the annual report.
- Completes the PI evaluation.
- Recommends implementation measures as defined in Chapter 4 of the *MDOT Research and Implementation Manual*.

1.3.2 UTC Coordinator

The UTC Coordinator is the identified staff member in Research Administration who is responsible for coordinating all MDOT activities with UTCs. The UTC Coordinator provides administrative assistance for the project in the following ways:

- Assists the PM and/or FAM with UTC Project Concept form review and problem statement development.
- Requests formal UTC proposals and facilitates their review and approval.

- Works with the PM to ensure the essential documents are compiled for contract or authorization initiation and tracks progress.
- Acts as Research Administration's liaison to project participants when process questions arise.
- Coordinate meeting responsibilities with the PM to ensure completion of the tasks.
- Ensure that all meeting discussions are documented (meeting minutes) by the PM or UTC Coordinator.
- Verify that reports and deliverables are received.
- Review invoices.
- Work with Research Administration staff to ensure that evaluations are complete.

1.3.3 Focus Area Manager

The FAM is the MDOT manager designated to coordinate research projects within a focus area as shown in Appendix B. The FAM may also assume the PM role on UTC projects. The FAM provides direction in the following ways:

- Coordinates with RAC chair to identify UTC proposals worthy of MDOT support.
- Meets with UTC representatives to identify project concepts.
- Recommends projects for RAC and REC approval.
- Recommends a PM to the RAC chair for each project.
- Approves RAP members.
- Reports project status to the RAC chair.
- Reviews and comments on draft deliverables.
- Provides guidance on implementation of research results.

1.3.4 Principal Investigator

The PI is the lead researcher from the UTC. The PI may assign Co-PIs to manage or conduct specific research projects as indicated in an authorized work plan. The PI conducts and manages

day-to-day research tasks as defined in the work plan or assigns those tasks to a Co-PI. Tasks include:

- Provide regular progress reports.
- Manage budget, scope and schedule. Inform the PM immediately of any trends in project progress that suggest a future need for changes to project cost, scope or schedule.
- Maintain regular contact with the PM and other RAP members through meetings and other informal means (email, phone).
- Submit project deliverables, respond to PM/RAP review comments and make changes as directed.
- Ensure that invoices and project deliverables are supplied on a timely basis.
- Lead the research team and provide other project researchers with clear direction. Maintain research team focus on project tasks, objectives and deliverables.
- Provide timely submittals and track contract and authorization approval progress with RITA, UTC partnering universities, and MDOT. MDOT will facilitate the FHWA Michigan review.

1.4 Project Development

The project development phase begins with a UTC project concept submittal and continues until project kickoff. Project concepts should be submitted to MDOT immediately following RITA selection of the UTC proposal. If the UTC project concept is approved by the REC, a problem statement is drafted by the PM and submitted to the appropriate RAC for review. The problem statement must be approved by the appropriate RAC and final approval is granted by the REC. The RAP membership must be approved by the appropriate FAM.

Project development also includes work plan development, job number establishment, and federal funding obligation. UTC projects are funded by a combination of university, federal RITA grants and MDOT SPR II funds. Historically, MDOT has contributed federal SPR II funds and has required university funding to match these federal funds. MDOT state matching funds have not been allocated in previous arrangements. Past funding arrangements have been as follows:

100% local match to RITA

Funding Source	SPRII Match	RITA Match
RITA		50%
University		25%
MDOT Fed SPRII	80%	25%
University	20%	

50% local match to RITA (Tier 1)

Funding Source	SPRII Match	RITA Match
RITA		67%
University		17%
MDOT Fed SPRII	80%	17%
University	20%	

1.4.1 UTC Project Concept

UTC project concepts are submitted to the UTC Coordinator in Research Administration. The UTC must complete the UTC Project Concept form (5320) Appendix C. The UTC Coordinator will work with the appropriate FAM to ensure completeness. The FAM will submit the project concept to the RAC for consideration. The RAC will make a recommendation to the REC for final approval. Subsequent to approval, the PM will draft a problem statement for RAP review followed by RAC approval.

The UTC Project Concept form documents the following:

- Problem to addressed
- Objectives and Tasks
- Timeline
- Deliverables
- Budget
- DOT involvement
- Potential investigator

1.4.1.1 Problem to Address

The UTC Project Concept form is used to outline the MDOT problem to be addressed by research. When preparing the form, the following questions should be addressed:

- What is the problem?
- How is this problem affecting MDOT operations?
- What information is needed to address the problem?
- How will having or not having the information impact MDOT?
- What specifically is MDOT trying to accomplish with the research?
- What is expected to result from the research?

The form must address a research problem and not a planning/process improvement. It should involve analysis and not just data collection. The research outcomes should result in broad application instead of addressing only one specific issue.

1.4.1.2 Objectives and Tasks

The objectives outline the expected results, while the tasks indicate how the research team will get the results. Task can be very specific and still allow flexibility when developing a work plan. Successful research projects include the following general steps in project execution:

- Document and learn from existing research
- Gather new information and/or data
- Analyze the new information and/or data
- Report on the results of the analysis
- Identify implementation opportunities and challenges

1.4.1.3 Schedule

The PM, working with the PI from the UTC, must determine how long the research will take and when the results are needed. It is important to define project milestones to ensure steady progress and timely intermediate project deliverables. The PM must allow for three months at the end of the project for final deliverable review.

Data collection needs for the research can potentially affect project progress. The overall project schedule must account for seasonal restrictions that prevent year-round data collection. The PM and PI must think about when data collection will happen based on the weather, resource availability, and university staff availability.

1.4.1.4 Budget

The PI must estimate the project funding needs while the PM must review the budget. Close coordination with the UTC is critical, due to the various funding sources used to fund UTC projects. Budgets must be categorized by tasks. In addition, the budget items must list funding source amounts to show that various funding match requirements are being met.

Costs for MDOT personnel to assist with conducting research including field work and traffic control do not need to appear in the UTC Project Concept Form, however the PI will need to communicate the need for these services in the MDOT involvement portion of the form. The project manager assesses the need and estimates these costs when completing the problem statement form.

1.4.1.5 Deliverables

Deliverables must include a final report. Additional deliverables may include:

- PowerPoint presentation
- Workshop
- Excel spreadsheet
- Training materials
- Software
- Equipment
- Policy recommendations
- Specifications
- Procedures

The PM must give careful thought to what deliverables are required for a specific research project. Deliverables must be identified by asking the question:

“What is necessary to implement the findings of the research?”

The answer to this question will assist the PM in identifying what deliverables should be required on Problem Statement Form.

1.4.1.6 MDOT Involvement

The UTC Project Concept form must document how MDOT staff will support the project. Will MDOT staff provide data (and in what format)? Will MDOT facilitate access to a database or coordination with other organizations? Will MDOT select specific sites to study? The PI outlines these needs on the UTC Project Concept form while the PM outlines, in the problem statement, what MDOT will do to support the project and the necessary budget needs.

MDOT staff also may be needed to provide support for field work, including traffic control and/or other assistance. This must be clearly defined in the UTC Project Concept form. Once the project begins, field work requests should be made at least three months prior to the date required. The PI submits the request to the PM describing the assistance needed. The PM coordinates the work with MDOT field personnel and approves the use of the funds as needed.

1.4.1.7 Principal Investigator

The qualifications of the PI and the supporting research team are included on the UTC Project Concept form. MDOT may require that the PI add additional expertise to the team that is not represented at the university or in the university department. The form can be used to identify sub-consultants or co-principal investigators needed to conduct the research. Additional needs beyond a research topic expert may include various specialty skills such as those of a statistician or communications expert.

1.4.2 Problem Statement Development

The Problem Statement form (5308) Appendix D is developed by the PM with FAM, UTC Coordinator, and RAP input. The UTC Project Concept form and MDOT staff input are the primary sources for problem statement development. Each project has a problem statement form that is used as a basis for each of the project in the UTC proposal. It is important that the problem statement document the following:

- Problem to addressed
- Objectives and Tasks
- Timeline
- Deliverables
- Budget

- DOT involvement
- Potential investigator

Additional guidance documents and resources for writing problem statements are available in Chapter 3 of the *MDOT Research and Implementation Manual*.

1.4.3 Project Accounting

Each UTC is assigned a Research Administration file number (OR #), a job number and a contract ID. The OR# is used to track project activities during the project development phase. Subsequent to project award, a contract ID is assigned resulting from vendor contract authorization. A job number also is assigned either at the time of the project advertisement or project award. The job number is used to track project budgets for the vendor, MDOT staff costs and field work costs. Research Administration staff work with the PM, Contract Services Division and Statewide Planning to establish these various project tracking numbers.

1.4.4 Contracting

The contracting stage includes fund obligation, proposal development, and contract initiation.

1.4.4.1 Obligation

Before a project authorization can be executed by MDOT, federal funding must be obligated. Every year Research Administration requests FHWA approval of each project as part of the annual program approval process. Once FHWA approval is given, Research Administration informs MDOT's Financial Operations Division (FOD) to request federal fund obligation. FOD staff forwards the request with the federal project number and the federal item number to FHWA for approval. FHWA secures fund obligation prior to October 1. Additionally, new fund obligations are required for new projects throughout the program year. These are initiated through program amendments.

1.4.4.2 Contracts and Authorizations

After problem statements are approved by the RAC, the UTC Coordinator requests a proposal from the PI. Work Plan guidelines are found in Appendix E.

Once the work plan is accepted by the PM, the research project analyst, research administration, completes a Request for New Project Authorization or Contract Form (5301) Appendix F. The form includes contact information for the PM and PI, budget information, as well as the start and end date of the project. This form is approved and signed by the PM, UTC Coordinator, and Engineer of Research. The form is sent to Contract Services Division (CSD), along with the

work plan, to initiate contract or authorization execution. Authorizations are issued using Acceptance of Priced Proposal & Authorization for University to Proceed Form (5185) (Appendix G).

1.5 Project Management

The project management phase includes both execution and closeout. Project management begins at project kickoff and concludes when final project deliverables are accepted and closeout activities are completed. Project management includes tasks such as leading meetings, reporting, revising contract documents, reviewing and accepting project deliverables, reviewing and approving invoices, evaluating PI performance and completing an internal audit.

1.5.1 Execution

Upon contract award, the project manager becomes actively involved with guiding the research. Key tasks that occur after project award include RAP meetings, project reporting, invoice review, and possible work plan revisions.

1.5.1.1 Meeting Requirements

The initial project kickoff meetings along with subsequent progress meetings are critical for project success. These meetings are necessary to guide the project and provide opportunities for MDOT staff to assist the research team in maintaining focus on the UTC's tasks and objectives.

1.5.1.1.1 Kickoff Meeting

The PM schedules the first research advisory panel meeting (kickoff meeting), soon after authorization. At the kickoff meeting, the PM/RAP reviews the work plan and project milestones. The PI and the research team also must communicate project data needs at the kickoff meeting. Supplying data to the research team and scheduling field work, including traffic control, many times is crucial early on in the project schedule to avoid future delays. Meeting discussions are documented by the PM or the UTC Coordinator. A sample agenda is included in Appendix H. Subsequent meetings follow a similar agenda.

1.5.1.1.2 Progress Meetings

The PM/RAP meets periodically with the PI to discuss progress. The PM should coordinate meeting dates to coincide with project milestones. These milestones may include:

- Reviewing existing related research
- Surveying national experts on the state of the science
- Collecting data
- Analyzing data

- Documenting findings and writing reports
- Demonstrating prototypes
- Technology transfer

Project meeting agenda items include a project status report by the PI, a summary of project issues, project data needs and a review of interim project finding by the PM/RAP.

1.5.1.1.3 Final Meeting

The final project meeting allows the PI and the PM/RAP to discuss the final report. The PI presents the results of the research project and summarizes report recommendations. Implementation opportunities are also discussed. The meeting also provides an opportunity for MDOT to provide comments on deliverables so that final revisions can take place prior to report publication. It is important to review the list of deliverables found in the work plan at this time.

1.5.1.2 Reporting Requirements

Quarterly Reports and Annual Reports are essential in tracking project progress and identifying challenges. These reports are used to track work completed and project future work.

1.5.1.2.1 Quarterly Report

Each quarter the principal investigator submits a Quarterly Report Form (5305) Appendix I and the Schedule of Research Activities Form Appendix J to Research Administration outlining the work that was accomplished during that quarter. Quarterly reports are due in accordance with the following schedule:

- 1st FY quarter: Oct 1 – Dec. 31; report due Jan. 15
- 2nd FY quarter: Jan. 1 – March 31; report due April 15
- 3rd FY quarter: April 1 – June 30; report due July 15
- 4th FY quarter: July 1 – Sept. 30; report due Oct. 15

Research Administration forwards the report to the PM for review. If the PM is satisfied with the report he or she informs Research Administration of their approval. If the PM has a question or concern he or she works with the PI to resolve the issue. The PM documents all concerns for the project files.

If the PI wants to request a modification to the terms of the authorization or contract, a formal request must be made directly to the PM rather than through the quarterly report. More information is found in the "Project Revisions" section of the chapter.

1.5.1.2.2 Annual Report

Each project manager provides a summary of the UTC's activity on the MDOT Research Project Annual Report Form (5312) Appendix K and submits it to Research Administration. The form is due in late October to early November. Research Administration compiles a report containing all the forms from SPRII funded projects and submits a copy to FHWA by January 1. Annual reports are available at www.michigan.gov/mdotresearch.

1.5.1.3 Invoicing

Invoices may be sent monthly or based on milestone payments depending on the method of payment. The university is also responsible for submitting the Local Agency Request for Reimbursement Form (802P) form Appendix L to Research Administration with every invoice. Each invoice must have a breakdown of university matching funds, RITA funds, and any other sources of funds or in kind contributions. Once the 802P form and invoice are submitted to Research Administration, the following steps are taken:

- The research project analyst reviews the invoice then forwards it to the PM for approval.
- The PM works with the PI to resolve concerns or questions. The PM approves or rejects the invoice and returns it to the research project analyst.
- The UTC Coordinator receives the approved invoice and conducts an additional review communicating any questions or concerns to the PM and PI.
- Once the UTC Coordinator approves the invoice, the research project analyst requests that payment be issued.

At the end of the fiscal year (September 30), each vendor (university/consultant) estimates the outstanding invoice amounts remaining for the ending fiscal year. This estimate is used to set aside previous fiscal year funds to pay the unpaid invoices when they are received. These accounts are termed Estimated Accounts payable (EAP). Research Administration must receive the estimates by the first week of October. Actual due dates will be announced each fiscal year. Prior fiscal year invoices must be submitted to MDOT by November 15.

1.5.1.4 Project Revisions

A revision in cost, scope, duration and/or staff may be proposed during the contract period and is addressed as follows:

1. Initially the PI submits written communication to the PM outlining the requested changes and justification. The PI is also required to submit any supporting documentation that pertains to the cost, scope, duration, or staff change as outlined in the sections below.

2. The PM presents the proposed change along with necessary documentation to the UTC Coordinator for review and concurrence. If deemed complete, the PM, with research project analyst assistance, completes the Project Change Request Form (5306) Appendix M.
3. The PM submits the signed Project Change Request form and supporting documentation to the research project analyst
4. For the change to be processed, the form must be initialed by the UTC Coordinator, and then signed by the Engineer of Research.
5. The research project analyst submits executed forms to contract services and/or places them in the project file as requirements indicate below. On average, a revision takes two to three weeks to process in Contract Services. If a revision must be approved by the State Administrative Board, the process may take as much as six to eight weeks.

Additional guidance is available in Chapter 3 of the *MDOT Research and Implementation Manual*.

1.5.2 Closeout

Project closeout includes reviewing and accepting project deliverables, paying the final invoice, evaluating PI performance and completing an internal audit.

1.5.2.1 Project Deliverables

The PM is responsible for reviewing and approving all project deliverables and providing feedback on drafts and revisions. Project deliverables will include a final report, implementation plan, and technology transfer materials. Additional deliverables may include things like software products, guidance documents, equipment, presentations, training manuals, training events, or demonstrations.

1.5.2.1.1 Final Report

A final report is required for every research project (CFR 23.420.209.a.6). The report documents the methods used, data collected, analyses performed, conclusions, and recommendations. Many UTC's conduct several different projects so several reports are necessary to document the research and recommendations.

1.5.2.1.1.1 Format

A final report is required for every research project (CFR 23.420.209.a.6). The report documents the methods used, data collected, analyses performed, conclusions, and recommendations. Formatting requirements are shown in Appendix N.

1.5.2.1.1.2 Review and Acceptance Procedures

The PM leads the review and approval of final deliverables. Enough time needs to be planned into the review process for meaningful revisions. Once the FAM accepts the final deliverables, final payments can be made. The project manager communicates the final report deliverable expectations in accordance with the following 90-day review process:

Step 1 Draft Report: The PI submits the draft final report to the PM. The PM reviews the report findings with the FAM to determine whether EOC approval is required.

- Due date: At least 90 days before the authorized final project deliverable date.

Step 2 MDOT Review: The PM compiles the comments, and communicates the needed revisions to the PI. Comments are based on:

- 1) Completeness: The report contains all the necessary content.
- 2) Technical merit: The research is well documented and the findings are scientifically founded.
- 3) Format and style. The report meets high standards of writing and presentation.

- Due date: Within 30 days of receipt of the report.

Step 3 Resubmittal: The PI modifies the draft final report and resubmits the report to the PM.

- Due date: Within 45 days of receiving the comments from the PM.

Step 4 Revisions: The PM checks to see if the needed revisions have been made. The PI will make revisions as requested until the final project report is initially accepted by the PM.

- Due date: Before the final deliverable date indicated in the contract or authorization.

Step 5 Delivery: Following initial acceptance, the PI will deliver the final report to the MDOT Librarian at:

MDOT - Library - B155
P.O. Box 30050
Lansing, MI 48909

The final report will be submitted in hard copy and digital form as follows:

- 1) Four hardbound double-sided copies
- 2) At least one searchable PDF file on CD. If the entire report file size is larger than 8 megabytes (MB), the file shall be divided into separate parts at logical breaks so that no file is larger than 8 MB.
 - Due date: Deliverable date indicated in the contract or authorization

Step 6 Final Acceptance: The PM is responsible for accepting the final project deliverables unless the FAM determines that the Engineering Operations Committee should be consulted prior to approval.

- Due date: the later of the following:
 - After final deliverables have been received and approved as indicated in step 5 or
 - After the final invoice has been received and approved as indicated in the invoicing section of this chapter.

1.5.2.1.1.3 Publishing Prior to Project Completion

Report publishing prior to MDOT final acceptance is prohibited without special MDOT approvals. The MDOT Engineering Operations Committee (EOC) must approve any special request to do so. All early published documents resulting from MDOT approval will be provided with the final project deliverables.

1.5.2.1.2 Implementation Plan

The PI writes and submits an implementation plan, which is a technical report of 10 pages or less that explains how the result(s) of the study could best be utilized by MDOT. The report should note the recommended implementation steps, the estimated cost of implementation, and the benefits of adopting the implementation plan. The PM will determine if this implementation plan can be included as part of the final report recommendations or developed as a standalone document.

1.5.2.1.3 Outreach Plan

If a project requires outreach to a larger audience than the RAP, a component of the implementation plan should include an outreach plan. This outreach plan should at a minimum indicate the message(s), the audience(s), and the medium(s).

The project deliverables may also include the following summaries of the research project to promote broader awareness of the research results within MDOT and externally.

1. Research Spotlight: All research projects are required to produce text for a possible Research Spotlight publication. Spotlights include a project-related image, project information, a project manager quote, and contact information for the PI and PM. Research Spotlights are posted on Research Administration's Web site at www.michigan.gov/mdotresearch. The body of the Spotlight is 650-700 words, with a brief introductory paragraph followed by sections titled:
 - a. Problem
 - b. Approach
 - c. Research
 - d. Results
 - e. Value
2. Newsletter: All research projects are required to produce one article for inclusion in the research newsletter. In a similar way to the Spotlights, the newsletter articles promote broader awareness of the research. The text for the article should not exceed two pages, and at least one graphic must be provided in JPEG format. Submission of articles should occur electronically. This does not guarantee that the article will be published in the newsletter. For guidance on the content of a typical project article, research newsletters are posted on Research Administration's Web site at www.michigan.gov/mdotresearch.

1.5.2.1.4 Software Products

If software is developed as part of a contracted project, the PI will provide the source code to MDOT as one of the final deliverables. MDOT has the right to use the software in accordance with the rights authorized in the following contract paragraph:

For all services that result in software development for governmental purposes, the consultant will provide MDOT with a worldwide, irrevocable, nonexclusive, fully paid and royalty-free license to use the source code(s) for the software developed in digital format and/or as specified in the scope of work.

1.5.2.1.5 Patents and Copyrights

Some projects result in patent applications and copyrights. In these cases, the consultant or university will grant a license not only to MDOT, but also to all Michigan state and local

governmental agencies and the United States government. These requirements and additional requirements are spelled out in the following contract paragraph:

The consultant will notify the PM of any patent applications and copyrights resulting from work performed under an MDOT authorization. The consultant will grant to all Michigan state and local government agencies and the U.S. government worldwide, irrevocable, nonexclusive, fully paid and royalty-free license to reproduce, publish or otherwise use and to authorize others to use the work for governmental purposes, whether or not a patent or copyright is obtained.

Refer to Chapter 5 of the *MDOT Research and Implementation Manual* for more information on copyrights and patents.

1.5.2.1.6 Equipment

Equipment with a value of less than \$5,000 may be retained, sold, or disposed of if approved by the PM and RM. Proceeds will go to the research agency. Equipment that is valued at more than \$5,000 may be sold and proceeds distributed to FHWA and MDOT with pro-rata share determined by the original purchase cost share.

1.5.2.2 Administrative Requirements

Research Administration works with the PM to complete various administrative requirements as part of the project closeout process. This includes reviewing and paying the final invoice, completing vendor evaluations and completing an internal audit of project billings and payments.

1.5.2.2.1 Final Invoice

When the final invoice arrives, the research project analyst works with the PM to determine the status of the final deliverables. Fifteen percent of the total budget is retained until the final deliverables are received and approved by the PM. Once the final deliverables are received and approved by the PM, the research project analyst requests release of the final payment.

1.5.2.2.2 Consultant Evaluation

As the Project Analysts requests release of the final payment, the PM is reminded to complete a consultant evaluation in CTRAK. The PM gives a signed original of the evaluation to the research project analyst. The analyst sends a cover letter and a copy of the evaluation to the PI. The evaluation is placed in project file. Evaluations are used to determine past performance scores in future proposal selections.

1.5.2.2.3 Internal Audit

After a project expires and final payment is released, project expenditures are reviewed by Research Administration. Expenditures are verified to ensure that all payments were processed

accurately. Commission audit must review all projects with a contract value exceeding \$100,000. Contracts that are valued at \$100,000 or less may also be reviewed by OCA at the request of Research Administration. Once the audit is complete, a letter is sent to the consultant/university seeking concurrence with the results of the audit.

APPENDIX A

**RESEARCH ADMINISTRATION
RESEARCH ADVISORY PANEL NOMINATION FORM**

PROJECT TITLE

PROJECT NO.

OR NO.

PROJECT MANAGER

PRINCIPAL INVESTIGATOR

RESEARCH/CONSULTANT AGENCY (If known)

RAP MEMBERS

The following group is recommended for consideration for the project Research Advisory Panel*

NAME	AREA OF EXPERTISE	DIVISION/REGION TSC	TELEPHONE NO.	E-MAIL ADDRESS

NOTES:

FOCUS AREA MANAGER SIGNATURE

DATE

ENGINEER OF RESEARCH SIGNATURE

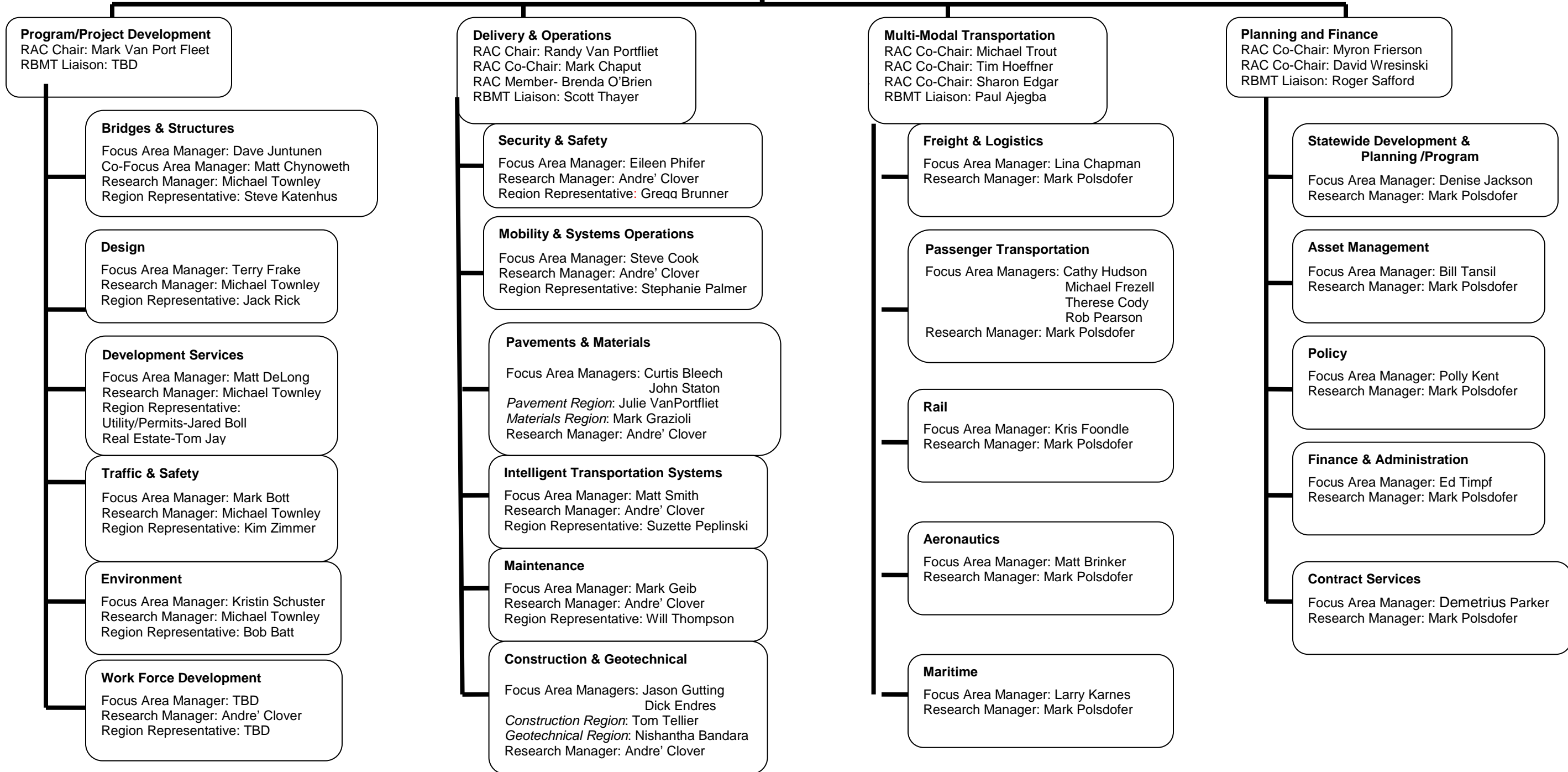
DATE

cc: Bureau Director
Research Manager
Project File

APPENDIX B

Research Program Committee Structure

Research Executive Committee
 Chief Operations Officer: Gregory Johnson MDOT Chief Administrative Officer: Laura Mester
 Engineer of Research: Steve Bower
 Region Bureau Management Team (RBMT) Liaison to Research Administration: Kim Avery
 Research Advisory Committee (RAC) Chairs and Co-Chairs: see below



APPENDIX C

RESEARCH ADMINISTRATION UTC PROJECT CONCEPT

PROPOSED UTC PROJECT TITLE

SUBMITTER

NAME		DATE
TELEPHONE NUMBER	E-MAIL ADDRESS	
ORGANIZATION	UTC NAME	

PROBLEM TO ADDRESS

BRIEFLY DESCRIBE THE PROBLEM TO BE ADDRESSED AND WHY IT IS AN ISSUE FOR MDOT

RESEARCH OBJECTIVES AND TASKS

Add Row		LIST THE RESEARCH OBJECTIVE(S) TO BE ACCOMPLISHED	
	1		Delete Row
Add Row		LIST THE MAJOR TASKS TO ACCOMPLISH THE RESEARCH OBJECTIVES	ESTIMATE PERSON HOURS
	1		Delete Row

Describe activities in sufficient detail to permit evaluation of the probability of success in achieving the objectives. Identify major operational phases and describe how the activities will be carried out. Detailed task description attachments are appropriate.

BUDGET INFORMATION

UTC PRELIMINARY BUDGET FORM							
RITA Match Requirement		50%	50%				
SPR II Match Requirement			80%	20%			
Add Row	Task #	Tasks	RITA	University or other match to RITA	MDOT FHWA SPR II	University or other match to SPR II	Total
Delete Row	1						
		Total					

DELIVERABLES

MDOT INVOLVEMENT (What services and data will MDOT provide and when? Indicate how MDOT's Research Advisory Panel & Project Manager will direct the research.)

URGENCY, PAYOFF POTENTIAL AND IMPLEMENTATION

WHAT DELIVERABLES WILL BE SUBMITTED AT THE END OF THIS PROJECT? (e.g., usable technical product design method, techniques, training, workshops, report, manual of practice, policy, procedure, specification, standard, software, hardware, equipment, training tools, etc.)

DESCRIBE HOW THIS PROJECT WILL BE IMPLEMENTED AT MDOT

DESCRIBE HOW THIS PROJECT WILL BE IMPLEMENTED AT MDOT

LITERATURE RESEARCH

Attach the results of a preliminary literature search identifying related completed or in progress research. Where there is research that directly applies to the proposed project, explain how this project addresses a need that is still outstanding.

POTENTIAL OBSTACLES

WHAT RISKS OR OBSTACLES MAY MAKE CARRYING OUT THIS PROJECT DIFFICULT? WHAT STRATEGIES WILL YOU USE TO OVERCOME THEM?

INVESTIGATOR(S)

DESCRIBE QUALIFICATIONS OF INVESTIGATOR AND TEAM MEMBERS

DESCRIBE WHAT UNIQUELY QUALIFIES THE INVESTIGATOR AND TEAM MEMBERS

Add Row	#	PROVIDE NAMES AND PHONE NUMBERS FOR REFERENCES ON AT LEAST 3 PROJECTS TO PRESENT PAST PERFORMANCES
Delete Row	1	

NAME OF UTC LEAD UNIVERSITY

UNIVERSITY(S) IN THIS UTC, BESIDES THE LEAD

If you have any questions please contact:
 Steve Bower, P.E., Administrator, Research Administration
 Phone: (517) 636-7777, Fax: (517) 322-1262, bowers@michigan.gov

APPENDIX D

RESEARCH ADMINISTRATION PROBLEM STATEMENT

Choose an Item

PROPOSED RESEARCH PROJECT TITLE	RESEARCH NUMBER OR "NEW"
---------------------------------	--------------------------

STRATEGIC PRIORITY NUMBER	PROJECT CATEGORY	SUB-CATEGORY
---------------------------	------------------	--------------

SUBMITTER

NAME	DATE
------	------

TELEPHONE NUMBER	E-MAIL ADDRESS
------------------	----------------

BUREAU / REGION / OFFICE / SECTION / UNIT	
---	--

PROBLEM TO ADDRESS

BRIEFLY DESCRIBE THE PROBLEM TO BE ADDRESSED AND WHY IT IS AN ISSUE FOR MDOT

RESEARCH OBJECTIVES AND TASKS

LIST THE RESEARCH OBJECTIVE(S) TO BE ACCOMPLISHED

- 1.
- 2.
- 3.
- 4.

LIST THE MAJOR TASKS TO ACCOMPLISH THE RESEARCH OBJECTIVES

ESTIMATED PERSON
HOURS

- 1.
- 2.
- 3.
- 4.
- 5.

ESTIMATED COST AND TIMELINE

ESTIMATE THE COST OF THIS RESEARCH STUDY (Provide at a minimum the cost range (min and max) associated with the estimated person hours)

PROJECT DURATION

REQUIRED COMPLETION DATE

METHOD OF PAYMENT: Select One

ACTUAL COSTS (University Contracts)
 MILESTONE*
 LOADED HOURLY RATE

*IF MILESTONE PAYMENT IS SELECTED, LIST MILESTONES HERE:

BUDGET INFORMATION

TOTAL BUDGET (BY FY)	FY1	FY2	FY3	FY4
----------------------	-----	-----	-----	-----

DELIVERABLES

WHAT DELIVERABLES WOULD YOU LIKE TO RECEIVE AT THE END OF THIS PROJECT? (e.g., usable technical product, design method, techniques, training, workshops, report, manual of practice, policy, procedure, specification, standard, software, hardware, equipment, training tools, etc..)

MDOT INVOLVEMENT (what services and data will MDOT provide and when)

URGENCY, PAYOFF POTENTIAL AND IMPLEMENTATION

DESCRIBE HOW THIS PROJECT WILL BE IMPLEMENTED AT MDOT

DESCRIBE HOW MDOT WILL BENEFIT FROM THE IMPLEMENTATION OF THIS PROJECT AND WHO THE BENEFICIARIES WILL BE

LITERATURE RESEARCH

ATTACH THE RESULTS OF A PRELIMINARY LITERATURE SEARCH IDENTIFYING RELATED COMPLETED OR IN PROGRESS RESEARCH. WHERE THERE IS RESEARCH THAT DIRECTLY APPLIES TO THE PROPOSED PROJECT, EXPLAIN HOW THIS PROJECT ADDRESSES A NEED THAT IS STILL OUTSTANDING.

POTENTIAL OBSTACLES

WHAT RISKS OR OBSTACLES MAY MAKE CARRYING OUT THIS PROJECT DIFFICULT? WHAT STRATEGIES WILL YOU USE TO OVERCOME THEM?

INVESTIGATOR(S)

DESIRED QUALIFICATIONS IN AN INVESTIGATOR AND TEAM

NAME OF POSSIBLE INVESTIGATORS (universities, consultants, MDOT staff, other agencies)

RECOMMEND POSTING RFP FOR CONSULTANTS AND UNIVERSITIES

RECOMMEND A MICHIGAN UNIVERSITY ONLY SOLICITATION

DOES THE PROJECT HAVE NATIONAL, REGIONAL / MULTI-STATE OR MICHIGAN ONLY IMPLICATIONS?

National

Regional / Multi-state

Michigan only

LIST ANY OTHER STATE, REGIONAL OR NATIONAL AGENCIES AND OTHER GROUPS WHO MAY HAVE AN INTEREST IN SUPPORTING THIS STUDY

DO NOT WRITE BELOW THIS LINE

FOCUS AREA MANAGER APPROVAL*		DATE
<input type="checkbox"/> E MAIL	<input type="checkbox"/> MEETING NOTES	<input type="checkbox"/> CONVERSATION RECORD
RESEARCH ADVISORY COMMITTEE CHAIR APPROVAL*		DATE
<input type="checkbox"/> E MAIL	<input type="checkbox"/> MEETING NOTES	<input type="checkbox"/> CONVERSATION RECORD
COO OR CAO APPROVAL*		DATE
<input type="checkbox"/> E MAIL	<input type="checkbox"/> MEETING NOTES	<input type="checkbox"/> CONVERSATION RECORD
RESEARCH MANAGER SIGNATURE		DATE
ENGINEER OF RESEARCH SIGNATURE		DATE

MDOT employees with questions should contact:
 Steve Bower, P.E., Administrator, Research Administration
 Phone: 517-241-4667, Fax: 517-241-2833, bowers@michigan.gov
 or Review the Research & Implementation Manual

APPENDIX E

Research Center Work Plan Submission Guidelines

A center's work plan should be a well-organized document which addresses the need for the center's activities. The work plan should provide a detailed description of the work required to achieve its objectives and itemize all costs.

Work plans are limited to twenty (20) pages in length, excluding the cover page, title page, table of contents, and appendices. All required forms are to be submitted as appendices. Text should be no less than 10-point font size with 1.5 line spacing and 1-inch margins on all sides. All pages, including appendices, must be consecutively numbered. All work plans must contain the following sections:

1. **Cover Page** - the first sheet of the work plan which lists the following:
 - a. The center's title
 - b. Research Administration Reference Number
 - c. Name of center's agency
 - d. Name of principal investigator(s) PI(s)
 - e. Printed name and signature of person(s) with contracting authority

(NOTE: The center's activities are considered to be under the technical direction of the principal investigator (PI) identified in the work plan. If multiple investigators are participating in a center the *principal* investigator shall be listed first on the work plan and on all reports. Because the PI is expected to have the primary responsibility for the work, the PI is also expected to be available and actively involved in the center's activities for the full contract period.)

2. **Title Sheet** - the second page of the work plan which lists the following information:
 - a. The title for the center
 - b. The name and business address of the center's agency
 - c. The name, title, address, phone number, and email address of the PI(s) or co-PI(s)
 - d. The name, title, address, phone number, and fax number of the person(s) who are authorized to bind the agency contractually
 - e. The date submitted
 - f. A new title sheet shall be furnished with each revision to the work plan and shall include the date of the revision, the original submission date, and the dates of all previous revisions.
3. **Forms 5100D and 5100J**- The Consultant Data and Presignature Sheet (5100J) is required for the signatory on this work plan. These Forms are available at MDOT's Vendor Consultant Services Website http://www.michigan.gov/mdot/0,1607,7-151-9625_21540---,00.html.
4. **Table of Contents** - should include a list of figures, tables, and appendices.
5. **Background** - a clear and concise description of the problems to be solved. This section should explain the need for the center's activities and demonstrate the PI's knowledge of the topic. Document center's focus and sight literature noting the current state of the science for this topic. This discussion should indicate how the center's activities findings are expected to save money, improve quality, efficiency or safety, and advance the state of technology. The submissions should include a discussion on the urgency of the

Research Center Work Plan Submission Guidelines

proposed center's activities in relation to highway transportation needs in general and the potential for payoff (in terms of benefits/cost, if possible) from achievement of the center's activities objectives.

6. **Objectives** - the technical objectives upon which the center's activities team is expected to focus. The goals of the center's activities should be clearly identified. The submissions should define the objectives in terms of the final expected products.
7. **Activity summary** - the work plan shall completely detail the progression of the center's activities including the submission of quarterly reports, a draft final report, and an acceptable final report. It should describe how the study will be structured to meet each objective. To the extent possible, it should identify major operational phases, relate the phases to manpower requirements, time schedules, and cost estimates, and describe how the activities will be carried out. Center's activities shall be described in sufficient detail to permit evaluation of the probability of success in achieving the objectives.

Attach Appendix B to the narrative to note the necessary tasks. If assistance from the department is necessary in accomplishing specific tasks (e.g.: traffic control, data collection, use of equipment/vehicles, etc.), the work plan must include a section that details such events.

The submission must clearly describe the role of the partnering agency in the work plan. All tasks to be completed by the partnering agency must be detailed in the work plan. Partnership agreements must be established before the work plan is submitted. Signed documents that acknowledge the role(s) of the partner(s) and financial contributions (either cash or in-kind) must accompany the work plan in an appendix. The activity summary shall include the following:

- a. **Quality Assurance and Quality Control (QAQC)** - A summary of the QAQC processes is required. This discussion should include the roles and responsibilities of staff involved as well as the timing of these processes. Include how you will ensure the objectivity of the staff involved and describe the QAQC process that all of the deliverables will go through prior to submittal to MDOT.
- b. **Participation in Center Kick-Off Meeting** - In an effort to ensure everyone involved in a center is informed of the contractual obligations, scope of work, deliverables, milestones, time table, and appropriate office policies and procedures, a start-up meeting will be scheduled before the start of the center's activities. This meeting will also provide an opportunity to clarify technical issues or concerns with the center. Invitees to this meeting include the PI(s), technical liaisons, Project Manager and Research Administration staff. The meeting should last for approximately one hour and is scheduled by the Project Manager before the start of center activities.
- c. **Participation in Center Review Session** - Center reviews are a mechanism for updating sponsors and other interested parties on the status of a center's activities and are conducted by the Project Manger. Principal Investigators will provide a

Research Center Work Plan Submission Guidelines

presentation on the center's progress. A PowerPoint file should be provided to MDOT at least one week prior to the scheduled review session. Technical issues or problems may be resolved at this time, or subsequent meetings may be scheduled for that purpose. Research Administration will work with the Project Manager (PM) to coordinate the scheduling of review sessions. Principal Investigators can expect to participate in at least one formal review session for every 12-month period.

- d. **Participation in Center Wrap-Up Meeting** - Center wrap-up meetings are a platform for providing a final presentation on a center's activities. An overview of the center's activities will be provided with detailed discussions on the findings and recommendations. These presentations will possess strong technical components and in-depth discussions that focus primarily on the center's activities and implementation. The PI will provide a PowerPoint presentation in advance of the wrap-up meeting.
8. **Results & Deliverables – Appendix A and A2** – Describe all expected products, devices, procedures, and other items that will be provided to the department during and at the conclusion of the center's activities. In addition to special reports and deliverables, it is expected that the following reports will be provided at a minimum.
- a. **Quarterly Reports** - The principal investigator must submit quarterly progress reports. Electronic submission of the quarterly reports must be included in the work plan, depicted on the work time cost schedule form, and acknowledged in the deliverables section.
 - b. **Annual Interim Report for two-year authorizations** – due on October 30.
 - c. **Final Reports and Executive Summary**

Formats and submission schedules for these documents are available in the Research & Implementation Manual and on the Research Administration web site at www.michigan.gov/mdotresearch.

9. **Itemized Budget** - Costs must be justified by including copies of information used to prepare the budget (i.e., release time contracts, price quotes for all equipment, catalog sheets, etc.). For activities that will be performed in distinct phases, a budget for each phase is required. Educational institutions follow the guidelines in the Research Administration Research and Implementation Manual and use the budget form listed as Appendix D.

For the development of travel costs, refer to the State of Michigan travel policy found at: http://michigan.gov/documents/DMB_StandardizedTravelRegulations_23541_7.pdf. In addition, all work plans must include provisions for a center start-up meeting and annual visits by the PI(s) for consultation with MDOT. The budget and schedule shall reflect this requirement. Check this policy for each submission, as changes may occur in the allowable costs.



Research Center Work Plan Submission Guidelines

Work plan Submission – Email the work plan, in draft form, to the Research Manager (RM) and Project Manager (PM). The RM and PM will review the work plan and send an e-mail to the submitting agency outlining required modifications. E-mail the final work plan to the RM and PM and mail a copy to the Engineer of Research at the following address.

Steve Bower
Engineer of Research
Research Administration
425 West Ottawa Street
P.O. Box 30050
Lansing, Michigan 48909

Appendices

Deliverables Table	Appendix A
Schedule of Center's Activities.....	Appendix B
Proposed Budget	Appendix D

NOTE: The Appendices area available at the bottom of the following web page:
www.michigan.gov/mdotresearch.

DELIVERABLES TABLE

PROJECT TITLE

NOTE: Deliverables on this table are not considered received by MDOT until submitted to Research Administration. See MDOT's Research and Implementation Manual for standards for the final report. The Principal Investigator is responsible for submitting deliverables.

Products: Examples of products typically most appropriate as stand-alone items include guidebooks, training materials, devices, instruction manuals, and brochures.

Add Row	No. (P1, P2, Etc.)	Stand-Alone Product Description	Due Date (due at or before project termination)	Comments
Delete Row				



No.	Report Description (Succinctly describe intended contents of each report.)	Due Date	Comments
R1	Quarterly Reports - Comprehensive and Detailed documentation of all work tasks and results	The 15th of January, April, July, and October while the authorization or contract is active.	Must be submitted to Research Administration on the quarterly report form number 5305.
R2	Draft summary of work performed, findings and conclusions		A draft final report is due 90 days before the final report.
R3			
R4			
Final Report	Summary of work performed, findings and conclusions		See MDOT's Research and Implementation Manual for standards and submittal requirements for the final report.
Date:			

RESEARCH PROPOSAL BUDGET FORM WORKSHEET

PROJECT TITLE	RESEARCH ORGANIZATION	DATE
---------------	-----------------------	------

SALARIES & WAGES – MUST COMPLY WITH OMB CIRCULAR A-21 Specify number of hours to be worked and hourly rate for each individual below.
Examples of role of individual are Principle Investigator, Technician, Grad Student, etc.

										FY1	FY2	FY3	FY4	TOTAL
NAME OF INDIVIDUAL										ROLE OF INDIVIDUAL				
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
Rate & Hrs														
NAME OF INDIVIDUAL										ROLE OF INDIVIDUAL				
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
Rate & Hrs														
NAME OF INDIVIDUAL										ROLE OF INDIVIDUAL				
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
Rate & Hrs														
NAME OF INDIVIDUAL										ROLE OF INDIVIDUAL				
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
Rate & Hrs														
NAME OF INDIVIDUAL										ROLE OF INDIVIDUAL				
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
Rate & Hrs														
NAME OF INDIVIDUAL										ROLE OF INDIVIDUAL				
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
Rate & Hrs														
NAME OF INDIVIDUAL										ROLE OF INDIVIDUAL				
Enter FY	FY1 rate	FY1 hrs	FY2 rate	FY2 hrs	FY3 rate	FY3 hrs	FY4 rate	FY4 hrs						
Rate & Hrs														
SUB-TOTAL SALARY & WAGES														

FRINGE BENEFITS – MUST COMPLY WITH OMB CIRCULAR A-21 Indicate employee, appropriate negotiated rate for each and description of who the rate applies to. (e.g. – Sam Smith, 25%, Summer Faculty. This rate is negotiated between the university and it's cognizant agency

										FY1	FY2	FY3	FY4	TOTAL
NAME OF INDIVIDUAL										RATE DESCRIPTION				
(% rate, enter as a decimal)	FY1		FY2		FY3		FY4							
NAME OF INDIVIDUAL										RATE DESCRIPTION				
(% rate, enter as a decimal)	FY1		FY2		FY3		FY4							
NAME OF INDIVIDUAL										RATE DESCRIPTION				
(% rate, enter as a decimal)	FY1		FY2		FY3		FY4							
NAME OF INDIVIDUAL										RATE DESCRIPTION				
(% rate, enter as a decimal)	FY1		FY2		FY3		FY4							
NAME OF INDIVIDUAL										RATE DESCRIPTION				
(% rate, enter as a decimal)	FY1		FY2		FY3		FY4							
NAME OF INDIVIDUAL										RATE DESCRIPTION				
(% rate, enter as a decimal)	FY1		FY2		FY3		FY4							
NAME OF INDIVIDUAL										RATE DESCRIPTION				
(% rate, enter as a decimal)	FY1		FY2		FY3		FY4							
SUB-TOTAL FRINGE BENEFITS														
SUBCONTRACTOR – MUST COMPLY WITH OMB CIRCULAR A-21. A copy of the subcontractor's budget must be attached. An MDOT approved subcontract is required for subcontractor costs in excess of \$25,000 prior to payment of invoices that contain subcontractor work. List all subcontractors on a separate line.														
SUBCONTRACTOR NAME & AMOUNT														
SUBCONTRACTOR NAME & AMOUNT														
SUB-TOTAL SUBCONTRACTOR														

TRAVEL – MUST COMPLY WITH OMB CIRCULAR A-21. Must be in accordance with IDS contract requirements.

	FY1	FY2	FY3	FY4	TOTALS
In-State Travel (Destinations within Michigan) Provide destination, purpose, total mileage, total # of days, total # of meals, Total # trips, name of individual(s) traveling					
Out-of-State Travel (Prior approval required) Provide destination purpose, total mileage, total # of days, total # of meals, total # trips, name of individual(s) traveling.					
SUB-TOTAL TRAVEL					

SUPPLIES – MUST COMPLY WITH OMB CIRCULAR A-21 (Few items not allowed are: computers, printers, monitors, fax machines, printer paper, toner cartridges, pens, pencils, legal pads, clips, rubber bands, post-it notes, books, notebooks, binders, folders, diskettes, postage stamps, chairs, office furniture, calendars, paper punches, business cards, staples, waste cans, etc.) Provide details if cost exceeds \$2,000. Individual line items in excess of \$1,000 require a detailed explanation regardless of total cost.

DESCRIPTION					
DESCRIPTION					
DESCRIPTION					
DESCRIPTION					
DESCRIPTION					
DESCRIPTION					
DESCRIPTION					
SUB-TOTAL SUPPLIES					

CAPITAL EQUIPMENT – MUST COMPLY WITH OMB CIRCULAR A-21. Purchased specifically for this project. List items with a value in excess of \$500. Equipment in excess of \$5,000 requires prior approval.

DESCRIPTION					
DESCRIPTION					
DESCRIPTION					
DESCRIPTION					
DESCRIPTION					
DESCRIPTION					
DESCRIPTION					
SUB-TOTAL EQUIPMENT					

APPENDIX F

Research Administration Request for New Project Authorization or Contract

PROJECT TITLE

VENDOR/UNIVERSITY

PRINCIPAL INVESTIGATOR'S NAME		EMAIL	PHONE NO.	FAX NO.
MDOT PROJECT MANAGER'S NAME		MAIL CODE	PHONE NO.	FAX NO.
RESEARCH MANAGER		MAIL CODE	PHONE NO.	FAX NO.
START DATE	ENDING DATE	WORK DURATION IN MONTHS		

TOTAL PROJECT COST

AMOUNT TO BE SPENT BETWEEN 10/1/___ & 9/30/___	AMOUNT TO BE SPENT BETWEEN 10/1/___ & 9/30/___
AMOUNT TO BE SPENT BETWEEN 10/1/___ & 9/30/___	AMOUNT TO BE SPENT BETWEEN 10/1/___ & 9/30/___

Proposal Received – Verify the Following:

- Personnel – all labor reported as % of effort (none included in direct expenses)
- Sub consultants have submitted a derivation of cost (Sub contract will be required if greater than \$25,000)
- Special Equipment
 - Verified equipment is necessary for the project
 - Verified equipment is dedicated to the use of this project
 - Verified equipment is prorated for the life of this project

Provide breakdown of direct expenses over \$2,000. This includes but is not limited to: Lab supplies, Travel expenses, Phone, Fax, Copying, etc.
Proposed budget is broken down by MDOT fiscal year.

MDOT should be able to determine how expenses were developed from the breakdown provided (ex: Mail-250 letters @ \$9/letter)

Please send and Email this completed form along with the proposal (work plan and budget) to Research Administration

PROJECT MANAGER'S SIGNATURE	DATE
ENGINEER OF RESEARCH	RESEARCH MANAGER INITIALS
	DATE

FOR RESEARCH STAFF USE:

RESEARCH NO.	JOB NO.	PHASE NO.	PCA CODE	INDEX CODE	OBJECT CODE

APPENDIX G

Contract Services Division
ACCEPTANCE OF PRICED PROPOSAL & AUTHORIZATION FOR
UNIVERSITY TO PROCEED

FORM USE: University Research
COPY OF THIS SHEET ONLY: Office of Commission Audits, Engineer of Research & Best Practices
FULL COPY: MDOT Project Manager, University, Research Analyst (if applicable)

CONTRACT NO.	AUTHORIZATION & REVISION NO.	IDS CONTRACT EFFECTIVE DATE	IDS CONTRACT EXPIRATION DATE
--------------	------------------------------	-----------------------------	------------------------------

AUTHORIZED UNIVERSITY AND ADDRESS	UNIVERSITY ADMINISTRATOR	
	ADDRESS MAIL TO THIS PERSON	
	PHONE NO.	FAX NO.
	E-MAIL ADDRESS	

PRINCIPLE INVESTIGATOR	ASSOCIATE RESEARCHERS	
MDOT PROJECT MANAGER	REGION/TSC	MAIL CODE
PHONE NO.	FAX NO.	EMAIL ADDRESS

SERVICE DESCRIPTION & LOCATION / Page(s) (1 to ____)

RESEARCH NO.	CS NO.	JOB NO.	% FEDERAL %	PCA CODE	INDEX CODE	REPORTING
--------------	--------	---------	----------------	----------	------------	-----------

INVOICING LIMITATION The University may only invoice up to 85% of the total authorization amount prior to the submission and subsequent approval of the final deliverables. On December 1 each year, all prior fiscal year funds will be released from existing obligation. If invoices are submitted on or after November 15 for prior fiscal year work, payment will be delayed	MDOT PAYMENTS AREA TO SEND UNVIERSITY INVOICES <input type="checkbox"/> Office of Research & Best Practices (Research Admin. Assistant) <input type="checkbox"/> Contract Services Division – Contract Support Unit <input type="checkbox"/> Bureau of Transportation Planning
	AUTHORIZATION EFFECTIVE DATE (START DATE)

COMMENTS

SUMMARY OF COST

FUNDING	FY	FY	FY	AMOUNT
	JN	JN	JN	
University Share				
MDOT Funding				
Federal Funding				
Totals				

AUTHORIZATION AMOUNT	
Basis of Payment is:	TOTAL AUTHORIZED TO DATE

UNIVERSITY ADMINISTRATOR	DATE SIGNED
MDOT CONTRACT ADMINISTRATOR	DATE REVIEWED
MDOT AUTHORIZATION BY	DATE EXECUTED

APPENDIX H



**Kickoff Meeting Agenda
Statewide Planning and Research, Part II**

Project Title
Contract and Authorization, Job Number, Research Number
Location
Date and Time

Facilitator: Research Manager (RM)

Invitees: Principal Investigator (PI), organization
Project Manager (PM)
Research Advisory Panel member (RAP), MDOT
RAP, MDOT
RAP, MDOT
RAP, MDOT
RAP, MDOT

Purpose: Confirm schedule, deliverables, and program requirements

AGENDA TOPICS

1. Opening remarks and introductions – RM
2. Summary of research project and schedule as outlined in the contract – RM
 - a. Summary
 - i. Proposed Start: date
 - ii. End Date: date
 - iii. Funding: budget
 - b. Schedule – Review Gantt Chart
 - c. Deliverables – Review Deliverables Table
 - d. Implementation Plan – Review Implementation Plan
3. Presentation of research project and schedule as outlined in the contract – PI
 - Task 1:**
 - Task 2:**
 - Task 3:**
 - Task 4:**
 - Task 5:**
 - Task**
4. Objectives and expectations for the research – PM
 - a. Objectives:
 - i. List objectives from work plan or request for proposal

Kickoff Meeting Agenda

Title

Page 2 of 2

Date

- b. Expectations:
 - i. Starting the project well*
 - ii. Defining MDOT's and PI's role*
 - iii. Communication requirements*
 - iv. End results expectations*

- 5. Consensus on expectations – RM, PI, PM

- 6. Summary of action items and person(s) responsible – RM

- 7. Schedule future meetings – RM
 - a. List preliminary plan for future meetings
 - b. Intermediate meeting – Month
 - c. Intermediate meeting – Month
 - d. Intermediate meeting – Month
 - e.
 - f. Final meeting - Month

- 8. Research project process and outline of responsibilities and expectations - RM
 - a. Reporting – Quarter Report (PI), Annual Report (PM)
 - b. Invoicing –Invoice limitation at 85%, End of year requirements
 - c. Meetings – Initial, Intermediate (PM to determine frequency), Final
 - d. Subcontracts – List Subcontracts

Notes:

APPENDIX I

RESEARCH ADMINISTRATION QUARTERLY REPORT

REPORT FOR QUARTER ENDING	DATE SUBMITTED
---------------------------	----------------

PROJECT TITLE

RESEARCH AGENCY

PRINCIPAL INVESTIGATOR

PROJECT MANAGER

RESEARCH MANAGER

CONTRACT/AUTHORIZATION NO.			PROJECT START DATE	
PROJECT NO.			PROJECT COMPLETION DATE (Original)	
OR NO.			PROJECT COMPLETION DATE (Revised)	

BUDGET STATUS

CONTRACT FUNDS APPROVED	\$		% PERCENT COMPLETE (By Budget)	%
			% PERCENT COMPLETE (By Work)	%
TOTAL FUNDS EXPENDED TO DATE	\$		% PERCENT OF TIME EXPIRED:	%

PLEASE LIST THE TECHNICAL LIAISONS AND OTHER INDIVIDUALS WHO SHOULD RECEIVE A COPY OF THIS REPORT

SUMMARY OF PROGRESS FOR THIS QUARTER

Attach a progress schedule consisting of graphical information depicting a schedule of research activities tied to **each task** defined in the proposal.

PROPOSED WORK FOR NEXT QUARTER

IMPLEMENTATION (if any)

PROBLEMS AND RECOMMENDED SOLUTIONS (if applicable)

Describe any problems encountered or anticipated that might affect the completion of the project within the time, scope, and fiscal constraints set forth in the contract. Describe recommended solutions. NOTING DIFFICULTIES IN THIS SECTION DOES NOT CONSTITUTE A REQUEST OR AUTHORITY TO MODIFY THE PROJECT. Any requests for additional time, money, or scope revisions must be submitted in a separate letter to the Engineer of Research.

EQUIPMENT PURCHASED (if any)

CONTACTS AND MEETINGS

(Describe any meetings or contact with MDOT technical liaisons and other pertinent individuals relative to this project.)

APPENDIX J

SCHEDULE OF RESEARCH ACTIVITIES

An O, R, or X is used to indicate a month with activity	or "O" = Original Schedule	Revision Date:		Title:																																	
	or "X" = Work Completed																																				
	or "R" = Revised Schedule	FY 20__ __					FY 20__ __					FY 20__ __																									
Research Activity	Estimated % of Total Project Budget	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Task 1																																					
Task 2																																					
Task 3																																					
Task 4																																					
Task 5																																					
Task 6																																					
Task 7																																					
Task 8																																					
Task 9																																					
Task 10																																					
Total (should = 100%)		0.0%																																			

APPENDIX K

**RESEARCH ADMINISTRATION
MDOT RESEARCH PROJECT
ANNUAL REPORT - FISCAL YEAR 20--**

PROJECT TITLE:

FUNDING SOURCE: SPR, Part II OTHER (PLEASE EXPLAIN)

PROJECT MANAGER:

CONTRACT/AUTHORIZATION NO.		PROJECT START DATE	
PROJECT NO.		COMPLETION DATE (Original)	
OR NO.		COMPLETION DATE (Revised)	
RESEARCH AGENCY			
PRINCIPAL INVESTIGATOR			

BUDGET STATUS

FY 2012 Budget			Total Budget		
FY FUNDS	(Original)	\$	TOTAL COST	(Original)	\$
	(Revised)			(Revised)	
TOTAL FY 2012 EXPENDITURES			Total Contract Amount Available		
		\$			\$

PURPOSE AND SCOPE

FISCAL YEAR 20-- ACCOMPLISHMENTS

FISCAL YEAR 20--ACCOMPLISHMENTS

FISCAL YEAR 20--ACCOMPLISHMENTS

FISCAL YEAR 20--PROPOSED ACTIVITIES

JUSTIFICATION(S) FOR REVISION(S) (List the approval date for the revision(s))

SUMMARY OF THE IMPLEMENTATION RECOMMENDATION (Required the last year of the project)

APPENDIX L

LOCAL AGENCY REQUEST FOR REIMBURSEMENT

This information is required by MDOT in order for you to obtain reimbursement for expenses.

MDOT AGREEMENT # / NON-DEPT. AGREEMENT #	LOCATION		MDOT STRUCTURE #
DATE	REQUEST #	FINAL? <input type="checkbox"/> Yes <input type="checkbox"/> No	AMOUNT AUTHORIZED TO SPEND \$
AGENCY	CONTROL SECTION	JOB #	TOTAL PROJECT COST TO DATE \$
ADDRESS (Street)	FED. PROJECT #	FED. ITEM #	PROJECT COSTS THIS REQUEST \$
ADDRESS (City, State)	PERIOD COVERED		BALANCE AVAILABLE \$

SUMMARY OF CHARGES

PRELIMINARY ENGINEERING	LABOR	_____	
	EQUIPMENT RENTAL	_____	
	OTHER _____	_____	
	TOTAL PRELIMINARY ENGINEERING		_____
REAL ESTATE	ACQUISITION COST	_____	
	APPRAISAL FEES	_____	
	OTHER _____	_____	
	TOTAL REAL ESTATE		_____
LOCAL CONTRACTED WORK		_____	
	TOTAL LOCAL CONTRACTED WORK		_____
CONSTRUCTION ENGINEERING	INSPECTION/STAKING/TESTING	_____	
	OTHER _____	_____	
	TOTAL CONSTRUCTION ENGINEERING		_____
FORCE ACCOUNT	LABOR	_____	
	EQUIPMENT	_____	
	MATERIALS	_____	
	OTHER _____	_____	
	TOTAL FORCE ACCOUNT		_____
	TOTAL CHARGES		_____

CERTIFICATION

I certify that, to the best of my knowledge, the figures entered above are correct and represent a proper claim for reimbursement for expenditures made under the appropriate Federal and/or State Act.

AGENCY REPRESENTATIVE (Signature)	TITLE	DATE
MDOT CONCUR FOR FUNDING (Signature)	TITLE	DATE

FINANCE USE ONLY

TRANS. CODE	JOB NO.	FED. ITEM	ACTIVITY CODE	ACCOUNT CODE	AMOUNT

BILL NO.

APPENDIX M

RESEARCH ADMINISTRATION PROJECT CHANGE REQUEST

CHECK ALL THAT APPLY: DURATION CHANGE: COST CHANGE: SCOPE CHANGE: STAFF CHANGE:

PROJECT TITLE		
PROJECT MANAGER		PRINCIPAL INVESTIGATOR
PHONE NUMBER	PHONE NUMBER	EMAIL ADDRESS
RESEARCH AGENCY		RESEARCH MANAGER
CONTRACT / AUTHORIZATION NUMBER		PROJECT NUMBER
OR NUMBER	APPROVED TOTAL COST \$	
PROJECT START DATE	APPROVED COMPLETION DATE	

CHANGE IN COMPLETION DATE

ORIGINAL COMPLETION DATE	ORIGINAL START DATE	NEW COMPLETION DATE REQUESTED
--------------------------	---------------------	-------------------------------

REASON / JUSTIFICATION FOR CHANGE

CHANGE IN COST

COST INCREASE/DECREASE \$	NEW COST \$
------------------------------	----------------

REASON / JUSTIFICATION FOR CHANGE

CHANGE IN SCOPE OF WORK

DESCRIPTION OF SCOPE CHANGE

REASON / JUSTIFICATION FOR CHANGE

CHANGE IN STAFF

ORIGINAL STAFF PERSON	POSITION TITLE	EFFECTIVE DATE OF CHANGE
-----------------------	----------------	--------------------------

NEW STAFF PERSON

REASON / JUSTIFICATION FOR CHANGE

PROJECT MANAGER SIGNATURE	DATE	
ENGINEER OF RESEARCH SIGNATURE	RESEARCH MANAGER INITIALS	DATE

FHWA APPROVAL NEEDED? NO YES, if yes, complete the following

DATE FHWA APPROVAL REQUEST WAS SENT	DATE FHWA APPROVAL WAS RECEIVED
-------------------------------------	---------------------------------

cc: Project File

APPENDIX N

Final Report Format

Research reports need to have a professional consistent format. The following specific sections should be included in a final report unless the project manager provides approval for a different outline unique to a particular research project.

- i. Title Page
- ii. Abstract Page (see attached)
- iii. Acknowledgments and disclaimer (see attached)
- iv. Table of Contents
- v. List of Tables
- vi. List of Figures
- vii. Executive Summary
- viii. Introduction
 1. Background
 - a. Objectives
 - b. Scope
 2. Statement of hypotheses
- ix. Literature review (if applicable)
 1. Review of previous research
 2. Summary of state-of-the-art
- x. Methodology
 1. Experimental design
 2. Equipment
 3. Procedures
- xi. Findings
 1. Summary of data
 2. Method of analysis
 3. Presentation of results
- xii. Discussion
 1. Validity of hypotheses
 2. Factors affecting the results
 3. Implications
- xiii. Conclusions
 1. Conclusions from the study
 2. Recommendations for further research
 3. Recommendations for implementation (The Implementation Plan may be part of the final report or a separate document)
- xiv. Bibliography
- xv. Appendices
 1. Glossary (optional)
 2. List of Acronyms, Abbreviations and Symbols
 3. Other Appendices (as needed)
 - a. Experimental data
 - b. Analytical technique details
 - c. User Manuals
 - d. Other Deliverables

Final Report Format

Examples of completed research reports are available at the following link, http://www.michigan.gov/mdot/0,1607,7-151-9622_11045_24249---,00.html. These examples can be reviewed to see the content and format of a completed report.

A well-written report is clear and concise. It communicates all important aspects of the research project to the reader in an effective and professional manner. Format guidelines have been prepared with reference to the NCHRP 20-45 report, *Scientific Approaches for Transportation Research* available at <http://gulliver.trb.org/publications/nchrp/cd-22/start.htm>. Volume One of the report, *Research Methodologies*, provides useful information for planning, conducting, and reporting on research. “Chapter 5: Reports and Presentations” and “Appendix C: Writing and Format of Reports” provides guidelines for preparing reports.

As noted in MDOT’s *Consultant/Vendor Selection Guidelines for Research Service Contracts*, the consultant or university will provide a quality assurance and quality control plan with designated quality assurance staff to review the report.

While MDOT does not have a format or style guide for the final report, the following requirements must be followed:

- Pages of a final report will be numbered. Pages prior to the Introduction should be enumerated with lower case Roman numerals (i.e., i, ii, etc.). Beginning with the first page of the Introduction, Arabic numerals should be used.
- Text will be at least 12 point in size and in a common font (Times, Arial or an equivalent).
- Acronyms and abbreviations will be spelled out and noted in parentheses upon their first use in a report.
- Figures (including photographs) will be numbered and labeled.
- Tables will be numbered and labeled.
- Equations will be numbered.

The research project analyst will provide a partially completed abstract page with the report number for the project manager and principal investigator about 3 months before the end of the project.

Final Report Format

Research Report Disclaimer

The following MDOT disclaimer must be attached to all research reports and publications:

“This publication is disseminated in the interest of information exchange. The Michigan Department of Transportation (hereinafter referred to as MDOT) expressly disclaims any liability, of any kind, or for any reason, that might otherwise arise out of any use of this publication or the information or data provided in the publication. MDOT further disclaims any responsibility for typographical errors or accuracy of the information provided or contained within this information. MDOT makes no warranties or representations whatsoever regarding the quality, content, completeness, suitability, adequacy, sequence, accuracy or timeliness of the information and data provided, or that the contents represent standards, specifications, or regulations.”

Final Report Format

1. Report No. RC-	2. Government Accession No.	3. MDOT Project Manager	
4. Title and Subtitle		5. Report Date	
		6. Performing Organization Code	
7. Author(s)		8. Performing Org. Report No.	
9. Performing Organization Name and Address		10. Work Unit No. (TRAIS)	
		11. Contract No.	
		11(a). Authorization No.	
12. Sponsoring Agency Name and Address Michigan Department of Transportation Office of Research and Best Practices 425 West Ottawa Street Lansing MI 48933		13. Type of Report & Period Covered Final Report	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract			
17. Key Words		18. Distribution Statement No restrictions. This document is available to the public through the Michigan Department of Transportation.	
19. Security Classification - report Unclassified	20. Security Classification - page Unclassified	21. No. of Pages	22. Price