

***Federal-Aid Highway Program  
Stewardship and Oversight Agreement***

***Between***

***Massachusetts Highway Department and Federal Highway  
Administration – Massachusetts Division***

***October 30, 2009***

**Massachusetts Highway Department (MHD)/ Federal Highway Administration –  
Massachusetts Division (FHWA-MA)**

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**Commissioner  
Massachusetts Highway Department**

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**Administrator  
Massachusetts Division Office  
Federal Highway Administration**

**Stewardship and Oversight Agreement**

This stewardship and oversight agreement is the result of the joint efforts of the Massachusetts Highway Department and the Federal Highway Administration, Massachusetts Division.

The purpose of this agreement is to facilitate the implementation of the provisions of Title 23 U.S.C. This stewardship and oversight agreement is a comprehensive agreement that covers all aspects associated with administering the Federal-aid Highway Program (FAHP) under Title 23 and other associated laws.

It is understood that this agreement is subject to change and revision as additional information and implementing guidance becomes available or at the request of either signatory party. This agreement replaces the existing agreement dated March 8, 1999 and becomes effective on the date of the last executed signature below.

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

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**Luisa Paiewonsky**  
**Commissioner**  
**Massachusetts Highway Department**

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

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**Lucy Garliauskas**  
**Administrator**  
**Massachusetts Division Office**  
**Federal Highway Administration**

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## GLOSSARY

3R:	Resurfacing, Rehabilitation, and Restoration
4R:	Resurfacing, Rehabilitation, Restoration and Reconstruction
AASHTO:	American Association of State Highway and Transportation Officials
CE:	Construction Engineering
CPIS:	Continuous Process Improvement Study
DBE:	Disadvantaged Business Enterprise Program
FAHP:	Federal-aid Highway Program
FHWA:	Federal Highway Administration
FIRE:	Financial Integrity Review and Evaluation Program
FTA:	Federal Transit Administration
HPMS:	Highway Performance Monitoring System
HSIP:	Highway Safety Improvement Program
HSP:	Highway Safety Program
I:	Interstate
IM:	Interstate Maintenance
ISTEA:	Intermodal Surface Transportation Efficiency Act of 1991
ITS:	Intelligent Transportation Systems
LPA:	Local Public Agency
MPO:	Metropolitan Planning Organization
N/A:	Not Applicable
NBIS:	National Bridge Inspection Standards
NEPA:	National Environmental Policy Act of 1969
NHS:	National Highway System
NHTSA:	National Highway Traffic Safety Administration
PE:	Preliminary Engineering
PR/PE:	Process Review/Product Evaluation
PS&E:	Plans, Specifications and Estimate
SAFETEA-LU:	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users of 2005
SHSP:	Strategic Highway Safety Plan
SPR:	Statewide Planning and Research
STIP:	State Transportation Improvement Program
STP:	Surface Transportation Program
TEA-21:	Transportation Equity Act for the 21st Century of 1998
TS&L:	Type, Size, and Location
USC:	United States Code of Federal Regulations
USEPA:	United States Environmental Protection Agency
VE:	Value Engineering

## TERMS AND DEFINITIONS

**3R Project** - A type of project typically intended to extend the service life of existing highways, bridges, and related appurtenances; and/or restore safe, efficient travel on an existing facility. 3R projects are typically constructed within existing right-of-way, or require only minor acquisitions necessary to enhance safety.

**Delegated Projects, MHD Oversight, MHD Administered Projects, Exempt Projects or X Projects** – Projects that do not require FHWA to review or approve most actions. See Exhibit 1, Project Management and the Project Management Approval Action Responsibility Matrix for these review and approval actions.

**Change Order** - An order covering changes in the plans or quantities or both, within the scope of the contract, and establishing the basis of payment and time adjustments for the work affected by the changes.

**Construction Engineering** - For funding purposes, the phase of a project following the Preliminary Engineering phase that begins at the time of Construction Award through project completion.

**Control Documents** - Applicable standards, policies, and standard plans and specifications that FHWA accepts for application in the geometric and structural design of highways.

**Core Functions** - Activities that make up the main elements of the Division's Federal-aid oversight responsibilities based on regulations and national policies. Core functions in the Division Office are Planning, Environment, Right-of-Way, Design, Construction, Finance, Operations, System Preservation, Safety, and Civil Rights.

**EOTPW** - The Commonwealth of Massachusetts Executive Office of Transportation and Public Works.

**Extra Work Order** - A document that amends the contract and identifies work to be paid for by the force account method.

**Federal-aid Highway Program** - Congress has charged Federal Highway Administration (FHWA) with administering the Federal-aid Highway Program (FAHP) under Title 23, and other associated laws.

**FHWA** - The Federal Highway Administration

**FHWA-MA** - The Massachusetts Division Office of the Federal Highway Administration

**Final Voucher** - A final voucher represents the final claim, submitted by the State for a single completed project accepted by the FHWA. The approval of the final voucher does not eliminate the FHWA's right to disallow costs and recover funds on the basis of a later audit or other review

or the State's obligation to return or request any additional funds due as a result of later refunds, corrections, or other transactions.

**Full Oversight Projects** – Projects that require FHWA to review and approve most actions pertaining to project development and contract modification. See Exhibit 1 and Exhibit 2, the Project Management Approval Action Responsibility Matrix and the Federal-aid Oversight Flowchart.

**Goal** – A broad statement that amplifies the end toward which the effect is directed.

**ITS** – Intelligent Transportation Systems (23 CFR 940.3)

**ITS Elements** – Intelligent Transportation System items including, cameras, remote traffic microwave sensors (RTMS) to collect speed and volume data, environmental sensor stations (ESS), traffic signalization, traffic signal prioritization/preemption, fiber optic cabling, road weather information stations (RWIS) stations, variable message signs (VMS) and installations, weight and motion stations, flood sensors, and other similar items identified or to be identified in the Statewide or CCMPO ITS architectures.

**ITS Projects** – Any project that in whole or in part funds the acquisition of technologies or systems of technologies that provide or significantly contribute to the provision of one or more ITS user services as defined in the approved statewide or MPO architectures.

**Major Projects** - Projects with an estimated total cost greater than \$500 million (in year of expenditure dollars), or projects approaching \$500 million with a high level of interest by the public, Congress, or the Administration. The NEPA decision for each project or program of projects defines the project scope, limits and cost for each project.

**Major or Unusual Structure** - A major or unusual structure involves difficult or unique foundations, longer than usual spans, or design practices that depart from current practice. Examples include segmental concrete, arch, suspension, cable stayed, movable, and bridges with individual spans exceeding 500'.

**MHD** – The Massachusetts Highway Department or MassHighway.

**National Highway System (NHS)**- Consists of interconnected urban and rural principal arterials and highways, which serve major population centers, international border crossings, ports, airports, public transportation facilities, other intermodal transportation facilities and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel. All routes on the Interstate System are a part of the National Highway System. See 23 CFR § 470.107(b) - For the Massachusetts NHS System Map see attached link: [http://www.fhwa.dot.gov/planning/nhs/maps/ma/ma\\_Massachusetts.pdf](http://www.fhwa.dot.gov/planning/nhs/maps/ma/ma_Massachusetts.pdf)

**New or Reconstruction (4R) Project** — A type of highway-oriented project that is designed to add capacity, modify and/or create new access points, reconstruct existing pavements and structures, or create new facilities on new location. 4R (resurfacing, rehabilitation, restoration

and reconstruction) work includes the placement of additional surface material and other work necessary to return an existing roadway to a condition of structural or functional adequacy. This may include improving geometric features such as flattening curves, improving sight distance and minor roadway and/or shoulder widening.

**Non-Title 23 Programs** – The United States Codes (U.S.C.) governing programs such as National Environmental Policy Act (NEPA), Clean Air Act, Title VI of the Civil Rights Act, Council on Environmental Quality, Section 4(f), Disadvantaged Business Enterprises, Prevailing Wage Rates, Acquisition of Right-of-Way, that have a direct effect on implementing the Federal-aid Highway Program and those required in USC and CFR.

**Objective** – A description of the intended result, effect, or consequence that is sought and expected will occur as a result of carrying out a program, strategy, or activity.

**Oversight** – This is the act of ensuring that the Federal-aid Highway Program is delivered consistent with applicable laws, regulations, and policies. In this context, oversight is the compliance or verification component of FHWA stewardship activities. Narrowly focused, oversight activities ensure that the implementation of the various elements of the Federal-aid Highway Program is in accordance with applicable laws, regulations, and policies. More broadly focused oversight activities enable the FHWA to ensure the effective delivery and operation of the transportation system envisioned in its base Federal statutes.

**Performance/Compliance Measure** – A tangible, measurable value or characteristic against which actual achievement can be compared, including a result expressed as a quantitative standard, value, or rate. Another term used for a performance/compliance measure is a performance/compliance indicator.

**Preliminary Engineering** - For funding purposes, preliminary engineering is defined as the phase of a project beginning with project initiation through award of the construction contract.

**Preservation Projects** - Projects employing planned, cost effective strategies to an existing roadway system and its appurtenances that preserve the system, retards future deterioration, and maintains or improves the functional condition of the system without increasing structural capacity.

**Program Area** – A program in which performance measures, program assessments, program/process reviews, program management and project management activities will be developed to govern the management of the Federal-aid Highway Program. Core program areas are Planning, Environment, ROW, Finance, Safety, Civil Rights, Design, Construction, Operations, and System Preservation.

**Program Assessment** – This process may take many forms including joint risk assessments, self-assessments, and the Program Delivery Improvement Tool (PDIT). All of these techniques are based on the common concepts of identifying strengths, weaknesses and opportunities and the identification and sharing of “best practices” to continually improve the program.

**Program Management** – Ensuring that Federal program requirements are met through daily stewardship, oversight, and assistance.

**Program/Process Review** – A review is a thorough analysis of key program components and the processes employed by MHD in managing the Federal-aid programs. A review is conducted to 1) ensure compliance with Federal requirements, 2) identify areas for efficiencies and improvements to the program, 3) identify exemplary practices, and/or 4) define and document the process being reviewed.

**Project** – Portions of a highway that a State proposes to construct, reconstruct, or improve as described in the preliminary design report or applicable environmental document. A project may consist of several contracts or phases over several years, as used in the Agreement’s Project Management Section and Project Management Approval Action Responsibilities Matrix.

**Project Management** – This responsibility includes 1) the development of a project’s design, plans, specifications, 2) obtaining environmental permits, 3) developing cost estimates, 4) performing right-of-way activities and providing right-of-way certification statements, 5) providing fiscal management, and 6) awarding a contract(s), 7) performing construction, and inspections/final acceptance of a project.

**ROW** – Right-of-Way

**Risk Management** – The systematic process of identifying, assessing, and managing threats and opportunities faced by Federal-aid projects and programs.

**Strategy** – A description of one or more activities, programs, or projects, which will be produced or provided over a multi-year period or by a specified date.

**Stewardship** – The efficient and effective management of the public funds that have been entrusted to MHD and the FHWA. FHWA’s stewardship involves all activities necessary to deliver the Federal-Aid Highway Program, such as leadership, technology deployment, technical assistance, problem solving, program administration and oversight. Stewardship efforts include oversight and approval actions, as well as many day-to-day actions that are routinely performed by either FHWA or MHD to ensure that the FAHP is administered appropriately. FHWA stewardship activities, beyond oversight, include continuous process improvement initiatives, technical assistance, technology deployment, performance measurement, project involvement activities, and sharing best practices.

**Target** - An objective or goal that a program area is trying to achieve by a future date.

**Title 23** – The United States Code governing the Federal-aid Highway Program.

## BACKGROUND AND INTRODUCTION

Congress has charged the Federal Highway Administration with administering the Federal-Aid Highway program (FAHP) under Title 23, and other associated laws. In addition, FHWA responsibility for administering the FAHP has been clearly outlined in the following legislation: the Intermodal Surface Transportation Efficiency Act ([ISTEA](#)) of 1991; the Transportation Equity Act for the 21<sup>st</sup> century ([TEA-21](#)) of 1998; and the Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users ([SAFETEA-LU](#)) of 2005.

Federal funding is provided to assist States and Federal Agencies in providing transportation services through the various FHWA programs. By law, the nature of the majority of these Federal programs is Federal assistance for State administered programs. The FHWA and MHD have jointly administered the FAHP with a strong sense of partnership for many years. These parties have administered the FAHP efficiently and effectively to help accomplish national, state and local goals—to develop and maintain a national highway network, improve its operation and safety, and provide for national security and commerce while protecting and improving the environment. Stewardship efforts include oversight and approval actions, as well as many day-to-day actions that are routinely performed by either or both parties to ensure that the FAHP is administered appropriately. The Stewardship and Oversight Agreement formalizes these delegated responsibilities and agreement to address how the FAHP will be administered.

The flexibility afforded in [ISTEA](#) and [TEA-21](#) allows States to assume the U.S. Secretary of Transportation's responsibilities for design, plans, specifications, estimates, contract awards and inspection of certain Federal-aid projects. While States may assume certain project approval authorities in accordance with [23 USC 106](#), FHWA is ultimately accountable for ensuring that the Federal Highway Program (FAHP) is delivered consistent with the established requirements.

On August 10, 2005, the President signed into law the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users ([SAFETEA-LU](#)). [SAFETEA-LU](#) addresses the many challenges that the transportation agencies are facing today such as improving safety, reducing traffic congestion, protecting the environment, improving efficiency in freight movement, and increasing intermodal connectivity. [SAFETEA-LU](#) provides more flexibility to State and Local transportation decision makers for solving transportation problems in their communities. It makes it easier and attractive for the private sector to participate in highway infrastructure projects to bring new ideas and resources to the table.

Notwithstanding the provisions of this Agreement, FHWA-MA retains overall responsibility and accountability for all aspects of the Federal-aid program. Therefore, the Agreement does not preclude FHWA's access to and review of Federal-aid projects or federally funded program activities in planning, environment, right-of-way, finance, civil rights, design, construction, operations, and system preservation at any time, and does not replace the provisions of Title 23, USC. Further, FHWA-MA and by extension MHD including any sub-recipients, are responsible for the effective, efficient and appropriate use of Federal funds.”

## SUMMARY OF MHD/FHWA-MA REQUIREMENTS AND AGREEMENTS

The following provisions are based on [Section 1305 of TEA-21](#) and [Section 1904](#) of the SAFETEA-LU. As permitted by [Section 1305 of TEA-21](#), MHD and FHWA-MA agree that FHWA-MA will retain full FHWA Oversight responsibilities on the following types of Federal-aid projects:

1. All Federal-aid Interstate Projects and all Federal-aid Intelligent Transportation Systems (ITS) Projects regardless of constructed value, as well as all Federal-aid Projects meeting the guidelines noted below in (2) and (3).
2. All Federal-aid projects located on the National Highway System (NHS) (other than Interstate) estimated to have an estimated Total Federal Participating construction cost of \$5 million or more.
  - i. Determination concerning the \$5 million cut-off for non-Interstate NHS projects will be made by jointly by MHD/FHWA-MA when the project is initially included in MHD's Statewide Transportation Improvement Plan (STIP). FHWA-MA and MHD will reconfirm the project status (FHWA Oversight or MHD Oversight responsibility) at the time of project scoping. After project scoping, oversight responsibility will be fixed and will remain unchanged unless: 1) there is a significant change in the project scope that would significantly alter the estimated construction cost of the project; or, 2) if both MHD and FHWA-MA agree that there is a reason to change oversight.
3. All Federal-aid projects that are not located on the NHS (non-NHS) or Interstate System estimated to have an estimated Total Federal Participating construction cost of \$10 million or more.
  - i. Determination concerning the \$ 10 million cut-off for non- NHS projects will be made by jointly by MHD/FHWA-MA when the project is initially included in MHD's Statewide Transportation Improvement Plan (STIP). FHWA-MA and MHD will reconfirm the project status (FHWA Oversight or MHD Oversight responsibility) at the time of project scoping. After project scoping, oversight responsibility will be fixed and will remain unchanged unless: 1) there is a significant change in the project scope that would significantly alter the estimated construction cost of the project; or, 2) if both MHD and FHWA-MA agree that there is a reason to change oversight.

FHWA-MA delegates and MHD agrees to assume FHWA-MA's responsibility for the oversight of compliance with Title 23 – U.S.C. for the preliminary engineering, design, plans, specifications, estimates, contract awards, and construction inspection for all other Federal-aid projects in Massachusetts. These projects will be referred to as Delegated Projects, MHD Oversight Projects, MHD Administered Projects, Exempt Projects or X Projects.

## **MHD/FHWA-MA RESPONSIBILITIES**

1. Under Title 23 and non-Title 23, FHWA is ultimately accountable for the oversight of all programs under the Federal-aid Highway Program.
2. “FHWA Oversight” is defined as full FHWA involvement in project scoping, preliminary engineering, design, plans, specifications, and estimates (PS&E) approval, concurrence in award, project inspections, contract modification approvals, approvals of design exceptions, approvals of claim settlements, project acceptance, etc.
3. “Delegated Projects, MHD Oversight Projects, MHD Administered Projects, Exempt Project or X Projects” is defined as delegation of FHWA oversight responsibilities to MHD. Delegation removes FHWA-MA from direct involvement in design activities, PS&E approval, concurrence in award, and construction activities. MHD will act on behalf of FHWA-MA in ensuring that all Title 23 requirements are met. In addition, FHWA-MA reserves the right to conduct reviews, as appropriate, to confirm that the Federal-aid program is being administered in accordance with the applicable laws and regulations. FHWA-MA will continue to assume responsibility for Federal actions required for non-Title 23 programs such as:
  - Activities for compliance with Section 102(2) (c) of the National Environmental Policy Act (NEPA) and 23 CFR 771.
  - Activities for compliance with Section 4 (f) of the Department of Transportation Act of 1966.
  - Civil Right Act of 1964, 42 USC 2000 (d) and 23 CFR 200 (Title VI), and 23 CFR 230 (EEO)
  - Uniform relocation Assistance and Real Properties Acquisition Policies Act of 1970, 42 USC 4601, 49 DFR part 24, and 23 CFR Parts 710-740
4. To provide appropriate oversight information to all FHWA-MA and MHD employees involved in the development of a project, the Federal-aid project number will be followed by an “X” to indicate it as a non-FHWA Oversight Project. MHD will identify an acceptable method to readily identify projects as Oversight or non-FHWA Oversight Projects in their data base system (Project Info). This designation should also be included in the STIP entry for each project.
5. There may be a limited number of projects, in which FHWA-MA Oversight may deviate from the criteria listed above. Reasons for the deviation may include but are not limited to project complexity or lack of complexity, need to maintain a federal presence in a specific MHD District, or unique/innovative design and/or construction. Project selection will be made in consultation with the appropriate district.
6. It should be noted that any work associated with the modification or addition of interchanges or access points on the Interstate system, regardless of funding source or responsible agency (i.e. MHD or Massachusetts Turnpike Authority (MTA) or Massachusetts Port Authority (MassPort) - regardless of project funding), must be submitted

to the FHWA-MA office for review and appropriate action. FHWA-MA through its oversight and stewardship responsibilities will work with MHD/EOTPW to encourage the MTA to develop the necessary policies and procedures and makes decisions in a manner that ensures that the Massachusetts Turnpike (I-90) is being operated and maintained in compliance with Federal and national standards for the Interstate system. The FHWA-MA through its oversight and stewardship responsibilities will also work with MHD/EOTPW to encourage any other state agencies/authorities which own/operate roadways (DCR, MassPort) in Massachusetts to develop the necessary policies and procedures and make decisions in a manner that ensures that the appropriate national (AASHTO) or MassHighway design standards are being met.

7. On FHWA Oversight Projects, the FHWA-MA Division office will have early project involvement. On these types of projects, MHD will ensure all early project coordination with FHWA-MA and will notify FHWA-MA of all scoping meetings, preliminary plan reviews, field inspections and pre-advertisement reviews.
8. Process Reviews and/or Product Evaluations (PR/PE) will be undertaken as identified as part of FHWA-MA's annual risk assessment or as otherwise determined to be appropriate. FHWA-MA and MHD will annually, jointly determine what areas will be the focus for reviews, with the main emphasis on identified high risk areas and overall quality improvements. FHWA-MA will employ a risk management framework in consultation with MHD to take into consideration available staffing and funding resources, as well as the MHD's Transportation needs. MHD may work collaboratively with FHWA-MA to identify risks and make resources available to address the risk assessment findings.
9. Process Reviews will be accomplished using a team approach. MHD will be fully involved in selecting review areas, developing review guidelines, conducting the actual reviews, and resolving issues resulting from the reviews. Within the FHWA-MA, an individual having responsibilities associated with the particular review areas will generally be assigned as the team leader. FHWA Resource Center personnel will be notified of the process review areas and may be offered an opportunity to participate. A standard report will be prepared for each review outlining the findings and recommendations. The agreed upon resolution of all findings or recommendations will be documented. The report will also identify best practices both nationwide and as implemented in Massachusetts. The Review Team Leaders will present the findings and recommendations of each process review with the appropriate management personnel from each agency and present all recommendations for review and concurrence to MHD. The Review Team Leaders will follow-up to ensure that the recommendations are satisfactorily resolved. When necessary, the status of resolution of findings and recommendations will be discussed in periodic meetings held with MHD management.
10. Program Assessments will include joint risk assessments, self- assessments and program assessments. All of these tools are based on the common concepts of identifying strengths, weaknesses and opportunities and the identification and sharing of "best" practices to continually improve the program.

11. Program Reviews are a thorough analysis of key program components and the processes employed by the MHD in managing the program. The reviews are conducted to 1) ensure compliance with Federal requirements; 2) identify opportunities for greater efficiencies and improvements to the program; and/or 3) identify exemplary practices. They can be referred to, or known as, program improvement reviews, program assessments, program accountability and results reviews, process reviews, program/product evaluations, or CPIS. MHD agrees that the product evaluation portion of these reviews may sample from all Federal-aid projects without regard to system or extent of FHWA oversight in this agreement.
12. Program Management includes the daily stewardship of Federal-aid programs, including project and program oversight and program assistance. Program management ensures Federal program requirements are met while proactively seeking opportunities to add value in the course of routine program approval actions, participating on joint task forces, joint committees and joint quality improvement teams, and aiding and assisting MHD and other transportation stakeholders with answering questions on program issues. The balance of Federal oversight will be accomplished by partnering efforts, participation on task forces, committees and teams and other routine daily interaction. In monitoring the program, various techniques can be used to help determine which reviews are to be conducted including risk assessments, and pre-determined schedules for regular reviews of specific programs or components.
13. For MHD's Oversight of Federal-Aid Funded Projects or Programs, MHD shall comply with Title 23 and/or certain non-Title 23, USC Federal-aid program requirements, such as metropolitan and statewide planning, environment, procurement of engineering and design related services contracts, participation by Disadvantaged Business Enterprises (DBE), prevailing wage rates, acquisition of right-of-way, relocation and accommodation of utilities, and railroad work.
14. MHD may not enter into an agreement with a local public agency (LPA) to administer phases or portions of MHD Oversight Projects or FHWA Oversight Projects without the explicit approval of the FHWA-MA Division Office. In each case, should approval be granted, the agreement shall require the third party to perform work under the appropriate federal requirements. (23 CFR 635.102)
15. MHD is responsible for compliance with federal requirements by the local public agency (LPA). In accordance with SAFETEA-LU [Section 1904](#), MHD shall be responsible for determining that sub-recipients of Federal funds under this title have:
  - adequate project delivery systems for projects approved under this section;
  - sufficient accounting controls to properly manage such Federal funds. FHWA-MA shall periodically review the monitoring of sub-recipients by the MHD.
16. The staff of the FHWA Massachusetts Division office is available for consultation on all aspects of any MHD project. This could entail consultation about fiscal matters, design issues, contract administration, material and geotechnical issues, new technologies, research

application, etc. The FHWA Massachusetts Division Office will coordinate assistance of technical specialists from the FHWA Resource Center and Headquarters Offices as appropriate.

17. For each project on the Federal-aid system with an estimated total cost of \$25,000,000 or more (\$20,000,000 or more for a bridge project), the MHD shall conduct at least one Value Engineering analysis to satisfy federal requirements (see 23 CFR 627).
18. SAFETEA-LU requires that for any Federal-aid project with an estimated cost of \$100,000,000 million or more, MHD shall develop an annual finance plan which shall be made available to the FHWA-MA for review upon request. Projects with estimated costs in excess of \$500 million or more require an annual finance plan and a project management plan for approval by the FHWA-MA with concurrence from the FHWA Headquarters Office.
19. FHWA-MA and MHD will work together to jointly develop mutually agreeable risk management/risk mitigation strategies on identified high risk areas, as well as the establishment of various performance/compliance measures or performance/compliance indicators, objectives, targets and goals to be monitored, tracked and reported in each agencies respective performance management system/plans throughout the Federal fiscal year.

## **PROJECT AUTHORIZATIONS**

### **Obligation of Funds**

FHWA has the sole authority to authorize Federal-aid projects since Authorization of a Federal-aid project is a contractual obligation of the Federal government under [23 U.S.C. 106](#). On all Federal-aid projects (FHWA Oversight or MHD Oversight), the FHWA Massachusetts Division will authorize the project by execution of the Project Agreement contained in FHWA's Fiscal Management Information System (FMIS 4).

- Funds for all projects will be obligated on a project-by-project basis for all types and sizes of projects and for all classes of funds.
- MHD/EOTPW will enter all necessary information into the FHWA's Fiscal Management Information System (FMIS 4).
- The requested amount for authorization must be within the agreed upon limits of the STIP estimated cost for the specific phase being authorized.

MHD must include appropriate justification for any additional funds being requested as part of any request for the modification to existing project agreements. No additional federal funds will be authorized without proper justification.

### **Preliminary Engineering/Environmental Authorizations**

- The project must be on the appropriate Federal-aid system (or functional classification)
- The project must be the type of work for the type of funds (appropriation code) being used.
- The project must be included in the approved STIP.
- The requested amount for authorization must be within the agreed upon limits of the STIP estimated cost for the specific phase being authorized.
- In non-conforming areas of the State, the project must be included in the constrained conforming long range plan.

### **Final Design Authorizations:**

- The requirements shown under "Preliminary Engineering/Environmental Authorizations" must be satisfied, and;
- The requested amount for authorization must be within the agreed upon limits of the STIP estimated cost for the specific phase being authorized.
- The project must have an approved environmental document.

### **ROW/Utility Authorizations**

The initial authorization for ROW and utility relocations is given at the preliminary stage of development. However, FHWA-MA requires that MHD submit a modified project agreement,

through Fiscal Management Information System (FMIS4), at such point that the ROW and utility plans are complete in order to request authorization for full ROW and utility relocation work. The following items must be completed prior to any ROW or utility authorizations being executed:

- The requirements shown under “Preliminary Engineering/Environmental Authorizations” must be satisfied, and;
- The requested amount for authorization must be within the agreed upon limits of the STIP estimated cost for the specific phase being authorized.
- The project must have an approved environmental document.

#### **Construction Authorizations:**

- The requirements shown under “Preliminary Engineering/Environmental Authorizations” and those shown under “Design Authorizations” must be satisfied, and;
- The PS&E package must be complete, in accordance with 23 CFR.
- All design exceptions must be identified and approved prior to PS&E package submittal.
- All access point modifications must be approved for projects on the Interstate System.
- A written certification must be made that all right-of-way has been acquired in accordance with the current FHWA directive(s) covering the acquisition of real property or that acquisition of right-of-way is not required.
- A written certification must be made that all utility and railroad work has been completed or that all necessary arrangements have been made for it to be undertaken and completed as required for proper coordination with the physical construction schedules. Where it is determined that the completion of such work in advance of the highway construction is not feasible or practical due to economy, special operational problems and the like, there shall be appropriate notification provided in the bid proposals identifying the utility and railroad work which is to be underway concurrently with the highway construction.
- Where utility facilities are to use and occupy the right-of-way, the State must demonstrate that the provisions of [23 CFR 645.119\(b\)](#) have been fulfilled.
- There must have been a willingness to hold a public hearing or a hearing was held for the project, as appropriate.
- All necessary permits must have been obtained for the project.
- All hazardous waste or contaminated materials must be identified (to the extent practicable) and removed or appropriate bid items included in the contract.

In addition to the items listed above, the FHWA-MA must have the following information in order to execute an authorization for construction:

- Ten full working days are required to process the PS&E package which consist of plans, specifications, and a current engineers estimate and project authorization data in FMIS 4 to ensure all Federal requirements are being met prior to project advertisement;
- Responses to the FHWA Massachusetts Division's previous written comments prior to PS&E submittal;

Also, MHD/EOTPW must contact the FHWA-MA to assure that the project has been authorized prior to it being advertised. No authorizations will be given after the project has been advertised. Exceptions to the above listed requirements will only be considered in special cases. The MHD Construction Engineer or the MHD Chief Engineer must make all requests for exceptions. Approval of such requests is reserved for the FHWA Massachusetts Division Administrator or the Assistant Division Administrator.

Any revisions to FHWA approved PS&E's (contract addenda and/or updated project costs) must be submitted to FHWA-MA and approved prior to opening of bids.

## OTHER PROJECT AND PROGRAM MANAGEMENT AREAS

### FHWA Construction Inspections

FHWA Oversight Projects: The FHWA-MA will inspect those projects defined as full FHWA Oversight as deemed appropriate. Inspections will consist of an office review and/or field inspection of construction activities. The office review is intended for MHD staff to inform FHWA-MA representatives of any on-going activities on the project such as extra work orders, claims, and the overall progress of work. The field inspection is intended for FHWA -MA representatives to observe MHD's oversight of the contractor's on-going activities, as well as completed products. In addition, the field inspection gives FHWA-MA representatives an opportunity to meet with MHD's inspectors in the field to discuss the project and any other relevant topics.

The FHWA-MA will also perform a final inspection as part of the inspection activities for all FHWA Oversight projects. This activity is most efficiently and effectively accomplished when done at the time of MHD final inspection. Therefore, MHD should notify the FHWA-MA as soon as a final inspection is scheduled.

### Final Acceptance of FHWA Oversight Projects by FHWA

Final Acceptance of FHWA Oversight Projects is made at the time the FHWA-MA office makes final payment after MHD submits a final voucher for reimbursement. Prior to final acceptance, the FHWA-MA office must have the following documents:

- i. Any Pending Extra Work Orders or Claims, Extensions of Contract Time and Liquidated Damages
- ii. MHD Formal Acceptance Letter and Certificate of Completion of Work
- iii. MHD Materials Certification

### Claims

FHWA Oversight Projects: The FHWA-MA shall be made aware by MHD of the details of any claim at an early stage so that coordination of efforts can be satisfactorily accomplished. It is expected that MHD will diligently pursue the satisfactory resolution of claims within a reasonable period of time. MHD not allowing FHWA-MA the opportunity for input could be the basis of not participating in the claim settlement. FHWA participation in the settlement of a claim will be in accordance with [23 CFR 635.124](#)

MHD Administered Projects: MHD may approve Federal participation in claims for MHD Administered Projects, but must evaluate and document the claim as if they were doing it for the FHWA. Federal participation in claims approved by MHD is still subject to FHWA-MA oversight through periodic process reviews. Any significant claims should be brought to the attention of FHWA-MA regardless of oversight responsibility. FHWA-MA will maintain a representative as a non-voting member of the MHD Claims Committee to monitor the claims resolution process.

## Design-Build Contracts

- As stated in [Section 1503](#) of the SAFETEA-LU, a State transportation department or local transportation agency can issue a request for proposal (RFP), proceed with awards of design-build contracts or issue notice to proceed prior to the completion of a NEPA process. However, a State or local agency shall receive concurrence from the FHWA-MA office before carrying out any of these activities.
- For Federal-aid Oversight and MHD Administered Design-Build projects, MHD is required to involve FHWA-MA early in the process. For Federal-aid Oversight Design-Build projects, MHD will submit the request for qualification (RFQ) documents for FHWA-MA review and approval prior to release. MHD will also obtain FHWA-MA approval prior to releasing the RFP document. FHWA approval of the RFP document carries the same significance as PS&E approval with authorization of Federal-aid fund, and MHD must submit a formal request for RFP approval/authorization for both FHWA-MA and MHD Administered Design-Build Projects.
- Design exceptions on Federal-aid Oversight Design-Build projects must be identified, documented and recommended by MHD before submitting design exception approval requests to FHWA-MA and approved prior to the release of documents for construction. MHD is responsible for documenting and approving design exceptions on MHD Administered Design-Build Projects as if they were documenting the design exception for FHWA-MA approval.
- For Federal-aid Oversight Design-Build projects, FHWA-MA will work with MHD to develop appropriate design and construction review/oversight strategies for the specific projects.

## Major Projects

A major project is a project with an estimated total cost in the year of expenditure of over \$500,000,000 and one that involves any amount of Federal financial assistance. [SAFETEA-LU](#) lowered the monetary threshold of a major project from \$1 billion to \$500 million.

- FHWA and MHD will place special emphasis on major projects including more extensive review of project costs estimates, through the development of project management plans (PMP), through risk analysis and through the development of finance plans. Detailed guidance on FHWA's expectations are found on the FHWA major project website including a FHWA memorandum from the FHWA Administrator dated January 19, 2007 - <http://www.fhwa.dot.gov/programadmin/mega/index.cfm>
- Although FHWA's decision on whether or not a project is a major project triggering FHWA's formal reporting is made around the end of the NEPA stage, FHWA will examine and begin more detailed monitoring when the potential for a major project is identified during the planning stage. In the early development of a potential major project, MHD and FHWA-MA should prepare an analysis of project management challenges or major areas of risk. The FHWA will utilize a document titled "Risk Management Tool for Managing the

Planning/Environmental Phases of Prospective Major Projects,” located on the FHWA major project website.

- The FHWA Massachusetts Division will examine the cost estimate of a potential major project the first time the potential major project appears in the STIP and TIP, and also each time the State/MPO update their STIP/TIP.
- Cost estimates for major projects shall be re-evaluated and updated if necessary at the draft EA or EIS stage. At the final EA or EIS stage, MHD will develop and perform an independent validation of the cost estimate for the preferred alternative prior to submitting Final EA or Final EIS to FHWA. FHWA will review MHD’s preferred alternative cost estimate and accept the cost estimate based on an independent review of the estimate and the State’s independent validation. Guidance on cost estimating is found on the FHWA major project website.
- As the NEPA process is being completed, MHD is expected to submit to FHWA an initial Project Management Plan (PMP). This document and its later revisions as the project is further developed, should clearly define the roles, responsibilities, processes, and activities, which will result in the major project being completed on time, within budget, with highest degree of quality and safety. A PMP must be approved prior to any federal action such as authorizing federal funds for ROW or construction. Also, during construction, the PMP must be revised and updated periodically as needed to reflect current status of the major project. Guidance on a PMP is found on the FHWA major project website.
- MHD shall submit an Initial Finance Plan for a major federal-aid project to the FHWA Massachusetts Division, for review and approval prior to the authorization of Federal-aid funds for ROW acquisition. Prior to the authorization of federal-aid funds for construction, MHD will develop, request, and receive FHWA approvals of an updated Finance Plan. Guidance on a major project finance plan is found on the FHWA major project website.
- MHD will update the Finance Plan annually and receive FHWA approval for each update.
- For a major project, the U. S. Secretary of Transportation may require one or more Value Engineering analysis.
- For major projects advanced as Federal-aid Design-Build projects, an initial finance plan, a PMP, and a cost estimate must be provided to FHWA prior to the approval of a request for a proposal (RFP) and authorization of funds.

### **Special Funded Projects**

- ITS earmark projects will have full Federal Oversight regardless of dollar amount of the project.

- All other Congressional earmarks (those contained in enabling legislation, annual appropriations legislation and discretionary programs) will follow the oversight guidance for Interstate, NHS and Non-NHS Projects previously noted.
- For all Congressional earmark projects noted above, MHD will submit quarterly project status report to the FHWA-MA. The report should at a minimum include project location, short project description, current project development stage, any issues, and project funding.

### **Finance Program**

FHWA-MA will establish an effective oversight program in accordance with provisions in FHWA Order 4560.1, Financial Integrity Review and Evaluation (FIRE) to ensure that Federal-aid funds are properly managed and effectively used in accordance with Federal policies, and that safeguards are in place to minimize fraud, waste, and abuse. In addition, the FIRE program ensures that proper internal controls are established and followed, with objectivity and a separation of financial duties in conducting the Agency's day-to-day operations. FHWA-MA's Financial Management Team is responsible for completing the FIRE activities on an annual basis. The FHWA-MA is also responsible for ensuring actions have been completed in support of the Annual Certification as required in the FIRE Order.

### **Transportation Planning Program**

The FHWA-Massachusetts Division (FHWA-MA) will employ full oversight for all aspects of statewide and metropolitan planning, including air quality conformity, to ensure compliance with 23 USC 134 and 135 and the Clean Air Act, and with the regulations at 23 CFR 450.300 (metropolitan planning), 23 CFR 450.200 and 23 CFR 420 (statewide planning), and 40 CFR 93 Subpart A (air quality conformity).

In addition, the FHWA-MA will enter into three separate sub-agreements with the EOTPW that will describe the FHWA-MA and the EOTPW's roles and responsibilities, including schedules for key deliverables, for statewide transportation planning, metropolitan planning and air quality conformity.

### **Environmental Program**

FHWA is the lead federal agency responsible for compliance with a wide range of environmental requirements under a single, unified process for transportation decision-making. Pertinent laws and regulations include the National Environmental Policy Act (NEPA); implementing regulations of the Council on Environmental Quality (CEQ), 40 CFR 1500, et seq and FHWA 23 CFR 771; Section 4(f) [49 U.S.C. 303] and implementing regulations 23 CFR 774; Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations 36 CFR 800; Section 404 of the Clean Water Act; and Section 7 of the Endangered Species Act (ESA).

The FHWA-MA shall retain approval authority for all Environmental Impact Statements, all Environmental Assessments, and all Section 4(f) statements as required by the above laws and regulations.

The FHWA-MA has a Programmatic Agreement for Categorical Exclusions (CEs) with the MHD in which responsibilities are delegated to the MHD, in compliance with NEPA, for Automatic and Programmatic CEs. The FHWA-MA retains approval authority for Individual Categorical Exclusions under the agreement.

The FHWA-MA also delegates responsibilities for consultation involving historic properties under Section 106 to the MHD in accordance with a Programmatic Agreement (PA) between the FHWA-MA, the MHD, and the MHC. The PA only applies to minor highway projects classified as CEs under NEPA. For projects requiring an EA or an EIS as class of action under NEPA, the FHWA-MA conducts the consultation according to 36 CFR 800.

The FHWA-MA does not delegate formal consultation with Native American tribes as such tribal consultation is required by the regulations to be “government-to-government” consultation.

## OPERATING PROCEDURES

For all projects that require an action or approval by the FHWA, the MHD and the FHWA-MA will work cooperatively to (1) ensure compliance with NEPA and all other applicable laws and regulations, and (2) determine the type of environmental document that is appropriate (such determination shall be made before an alternative is selected). For CEs, the MHD shall use an agreed-upon checklist to reach the appropriate CE determination, in accordance with the Programmatic Agreement for CEs. The MHD will be responsible for the preparation of all necessary environmental studies and documentation, with guidance provided by the FHWA-MA.

### **Right of Way Program**

The right-of-way (ROW) discipline involves both project and program related activities. The project related activities include the functional areas of appraisal, acquisition and relocation, the principal activities used to acquire space for highway projects. Oversight of ROW projects will be in accordance with the thresholds specified elsewhere in this document. ROW program related activities requiring specific FHWA-MA approval and/or oversight include: State ROW operations manual; property management activities; early acquisition, protective buying and hardship; functional replacement; Federal land transfers; and highway beautification.

The applicable laws, regulations and orders governing the ROW functional area include the following:

- 49 CFR 24, Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs
- 49 CFR 18, Uniform Administrative Requirement for Grants and Cooperative Agreements to State and Local Governments
- 23 CFR 1.23, Use of Right of Way

- 23 CFR 620, Subpart B, Relinquishment of Highway Facilities
- 23 CFR 635.309, Right-of-Way Certification
- 23 CFR 646.216, Railroad ROW
- 23 CFR 710, Right-of-Way and Real Estate
- 23 CFR 750, Highway Beautification
- 23 CFR 751, Junkyard Control and Acquisition

Refer to the ROW sub-agreement to be executed with the MHD for a detailed description of FHWA-MA and MHD roles and responsibilities for project and program related activities.

### **Highway Safety Improvement Program**

The FHWA-MA will make project eligibility determinations for all proposed safety improvement projects as outlined in the HSIP Guidelines and as active participants of the HSIP Task Force. Oversight of safety projects shall be in accordance with the thresholds specified elsewhere in this document.

The State will submit the necessary documents to satisfy the Highway Safety Reporting requirements identified in 23 USC 148(g).

### **Systems Operations Program**

For all ITS projects, MHD shall provide adequate documentation to the FHWA-MA, and the FHWA-MA will provide concurrence, that the ITS project is consistent with the Regional ITS Architecture and the project has been or will be developed based on a systems engineering analysis in accordance with the provisions of 23 USC 940.11.

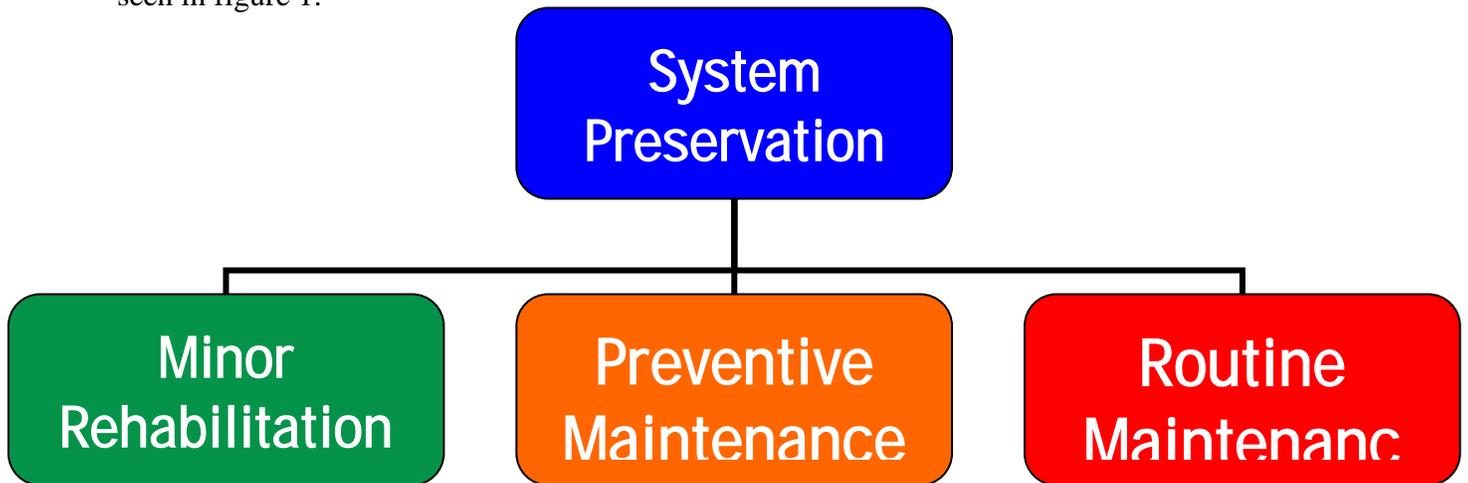
ITS Service contracts, i.e. those providing for operations (HOV lanes, motorist assistance patrols, staffing of TOC's, incident management activities, 511, etc.) shall have full FHWA oversight by the FHWA-MA.

Oversight of ITS Construction contracts (projects providing for the installation of ITS field devices) shall be determined in accordance with the thresholds specified elsewhere in this document.

### **System Preservation Program**

System Preservation represents a proactive approach in maintaining existing highways. It enables MHD to reduce costly, time consuming major rehabilitation and reconstruction projects and the associated traffic disruptions. With timely preservation we can provide the traveling public with improved safety and mobility, reduced congestion, and smoother, longer lasting pavements, bridges, and other appurtenances.

A program for System Preservation consists primarily of three components: preventive maintenance, minor rehabilitation (non structural), and some routine maintenance activities as seen in figure 1.



*Figure 1: Components of System Preservation*

**Description for Figure 1: System Preservation consists of preventive maintenance, minor rehabilitation, and routine maintenance**

For a treatment to be considered pavement/bridge preservation, one must consider its intended purpose. As described and defined in **Appendix A**, the distinctive characteristics of preservation activities are that they restore the function of the existing system and extend its service life, not increase its capacity or strength.

The FHWA-MA will work closely with MHD and EOTPW to ensure that an appropriate balance of System Preservation projects is programmed in the STIP. This will be addressed each fiscal year in the STIP development and approval process.

The FHWA-MA oversight of System Preservation projects using Federal-aid funds will be as follows:

- FHWA may participate in the initial review of proposed pavement and bridge preservation projects to determine that the scope and specific treatment selected are consistent with the definition of System Preservation (See Appendix A).

Oversight of System Preservation Construction contracts shall be determined in accordance with the thresholds specified elsewhere in this document.

### **Construction Quality Assurance Program**

Each State Transportation Agency (STA) is required to have in place a Construction Quality

Assurance (QA) Program to assure that the materials and workmanship incorporated into each Federal-aid construction project on the NHS are in conformity with the approved plans and specifications, including approved changes. The QA Program must meet the criteria of 23 CFR 637B (*Quality Assurance Procedures for Construction*) and be approved by FHWA.

A QA Program is comprised of six distinct elements that contribute to the achievement of quality. As presented in the *National Quality Improvement Task Force Report on QA Procedures for Highway Construction* (NQI/FHWA Report, June 1994), the *AASHTO Implementation Manual for Quality Assurance* (AASHTO SOC, February 1996), and 23CFR637, the core elements of a Construction Quality Assurance Program include:

1. Contractor Quality Control (QC)
2. Agency Acceptance
3. Agency Independent Assurance (IA)
4. Dispute Resolution
5. Laboratory Accreditation and Qualification
6. Personnel Qualification/Certification

All six elements are needed in order to have a complete and effective QA Program. A QA Program having only four or five out of the six program elements is not sufficient and should not be construed as being “substantially compliant” with the intent of the AASHTO guidelines or the federal regulation.

MHD, in consultation with the FHWA-MA will prepare and maintain a written Construction QA Program document that addresses the above six (6) core elements. Following approval by the FHWA-MA of the QA Program document, MHD and the FHWA-MA will periodically evaluate and update the QA Program as needed.

### **Performance/Compliance Measures**

The parties acknowledge that MHD will be incorporated into the Massachusetts Department of Transportation (“MassDOT”) as of November 1, 2009. It is the parties’ intention to enter into a new version of this Agreement after that date. The parties agree to work cooperatively to develop performance measures as well as indicators of compliance in pertinent areas.

## **Dispute Resolution**

The FHWA Massachusetts Division Office and MHD work as partners in delivering the Federal-aid transportation program in Massachusetts. It is recognized, however, that there may be times when consensus cannot be achieved between the two agencies. Whenever these situations arise, the FHWA Massachusetts Division Office and MHD agree to work together to resolve disputes in a timely manner. In those cases where a solution cannot be identified, MHD and the FHWA Massachusetts Division office may elevate the issue to the next level in the “chain of command.”

It has been agreed that only MHD Commissioner or the Chief Engineer will make MHD appeals to FHWA Headquarters’ offices with prior notice to the FHWA Massachusetts Division Office.

## **Implementation**

This “MHD/FHWA-MA Stewardship and Oversight Agreement” will become effective upon signature of both parties and will apply to new projects after November 1, 2009. On going construction projects will continue under their current oversight status until final acceptance.

## **Agreement Modifications**

It may be necessary to amend this agreement at any time should essential modification become apparent to either party. The parties agree that there will be periodic reviews of this Agreement to reflect changes in federal and state laws, regulations and requirements.

## **Attachments**

The following attachments are included:

- [Exhibit 1](#), which shows how oversight responsibility is assigned by this agreement.
- [Exhibit 2](#), which shows the decision process involved in determining the exemption status for each project.
- Appendix A - Definitions for System Preservation



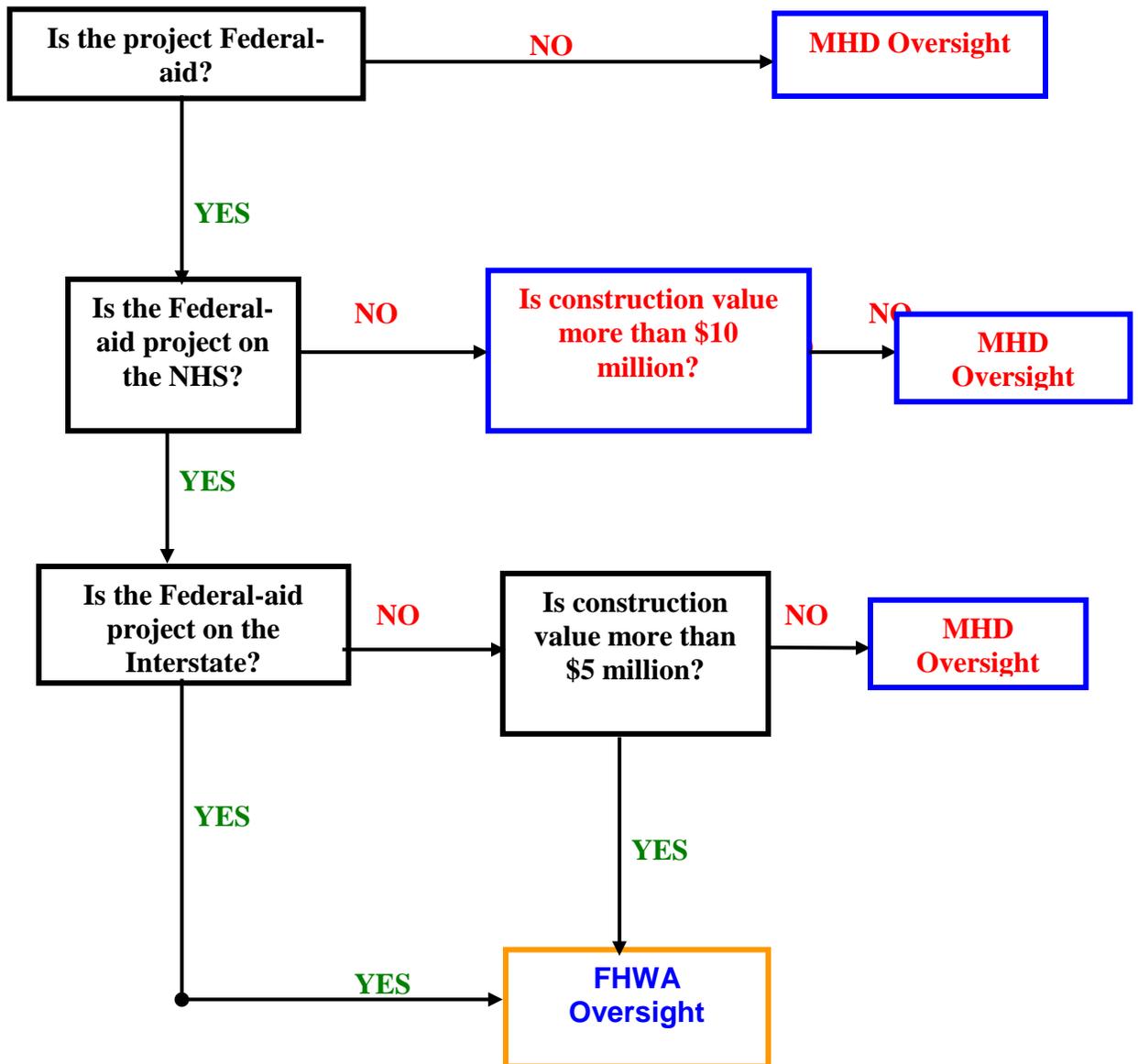
**EXHIBIT 1 - OVERSIGHT RESPONSIBILITY BY SYSTEM**

ACTIVITY		<b>MHD Oversight Projects</b> NHS Non-Interstate < \$5.0 Million Non-NHS < \$10.0 Million	<b>FHWA Oversight Projects</b> Interstate NHS > \$ 5.0 Million Non-NHS > \$10.0 Million
<b>Preconstruction:</b>			
Authorization for PE and Preliminary ROW Activities		MHD	FHWA
Non-Title 23		FHWA/MHD	FHWA/MHD
Consultant Agreements		MHD	FHWA
Utility Agreements		MHD	FHWA
Design Standards	NHS	FHWA Approved AASHTO	FHWA Approved AASHTO
	Non-NHS	MHD Standards	MHD Standards
Design Exceptions/ Interstate Access Approval/ Change in Limited Access	Interstate	FHWA	FHWA
	Non-Interstate	MHD	FHWA
Interstate Clearances Vertical/Horizontal		FHWA	FHWA
Bridge Type, Size and Location		MHD	FHWA
Buy America Exemption		FHWA	FHWA
ROW Authorization		MHD	FHWA/MHD
<b>Construction:</b>			
PS&E Approval		MHD	FHWA
Authorization for Advertisement of Bid/ROW Certification		FHWA	FHWA
Concurrence in Award		MHD	FHWA
Construction Inspections		MHD	FHWA/MHD
Claims		MHD	FHWA/MHD
Contract Modifications		MHD	FHWA/MHD
Final Inspection		MHD	FHWA/MHD
Final Project Acceptance		MHD	FHWA/MHD

## EXHIBIT 2 – FEDERAL-AID OVERSIGHT FLOWCHART

Description of Exhibit 2: Federal-Aid Oversight Flowchart

“Is the project Federal-aid?” If no, then MHD Oversight. If yes, ask “Is the Federal-aid project on the NHS?” If no, ask “Is construction value more than \$10 million?” If no then MHD Oversight. If yes to former, ask “is the Federal-aid project on the Interstate?” If not ask “Is construction value more than \$5million?” If no, then MHD Oversight. If yes FHWA Oversight. If Yes to “is the Federal-aid project on the Interstate” then FHWA Oversight?”



## **Control Documents**

FHWA-MA typically reviews and approves the following MHD control documents including all updates and amendments:

- i. MassHighway Project Development and Design Guide
- ii. MassHighway Design Guide
- iii. MassHighway Standard Specifications for Highways and Bridges
- iv. Supplemental Specifications and Standard Special Provisions
- v. MassHighway Construction and Traffic Standard Drawings and Details
- vi. MassHighway Guide Sign Policy for State Highways
- vii. MassHighway Standard Traffic Management Plans
- viii. MassHighway Standard Operation Procedures (any SOPs that could affect Federal-aid projects)
- ix. MassHighway Consultant Selection and Procurement Policies
- x. MassHighway Design Build Procurement Guide
- xi. MassHighway Policy and Engineering Directives
- xii. MassHighway Noise Policy
- xiii. MassHighway Bridge Manual
- xiv. MassHighway ROW Manual

## **APPENDIX A**

### **Definitions for System Preservation**

**Pavement/Bridge Preservation** is “a program employing a network level, long-term strategy that enhances pavement/bridge performance by using an integrated, cost-effective set of practices that extend asset life, improve safety and meet motorist expectations.”

An effective preservation program will address pavements and bridges while they are still in good condition and before the onset of serious damage. By applying a cost-effective treatment at the right time, the pavement or bridge is restored almost to its original condition. The cumulative effect of systematic, successive preservation treatments is to postpone costly rehabilitation and reconstruction. During the life of a pavement/bridge, the cumulative discount value of the series of preservation treatments is substantially less than the discounted value of the more extensive, higher cost of reconstruction and generally more economical than the cost of major rehabilitation. Additionally, performing a series of successive preservation treatments during the life of a pavement/bridge is less disruptive to uniform traffic flow than the long closures normally associated with reconstruction projects.

System Preservation Guidelines					
System Preservation	Type of Activity	Increase Capacity	Increase Strength	Reduce Aging	Restore Serviceability
	New Construction	X	X	X	X
	Reconstruction	X	X	X	X
	Major (Heavy) Rehabilitation		X	X	X
	Structural Overlay or Repair		X	X	X
	Minor (Light) Rehabilitation			X	X
	Preventive Maintenance			X	X
	Routine Maintenance				X
	Corrective (Reactive) Maintenance				X
	Catastrophic Maintenance				X

**Table 1-** System Preservation Guidelines

**Preventive Maintenance** is “a planned strategy of cost-effective treatments to an existing roadway system and its appurtenances that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system (without significantly increasing the structural capacity).” *Source: AASHTO Standing Committee on Highways, 1997*

Preventive maintenance is typically applied to pavements/bridges in good condition having significant remaining service life.

**Minor Rehabilitation** consists of non-structural enhancements that extend the service life of an existing pavement/bridge. It includes non-structural enhancements made to existing pavement sections or bridge elements to eliminate age-related distresses that develop due to environmental exposure. Because of the non-structural nature of minor rehabilitation techniques, these types of rehabilitation techniques are placed in the category of System Preservation.

**Routine Maintenance** “consists of work that is planned and performed on a routine basis to maintain and preserve the condition of the highway system or to respond to specific conditions and events that restore the highway system to an adequate level of service.” *Source: AASHTO Highway Subcommittee on Maintenance*

Routine maintenance consists of day-to-day activities that are scheduled by maintenance personnel to maintain and preserve the condition of the highway system at a satisfactory level of service. Depending on the timing of application, the nature of the distress, and the type of activity, certain routine maintenance activities may be classified as preservation. Routine Maintenance activities are often “in-house” or agency-performed and are not normally eligible for Federal-aid funding.