

**ASSET MANAGEMENT METHODOLOGY / CONDITION ASSESSMENT  
METHODOLOGY RESEARCH**

**AGENCY:** Federal Transit Administration (FTA), United States Department of Transportation (USDOT)

**ACTION:** Notice of Funding Availability (NOFA)

**SUMMARY:** FTA is seeking research two proposals to develop 1) a manual for transit asset management and 2) to explore methods for using maintenance data to populate higher-level asset inventories. These two projects are intended to complement each other and provide an overall framework for asset management at transit agencies.

The first project will develop and document a framework for transit asset management similar to AASHTO's guidance for highway asset management. The second project will be an investigation of the potential to integrate existing maintenance management systems with higher-level asset management inventories in conjunction with an urban transit rail system.

FTA is seeking to fund two separate projects to comprehensively address transit asset management. FTA has a total of \$1.4 million in funding for both projects. FTA expects that the two projects are roughly equal in scope. Applicants may apply for both or one of the projects.

**DATES:** An applicant must submit a proposal electronically to <http://www.grants.gov> by December 30, 2010 for consideration. All potential applicants are advised to begin the <http://www.grants.gov> registration process immediately, if they have not previously submitted Federal assistance applications through <http://www.grants.gov>, in order to be able to meet the deadline. FTA expects to award funds through a cooperative agreement in January 2011. In the event of a system problem or technical difficulty with the application submittal, the applicants should contact the FTA Project Manager for delivery instructions.

**ADDRESSES:** The website <http://www.grants.gov> allows applicant organizations to electronically find and apply for competitive opportunities from all Federal agencies that award Federal assistance. This website is the single access point for over 1,000 Federal assistance programs administered by the 26 Federal agencies.

**FOR FURTHER INFORMATION CONTACT:** Technical, program management and administrative questions should be directed to Terrell Williams, Office of Technology (TRI-20), E43-469, Federal Transit Administration, U.S. Department of Transportation, 1200 New Jersey Ave, SE, Washington, D.C. 20590; email address: [Terrell.Williams@dot.gov](mailto:Terrell.Williams@dot.gov), or by phone at 202-366-0232.

**SUPPLEMENTARY INFORMATION:** A Notice of Funding Availability 'State of Good Repair Research' is currently posted on <http://www.grants.gov>. FTA's expectation is that both projects will be conducted simultaneously. Applicants may apply for one or both projects. Industry reports from the FTA, Transit Cooperative Research Program, American Public Transportation Association and others on the subject of State of Good Repair and Asset Management should be referenced.

## **Objective**

This project will support FTA's State of Good Repair and Asset Management Programs. In 2010, Congress directed FTA to assume a leadership role in improving asset management in transit agencies. Specifically, the Committee instructed FTA to develop standards for asset management plans with an emphasis on maintaining safety, as well as to provide technical assistance to transit agencies on asset management and conduct a pilot program to identify best practices in the field. The pilot program will not be included in this research.

## **Background**

FTA estimates that the US transit industry has a capital asset rehabilitation and replacement backlog of \$78 billion dollars (out of an industry total of \$607 billion in capital assets). This backlog is the result of an on-going under-investment in capital assets, particularly at transit agencies that operate heavy rail systems. Investment in US transit capital assets from all sources is around \$12 billion per year whereas FTA estimates that \$14.4 billion would be needed annually to maintain a state of good repair for these assets (not counting the \$78 billion backlog).

Maintaining transit assets in a state of good repair should be an important part of every transit agencies safety program. Although many, perhaps most, injuries and deaths on transit facilities are caused by human error there is clear evidence that poorly-maintained equipment can be dangerous. On most transit rail systems, collisions and derailments can only occur due to equipment failures. Deferred maintenance of safety-critical systems must be addressed as part of any asset management program.

In 2008, Congress required FTA to assess the condition of the Nation's transit rail infrastructure. In April 2009 the agency reported that one-third of transit agency assets are either in marginal or poor condition, and that significant reinvestment is necessary to address the backlog of capital needs. Given the large gap between the level of investment needed to bring urban rail transit into better condition and the amount of resources currently available for such investments, it is imperative that every dollar invested in rail capital improvements be put to its best use. Compounding the resource challenge is the generally weak state of much of the transit sector's ability to manage capital assets strategically. Asset management programs would enable transit agencies to take inventory of their capital assets, assess the condition of those assets, use objective and quantitative analysis to estimate reinvestment needs over the long term, and prioritize their capital investments by using all of the information and analysis that was required under the program.

FTA's research activities are authorized by 49 USC 5312, Research, Development, Demonstration, and Deployment Projects. Improving the State of Good Repair is one of FTA's five Strategic Research Goals. Under this goal, FTA has set forth the outcomes of a) Increase public investment in recapitalization of transit assets, b) Provide reliable and safe transportation across the US through improved capital asset conditions, c) Increase number of agencies that invest in transit asset management systems, and d) Increase quantity of transit assets in a State of Good Repair.

## **Project Description**

The objective of this research is to develop best practices for asset inventories for maintaining and supporting long-term capital asset management. Asset inventories should include condition information and should be able to be integrated with various levels of transit maintenance and capital asset planning.

### *Project I - Transit Asset Management Framework*

#### Objective

This research project is to develop a framework for transit asset management. A variety of existing sources and stakeholders will be reviewed and adapted to the general institutional environment of U.S. transit agencies. To develop a guidance document that will describe essential elements of transit asset management and how they should be implemented. Training materials for a national-level course that covers this material will be developed. This research shall provide an example of what an acceptable transit asset management system should consist of and provide suggested technical-assistance tools to help transit agencies follow this model.

#### Tasks

- 1) Review asset management practices for urban rail transit systems and compare them to the highway industry in the context of determining how to develop a set of guidelines for urban rail transit similar to those developed by AASHTO for the highway industry or other comparable industries.
- 2) Perform research where necessary to develop guidance specifically adaptable to transit institutions and urban rail assets.
- 3) Develop an implementation framework that facilitates transit agencies assessment of the current state of asset management practices and strategically prioritize and manage overall improvement in their capital assets. Framework should include both basic and advanced capabilities as well as evaluation procedures.
- 4) Document results and develop training materials.

#### Deliverables

- 1) Briefing to FTA staff on the materials provided. The briefing shall be documented in a stand-alone PowerPoint format.
- 2) Comprehensive manual on how to implement asset management at a transit agency.
- 3) Comprehensive training materials for a four-day national-level course on urban rail transit asset management including the integrated use of existing capital and Maintenance Management Information Systems (MMIS) data and applications.

## Project II – *Transit Asset Inventory Development and Integration*

### Objective

To explore development of asset inventories for asset management at a transit urban rail system. The product will specifically consider how urban rail transit agencies can leverage data in their maintenance management systems to build asset inventories for higher-level analysis to optimize investments in urban rail capital assets. Researchers will consider how hierarchical structures can be designed to aggregate detailed urban rail asset lists into whole-vehicle and system-level information and how maintenance data and life-cycle information can be used to infer the condition of these aggregated entities for purposes of informing reinvestment strategies.

### Tasks

- 1) Review current practices in urban rail transit capital asset inventory development. Catalog and describe the categories, hierarchies, and data elements that are commonly used. Identify differences in approach and in details and synthesize this information to produce a standard set of categories, data, and practices.
- 2) Work with a transit urban rail system that utilizes a modern maintenance management system, review what data they have available and how it is organized. Consider how this data relates to the standard asset inventory structure developed above.
- 3) Review urban rail capital asset planning at the agency and determine what the data requirements are for this planning. Map data flow through the agency, from sources to uses. Determine what additional enhancements are contemplated or are underway. Present the goals and objectives of this study and solicit input from the agencies.
- 4) Determine how the available maintenance data can be used to support higher levels of asset management.
- 5) Demonstrate the technique on a sample of actual assets and evaluate its effectiveness.

### Deliverables

- 1) Provide a draft reference document defining recommended industry-integrated standard asset inventory structures, data elements, and hierarchical relationships.
- 2) Document and illustrate how larger capital items are related through the proposed hierarchical relationships to data recorded in maintenance management systems and how this data can be used to infer conditions of these larger capital assets.
- 3) Briefing to FTA staff on the plan and partnership with transit agency. The briefing shall be documented in a stand-alone PowerPoint format. The briefing may also include the use of Roundtable or subject-matter industry experts who will provide briefing to FTA staff and respond to specific questions regarding practices, challenges and opportunities within their agencies and the industry as a whole.

### **Award Information**

The total available funding is up to \$1.4 million to be shared roughly equal between Projects I and II. Any future funding depends on Congressional appropriation. FTA will participate in

activities by attending review meetings, commenting on technical reports, maintaining frequent contact with the project manager and approving key decisions and activities including redirecting activities if needed.

### **Cost Sharing or Matching**

Federal transit funds are available to research projects at up to 100 percent of the project cost. Cost sharing will not be an evaluation criterion.

### **Eligibility Information**

Eligible recipients include State and local government agencies, public and private transit agencies, universities, non-profit organizations, consultants, legally constituted public agencies, operators of public transportation services, and private for-profit organizations.

### **Central Contractor Registration**

In accordance with Federal Acquisition Regulation Section 4.1102, “prospective contractors shall be registered in the Central Contractor Registration database prior to” application and shall provide the prospective contractor’s Data Universal Numbering System Number in the application.

### **Proposal Content**

This announcement includes all of the information that you need to apply. The following forms are available in grants.gov and are required to be completed:

1. SF 424 Mandatory
2. Other Attachments Form

#### 1. SF 424 Mandatory

Most of SF424 is self explanatory. The application should answer the following items as follows:

- 1a – application
- 1b – annual
- 4a – Leave blank
- 4b – 26

#### 2. Other Attachments Form:

1. The application should be no more than 15 pages in length as outlined in Chapter II (Item 9.b) of FTA Circular 6100.C: Transit Research and Technology Programs: Application Instructions and Program Management Guidelines.  
[http://www.fta.dot.gov/laws/circulars/leg\\_reg\\_4121.html](http://www.fta.dot.gov/laws/circulars/leg_reg_4121.html)

This application should also address the seven criteria detailed below in the Application Review Information section. The project budget justification should include identification of any matching funds and their source. The Formal Application described in the Circular is not being requested at this time. The application should also explicitly state which project(s) the applicant is applying for.

2. The application should attach information on the qualifications of key personnel, including biographies, and documentation of experience in transportation asset management practices.

All potential applicants are advised to begin the <http://www.grants.gov> registration process immediately, if they have not previously submitted Federal assistance applications through <http://www.grants.gov>, in order to be able to meet the deadline. Anyone intending to apply should complete the application process on <http://www.grants.gov> by December 30, 2010 for consideration.

### **Application Review Information**

A review panel will be convened to review each proposal. Project proposals will be evaluated based on the following criteria;

1. Concept of Problem - Understanding of the problem to be addressed in this project, including knowledge of transit assets, maintenance management systems, preventive maintenance standards, components of asset management and in general the transit State of Good Repair needs. The discussion should indicate that the proposer has a good understanding of the reasons for the research. (20%)
2. Research Approach – The research approach should be consistent with the project objectives and should make clear the practical concerns that shape the proposer’s research methodology. The discussion should include items such as the approach to data collection, innovative concepts, and reliability of equipment proposed for use. The proposal should explain how this proposed research relates to other completed or ongoing asset management and state of good repair research including expected results and the uniqueness of the research approach. (20%)
3. Research Principals – The qualifications of key personnel should includes knowledge of, and prior experience with, FTA’s Condition and Performance Report, transit infrastructure, asset management programs and systems, Transit Economic Requirements Model (TERM) and the National Transit Database (NTD). (15%)
4. Technical Management Plan, which includes the management approach for planning, scheduling, administering, staffing, coordinating and conducting the work effort and evaluating and documenting the results. Of particular importance will be the portion that involves proposing industry standards for transit asset management plans. (15%)

5. Past performance on activities relevant to the asset management and state of good repair. (10%)
6. Plan for participation of Disadvantaged Business Enterprises (DBE) is encouraged. The plan should demonstrate responsiveness to the Department of Transportation's encouragement of participation by disadvantaged business enterprises (i.e., small firms owned and controlled by minorities, women or disabled veterans. Joint ventures with DBE firms with requisite experience are encouraged. Good faith efforts may include contacting a wide range of potentially qualified DBEs. (10%)
7. Plan for evaluation and data collection. The proposal must address how success will be measured (e.g., system performance targets and metrics). (10%)

### **Award administration Information**

The anticipated notification date for successful applications is the January 2011. Following receipt of the notification letter, the successful entities will be required to submit the Formal Application as outlined in Chapter II (Items 10-25) of FTA Circular 6100.C: Transit Research and Technology Programs: Application Instructions and Program Management Guidelines, [http://www.fta.dot.gov/laws/circulars/leg\\_reg\\_4121.html](http://www.fta.dot.gov/laws/circulars/leg_reg_4121.html) through the FTA Transportation Electronic Award Management (TEAM) system website.

Before FTA may award Federal financial assistance through a Federal cooperative agreement, the applicant must submit all certifications and assurances pertaining to itself and its project as required by Federal laws and regulations. Since Federal fiscal year 1995, FTA has been consolidating the various certifications and assurances that may be required of its awardees and the projects into a single document published in the Federal Register. Sample Agreements for FTA Grants and Cooperative Agreements and guidelines are published in the Federal Register and posted on the FTA Web site at:

[http://www.fta.dot.gov/funding/apply/grants\\_financing\\_10736.html](http://www.fta.dot.gov/funding/apply/grants_financing_10736.html)

Recipients will be required to manage their projects in accordance with FTA Circular 6100.C: Transit Research and Technology Programs: Application Instructions and Program Management Guidelines. : [http://www.fta.dot.gov/laws/circulars/leg\\_reg\\_4121.html](http://www.fta.dot.gov/laws/circulars/leg_reg_4121.html). This includes requirements on project management and administration including quarterly reporting, financial management, and payment.

FTA will manage the cooperative agreement through the [TEAM system website](#).