



Oversight Procedure 37 – Fleet Management Plan Review

1.0 PURPOSE

The purpose of this Oversight Procedure is to describe the review, analysis, recommendation procedures and reporting requirements that the Federal Transit Administration (FTA) expects from the Project Management Oversight Contractor (PMOC) regarding the project sponsor's Rail Fleet Management Plan (RFMP) and Bus Fleet Management Plan (BFMP).

To support a request for advancement or funding for a major capital project, FTA requires the project sponsor submit a fleet management plan covering all existing transit modes in service. This plan should demonstrate that the project sponsor properly plans for and carries out competent overall management of its entire vehicle fleet. As an alternate, the project sponsor may submit separate RFMPs for each mode that does not share track with any other mode.

While the fleet management plans are not approved or disapproved per se, the PMOC's review informs FTA as to whether the proposed major capital project will degrade existing transit service as a consequence of its design and construction; whether the project sponsor will have adequate resources to provide service to meet the transit demand during and after the construction of the major capital project. This review provides a major input to FTA in its determination of the adequacy of the project sponsor's operational resources and financial capacity.

2.0 BACKGROUND

The FTA, in two 1999 Internal Memos to the Regional Administrators (see Section 4.0 below), explained that the purpose of bus and rail fleet management plans is to encourage a transit operator or project sponsor to properly plan for and carry out the overall management of its fleets. The Memos also provided an outline format to assist in FTA's review of fleet management plans and sets forth the minimum content requirements of each plan. The letters stress that the items in the outline section of each are minimum requirements and to include other material, as appropriate.

3.0 OBJECTIVES

The objectives of the PMOC review of the project sponsor fleet management plans is to ensure that each plan meets the minimum criteria provided in the FTA's 1999 RFMP and BFMP Guidance and ensure that the content will enable the transit operator to properly plan for and carry out the overall management of its vehicle fleet(s).

To enable proper evaluation, the RFMP submitted in support of a major capital project should, at a minimum, reflect a ten to fifteen year time frame and must include the project's design year. The BFMP time frame should begin with at least one full year of historical and empirical data compiled through past and current operations of the rail fleet. The minimum time frame requirements for a bus

fleet management plan are three to five years prior to the start of project construction until one to three years after the start of operations on the completed project, including at least one full year of historical and empirical data compiled through past and current operations of the bus fleet.

An effective plan will address vehicle and service types (bus, rail, etc.) in operation and anticipated to be in operation, including paratransit, as well as factors that are relevant to the project sponsor's determinations of current and future equipment needs. Future demand should be estimated based on (a) vehicle life expectancy, (b) the requirements for peak and spare vehicles, (c) strategies for acquisition of new vehicles, and (d) strategies for maintenance and operations. The plan should also address in detail the composition of the fleet, operating conditions, facilities, etc.

The role of the PMOC in this process is to evaluate, based on the experience and knowledge of the qualified evaluator(s), the extent to which the project sponsor has met the intent of the requirement for a Fleet Management Plan, as well as the project sponsor's ability to properly plan for and carry out the overall management of its vehicle fleet. The PMOC should first examine whether all of the required factors have been included in the Plan, and then provide opinions on whether the Plan is: a) feasible, based on the resources immediately available to the project sponsor, b) sustainable, based on the long term infrastructure and resources anticipated to be available to the project sponsor, and c) comprehensive, based on its consideration of the required factors to properly maintain and operate the new or refurbished vehicles contemplated.

4.0 REFERENCES

The following is the principal, but by no means the only, references to Federal legislation, regulation and guidance with which the PMOC should review and develop a solid understanding as related to the project sponsor's project work being reviewed under this OP:

- Circular C9030.1D, Urbanized Area Formula Program: Program Guidance and Application Instructions
- Circular 5200.1A, Full-Funding Grants Agreements Guidance
- Project and Construction Management Guidelines, 2011 Update
- Guidance: Rail Fleet Management Plans, FTA Memorandum to Regional Administrators, September 2, 1999 (attached as Appendix D)
- Guidance: Bus Fleet Management Plans for New Starts, FTA Memorandum to Regional Administrators, April 8, 1999 (attached as Appendix E)

5.0 PROJECTS SPONSOR'S SUBMITTALS

Appendix C contains a sample table of contents and timeline for completion of a Fleet Management Plan. Separate fleet management plans may be developed for bus and rail including separate plans for rail systems that do not share a common rail line. The PMOC shall utilize this table of contents as a guide in its review of a project sponsor's Fleet Management Plan.

The project sponsor is required to formally submit its Fleet Management Plan to FTA at the following milestones during the project life:

- Before entry into Engineering;
- For a Risk Assessment if conducted during the Engineering Phase
- Before FFGA (if required, as an update).

It is anticipated that an existing fleet management plan may need updates from time to time between milestones. It should be noted that during transitional periods of new replacement car deliveries, retirement, or the rebuild/rehab, the spare ratio of the total cars available will be higher than typical. Any increase over previous spare ratios should be clearly described and should be temporary in nature for the transit agency. Items that will necessitate an immediate update to the plan might include the following:

- New vehicle purchase;
- Retiring of existing vehicles;
- Rebuild/rehab program to extend life expectancy of existing vehicles;
- Extensions or expansions in service;
- Strategic changes that affect the operations, peak vehicle requirements, or load factors of the system.

A revised fleet management plan should include a brief description and clear reconciliation to the previously submitted plan.

6.0 SCOPE OF WORK

At the milestone points or as conditions warrant the FTA may require the PMOC to review the project sponsor's Fleet Management Plan. The PMOC shall report findings and make recommendations as to the accuracy, adequacy and reasonableness of the project sponsor's Fleet Management Plan and supporting data, plans, and documentation.

The fleet management plans must address operating policies (level of service requirements, vehicle failure definitions and actions); peak vehicle requirements (peak service period and scheduled standby trains); maintenance program (scheduled, unscheduled, and overhaul); system and service expansions; vehicle procurements and related schedules; and spare ratio justification.

The PMOC may be asked to:

- Share its knowledge of fleet management plans and practices with the project sponsor; serve as a resource, lend its experience and knowledge of other plans;
- Provide plans that have been found complete and reasonable as models of "best practices" among project sponsors;
- Provide further outlines of the elements in a fleet management plan to adjust the plan to the project sponsor's operation;
- Review the fleet management plan to ensure it is comprehensive and complete in its analysis of the vehicle operations.

In support of this review, the PMOC shall, when directed, conduct on-site inspections of equipment, facilities, data, documentation, or records to evaluate the project sponsor's effectiveness in implementing the fleet management plan in conformance with the grant agreement, sound operating or

engineering practices, or other statutory and administrative requirements. Inspection visits should be made, for example, to follow up on information received from the project sponsor about an event with significant impact on the project, or to determine whether the project sponsor has adequately implemented the fleet management plan.

The PMOC shall review project sponsor documentation, characterize the project sponsor's fleet management plan, and validate the plan and operating assumptions in conformance with these procedures; when directed the PMOC shall perform a technical review and/or conduct physical inspections. The PMOC shall evaluate and assess the accuracy, adequacy and reasonableness of the project sponsor's Fleet Management Plan and its supporting plans and documentation using the following criteria:

- 1) The project sponsor's existing transit service, in terms of level of service, operating costs, reliability, quality, and support functions, will not be degraded as a consequence of either the design and manufacture of the equipment or the design and construction of the project; and that the project sponsor will be able to provide adequate service to meet the transit demand for the years leading up to and following either the delivery of the equipment/facility or construction of the project;
- 2) Fleet operations (present and future) as described in the plan are substantially consistent with that adopted in the Record of Decision (if applicable), sufficiently complete in detail and analysis (fleet plan or supporting documentation) to readily demonstrate project sponsor's ability to maintain or improve the current level, and quality of operating costs, and reliability and quality of service for the years leading up to and following construction of the project. The plan also provides details of existing and planned vehicle procurements as well as any overhaul/rebuild programs that extend the life expectancy of the equipment;
- 3) The project sponsor has selected a sufficient time frame for fleet planning¹, and compiled sufficient historical and empirical data from past and current fleet operations;
- 4) The project sponsor can properly plan for and execute the overall management of its entire fleet of vehicles and related support functions and equipment, addressing reasonably foreseeable and relevant factors regarding future equipment needs:
 - a) Additional maintenance facility requirements;
 - b) Accommodations for future growth;
 - c) Contingency for short term changes in ridership;
 - d) Vehicle life cycle maintenance;
- 5) The project sponsor's management is competent and capable of providing leadership and direction on fleet planning and operating matters including all aspects of Fleet Management Plan requirements;
- 6) The Plan includes: (a) definition of terms, (b) the requirements for peak and spare vehicles including schedule spares, maintenance spares, parts spares, (c) the requirements for support functions such as heavy and running maintenance, capital and operating parts inventory and information technology, (d) strategies for acquisition of new vehicles or overhauling existing equipment and tradeoffs between them, (e) strategies for maintenance and operations

¹ The planning horizon for bus fleet plans should be at least 10 years but not less than described in Appendix E for BFMP in support of rail projects. The planning horizon for rail fleet plans should be through either the design year for new systems or through the first vehicle overhaul cycle, whichever comes later. For existing rail operators; however, the fleet plan should not be less than 15 years but typically 20 years to 30 years (See end note in Appendix D).

- including reducing spare vehicles, (f) strategies for reducing operating costs and increasing service reliability, (g) description of existing system and expansion plans, both project and non-project related, (h) a schedule for the existing and procured/overhauled vehicle fleet; (i) the project sponsor's reliability program, past performance and plans to improve reliability;
- 7) The FTA provides a recommended spare ratio of 20% for bus fleets. For rail fleets, the FTA has not established a specific spare ratio number as rail transit operations tend to be highly individualized and, as such, the spare ratio is expected to vary from operator to operator. The following, which mirrors the guidance provided to project sponsors, should be used by the PMOC in its review of the project sponsor's justification for and the reasonableness of the proposed spare vehicle ratio:
- a) Spare ratio justification should consider: average number of cars out of service for scheduled maintenance, unscheduled maintenance², and overhaul programs; allowance for ridership variation (historical data); ridership changes that affect car needs caused by expansion of system or services; contingency for destroyed cars; and car procurements for replacements and system expansions; vehicle procurement lead times;
 - b) Cars delivered for future expansion and cars that have been replaced, but are in the process of being disposed of should be identified and separated from other spares because they unfairly distort the spare ratio;
 - c) The Peak Vehicle Requirement should include "spare", "gap", or "standby" trains but only where those trains are scheduled, ready for service, and have a designated crew;
 - d) Factors that may influence spare ratio are: equipment make-up (locomotive-hauled trains; married pair units or single cars; equipment design, reliability and age); environmental conditions (weather, above-ground or underground operation, loading and track layout); operational policies (standby trains, load factors, headways); maintenance policies (conditions for removing cars from service), maintenance scheduled during nights and weekends, and labor agreement conditions; and maintenance facilities and staff capabilities;
 - e) A template for the calculation can be found in the Circular 9030.1D, Appendix D;
- 8) The project sponsor's information system reliably provides needed operating and financial data such as current estimates of maintenance facility and vehicle operating costs, reliability, and life expectancy for decision-making and performance review;
- 9) That in its selection and specification of vehicle equipment and systems, the project sponsor has matched the appropriate technology with the planned transit applications for the best performance at the lowest cost;
- 10) Project sponsor estimates of costs, service levels, quality, or reliability are mechanically correct and complete, consistent with the project sponsor-defined methodologies, and free of any material inaccuracies or omissions;
- 11) Project sponsor forecasts and schedules are mechanically correct and complete and are consistent with the plan scope and project scope adopted in the Record of Decision.

² Since the average number of cars undergoing unscheduled maintenance (including collision damage or waiting for parts) varies on a daily basis, it is expected that there will be a number of vehicles available but not used; this number represents the difference between the average number of cars held for unscheduled maintenance and the maximum permissible number of cars that can be held for unscheduled maintenance and still support the Peak Vehicle Requirement.

7.0 REPORT, PRESENTATION, RECONCILIATION

The PMOC shall review the items as per the checklist in Appendix. The PMOC shall provide FTA with a written report of its findings, analysis, recommendations, and professional opinions, including a description of the review activities undertaken. After FTA approval, the PMOC should share the report with the project sponsor. The report formatting requirements of OP 01 apply. When necessary, PMOC shall perform data analysis and develop data models that meet FTA requirements using Microsoft Office products such as Excel and Word and use FTA-templates when provided. The PMOC may add other software as required but documentation and report data shall be made available to FTA.