

**U.S. DOT Federal Railroad Administration
Office of Passenger and Freight Programs**

Monitoring Procedure 27 – Before-and-After Study

1.0 PURPOSE

This Monitoring Procedure (MP) describes FRA requirements for Monitoring and Technical Assistance Contractor (MTAC) activities related to Before-and-After Studies.

2.0 KEY PRINCIPLES

Before-and-After studies compare scope, capital cost, operational performance, and ridership, before and after an FRA-funded rail project progresses through a phase or phases. Points of reference include:

- actual conditions before
- forecasts made during
- actual conditions after

The information should be gathered and preserved for every project in every phase (planning, design, construction, and operation), so that when a project progresses to the next phase, a comparison can be made with the earlier point of reference. Refer to the sample table below.

The comparisons will show what has been accomplished through the FRA capital program, and the professionalism of the Grantee and its team. The capital cost portion of the Before-and After study will be the building block for an FRA cost database that can become an estimating resource for future projects.

3.0 REQUIRED DOCUMENTS

Relevant project information on project scope, capital cost, operational performance, ridership, and agreements for construction and maintenance, operations, and service outcomes (ref. MP 20 for more information on agreements.)

4.0 SCOPE OF WORK

4.1 Individual Corridors

The MTAC will discuss the Before-and-After study with the Grantee, and ensure the Grantee preserves and compiles the relevant information, and summarizes it in the table below. For an individual corridor, the Grantee should:

- set up an electronic archive for drawings, cost estimates (in original and in SCC format); information on operational performance and ridership; information on development and population densities in station areas.
- at each phase, document the required information including narratives to explain changes.

The MTAC will also oversee Service Outcome Agreement compliance and when necessary advise the parties on process, content, and compliance.

4.2 Nationwide Basis

For the nationwide Before-and-After Summary Report, a designated MTAC will collect copies of the individual Grantees' information (described above) and, when available, add "after actuals" for operational performance and ridership from the Grantee, the train operating entity, or others as appropriate. The MTAC will compile all information into a report. As appendices, the report will include for each project a one to two page scope description with changes highlighted; and the SCC capital cost Main Worksheets.

Before and After Study

Project Name:

Forecast Year:

Milestones	Date	Scope		Capital Cost YOE (X000)	Capital Cost		Ridership (Passengers per day)	Operating Cost		Operational Performance				Densities in Station Areas (use separate columns for each station area)		Reasons for Changes
		Route Miles	Number of Stations		Per Route Mile (X000)	Per Passenger Mile		Per Route Mile	Frequencies	Scheduled Trip Time	Run Time	Host Railroad Delay Minutes	Development (total SF)	Population (residential, employment)		
Completion of Planning/Concept Design	Actual (if applicable)	1/1/2013					10,000			4		3 hr 30 min	19.8			
	Forecast	1/1/2013	200	5	\$100,000	\$500	40,000			6		3 hr 20 min	16.0			
Completion of Preliminary Engineering	Forecast	6/1/2014	220	6	\$85,000	\$386	35,000									(1)
Completion of Final Design	Forecast	1/1/2016	220	6	\$120,000	\$545	35,000									
100% complete for construction; As-built drawings and final costs in; Revenue operations started	Actual	1/1/2019	220	6	\$130,000	\$591	35,000									
1 year after start of RevOps	Actual	1/1/2020					30,000									
5 years after	Actual	1/1/2025					35,000									
10 years after	Actual	1/1/2030					40,000									
20 years after	Actual	1/1/2040					50,000									

(1) At Rural Rte. 6, the elevated portion of Track / Railbed was eliminated; instead the railroad will be depressed with new road bridge above; Station B also now at grade.