

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

**Monitoring Procedure 26 – Lessons Learned / Best Practices**

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**1.0 PURPOSE**

FRA, Volpe, Grantees, stakeholders in rail projects, and even host railroads can learn from the project experiences of others. This Monitoring Procedure (MP) describes FRA's expectations of the Monitoring and Technical Assistance Contractor (MTAC) to record those experiences.

**2.0 KEY PRINCIPLES**

FRA's goals for Lessons Learned / Best Practices are the following:

1. Increase awareness of project pitfalls as well as good practices
2. Make the lessons available via the FRA public website
3. Change FRA policies and practices when lessons suggest such changes should be made

**3.0 REQUIRED DOCUMENTS**

As required, the MTAC will obtain documents and other materials from the Grantee or other sources.

**4.0 SCOPE OF WORK**

The MTAC should identify lessons and best practices in the course of the project, and describe each in a Lessoned Learned / Best Practices Report that includes narrative, drawings, photos, and video.

Each report should be short -- two to three pages maximum, with just enough background so the reader can put things in context. It may focus on events or insights from any project phase – planning, project development, construction, operations; and it may focus on any aspect – leadership, management, planning methodologies, design guidelines or criteria, challenges from public process or politics, techniques in design or construction, cost estimating, scheduling, testing preparatory to operations, etc. The report should include significant findings, recommendations, and new insights.

The MTAC and the Grantee may jointly develop the report, or the Grantee may read the MTAC's draft and provide input. The MTAC and/or Grantee may be asked to present the report at an FRA meeting.

**5.0 TOPICS FOR BEST PRACTICES**

The following is food for thought – areas where there is a known need for best practice guides.

- 1) Project Initiation
  - a) How corridor and multi-state partnerships can help States, railroads, operators, and FRA to plan rail networks, and more effectively accomplish passenger rail projects within those networks.

- b) Putting together a robust project team – what are the necessary and appropriate skills, experience, and levels of staff?

## 2) Planning and Concept Design

- a) Stations
  - i) Analyzing markets for corridor alignment and station location
  - ii) Carefully inserting railroad infrastructure to enhance, not divide, communities
  - iii) Planning for value capture/land use development in station areas
- b) Modeling railroad operations; assessing railroad capacity; forecasting ridership
- c) Environmental impact assessment and NEPA for rail projects
- d) How compliance with Buy America, the Americans with Disabilities Act, and the Uniform Relocation Assistance and Real Property Acquisition Policies Act shapes your project;
- e) Agreements among project parties
- f) Real estate complexities/pitfalls including contractor access, staging, and lay-down areas – more area than you might think!
- g) Hazard and vulnerability analyses and recommendations

## 3) Project controls

- a) Cost estimating, cost management, cost estimating
- b) Project scheduling
- c) Risk assessment, management, mitigation

## 4) Design

- a) Level of development/detail for Preliminary Engineering (PE) plans
  - i) Track design
    - (1) appropriately scaled, track geometry (spirals, curves, tangents)
    - (2) points of switch
    - (3) designation of existing track, new track, track to be removed, future track work
  - ii) level of investigation for utilities
  - iii) level of investigation for geotech conditions
- b) Platforms
  - i) height (48", 15", other)
  - ii) length (can it accommodate the size of trains, any projected increase in consists)
  - iii) location on mainline vs. on siding
  - iv) level boarding requirements
    - (1) public ownership/maintenance of the line vs. privately owned or long term lease
    - (2) accommodating wide loads via gauntlet tracks/bypass tracks
    - (3) curved platforms
    - (4) pedestrian and baggage access to platforms, etc.
- c) Signal design
  - i) Locations - particularly at stations, to maximize platform lengths and pockets that are used for complicated train movements;

- ii) Speeds - what aspects should typically be incorporated on the different classes of track, designing and spacing turnouts to accommodate the braking distance of a misrouted freight train.
  - iii) PTC
- d) Track, types of track
- i) For upgrades, what is appropriate -- continuously welded rail (CWR) versus jointed rail; also is there sufficient ballast for CWR
  - ii) What size rail is appropriate - 136 lb. vs. 115 lb.
  - iii) Are wood or cement ties more appropriate
  - iv) What are appropriate track centers – what are the state minimums for track centers; the advantages of using existing track centers vs. cost of using wider track centers (e.g. need to widen roadbed, replace bridges and other structures, etc.)
- e) Turnouts
- i) What size is appropriate
  - ii) When to use hand thrown vs. powered
  - iii) Use of electric locks
  - iv) Location of turnouts (e.g. on tangents, off of bridge/away from bridge structures, not along platforms, 100 ft. between the next crossover/turnout)
- f) Hazard and vulnerability mitigations
- 5) Systems Integration and Revenue Service Start-up
- a) Developing a test plan
  - b) Safety and Security certifications