



FACILITY ASSESSMENT

**Facility Master Plan
New Mexico Rail Runner Express**

Submitted to:

Rio Metro Regional Transit District



Prepared by:

WSP | Parsons Brinckerhoff



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HISTORY

The New Mexico Department of Transportation (NMDOT) in cooperation with the Rio Metro Regional Transit District (RMRTD) implemented commuter rail service between Belen, NM and Santa Fe, NM over a four year period between 2004 and 2008, commonly referred to as New Mexico Rail Runner Express (NMRX). The service covers approximately 100 miles and 22 weekday trains focused primarily during the peak periods. The NMDOT purchased the line from the BNSF in 2005 along with some extra property for stations and maintenance activities.

To support the service a rail vehicle maintenance and storage yard was constructed which included a maintenance canopy covering a single track that includes an inspection pit. The maintenance canopy is open on all four sides to allow for access to the equipment and the movement of material via forklift to the maintenance track. The tracks north and south of the covered pit were built as part of the project and provide for train storage. The current warehouse, which is part of the RMRTD lease of private property, is extremely old and is in poor condition. The RMRTD also leases office space adjacent to the maintenance and warehouse area to house RMRTD staff and staff from RMRTD's contract operator/maintainer for the service, Herzog Transit Services Inc. This office space is provided in a two 2-story buildings, which are also of a significant age.

PURPOSE

The purpose of the Master Plan study is to create a long range blue print for a more efficient and cost effective use of the property. Maintenance is currently conducted in the open and all the equipment is subject to weather elements. RMRTD would like to avoid leasing land, warehouse and office space and re-locate these functions on currently owned or purchased property. Given RMRTD's financial constraints the plan will need to be phased in a sequence that makes sense logistically, financially and operationally. To meet these objectives the RMRTD will consider the purchase of additional property beyond what is currently owned by the NMDOT if it is necessary to accommodate the maintenance, warehousing and administrative functions of the service. The Master Plan may also include the relocating all functions to the other side of the main tracks on City and BNSF owned property if deemed appropriate.

EXISTING CONDITIONS

The Rail Runner Express Operations & Maintenance Facility (OMF), which is accessed from the east on Iron Ave SE, operates a fleet of 9 diesel-electric locomotives, 9 bi-level cab coaches and 13 bi-level coaches in a push-pull configuration. Peak vehicle requirements for daily service are:

- One, 5-coach consist with 2 locomotives.
- One, 4-coach consist with 1 locomotive.
- One, 3-coach consist with 1 locomotive.
- Three, 2-coach consist with 1 locomotive.
- One, 2-coach consist with 1 locomotive, Ready Train.

The three remaining vehicles, 1 locomotive and 2 coaches, are not required for daily pull-out or ready status and serve as the system's reserve fleet. This reserve fleet allows for vehicle maintenance activities to occur while still achieving daily service requirements.

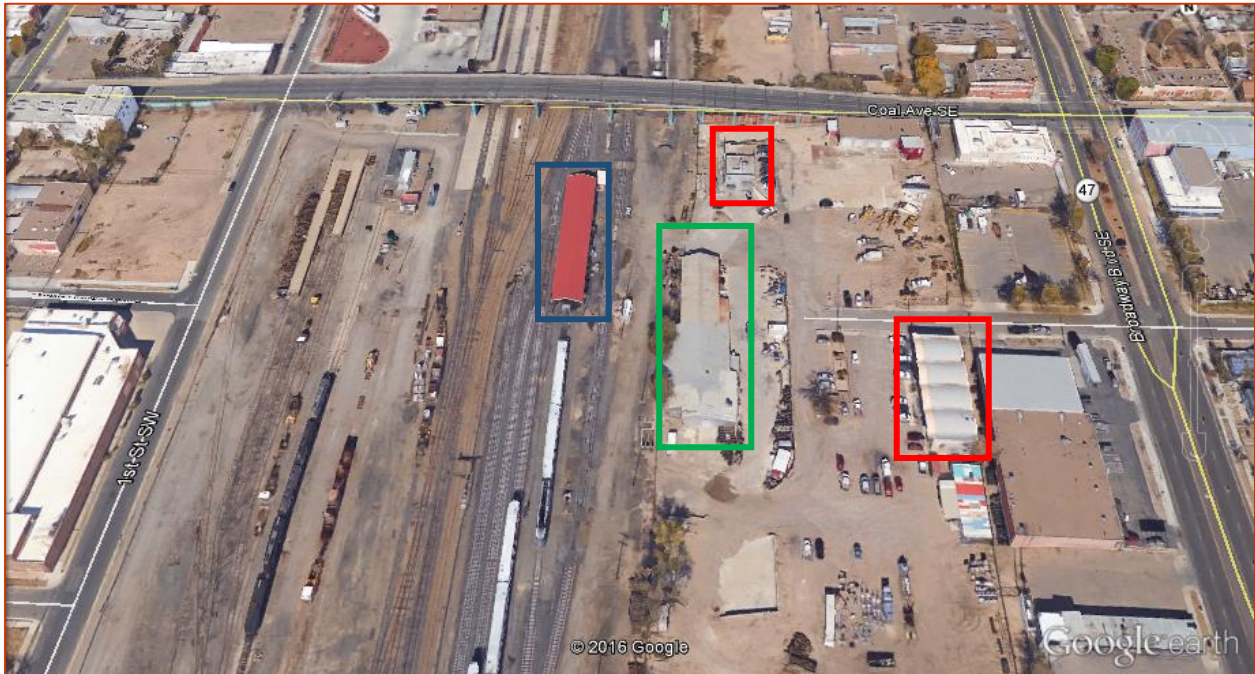


Figure 1

The blue rectangle in Figure 1 illustrates the location of the 35' by 200' long maintenance canopy with 25' long servicing pit. The maintenance canopy is open on all four sides to allow for access to the equipment and the movement of material via forklift to the maintenance track. This canopy and the surrounding yard track are the only areas within the OMF in which vehicle maintenance and daily servicing can be preformed. The maintenance canopy (see Figure 2) is outfitted with portable vehicle lifting jacks to allow for truck replacements, a sewer connection for toilet dumping, a potable water connection for vehicle water tank replenishment, lubricants and compressed air. Vehicle wayside power is provided near the maintenance canopy, but is undersized and is not in a convenient location. A small shed next to the maintenance canopy houses an air compressor and some cleaning and lubrication products.

All train consists are required to run through the maintenance canopy for daily service and inspection since the storage tracks are not equipped with sewer, water and compressed air utilities. Rail vehicle maintenance activities under or near the canopy consist of truck replacements, wheelset replacements, HVAC replacements, engine compartment component replacements, brake work, preventive maintenance, general running repairs and infrequent prime mover replacements.



Figure 2

Other vehicle servicing activities performed onsite include fueling, sanding and washing. Stationary fueling facilities are not provided on site. Locomotive diesel tanks are replenished through a contracted fuel truck delivery service. This service requires the proper positioning of locomotives in order for the fuel truck to gain access to the tanks. The sanding function is being performed through the use of a sanding trailer. Sanding is generally done at the maintenance canopy to forego the movement of the trailer through the vehicle storage yard, since accessing sanding port locations are not always easy to accomplish in the yard. Vehicle washing is being performed through the use of a cart mounted rotating brush with detergent feed as seen in Figure 3. Since the brush cart can only wash the sides of the vehicles, a trailer mounted high-pressure wash wand unit is also used in the process to clean the other surfaces of the train.



Figure 3

The green rectangle illustrated in Figure 1 is the location of the current warehouse which is part of the RMRTD lease of private property. The warehouse is extremely old and is in poor condition; see Figure 4. The warehouse stores a good portion of the required materials for vehicle maintenance including larger components such as H&P units, traction motors and combo wheelsets while trucks and coach wheelsets are stored outside. The warehouse also includes a machine shop area where general fabrication and welding activities occur. Some MOW parts are stored in the warehouse, but a large portion of MOW's stock is located a couple hundred feet to the south of the warehouse in an exterior area.



Figure 4

The red rectangles illustrated in Figure 1 are the locations of leased office and crew space. The larger two story building to the right contains most of the office and crew areas. The smaller two story building to the north serves primarily as crew space for the vehicle maintenance staff. Both of these buildings are of older construction and not within current ADA compliance standards, with the smaller building being in poor condition.

FINDINGS

This assessment focuses on the operational conditions of the yard facilities and its ability to effectively accommodate vehicle servicing requirements. The following conditions exist that reduce service efficiency, increase operating costs and create potential safety hazards.

1. The maintenance canopy is undersized and lacks suitable functionality to effectively maintain the commuter fleet. Although RTD staff and its service contractor have been able to perform the duties to keep the rail system running, they must continually improvise and deal with inefficiencies to complete maintenance activities.
2. The limited servicing facilities that are provided at the NMRX OMF are not typical per the industry and may be viewed as substandard.
3. A large premium is being paid to provide fuel truck services. Approximately 20,000 gallons of diesel fuel is used over a three-day period.
4. Vehicles are being indexed for every car in the train consists for daily service and inspection activities. This practice of indexing one car over a servicing area is time consuming and leads to additional operating costs.
5. Daily service and inspection of trains should be performed at one position stop. During this one stop the consist should be fueled, lubricants filled, sand boxes filled, toilets dumped and water tanks replenished. Ideally this is performed at the end of daily service.
6. Many transit agencies provide sewer, water and compressed air in the vehicle storage yard. This arrangement may be of consideration for the NMRX OMF. Although this arrangement would incur additional capital costs, it would allow greater flexibility in daily servicing.
7. A single direction drive-thru vehicle should be provided to effectively and automatically clean all vehicle surfaces.
8. A suitable sized vehicle maintenance facility should be provided to allow for uninterrupted component change-outs, running repairs and more complicated maintenance repairs.
9. A safe and effective method should be provided to change-out trucks without having mobile cranes crossing active tracks to shuttle components.
10. System spares include 17 coach wheelsets, 9 locomotive wheelset combos, 2 coach trucks and 1 locomotive truck.
11. Future OMF should accommodate the addition of 1 more locomotive and 3 more coaches.
12. An effective fall protection system and a facility overhead crane should be provided to accommodate vehicle roof top and engine compartment change-outs.
13. An interior work area should be provided for the maintenance of trucks and other large components.
14. The parts and materials warehouse should be adjacent to interior vehicle work tracks.
15. Although prime movers are infrequently replaced, a properly design facility with adequately sized overhead bridge crane would be a positive.
16. Wheel truing cannot be performed onsite and this function requires truck disassembly, multiple moves and an offsite contractor to perform this function.
17. MOW track service equipment is being maintained on an outside track area.
18. NMRX bus feeder system maintenance and operations facilities may make sense to be included in the OMF. These facilities could also maintain other system support vehicles.

RECOMMENDATIONS

1. A new interior rail car maintenance facility should be constructed for component change-outs, running repairs and heavy maintenance that would include:
 - a. A drop table with release track and capable of holding a vehicle on either side.
 - b. Two posted-rail vehicle repair positions with running board and rooftop access platforms and outfitted with suitable fall protection.
 - c. An overhead crane covering the drop table and vehicle repair positions capable of lifting all vehicle components less prime movers. A cost comparison should be made during design to identify price differential between a 15-ton crane and one capable of lifting a prime mover.
 - d. A welding/machine shop with proper ventilation.
 - e. A component wash room for high-pressure wand cleaning with proper grating and drainage.
 - f. An air compressor and lubrication storage/pump room.
 - g. A conditioned electronics shop and storage room.
 - h. A toolbox and portable shop equipment storage area.
2. A central warehouse should be constructed adjacent to the car maintenance facility to efficiently store all parts and materials necessary to support all system maintenance requirements.
3. A daily service and inspection track should be provided to allow for the fueling, lubricant filling, sanding, toilet dumping and water tank replenishment without having to index the train for every car location.
4. A support shop area should be provided to service MOW equipment and other system vehicles.
5. A new office and crew building should be constructed to provide adequate facilities for office staff, train operators and maintenance crews. This facility should include training and conference areas.
6. Consideration should be given for a potential automatic train washing facility.
7. Consideration should be given for a potential wheel truing facility.
8. Consideration should be given to accommodate future fleet growth.
9. Further master planning should be performed to determine potential construction phasing and costs.