



STATE OF RHODE ISLAND

DIVISION OF PUBLIC UTILITIES & CARRIERS

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Memo

To: Public Utilities Commission
From: Robert Bailey, P.E., Division of Public Utilities & Carriers
Re: Docket 5187- Petition to Establish Railroad Crossings
Date: November 30, 2021

On September 24, 2021, Solar Breakers, LLC filed a Petition to Establish three at-grade railroad crossings on railroad tracks operated by Newport and Narragansett Bay Railroad Co. (hereinafter, "N&NBRR") along a Rhode Island Department of Transportation (hereinafter, "RIDOT") owned Right of Way running west of and parallel to Burma Road in the Towns of Middletown and Portsmouth, Rhode Island.

Accompanying the Petition were detailed plans prepared by Northeast Engineers & Consultants. In its filing, the Petitioner represented that the Towns of Middletown and Portsmouth were aware of the filing and had no objections. Also accompanying the Petition was a Memorandum of Understanding between Petitioner and N&NBRR (Petition Exhibit D).

The Division engaged Pare Engineering to review the Petition in its entirety and to provide a peer-review of the engineering. Pare conducted a field visit and issued a report dated November 19, 2021. Pare made several recommendations for improvements to signage, vegetation management and storm water management. Pare's report is attached hereto as Exhibit A.

Just prior to the Division's receipt of Pare's report, on November 15, 2021, the Town of Middletown filed its comments of objection to the proposal. Middletown alleges that in 2015, it acquired an interest in 15 acres of surplus federal lands which is a portion of the subject property. Middletown stated that its plans for the acquired land include the installation of a fishing pier, a shoreline access point, and shoreline access park. Middletown's plans for the property also include beaches, walking trails, portage points,

picnic areas, parking, and restrooms. Middletown asserts that the proposed plan is in direct conflict with Middletown's plans for parking and access points.

Middletown argues that the Petition is legally deficient under R.I. Gen. Law §39-8-1.3 and should be denied because the statute requires the railroad owning the tracks to seek permission for the at-grade railroad crossings. Middletown submits that in this case, the N&NBRR is not the Petitioner, and therefore, the Petition must be denied and dismissed.

The Division notes that Exhibit D to the Petition, executed by Petitioner and N&NBRR, make it abundantly clear that the N&NBRR is aware of the Petitioner's plans and agrees to them. Whether this is sufficient to invoke the PUC's jurisdiction under R.I. Gen. Law §39-8-1.3 is a legal determination for the PUC to make. The Division takes no position on the merits of the argument.

Should the PUC determine that the petition is properly before it and will proceed to a substantive decision, the Division offers the following specific changes, as discussed in the PARE report:

1. Northeast Engineers & Consultants, Inc. needs to change the signage as shown in Pare's memorandum;
2. Vegetation overgrowth clearing limits need to be shown on the plans;
3. Proposed drainage needs to be on the plans and needs state regulatory approval (DEM, DOT, or both); and
4. Replace the rail ties and hardware within the limits of the proposed crossings.

In summary, the Division relies upon the detailed PARE report for its recommendations as to public safety concerns.



MEMORANDUM

DATE: November 19, 2021

TO: Rhode Island Division of Public Utilities and Carriers (RIDPUC)
Margaret Hogan
Christy Hetherington

FROM: David Elwell, P.E.

RE: **RI PUC Docket #5187 – At Grade Railway Crossing Review**
(Pare Project No. 21211.00)

As requested by the Rhode Island Division of Public Utilities and Carriers (RIDPUC), Pare Corporation (Pare) has completed a review of plans and existing file information prepared by Northeast Engineers & Consultants, Inc. for three proposed at-grade rail crossings on the Newport & Narragansett Bay Railroad (NNBRR) line off Burma Road located in Portsmouth and Middletown, Rhode Island. The plans have been reviewed and compared to the requirements established by the Federal Highway Administration's Highway-Rail Crossing Handbook (FHWA), as documented in the Manual on Uniform Traffic Control Devices (MUTCD), by the American Railway Engineering and Maintenance-of-Way Association (AREMA), and A Policy on Geometric Design of Highways and Streets (AASHTO). The following is submitted as a summary of this review.

Field Review and Data Collection

Pare performed a site visit of the three proposed crossing locations to observe and note the existing conditions relative to the petitioner's submitted plans and details. The site visit was conducted on November 16, 2021. Four primary observations were made during the site visit. The first pertains to available sight distance for proposed crossings 2 and 3 in each direction along the rail. In both directions at each location, visibility is significantly limited by overgrowth of vegetation. The second observation pertains to the eastbound approaches at crossings 1 and 3 and the westbound approach at crossing 2. These approaches have a substantial grade differential between the railbed and approaches, which may cause difficulty in braking for heavy vehicles that traverse the roadway in wet or icy conditions. As shown on the plans, the approach from Burma Road at crossing 2 begins at elevation 26 and drops below 23 within 12 feet horizontally. The third observation pertains to proposed signage at each crossing. Each approach to all three crossings has inadequate proposed signage as required by the MUTCD. The fourth observation pertains to existing swales that are present between the track and Burma Road. The swales create natural stormwater drainage paths to unnamed streams. The proposed approaches at crossings 2 and 3 require fill that will obstruct the drainage flow.

Exhibit A

Plan Review

The plans prepared by Northeast Engineers & Consultants Inc., dated May 2021, indicate three proposed railroad crossings for use by RIDPUC, RIDOT, and petitioner vehicles within a private way of their facilities. The crossings are proposed to have passive signage on both approaches. The signage consists of a stop sign (R1-1) at each approach, as well as "Private RR Crossing" and "Emergency Notification System (ENS)" Signage. The crossings are also proposed to be restricted by gated chain link fence on the land side of the tracks.

The rail crossing plan does not indicate train speeds or volumes, but FRA data collected by Pare in 2020 indicates an existing train speed of 10 miles per hour along the NNBRR Railway. This line is currently utilized by *The Grand Bellevue Rail Dining Experience* Dinner Train and the Rail Explorers: Rhode Island Division, who operates pedal-driven cars along the tracks.

Due to overgrown vegetation occupying the proposed crossing locations, the limits of vegetation removal will affect sight distance to and from Burma Road.

National Guidelines

The FHWA has many roles in relation to at-grade rail crossings including: the determination of factors that warrant passive or active crossing control; the establishment of best practices for safe passive and active crossing design, as outlined in the MUTCD; and the procedures for safety review, reporting and mitigation of crossings following initial construction.

The following criteria from the FHWA/MUTCD apply to the proposed at-grade crossing:

- Passive and/or active control guidelines apply to all public crossings and all privately owned crossings that are open to the public.
- Passive control refers to measures that alert crossing traffic of the location of a crossing, but do not specifically indicate an approaching train, such as signing and markings.
- A crossbuck (R15-1) sign shall be provided on the right-hand side of all approaches to an at-grade crossing with low volumes.
- Grade crossing advance warning (W10-1) signs shall be installed on each roadway in advance of every crossing. Depending on the crossing configuration, W10-2, W10-3, or W10-4 may be used in its place.
- Yield (R1-2) or stop (R1-1) signs should be used in combination with crossbuck signs at passive crossings.
- Yield control shall be the default for crossbuck assemblies unless an engineering study performed by the regulatory agency or highway authority having jurisdiction over the roadway approach determines that a stop is necessary (unusual conditions and/or poor sight lines).
- Yield or stop signs shall be mounted next to the crossbuck, rather than below on the same post, when adjacent to pedestrian travel or parking, requiring a 7-foot vertical clearance.

While AREMA references signal guidelines in their *Manual for Railway Engineering*, they identify and defer to the MUTCD as the primary standard for implementation and design of at-grade crossings. AREMA also identifies and refers to AASHTO for Roadway Approach Grading requirements.

The follow criteria from AREMA/AASHTO apply to the proposed at-grade crossing:

- In some instances, the roadway vertical alignment may not meet acceptable geometrics for a given design speed because of restrictive topography or limitations of right-of-way. The crossing surface should be at the same plane as the top of the rails for a distance of 2 feet outside the rails. The surface of the roadway should also not be more than 3 inches higher or lower than the top of nearest rail at a point 30 feet from the rail unless track superelevation makes a different level appropriate.

Summary of Findings

Based on the above, Pare concludes that due to limited train activity, low train speed, and low roadway vehicle volumes, passive controls as required by the MUTCD will be sufficient. The proposed signage layout, however, is inadequate to meet the MUTCD requirements. Pare recommends the following be considered by the designer:

- The plan callouts referencing signpost details would be more easily understood if the detail title, "Typical Crossing Signpost", on sheet 3 were included in the callouts on sheet 2.
- Proposed signage is included in the set, however, (R15-1) crossbucks are not included, which are required by MUTCD, as stated above. This signage should be added and reflected in the callouts for each crossing plan view, as well as the "Typical Crossing Signpost" Detail.
- The "Typical Crossing Signpost" detail on sheet 3 does not reflect requirements shown in MUTCD Figure 8B-2. This detail should be revised to replicate figure 8B-2 but can include additional signage. The signpost should meet MUTCD curb minimum offset, height, and retroreflectivity requirements. The signpost should be mounted no closer than 15 feet measured perpendicular from the nearest rail, as required by MUTCD.
- Because the "Private RR Crossing" Sign is not a MUTCD requirement, consider mounting on a separate signpost to prevent clutter and nonconformant minimum sign heights required by MUTCD.
- Advance warning signs are not included in the plan set. The MUTCD requires advance warning signs (W10 Series) to be used in advance of every highway-rail grade crossing. This signage should be added to the plan set accordingly based on the MUTCD requirements. It should be placed on Burma Road on the land side of the crossings and on the proposed driveway on the water side of the crossings.
- The landside approach at crossing 1 should be shown to extend to Burma Road so signage can be properly located.

- Crossings 2 and 3 are proposed in locations with vegetation overgrowth. This overgrowth can impede on sight distance of the crossing from Burma Road. The limits of tree trimming and vegetation clearing should be defined for review. This should be determined from Table 3 in the FHWA manual.
- The westbound approach at crossing 2 and the eastbound approach at crossing 3 do not meet vertical alignment requirements as stated in AASHTO Chapter 9.12.2, due to topographic limitations. This may result in vehicles bottoming out, as well as impede on driver visibility turning onto Burma Road.
- It should be stated on the “Section Through Railway at Crossing with Railseal Detail” that the approach roadway surfaces are to be in plane with the tops of the rails for at least 2 feet outside the rails.
- Swales present between the track and Burma Road at crossings 2 and 3 provide stormwater drainage paths to unnamed streams. Raising the grade at the approaches will constrict stormwater flow. Proposed drainage, capable of conveying existing flows, under the approaches should be included on the plans.
- Rail ties at these locations have been found to be in poor condition. Consider replacing ties and hardware within the limits of the proposed crossings.

If you have any questions regarding this information, please do not hesitate to contact me at (401) 334-4100.

Sincerely,



David J. Elwell, PE
Managing Engineer