ATTACHMENT B: Noise and Vibration Assessment

Noise Analysis: There are two aspects to potential noise impacts based on the proposed improvements to the MMA tracks – short term from construction and long term from improved operations. The noise disturbance from the track improvements would be temporary and should not have a significant noise impact on the areas surrounding the proposed improvements. Potential noise impacts could be adequately mitigated through best management practices, such as limiting construction activities to appropriate daytime hours.

The track improvements are being proposed to allow for slightly higher operating speeds and improvements in service to the communities and industries along the MMA right-of-way. The Federal Railroad Administration's (FRA's) cumulative noise impact criteria are based on the noise exposure increase compared to the existing outdoor noise levels. The criteria were developed to address potential annoyance in a residential environment using Ldn as the noise descriptor. Noise mitigation is to be considered when measures are necessary to mitigate severe impacts. A graphical representation of the FRA criteria is presented in Figure 1.

The FRA established three land use categories, identified as Category 1, 2, and 3:

- Category 1 - Tracts of land where quiet is an essential element in their intended purpose;
- Category 2 - Residences and buildings where people normally sleep: and
- Category 3 - Institutional land uses with primarily daytime and evening use.[1]

[1] High-Speed Ground Transportation Noise and Vibration Impact Assessment, Harris Miller Miller & Hanson, Inc., U.S. Department of Transportation Federal Railroad Administration, Office of Railroad Development, Washington, D.C., October 2005, Table 3-2.

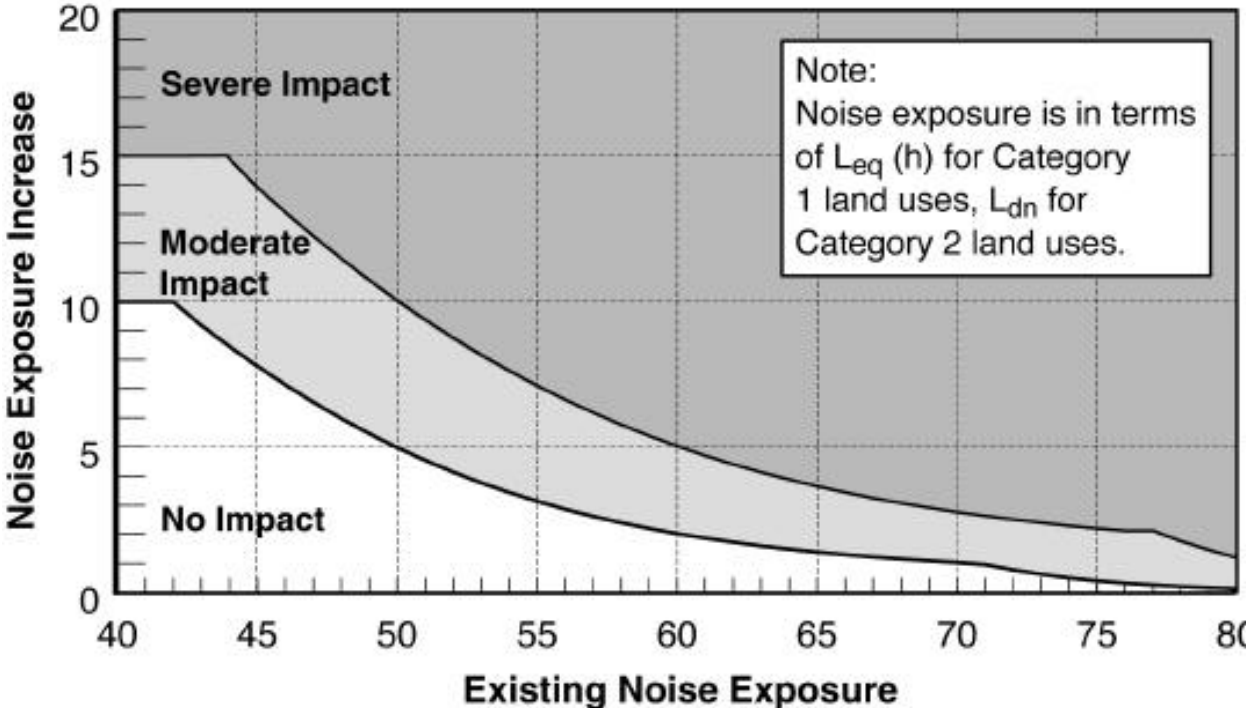

Figure 1 – FRA's INCREASE IN CUMULATIVE NOISE LEVELS CRITERIA

The cumulative noise criteria only address Category 1 and 2 land uses. The general assessment for this study will be based on the cumulative criteria established for Category 2 land uses. As explained in the note in Figure 1, the Ldn noise levels will be used for the community's noise exposure along the rail corridor.

The existing Ldn noise levels were developed using the population density procedures presented in FRA's High-Speed Ground Transportation Noise and Vibration Impact Assessment manual combined with the Ldn noise levels of the existing freight rail operations. Existing and future train Ldn noise levels were developed using the FTA's 2006 Create Noise Model[2], which includes specific noise source data for freight operations.

Existing Ldn noise levels in the communities presently served by the MMA range from 55 to 59 dBA. Track improvements and proposed operational changes from Millinocket to Oakfield will increase operating speeds, eliminate night time operations and reduce the Ldn noise level by 3 dBA. No change in noise levels are projected from Oakfield to Houlton. Noise levels adjacent to the rural main line from Oakfield to Squapan are expected to increase by 3 dBA Ldn as a result of increased operations and an increase in average speed. The increase through Smyrna Mills, which would not be exposed to increased operating speeds, would be 2 dBA Ldn. Increased daytime operations with increased operating speeds would occur between Squapan and Portage Lakes. The change in operations will increase the Ldn noise level by 3

[2] Create Noise Model, Prepared by HMMH, Inc., Copyright 2006, http://www.fra.dot.gov/us/content/167, Updated October 30, 2008.

dBA along the mainline. With operating speeds through Ashland and Portage Lakes remaining the same as existing, the Ldn increase would be 2 dBA within the communities. The proposed increase in average operating speeds from Portage Lakes north to Fort Kent would create a 1 dBA increase in the Ldn noise level. The noise levels along the Presque Isle Subdivision are not expected to change. Should the tracks from Presque Isle to Squapan be improved by replacing the jointed rail with welded rail, the Ldn noise would drop 5 dBA. Any other major sections of jointed track welded in the field or replaced by welded rail would create the same reduction in trackside noise levels.

The projected cumulative change compared to existing noise levels ranges from -3 to +3 dBA. The 3 dBA reduction would occur in the areas from Oakfield to Millinocket reducing the Ldn noise level to 56 dBA. The 3 dBA increase would occur in areas presently experiencing an Ldn noise level of 55 dBA. The proposed project is judged to create no impact based on Figure 1.

A secondary benefit to improving the MMA tracks would be a drop in future freight shipments by truck. The Environmental Assessment for the Discontinuance of Service and Abandonment of MMA service in Aroostook and Penobscot Counties, ME, STB Docket No. AB-1043 (Sub-No. 1) identified noise increases along US-1 and SR-11 ranging from 2.7 to 4 dBA Ldn. Maintaining or improving freight operations from Millinocket to Fort Kent would avoid this potential increase in traffic noise levels in the region.

Vibration Analysis: FRA's ground-borne vibration and noise criteria are based on maximum levels for a single event and the frequency of the events. The existing MMA operations would be considered infrequent according to the FRA criteria with infrequent being defined as less than 70 events per day. The ground-borne vibration criterion for the infrequent category is 80 Vdb while the corresponding ground-borne noise criterion is 43 dBA. Existing train operations most likely do not exceed those criteria except along sections of rail that are worn or corrugated. Since the improved operations will not significantly change the number of daily events, relative to 70 per day, and the source is not proposed to change, the vibration levels will remain relatively similar in the communities along the rail road right of way. If track improvements are made in the communities, such as field welding jointed rail, grinding the rail, or replacing the existing jointed rail with welded rail, vibration levels would decrease well below the ground-borne vibration and noise criteria.