September 21, 2015

Ms. Marisa Hansen, Esq.
Ulster County Attorney's Office
244 Fair Street
Kingston, NY 12401

Re: 2015 Follow-up Inspection of the Ulster County Rail Corridor

Dear Ms. Hansen:

HDR Engineering, Inc. (HDR) conducted a follow-up track inspection on behalf of Ulster County to determine compliance with Title 49, Part 213, Subpart A to F for Class 1 and Non-Class Specific Standards (hereafter Track Safety Standards) as required per agreement with the Catskill Mountain Railroad (CMRR). Inspections were conducted on foot on the Ulster and Delaware Corridor (hereafter the Corridor) between Downs Street in Kingston, NY and Bridge Street in Phoenicia, NY with two (2) HDR inspectors on Thursday, September 3 and Friday, September 4, 2015.

Based on the 2014 and 2015 inspections, the following are HDR's findings:

1. It was observed that the majority of the Corridor receives minimal maintenance. On the two (2) sections where train operations are conducted (totaling 6.23 miles), it was observed that evidence of maintenance activities had occurred.. It is the inspection team's conclusion that these sections, which are marked in green on the map in Appendix A, meet Class 1 Standards.
2. In areas where train operations are not conducted (totaling 17.24 miles), There was no evidence of any level of maintenance to support Class 1 operations since the last inspection in 2014. Mature trees were found growing in the ditches, rotted, split, and missing ties were observed consistently, and numerous joint conditions were found. Limited brush cutting was conducted in areas along the Ashokan Reservoir, but not to a degree that would comply with Title 49, Part 213, Section 37. Heavy timber was removed so on-track equipment could clear, but only to a clearance envelope sufficient for small on-track equipment.
3. Along all segments of the Corridor, it was observed that it was not kept free of brush, litter, and debris. Brush conditions were worse along segments not experiencing train operations. In areas where train operations do occur, vegetation is overgrown to where it brushes along the sides of equipment and hinders the ability of inspectors from performing their trackside duties.
4. Two (2) segments between Rt. 209 and MP 6.45 (totaling approximately 1 mile) have recently had ties installed to meet Class 1 Tie Condition. The first segment, between Rt. 209 and Hurley Mountain Road, was receiving improvements during the 2014

hdrinc.com

695 Atlantic Ave, Boston MA 02111
T 617.357.7700 F 617.357.7759

inspection. The second segment, between Hurley Mountain Road and MP 6.45, is currently receiving improvements as of the 2015 inspection. In order to meet Class 1 Standards, additional work must be conducted to ensure compliance. Vegetation is overgrown to the point where it is brushing the sides of equipment parked in this segment.

The table below outlines the specific conditions identified by the inspection team.

	From	To	Approximate Distance	Condition Assessment
1.	Downs Street (MP 3.23)	Rt. 209 (MP 5.4)	2.2 miles	Maintained to Class 1 Standards; passenger trains operate in this section. Other defects were observed that are not Class 1 compliant. *
2.	Rt. 209 (MP 5.4)	Hurley Mountain Road (MP 5.93)	0.5 miles	Tie condition generally meets Class 1 Standards; section was restored by CMRR in 2014. Other defects were observed that are not Class 1 compliant. *
3.	Hurley Mountain Road (MP 5.93)	MP 6.45	0.5 miles	Ties are currently being installed by CMRR to meet Class 1 Standards. However, other conditions will need to be addressed to meet Class 1 Standards. *
4.	MP 6.45	East End Esopus Creek Trestle (MP 21.26)	14.8 miles	Does not meet Class 1 Standards, poor tie conditions observed, loose joint bars, center cracked joint bars, drainage work required, no vegetation management. *
5.	East End Esopus Creek Trestle (MP 21.26)	West End Esopus Creek Trestle (MP 21.31)	290 ft	Bridge is washed out. *
6.	West End Esopus Creek Trestle (MP 21.31)	Cold Brook Station (MP 22.16)	0.9 mile	Does not meet Class 1 standards, poor tie conditions observed, loose joint bars, center cracked joint bars, drainage work required, and no vegetation management. *
7.	Cold Brook Station (MP 22.16)	MP 23.50	1.3 miles	Tie condition generally meets Class 1 Standards, however due to washouts, track segment is inoperable, loose joint bars, center cracked joint bars were observed, and no vegetation management. *
8.	MP 23.50	MP 27.53	4.03 miles	Maintained to Class 1 Standards; passenger trains operate in this section. Other defects were observed that are not Class 1 compliant. *
9.	MP 27.53	Bridge Street (MP 27.77)	0.24 mile	Does not meet Class 1 Standards, poor tie conditions noted, vegetation not maintained. *

*See Appendix B for photos of segment.

HDR inspected between MP 10 and MP 21.26 on September 3, 2015. The remainder of the Corridor was inspected on September 4, 2015 (MP 3.23 to MP 10 and MP 21.31 to MP 27.77).

Inspectors visually inspected tie conditions to determine compliance with §213.109 (Crossties). Inspectors would verify gage measurements with a tape measure and test the ability of ties to retain fasteners by hand. A portable track loading fixture (PTLF) was not used. In the most severe locations, spikes (rail fasteners) were able to be removed by hand and the rail was able to be moved laterally by applying minimal force. Crossties must be able to retain spikes (fasteners) and restrain the rail laterally to allow the track structure to support the vertical and lateral forces of a train. Merely operating work equipment is not proof that the track structure can support the load of a train.

Language in the lease agreement between Catskill Mountain Railroad, Inc. and the County of Ulster specifically requires the assignee to rehabilitate a minimum of 1 mile of track per lease year so that at the end of the lease the entire line is rehabilitated to "Class 1 Condition."[1] As such, this inspection was conducted as if the CMRR was governed by the Track Safety Standards. Volume 2, Chapter 1 of the *Track and Rail and Infrastructure Integrity Compliance Manual* was referenced to ensure consistency with HDR's interpretation of the Track Safety Standards and the generally accepted practices of track maintenance and inspection. In addition, the lead inspector used his experience maintaining and inspecting Class 1 through Class 4 track to identify defects.

Class 1 Defects are defined as defects identified that, in isolation or in combination, exceed the maximum parameter for track designated as Class 1. These Class-Specific Defects include, but are not limited to, parameters such as:

- Gage,
- Alinement (alignment),
- Track surface,
- Rail end mismatch,
- Minimum number of effective crossties within twenty-four inches (24") of a joint,
- Minimum number of effective crossties per thirty-nine feet (39').
    - The minimum number of effective crossties is broken down into three specific locations:
        - In tangent (straight) track or in curves less than or equal to two (2) degrees, and
        - Turnouts and curves greater than two (2) degrees.

Non-class Specific Defects are defined as defects that do not meet the standards set forth in Title 49, Part 213, Subpart A to F and are not specific to a certain class. These defects should be considered as the "minimum" conditions that should be followed for a railroad to operate at any speed. These defects include, but are not limited to, minimum requirements for:

- Drainage,
- Vegetation management, and
- Ballast.

[1] Lease Agreement, Page 3, Rehabilitation and Maintenance Paragraph.

Class 1 Defects must be repaired to operate passenger service, as revenue passenger trains are not permitted to operate on excepted track; Non-class Specific Defects must be repaired within 30 days of identification to remain in compliance with Track Safety Standards.

In order to ensure compliance with the Track Safety Standards, a comprehensive maintenance plan must be implemented. Drainage and vegetation defects will need to be addressed along the entire Corridor. Upon removal of vegetation, a detailed tie inspection should be conducted. A qualified individual (person meeting the requirements of (§213.7(a)) should determine the number of ties to replace in order to meet the minimum number of effective ties prescribed in the Track Safety Standards. Upon completion of the tie inspection and replacement, the operator should install ballast to support the new ties and maintain surface and alignment parameters set forth in the Track Safety Standards. A bolt and joint bar replacement program will also need to be implemented to ensure center cracked or broken joint bars are removed from the track and that at least one (1) bolt per rail is tight.

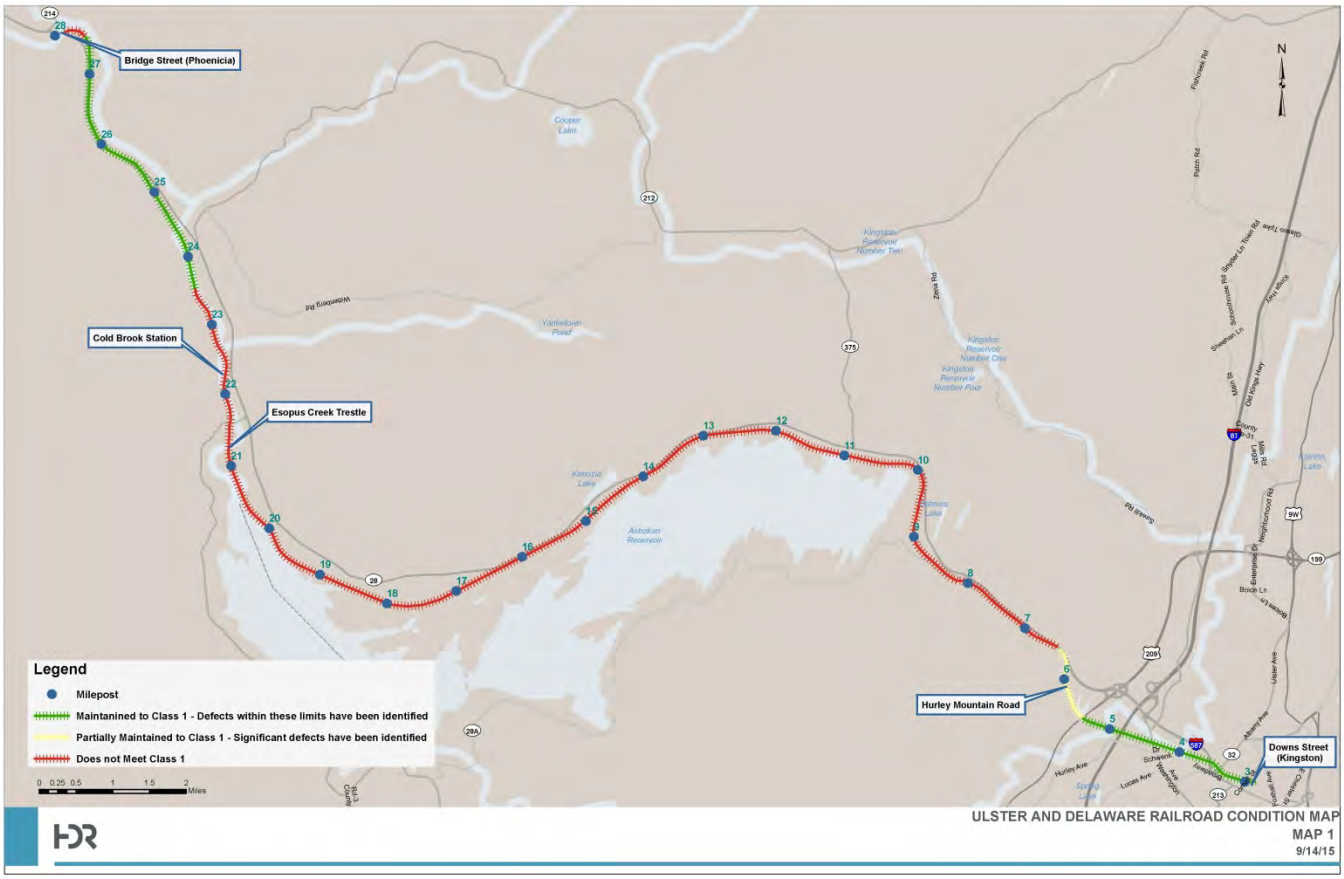
Sincerely,
HDR Engineering, Inc.

Owen Smith
Rail Engineer

Attachments

cc: Peter Reilly, HDR
Ken Briggs, HDR
Richard Semenick, HDR

Appendix A
Map 1: Ulster and Delaware Railroad Corridor Condition Map
2015 Follow-up Inspection



Appendix B
Conditions Observed

1. Conditions Observed from Downs Street (MP 3.23) to RT. 209 (MP 5.4)

1.1 Recently Mowed Vegetation

1.2 Tie Condition Observed

1.5 Vegetation Observed at Milepost 4

1.4 Tie Condition Generally Meets Class 1

2. Conditions Observed from RT. 209 (MP 5.4) to Hurley Mountain Road (MP 5.93)

2.1 Vegetation Maintained to Class 1

2.2 Tie Condition Generally Meets Class 1

2.3 No effective supports ties within the prescribed distance from a joint (§213.109(e) (1))

2.4 Tie Condition Generally Meets Class 1. Insufficient ballast (§213.103(a))

3. Conditions Observed from Hurley Mountain Road (MP 5.93) to MP 6.45

3.1 Recently Changed Ties To Meet Class 1. No Vegetation Management (§213.37)

3.2 No Vegetation Management (§213.37)

4. Conditions Observed from MP 6.45 to East End Esopus Creek Trestle (MP 21.31)

4.1 Previously Observed Tire Pile. Right Of Way Was Not Free Of Brush, Litter And Debris.

4.2 Poor Drainage And Defective Tie Condition (§213.33 and §213.109(e) (1))

4.3 Defective Tie, Tie Unable To Hold Spike (§213.109(c) (2))

4.4 Rockslide Next To Joint Tie Defect (§213.109(e) (1))

4.5 Previously Marked Joint Tie Defect, Tie Unable To Hold Spike – Defect Not Addressed (§213.109(c) (2))

4.6 Previously Marked Center Cracked Joint Bar – Defect Not Addressed (§213.121(c))

4.7 No Effective Support Ties Within The Prescribed Distance From A Joint (§213.109(e) (1))

4.8 Defect Tie Condition (§213.109(e) (1))

4.9 No Vegetation Management (§213.37)

4.10 Previously Marked Joint Tie Defect, Tie Unable To Hold Spike – Defect Not Addressed (§213.109(c) (2))

4.11 No Vegetation Management (§213.37), Difficult To Inspect

4.12 Center Cracked Joint Bar (§213.121(c))

4.13 Poor Drainage And No Vegetation Management (§213.33 And §213.37)

4.14 Poor Tie Condition and Insufficient Ballast (§213.109(e) (1) and §213.103(a))

4.15 No Vegetation Management (§213.37)

4.16 No Vegetation Management (§213.37), Difficult To Inspect

4.17 Washout, Insufficient Ballast (§213.103(a))

4.18 Rail End Mismatch (§213.115)

4.19 Previously Marked Center Cracked Joint Bar – Defect Not Addressed (§213.121(c))

4.20 Detailed View of Deteriorated (§213.109(c) (3))

4.21 No Vegetation Management (§213.37), Difficult To Inspect

4.22 Rail End Mismatch (§213.115)

4.23 Defective Tie, Vegetation Growing Through Tie (§213.109(c) (2))

4.24 Defective Tie, Tie Unable To Hold Spike (§213.109(c) (2))

5. **Conditions Observed from East End Esopus Creek Trestle (MP 21.26) to West End Esopus Creek Trestle (MP 21.31)**

5.1 Failed Esopous Creek Trestle

5.2 Poor Tie Condition On Espous Creek Trestle Approach (§213.109(e) (1))

5.2 Poor Timber Condition On Espous Creek Trestle Approach (§213.109(e) (1))

6. Conditions Observed from West End Esopus Creek Trestle (MP 22.31) to Cold Brook Station (MP 22.16)

6.1 Poor Drainage And No Vegetation Management (§213.33 And §213.37)

6.2 No Effective Support Ties Within The Prescribed Distance From A Joint (§213.109(e) (1))

6.3 Defective Tie, Tie Unable To Hold Spike (§213.109(c) (2))

7. Conditions Observed from Cold Brook Station (MP 22.16) to MP 23.50

7.1 Washout, Insufficient Ballast (§213.103(a))

7.2 No Vegetation Management (§213.37)

7.3 Washout, Insufficient Ballast (§213.103(a))

7.4 Center Cracked Joint Bar (§213.121(c))

8. Conditions Observed from MP 23.50 to MP 27.53

8.1 Tie Condition Generally Meets Class 1

8.2 Tie Condition Generally Meets Class 1, Vegetation Defects Observed (§213.37)

8.3 Tie Condition Generally Meets Class 1, Vegetation Defects Observed (§213.37)

8.4 Previously Observed Tie Pile, Ties Should Be Disposed Of At An Approved Facility

9. Observed Conditions from MP 27.53 to Bridge Street (MP 27.77)

9.1 Poor Tie Condition and Insufficient Ballast (§213.109(e) (1) and §213.103(a))

9.2 Defective Tie, Tie Unable To Hold Spike (§213.109(c) (2))

9.3 No Effective Support Ties Within The Prescribed Distance From A Joint (§213.109(e) (1))