Attachment C – SWPPP

Part 6 of 6

Exhibit 10: Correspondence

Christopher M. Hannett

From:	Orzel, Brian A CIV USARMY CENAN (US) <brian.a.orzel@usace.army.mil></brian.a.orzel@usace.army.mil>
Sent:	Monday, March 05, 2018 4:26 PM
To:	Christopher M. Hannett
Cc:	cwhi@co.ulster.ny.us; Thomas C. Baird
Subject:	RE: [Non-DoD Source] Ashokan Rail Trail, Ulster County

Chris,

I downloaded photos for Streams 20 + 21, 22, 29 + 30, 31 + 32, 33 and 35 using the link that you sent to me. Most of the areas shown in the photographs did not look like streams. However, I'd like to get a little more information on some of the photos:

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Brian

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Hi Brian,

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Christopher M. Hannett, P.E. Barton & Loguidice, D.P.C.

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a. For instance, you currently propose approximately 8200 square feet (0.19 acres) of fill within what you described "unnamed streams" that parallel the former railroad tracks. One question is, what criteria did you use to determine that these areas were in fact, streams? Another question revolves around the difference between these unnamed streams and other linear features along the tracks that you referred to as "swales". Why were the swales different from the unnamed streams? Yet another question would be, what activities would occur within the unnamed streams? Would you be excavating them to remove sediments and placing some sort of filter stone instead? After you conduct the work, would these areas continue to be streams or would they be more of a sediment filtering swale? My understanding of the differences could affect the impact calculations.

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c. Depending upon your answers to the above questions, the currently calculated 0.43 acres of permanent fills might be reduced. If you can show that the reductions are due to extraordinary efforts, like building more boardwalk (more cost) or restoring the unnamed streams (perhaps more cost), those efforts might qualify as mitigation and might save you from having to design and construct replacement waters, including wetlands.

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Brian

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Thank you,

Chris

Christopher M. Hannett, P.E.

Project Engineer

Barton & Loguidice, D.P.C.

Engineers, Environmental Scientists, Planners, Landscape Architects

10 Airline Drive s Suite 200 s Albany, NY 12205 s Phone: (518) 218-1801s Fax: (518) 218-1805

Files attached to this message

Filename Size Checksum (SHA256) 2018-02-20 USACE Revised Plans.zip 93 MB 6d6c7a60e09253f0c32aef0ab6c9d233cb573c571a962929294f13b33c774b0b

Please click on the following link to download the attachments: Blockedhttps://liquidfiles.bartonandloguidice.com/message/HeKk0BmYBFIL7XacLb7ktZ

This email or download link can be forwarded to anyone.

The attachments are available until: Friday, 20 April.

Message ID: HeKk0BmYBFIL7XacLb7ktZ

LiquidFiles Appliance <Blockedhttp://www.liquidfiles.com> : Blockedhttps://liquidfiles.bartonandloguidice.com

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Christopher M. Hannett

From:	Orzel, Brian A CIV USARMY CENAN (US) < Brian.A.Orzel@usace.army.mil>
Sent:	Monday, March 05, 2018 6:47 PM
To:	Christopher M. Hannett
Cc:	cwhi@co.ulster.ny.us; Thomas C. Baird
Subject:	RE: [Non-DoD Source] Ashokan Rail Trail, Ulster County

Chris,

The information that you provided, plus my need to be cautious are combining to make this a good news, bad news scenario.

I think I have enough information to make me comfortable that DEP Streams 20, 21, 22, 29 and 30, are not really streams by the Corps methodology. Therefore, please remove those streams from Table 2 and from the drawing sets. Please remove the blue shaded areas and corresponding fill calculations from the ESCP drawings.

I'm afraid that I still do not have enough information to make a similar determination for DEP Streams 31 and 32. Leave them on Table 2 and the drawing sets.

With Streams 20, 21, 222, 29 and 30 out of the calculation, it looks like the overall impacts would be reduced to approximately 0.25 acres of combined wetlands and streams. With a good discussion of your reroute at Station 132, the replacement of a culvert with a bridge at Station 173, the extension of the boardwalk, the ballast removal below the new boardwalk, a cost comparison for each, and an assertion that you believe that all of those measures add up to sufficient mitigation for the proposed impacts.

Please revise the appropriate drawings in both the PL and ESCP drawing sets. Please make sure that each revised drawing includes a revision date of March 5, 2018, or later. Please revise the boardwalk drawings to include section views, showing the size and types of piles, the distance between piles, the elevation of the boardwalk above the soil surface, and a representation and discussion of the area of ballast to be excavated (square feet and cubic yards) and the soils that would replace the ballast.

Please also include everything that I requested in my email of February 28 that doesn't conflict with this email.

Let's see if I can get something to FWS for ESA coordination tomorrow...

Brian

From: Christopher M. Hannett [mailto:channett@bartonandloguidice.com] Sent: Monday, March 5, 2018 5:17 PM To: Orzel, Brian A CIV USARMY CENAN (US) <Brian.A.Orzel@usace.army.mil> Cc: cwhi@co.ulster.ny.us; Thomas C. Baird <tbaird@bartonandloguidice.com> Subject: RE: [Non-DoD Source] Ashokan Rail Trail, Ulster County

Hi Brian,

I did my best to estimate where the photos were taken and noted that in red below. In the week leading up to the time the date stamped photos were taken (August 22 and 24) the NWS recorded 0.43 inches of rain on 8/18/2017 and 0.73

inches of rain on 8/22/2017 in Poughkeepsie, NY. In the other photos taken in the fall, the photos were taken from 10/15/2014 to 10/20/2014. In this range and the week prior, Poughkeepsie received: 0.62" on 10/8/2014, 0.15" on 10/11/2014, 0.67" on 10/15, and 0.49" on 10/16. For streams 31 + 32, photos 9-16, the photos were taken within the past month after a snowmelt. I believe this was one of those 50 degree days we had in mid to late February. My guess would be that the standing water is a result of the rainfall that occurred prior to the date the photos were taken and poor drainage flow through the swales due to debris accumulation.

Thanks, Chris

Christopher M. Hannett, P.E. Barton & Loguidice, D.P.C.

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Project Engineer

Barton & Loguidice, D.P.C. Engineers, Environmental Scientists, Planners, Landscape Architects

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Christopher M. Hannett

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Sent:	Wednesday, March 07, 2018 6:11 PM
To:	Orzel, Brian A CIV USARMY CENAN (US)
Cc:	Thomas C. Baird; cwhi@co.ulster.ny.us
Subject:	RE: [Non-DoD Source] Ashokan Rail Trail, Ulster County
Attachments:	SHPO Letter.pdf; Ashokan Rail Trail MD_04.pdf; RE: [Non-DoD Source] Ashokan Rail
	Trail, Ulster County; 2018-03-07 Ashokan Stream and Wetland Impact Tables.pdf;
	2018-03-07 USACE Wetland Mitigation discussion.pdf

Hi Brian,

I have responded to your questions from your February 28, 2018 email in blue below. I have also attached a number of the requested files and drawings. One of which is the wetland mitigation discussion stating why we believe that we have satisfied the mitigation requirements. Also included below is a link to download the complete, revised plan set. Do you require hard copies of any of the above materials?

https://liquidfiles.bartonandloguidice.com/message/RflvjDdocaqF5nfhkNm1Zd

If you have any questions or need additional information please give me a call (518) 218-1801.

Christopher M. Hannett, P.E. Barton & Loguidice, D.P.C.

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RESPONSE: It was our intent to submit a Preliminary Jurisdictional Determination for the project under the NWP 14.

2. Now, according to your calculations, you currently propose to permanently fill approximately 0.43 acres of jurisdictional waters. That acreage allows us to consider NWP 14, as the total proposed permanent fill would be less than 0.50 acres. However, since it is more than 0.10 acres, mitigation is required. Before I get into all of the implications of that, I need clarification on some of your proposed fills.

a. For instance, you currently propose approximately 8200 square feet (0.19 acres) of fill within what you described "unnamed streams" that parallel the former railroad tracks. One question is, what criteria did you use to determine that these areas were in fact, streams? Another question revolves around the difference between these unnamed streams and other linear features along the tracks that you referred to as "swales". Why were the swales different from the unnamed streams? Yet another question would be, what activities would occur within the unnamed streams? Would you be completely filling them? Would you be excavating them to remove sediments and placing some sort of filter stone instead? After you conduct the work, would these areas continue to be streams or would they be more of a sediment filtering swale? My understanding of the differences could affect the impact calculations.

RESPONSE: In an email from you on 3/5/18 (attached), the number of "unnamed streams" was reduced, resulting in a reduction of 5,200 sf of impacts to 3,000 sf. Work within the existing swales and "unnamed streams" that parallel the tracks throughout the corridor would consist of narrowing of the existing stream channel from placement of fill materials immediately adjacent to the existing stone ballast footprint in order to widen the trail. The existing streams will continue to flow and function in the same capacity as before construction, albeit in a narrower channel. The "unnamed streams" that run parallel to the tracks are in fact drainage swales for the existing railroad and surrounding terrain. These streams were delineated by NYCDEP and provided to B&L for inclusion in our impact calculations under the assumption that these streams are jurisdictional.

The maximum fill width off of the edge of the existing railroad ballast is 3 ft. through the "unnamed streams" adjacent to the railroad tracks. Additional work within these streams will include the extraction of woody debris (logs and branches) that have accumulated over the years. Small stone aprons (approximately 4 ft. by 6 ft.) have been proposed at outlet of the streams to reduce the stormwater velocity and potential for future erosion. Stone apron installation will consist of excavation of the existing stream to the limits shown and backfilling the excavated area with NYSDOT light stone fill (natural stone) placed on a geotextile reinforcement fabric. No additional grading or excavation within these stream channels is proposed. In all cases, the stream will remain fully functional and will not be completely filled or blocked for the construction of the trail.

b. On Drawing ESCP-37, you show a large wetland fill area, totaling approximately 3178 square feet (0.07 acres), in close proximity to a proposed boardwalk. In order to reduce your proposed impacts, is it possible to extend the proposed boardwalk to also avoid permanent fills in these areas?

RESPONSE: The boardwalk shown on PL-37 and ESCP-37 has been added to this project in order to reduce the amount of permanent fill required within this wetland (DEC Wetland AS-20.) The boardwalk was positioned where the wetland covers the full width of the trail to provide maximum benefit to the wetland. The proposed boardwalk clear span has been extended by 50 ft. to further reduce wetland impacts. The total length of the boardwalk has been increased from 385 ft. to 525 ft. in length, and now includes a 300 ft. span (increased from 250 ft.) of wetland AS-20. The additional 225 ft. is necessary to increase the elevation of the trail to completely span the wetland. The height of the span is 4 ft. from the top of the wetland soils to the bottom chord of the boardwalk. Increasing the length of the boardwalk further will not provide a significant benefit when compared to the additional costs associated with this increase. In addition to the boardwalk, the existing ballast and railroad ties will be removed from the wetland and backfilled with wetland soils. This will remove a potential source of contamination from the wetland and will provide an enhancement to the overall quality of the wetland. We have investigated rerouting the trail around this wetland to eliminate impacts, but have found this alternative to be prohibitive due to extraordinary costs associated with an alternate alignment. The county would have to purchase an easement from NYCDEP in order to reroute the trail. Please see the attached letter for a discussion of the wetland mitigation.

c. Depending upon your answers to the above questions, the currently calculated 0.43 acres of permanent fills might be reduced. If you can show that the reductions are due to extraordinary efforts, like building more boardwalk (more cost) or restoring the unnamed streams (perhaps more cost), those efforts might qualify as mitigation and might save you from having to design and construct replacement waters, including wetlands.

RESPONSE: Please see attached letter regarding the wetland mitigation discussion. Permanent fill quantities to streams and wetlands has been reduced to 0.25 acres.

3. With respect to the proposed boardwalk, I need to see more specific drawings, clearly showing the width and height above the vegetative mat. I need to see the diameter of each pile and the distance between piles. I need to see this information to confirm that the boardwalk would not have the effect of fill within the wetlands. You need to make sure that the piles would be spaced far enough apart and would place the boardwalk high enough above the soil surface that it would not effective fill the wetlands below.

RESPONSE: Please see drawing MD-4 (also separately attached) of the revised plans for the boardwalk details. The boardwalk is not designed at this time. However, minimum dimensions and performance specifications will be included in the contract plans and provided to the contractor so that they can contract out the design and installation of the boardwalk. The minimum clearance between the soils and the bottom chord of the boardwalk is 4 ft.

4. I need to be able to quantify the temporary fill areas, so I need you to add a column to Tables 1 and 2, listing the square feet of the temporary fill areas. Right now, those tables only show linear feet of temporary fills.

RESPONSE: Temporary impacts have been added to the tables. Please see attached revised tables.

5. What is the point of Table 4? Everything that you list on that table indicates no fill within each wetland.

RESPONSE: Table 4 indicated wetlands that were delineated by NYCDEP and was included to show DEP that there were no impacts to these wetlands.

6. Drawing BV-2 shows blue and orange shaded areas, indicating permanent and temporary fills within Esopus Creek. The permanent fill in Table 1 (4100 square feet) seems plausible, but only having 400 linear feet of temporary disturbance listed on the table makes it hard to estimate what the actual size in square feet might be for the six orangeshaded areas on the drawing. Perhaps adding the square feet of temporary impacts column to Table 1 will add clarity. If not, it might be best to revise Drawing BV-2 to include showing the Ordinary High Water (OHW) as clear lines on the plan view drawing, then labeling each individual temporary and permanent fill in square feet.

RESPONSE: Temporary impacts have been added to Table 1 and 2. Drawing BV-2 has also been revised to include the temporary and permanent impacts of each shaded area. Both are attached. The 400 linear feet of impacts refers to the linear feet of streambanks affected by this project and is conservatively estimated at 200 ft. of disturbances on both the north and south banks of the stream.

7. On Drawing ESCP-10, it appears that the blue-shaded area is too big for the actual impacts to the stream. The culvert to be abandoned already filled the stream when the railroad constructed it. The only new fill within the stream would be in the area outside of the existing culvert. Please revise ESCP-10 and your fill calculation.

RESPONSE: The impact calculation to Stream #35 included an approximate disturbance width of 5 ft. over the length of the stream. As currently proposed, installing the new culvert offline with the existing will result in no fill being placed within the existing stream. The tables and plans have been revised to reflect these changes and are attached.

8. ESCP-15 seems to indicate that you are counting a permanent stream fill in an area where you would be clearing accumulated sediment from within an existing culvert. As with item 7 above, presumably, the culvert already filled this area, so maintaining the culvert would not count as an additional stream fill.

RESPONSE: Correct, the existing sediment will be removed from the culvert and will not result in fills within the culvert or stream. Stream #16 has been revised to include no impacts. The tables and plans have been revised to reflect these changes and are attached.

9. On Drawings ESCP-48, I see Stream 23 labeled, but not Stream 7. Since Tables 1 and 2 place both streams at the same station and within the same culvert, did you count the permanent stream fill twice? The total permanent fill would be only for the stone apron, correct? The permanent fill on Table 1 is 100 square feet and the permanent fill on Table 2 is for 100 square feet. Since I don't even see Stream 7 on the drawing, I'm thinking that you can eliminate the listing for Stream 7 on Table 1. Is that correct?

RESPONSE: It appears that we have counted the same stream twice. Drawing PL-48 shows both streams 7 and 23, but they are the same stream. For the purposes of calculating fill we can ignore stream #23. The permanent fills to stream #7 include the installation of the stone apron at the outlet of the culvert, totaling 100 sf.

10. In the text of your application, you referenced a letter from SHPO dated October 3, 2016. Please send me a copy of that letter.

RESPONSE: The letter from SHPO has been attached.

11. In my letter dated December 1, 2017, attached, I requested Endangered Species Act (ESA) assessments for species that are listed for the project site within the U.S. Fish and Wildlife Service's (FWS) IPaC web site. You have not sent me any of that information. However, I have recently spoken with FWS and it is my understanding that you have been working with their Cortland Field Office. It sounds like you have submitted species-specific information to them for review. It is also my understanding that they would still like you to supply Habitat Evaluation Field Forms for the areas that you evaluated. A blank form is attached. So, please fill out the appropriate number of bog turtle forms and submit them to both this office and FWS. Also, all ESA documents that you have sent to FWS also need to be sent to me.

RESPONSE: We have provided you with the materials we previously sent to USFWS in an email from Tom Baird on 3/1/18. If additional materials or information is necessary to complete review of this application, please let me know.

Once I have everything, I should be able to process this as a NWP. Is the applicant trying to conduct the work this year? If so, any tree clearing that you are not able to conduct before March 31 will have to wait until November 1. If we need to finish this before March 31, we will both need to do things quickly.

RESPONSE: Yes, the County intends to begin construction of the trail this year and to cut trees prior to March 31.

Let me know if you have any questions.

Brian

-----Original Message-----From: Christopher M. Hannett [mailto:liquidfiles@bartonandloguidice.com] Sent: Wednesday, February 21, 2018 7:41 AM To: Orzel, Brian A CIV USARMY CENAN (US) <Brian.A.Orzel@usace.army.mil> Cc: cwhi@co.ulster.ny.us; tbaird@bartonandloguidice.com Subject: [Non-DoD Source] Ashokan Rail Trail, Ulster County

Good Morning Brian,

Please find at the link below, our plan revisions based on the January 23rd email that you had sent to Tom Baird. We have also mailed out a hard copy of the plans that should be arriving within a few days. Please do not hesitate to contact us if you have any questions, 518-218-1801.

Thank you,

Chris

Christopher M. Hannett, P.E.

Project Engineer

Barton & Loguidice, D.P.C.

Engineers, Environmental Scientists, Planners, Landscape Architects

10 Airline Drive s Suite 200 s Albany, NY 12205 s Phone: (518) 218-1801s Fax: (518) 218-1805

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Files attached to this message

Filename Size Checksum (SHA256) 2018-02-20 USACE Revised Plans.zip 93 MB 6d6c7a60e09253f0c32aef0ab6c9d233cb573c571a962929294f13b33c774b0b

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Exhibit 11: Wetland Mitigation Plan



March 7, 2018

Mr. Brian A Orzel Project Manager, Western Section US Army Corps of Engineers, New York District ATTN: Regulatory Branch, Room 1937 26 Federal Plaza New York, New York 10278-0900

Re: Ashokan Rail Trail, NAN-2017-01571-WOR

Subj: Wetland Mitigation Discussion

File: 369.007.001

Dear Mr. Orzel:

As requested in your email dated February 28, 2018 regarding United States Army Corps of Engineers ("USACE") Nationwide Permitting for the Ashokan Rail Trail project in Ulster County, NY, we have prepared a discussion on wetland mitigation and impact reduction measures proposed for the Ashokan Rail Trail project. This project involves the conversion of an 11.5 mile long railroad corridor into a recreational trail including the construction of two new bridges. We have undertaken various efforts throughout the design process to reduce and minimize impacts to wetlands, streams, and ultimately the Ashokan Reservoir and New York City's Water Supply. We have effectively reduced impacts to wetland and streams from just over 1 acre down to 0.25 acres through the reduction of the trail width through specific locations, avoidance of a wetland, and the construction of a boardwalk to span another. The project budget has also increased by approximately \$203,000 in order to implement these minimization practices. We ask that the USACE concur with our assertion that these measures add-up to sufficient wetland mitigation, despite the fact that impacts are above the allowable impacts of 0.1 acres to wetland and streams under NWP #14. Included in this letter is a description of each of the proposed impact reduction practices and associated costs and reduction in square feet (sf.) of the impacts to jurisdictional streams and wetlands.

Wetland O:

As delineated by Barton and Loguidice, D.P.C. (B&L) in the summer of 2016, Wetland O extends from Station A 134+00 to A 138+50, a length of 450 ft. along the original alignment of the railroad. Utilizing the standard 12 ft. wide trail and 2 ft. wide shoulders (16 ft. total width) would have resulted in 9,000 sf. of impacts to Wetland O, nearly 60% of the total wetland size. In order to avoid such extensive impacts to Wetland O, an 800 ft. section of trail has been rerouted to the north of Wetland O to completely avoid fill impacts to this wetland. In addition to reducing the impacts to 0 sf, the existing creosote laden railroad ties and existing ballast will be removed from this wetland and backfilled with native wetland soils in order to enhance the overall quality of the wetland. Removal of the ballast will also remove a potential barrier to

The experience to .



plants, soils and water from natural migration. The estimated costs to re-route the trail to the north are approximately \$50,000 more than would have been necessary to construct the trail through the wetland. These additional costs include tree clearing, excavation, fills, grading, stone base course, delineation fencing, geotextile, and excavation and backfill with wetland soils. This is the only portion of the trail that will not be constructed upon the original alignment of the railroad.

Stream #33:

Stream #33 runs parallel to the existing railroad tracks in the north drainage swale from Station A 181+00 to A 196+00. The trail has been shifted off of the center of the railroad alignment to the south approximately 3 ft. and the shoulder widths have been reduced to 0 ft. to avoid all impacts to this watercourse.

Streams #31&32 and Wetlands M&N:

Streams #31 & 32 run parallel in the drainage swales adjacent to the railroad tracks from Station A 236+50 to A 253+50. Wetlands M & N also reside in the drainage swales adjacent to the tracks from Station A 253+50 to 255+75. To minimize impacts to the streams and wetlands, the trail width has been reduced from 12 ft. to 10 ft., the shoulders from 3 ft. to 0 ft. and replaced with a 1 ft. structural trail backup which has been added to both sides of the trail to stabilize the trail surface. The total width of the trail and structural stabilization is 12 ft. where the streams run parallel to the proposed trail. The trail has also been shifted off of the center of the railroad alignment approximately 3 ft. to avoid significant impacts to the streams. Further reduction to the width of the trail is not recommended due to the anticipated pedestrian and cyclist usage throughout the trail network and to provide adequate passing widths for cyclists.

Wetlands K&L (NYSDEC Wetland AS-20):

Wetlands K&L are identified as NYSDEC Wetland AS-20 and are located primarily at the toe of slope of the ballast from Station A 260+00 to A 270+50. Portions of the wetlands connect and overlap across the railroad tracks and ballast. This is most evident from Station A 262+75 to A 263+25 and A 264+50 to A 270+00. As included for streams #31 and 32, the trail width and shoulders have been reduced to minimize the overall impacts to the wetlands and streams. In addition to the reduction in trail width, an elevated boardwalk has been proposed to span a 300 ft. long section of the wetland where the wetland plants and soils have infiltrated the railroad ballast. Upon consultation with DEP and the USACE, the length of the boardwalk has increased from 200 ft. to 250 ft. and finally to 300 ft. to further reduce impacts to wetland AS-20 and to provide the greatest benefit to the resource. This boardwalk will be constructed to allow for 4 ft. of clearance between the wetland soils and the low chord of the boardwalk, and will be approximately 12 ft. wide. Similar to Wetland O, we are also proposing to remove the existing railroad ties and ballast below the boardwalk and backfill the void with wetland soils. This will enhance the overall quality of the wetland by removing a potential barrier to plants, soils and water from natural migration through the wetland and will remove a potential source of contamination in the creosote treated railroad ties and within the ballast. The boardwalk will begin at Station A 264+60 and extend to Station A 269+85. The complete span and restoration of the wetland will extend from Station A 265+75 to 268+75, where the most significant portion of the wetland overlaps the railroad tracks and ballast. The remaining 225 ft. of the boardwalk will elevate the trail to account for the change in elevation from the existing grade to 4 ft.



elevated above the wetland soil. The construction of the boardwalk and wetland enhancements represents a total increase in construction costs of approximately \$160,000. The boardwalk option has reduced impacts to Wetland AS-20 from 13,652 sf. to 2,363 sf.

Butternut Creek Bridge Installation:

The existing failed concrete culvert at Station A 173+00 and embankment washout will be removed and replaced with a 75 foot span truss bridge, effectively daylighting the creek and restoring it to its natural flow. In addition to preventing further erosion to the embankment, the removal of the structure will eliminate a significant plunge pool and scour pit at the outlet to restore fish and other wildlife passage through the stream. All work required to remove the existing culvert will comply with in-stream timing restrictions for trout waters, from October 1 through April 30. The proposed work includes completely removing the concrete arch culvert and excavating the railroad embankment to restore the stream below. To minimize the amount of excavation required, H-pile and concrete lagging walls will be constructed in front of the proposed abutments up and above the ordinary high water mark. In addition to providing a sound and economic engineering solution, the construction of a bridge over Butternut Creek will enhance the aesthetic appeal of this scenic area and provide environmental benefits such as the reduction of erosion and scour forces within the stream, increase the hydraulic capacity during storm events, and provide benefits to both the aquatic and terrestrial ecology of the area. Post removal of the concrete culvert, the underlying material will be replaced with natural streambed stone similar to the existing substrate within the creek and will continue to revert back to a natural condition over time. Restoration of the stream to a natural state will increase flood attenuation by allowing stormwater velocity to be absorbed by soils and as such will increase the riparian plant viability, which in turn will enhance the overall wildlife habitat of the surrounding area. The removal of the concrete surface of the streambed and replacement with natural stone will aid fish passage and provide appropriate substrate to more diverse invertebrate species.

Various Streams:

Minor work such as stone apron installation and concrete repair is proposed throughout the corridor to rehabilitate existing steel and concrete culverts. In many cases, the existing large culverts exhibit scour at the outlet of the culvert and in some cases, perching of culvert outlet where stream erosion has occurred. In these situations, we propose to install stone fill to at the outlet of the culvert to reduce the potential for future erosion and scour. Overtime, the stream bed will naturally be restored as the voids within the stone fill with natural stream materials. During all culvert work, the appropriate erosion and sediment controls outlined by the NYSDEC Blue Book will be utilized to prevent sedimentation during construction and to reduce impacts to the stream. These measures include temporary stream diversions, dewatering, fiber logs, and velocity reducing stone aprons. All in-stream work will be reviewed by the NYCDEP and will be approved as part of their SWPPP review and approval process.



The table below summarizes and quantifies the major impacts to streams and wetlands found throughout the project corridor:

Water Feature	Impacts prior to reduction (SF.)	Impacts after reduction (SF.)	Original Cost (prior to reduction)	Cost to reduce impacts
Wetland O	9,000	0	\$30,000	\$81,000
Stream #33	4,400	0	N/A	N/A
Stream #31&32	12,000	3,000	N/A	N/A
Wetlands M&N	1,995	750	N/A	N/A
Wetland AS-20	13,652	2,363	\$18,000	\$170,000
Various Streams	4,772	4,772	N/A	N/A
Total	45,819	10,885	\$48,000	\$251,000

Constructing the trail along the original alignment of the trail with standard trail and shoulder widths would have resulted in a total impact to jurisdictional streams and wetlands of over 45,819 sf. or just over 1 acre. With the previously discussed reduction and minimization efforts implemented throughout the project corridor, total impacts to jurisdictional streams and wetland has been reduced to 10,885 sf., or 0.25 acres. In order to implement these reduction practices, the project has absorbed an increase in cost by approximately \$203,000.

The County and Barton and Loguidice, D.P.C. have been working with the NYCDEP and NYSDEC throughout the project design timeframe and have incorporated several beneficial environmental measures to ensure that this project has a positive impact to the environment. These measures include the daylighting of Butternut Creek, complete avoidance of Wetland O, reduction of impacts to NYSDEC Wetland AS-20, and the minimization and avoidance of several streams and wetlands found throughout the project corridor. In addition, construction of the trail will occur with timing restrictions in place such as the Northern Long-Eared and Indiana bat tree cutting restriction of April 1 to September 30, and the trout spawning restriction of October 1 to April 30. Existing sources of contamination, such as approximately 35,000 creosote laden railroad ties will be removed from the railroad corridor and existing contaminated railroad ballast will be capped with a 4" layer of trail top course stone to also reduce a source of future contamination.

The County and Barton & Loguidice believe that through the ongoing coordination with NYCDEP and the aforementioned efforts to reduce impacts to jurisdictional water resources and provide environmental benefits where possible, we have designed a project that will have a positive impact on the environment. We ask that the USACE concur with our assertion that these measures add-up to sufficient wetland mitigation, despite the fact that our impacts are above the allowable impacts of 0.1 acres to wetland and streams under NWP #14.



Thank you for your review of this project. Please do not hesitate to contact me should you have any further questions at (518) 218-1801 or channett@bartonandloguidice.com.

Sincerely,

BARTON & LOGUIDICE, D.P.C.

nom Hennie

Christopher M. Hannett, P.E. Project Engineer

CMH/

cc: Chris White, Ulster County Tom Baird, B&L Appendix V

Correspondence



Vincent Sapienza Commissioner

Paul V. Rush, P.E. Deputy Commissioner Bureau of Water Supply prush@dep.nyc.gov

71 Smith Avenue Kingston, NY 12401 T: (845) 340-7800 F: (845) 334-7175 April 25, 2018

Mr. Thomas C. Baird Barton and Loguidice, D.P.C 10 Airline Drive, Suite 200 Albany, NY 12205

Re: Ashokan Rail Trail Phase 2 Stormwater Pollution Prevention Plan (SWPPP) SWPPP Revisions, April 2018 DEP Project Log# 2015-AS-0118-SP.2 Parcel S/B/L 45.2-1-1 NYS Route 28 and 28A, (T) Hurley, (T) Olive, Ulster County

Dear Mr. Baird,

The New York City Department of Environmental Protection (DEP) has completed its review of the Ashokan Rail Trail Phase 2 SWPPP plans and documentation dated February 22, 2018. This submission includes a revised SWPPP narrative dated 2/26/18, a revised set of Contract Drawings (Appendix N, dated 2/22/18 and last revised on 3/29/18), and Appendices A through R last revised on 2/26/18. Previously, plans and documentation for twelve temporary construction passing areas and improvements to access roads at Gates W-5, W-7, E-8 and E-8B were reviewed and approved by this office as an amendment to the Phase 1 SWPPP.

According to the February 2018 SWPPP narrative, Phase 2 will consist of trail construction, including replacement of the bridge spanning the Esopus Creek and installation of a new bridge at the existing Butternut Creek culvert crossing. Culverts will be repaired or replaced at locations specified in the 3/29/18 Final Plans (Culvert Repair Details 1 - 10) and will include stone aprons at many of the culvert outlets. A boardwalk will be constructed at the NYS Wetland AS-20 crossing and other site amenities such as benches and fencing will be installed during Phase 2, following final grading.

Phase 2 will also include removal of railroad ties and grading of ballast at the following wetland locations identified by DEP on 12/19/17 that were excluded from the Phase 1 SWPPP:

Stations 131+00 to 140+00 Stations 181+00 to 196+00 Stations 237+00 to 270+00 Stations 464+00 to 471+00

Please note that all permits must be secured and in place prior to starting excavation work in these sensitive areas. Excavation work and tie removal should not occur within ponded areas or where groundwater levels are seasonally elevated to reduce the potential for release of pollutants and sediment into protected water resources. Clearing, grubbing, and grading also will occur in areas where the trail will be relocated (such as the rerouted section of trail at Sta. 134+00 to 139+00), in proposed staging and stockpile areas located within existing vegetated areas (such as the area to the north of Sta. 138+00) and at bridge and culvert repair sites (approximately 1.36 acres in several locations).

Following are comments on the submitted materials. Please revise the SWPPP plans and documents to address the issues outlined below:

(1) The Phase 2 SWPPP plans and documents contain numerous references to reshaping, regrading or rehabilitation of swales in non-sensitive areas to "convey stormwater to existing culverts or outflow areas and to prevent ponding of stormwater adjacent to the trail." Please be aware that these saturated and ponded areas may provide habitat and water quality value/benefits and shall not be systematically drained or destroyed. Please remove all swale modification notes and specifications from the plans and documentation, and reduce the trail corridor width at these locations from the stated 20' width for Phase 2 to the absolute minimum width necessary to construct the trail at each location.

(2) Where rock armoring is proposed at swale outlets or in areas where flow must be conveyed down a slope to a culvert, site specific vegetated or stone lined channel designs should be included in the plans and described in the details and specifications. In all cases, placement of stone armoring in protected water resources should be kept to the absolute minimum necessary to prevent scour within the channel or at the culvert outfall.

(3) The Drainage Table (MT-1) should be revised to include all of the culvert repair and replacement sites included on the Culvert Repair Details (CD-1 to CD-10).

(4) The Typical Stream Dewatering Detail shown on Erosion and Sediment Control Detail 4 (ESCD-4) includes a temporary diversion specification consisting of an impermeable barrier placed on one side of the watercourse with a small dewatered area behind it, and does not include any diversion or bypass pumping of the total stream flow volume. This detail must be revised to include an acceptable bypass system or pump-around method. Pumps and hoses should be available for diversion and dewatering of stream flow during streambank or bed excavations below the ordinary high water elevation, and a dewatering filter area should be established in an adjacent upland vegetated area to manage turbid water created during stream excavation work. It is recommended that this work be performed when there is minimal flow within the channel, and preferably when the channel is completely dry.

(5) Dewatering Plan - A suitable upland area for disposal of turbid water pumped from the work zone should be established prior to the start of excavation within the stream channel below the OHW elevation. Preferable practices for work area dewatering operations include:

• Providing outlet-controlled discharge to a stable, well-vegetated location as far from the receiving channel as possible to allow for full infiltration and to avoid short-circuiting, identifying and prioritizing the use of existing low areas or natural depressions adjacent to the work area;

• Where natural depressions or low areas are not available, the use of vegetated filter strip areas that can receive low to moderate discharge volumes provided sufficient outlet protection (e.g. perforated pipe at end-of-hose, level spreader, stone outlet) to prevent re-concentrated flows or scour;

• Use of infiltration pits or trenches situated in soil material with good infiltrative capacity, or the creation of temporary berms or impoundments in areas of infiltrative soils;

• Use of temporary sediment traps situated singularly or in series as necessary to provide sufficient settling;

• Installation of well point(s) (deep sumps) situated in the furthest upstream location(s) possible within each active work section in order to draw down clean water from well below the surface elevation, thereby creating a groundwater cone of depression that will more effectively result in dryer surface conditions;

• Use of straw-bale type impoundments or dikes *only* where no other practice is feasible, and in areas where runoff would normally be in the form of sheet-flow only (i.e. where slopes are gentle and no concentrated flows would arise).

(6) The proposed use of Fiber logs as the primary sediment barrier practice for the project is not consistent with *New York Standards and Specifications for Erosion and Sediment Control* (2016) "Blue Book" description of this practice. Fiber rolls are intended to dissipate energy on streambanks, channels, and water bodies or to reduce sheet flow on slopes, and do not function as filtering devices. Please limit the use of Fiber rolls to soil stabilization applications on slopes and streambanks and replace this specification with an approved perimeter sediment control practice such as Silt Fence. Similarly, please replace the Fiber Log check dam detail on Sheet ESCD-1 with the Stone Check Dam specification (Blue Book, Figure 3.1)

(7) Silt fence and Fiber Logs are specified on Drawing ESCP-37 and are shown roughly parallel to the trail on both sides of the boardwalk that traverses NYS Wetland AS-20. These sediment barriers must be removed from wetland areas. Equipment entry into wetland areas should be strictly limited to construction of boardwalk structural components such as piers and post sections and should include the use of temporary wetland timber matting if rutting of wetland soils occurs. Notes should be added to the plans to assure that disturbance to the ground surface and vegetation under and around the boardwalk is avoided and that no compaction of the soil occurs.

(8) The use of staging and access areas to store railroad ties, such as those observed at the E-11 access road should be prohibited during all phases of this project. Ties should be transferred directly from the ballast area to waiting containers for removal to approved off-site disposal areas.

(9) The staging and material stockpile area proposed to be constructed to the north of Sta. 139+00 (adjacent to the Gate W-7 access road) is too close to a highly saturated and rutted soil area. Please remove this staging and stockpile area from the plans and supporting documents.

(10) Erosion and sediment control practices must be inspected daily and repaired promptly at active stream crossing and bridge abutment construction areas. Mulch or rolled erosion control products must be applied at the end of each day at all locations where steep slopes are disturbed immediately adjacent to streams or waterbodies. Similarly, rutting or disturbance of steep slopes resulting from removal and transport of bridge demolition debris should be stabilized promptly.

(11) As discussed in the revised SWPPP narrative, the use of staked orange construction fencing

will be required for all Phase 2 soil disturbing activities that will occur within 50 feet of protected water resources and must be installed prior to the start of earth moving operations in these areas. As specified in the Sequence of Construction for the Phase 2 Trail Work, the locations of this orange construction fence should correspond to the resources shown on ESCP-1 through ESCP-88 in Appendix N, and delineation must be completed and reviewed by the Engineer and DEP at least one week prior to any work taking place near these sensitive areas.

(12) Please revise the Contract Drawings and narrative to better define and quantify the wetland losses that will result from the proposed Phase 2 activities. The 3/29/18 Final plans should be revised to show all permanent impacts to wetlands by adding blue shading to these areas as was done in Appendix N of the 2/22/18 Contract Drawings. In addition, please clarify and describe how the requirement for avoidance, minimization, and mitigation will be addressed for this project, as applicable.

(13) Section 4.0 - Good Housekeeping BMPs – Please add the following language consistent with DEP's Land Use Permit Special Conditions: No fuel storage, except for what is necessary for one day of work, will be allowed on City property. Spill control kits containing absorbents must be kept on site at all times whenever work is conducted on City property. No releasing, dumping, spilling or overnight storage of any petroleum-based oil, hydraulic fluid, fuels or chemicals shall be permitted on City property. All spills and releases must be immediately reported to the DEP Police at 914-593-7500 or 888-426-7433.

If you have any questions regarding this letter please contact me at (845) 340-7234.

Sincerely,

Jon Hairabedian for

Joseph Damrath, CPESC, CPSWQ, PWS Supervisor WOH Regulatory & Engineering Programs Stormwater Section

cc:

C. Laing, DEP J. Hairabedian, DEP D. Doyle, Ulster County C. White, Ulster County K. Ackerley, CWC G. Hoffstatter, (T) Hurley

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June 26, 2018

Mr. Joseph Damrath, CPESC, CPSWQ, PWS Supervisor NYC Environmental Protection 71 Smith Avenue Kingston, NY 12401

Re: Ashokan Rail Trail

Subj: Ashokan Rail Trail Phase I Stormwater Pollution Prevention Plan (SWPPP)

File: 369.007.001

Dear Mr. Damrath:

Barton and Loguidice, D.P.C. ("B&L") has received your letter titled "Ashokan Rail Trail Phase 2 Stormwater Pollution Prevention Plan ("SWPPP")" dated April 25, 2018. On behalf of the County and B&L, we appreciate your review of the SWPPP.

We have reviewed the letter and comments and offer the following responses:

DEP Narrative: According to the February 2018 SWPPP narrative, Phase 2 will consist of trail construction, including replacement of the bridge spanning the Esopus Creek and installation of a new bridge at the existing Butternut Creek culvert crossing. Culverts will be prepared or replaced at locations specified in the 3/29/18 Final Plans (Culvert Repair Details 1-10) and will include stone aprons at many of the culverts outlets. A boardwalk will be constructed at the NYS Wetland AS-20 crossing and other site amenities such as benches and fencing will be installed during Phase 2, following final grading.

Phase 2 will also include removal of railroad ties and grading of ballast at the following wetland locations identified by DEP on 12/19/17 that were excluded from the Phase 1 SWPPP: Stations 131+00 to 140+00 Stations 181+00 to 196+00 Stations 237+00 to 270+00 Stations 464+00 to 471+00

Please note that all permits must be secured and in place prior to starting excavation work in these sensitive areas. Excavation work and tie removal should not occur within ponded areas or where groundwater levels are seasonally elevated to reduce the potential for release of pollutants and sediment into protected water resources.





Clearing, grubbing, and grading also will occur in areas where the trail will be relocated (such as the rerouted section of trail at Sta. 134+00 to 139+00), in proposed staging and stockpile areas located within existing vegetated areas (such as the area to the north of Sta. 138+00) and at bridge and culvert repair sites (approximately 1.36 acres in several locations)

B&L Response: The removal of railroad ties and grading of ballast at the wetland locations identified by DEP on 12/19/17 were added back into the Phase 1 work after permits were obtained and are not included in Phase 2 construction. The removal of ties and grading in these areas are entirely included in Phase 1 construction. All permits pertaining to this work have been secured and are in place. Excavation work and tie removal were completed when the areas were not ponded. The only exception to this is Wetland O between station 131+00 and station 139+00 adjacent to where the re-route of the trail will occur. The County has compensated the Phase 1 contractor to improve the re-route ahead of Phase 2 in order to minimize impacts to this wetland during Phase 1. It is our understanding that NYCDEP requires the ties to be removed in this area, however, it is likely water will be ponded in this location during removal as it appears to be a semi or permanently wet area.

1. DEP Comment: The Phase 2 SWPPP plans and documents contain numerous references to reshaping, regrading or rehabilitation of swales in non-sensitive areas to "convey stormwater to existing culverts or outflow areas and to prevent ponding of stormwater adjacent to the trail." Please be aware that these saturated and ponded areas may provide habitat and water quality value/benefits and shall not be systematically drained or destroyed. Please remove all swale modification notes and specifications from the plans and documentation, and reduce the trail corridor width at these locations from the stated 20' width for Phase 2 to the absolute minimum width necessary to construct the trail at each location.

B&L Response: Proper drainage facility function is critical to the long-term success of the trail and the control of erosion. Poor stormwater conveyance may result in devastating effects to the infrastructure system if these facilities are not functioning properly. Several of the existing swales throughout the project exhibit poor drainage characteristics as evidenced by standing water within the drainage swales. B&L has revised the plans to reduce the length of new swale construction and to reduce the overall impacts of swale rehabilitation to extent possible. Down from 8,000 LF, the construction plans were revised to include approximately 3,100 LF of swale establishment that consists of excavating and grading the existing ground immediately adjacent to the trail to establish positive drainage away from the trail in locations where there is no existing swale or stormwater conveyance system. Swales are also proposed in locations where stormwater runoff may flow onto the trail from the land adjacent to the trail as shown on the construction plans. The project also proposes approximately 46,000



LF of swale cleaning which consists only of the removal of existing woody debris such as dead logs, branches and twigs from within the swales. No excavation or grading will occur as part of the swale cleaning work item and the existing swales will not be destroyed or drained. The revised swale work details are shown on DWG. TS-1 R1 and the locations of Swale Establishment and Swale Cleaning are shown on DWG. MT-1 of the revised Phase 2 Construction Drawings. These drawings are attached to this letter.

For Phase 2, the width of disturbance varies throughout the corridor based on the necessary safety accommodations for trail users and the minimization of impacts. The trail back-up width varies from 1-3 ft and is wider in areas where steep drop-offs may pose a hazard giving users more area to regain control, perform passing maneuvers, and other actions. The trail centerline has been shifted, raised, lowered, and reduced in width to minimize and avoid impacts to sensitive resources and to address washout and erodible areas. The erosion and sediment control plans include the limits of disturbance in the form of the Cut/Fill lines for this project and vary throughout the corridor.

We have balanced the establishment of drainage swales with as minimal ground disturbance as possible to help provide a sustainable trail system.

2. DEP Comment: Where rock armoring is proposed at swale outlets or in areas where flow must be conveyed down a slope to a culvert, site specific vegetated or stone lined channel designs should be included in the plans and described in the details and specifications. In all cases, placement of stone armoring in protected water resources should be kept to the absolute minimum necessary to prevent scour within the channel or at the culvert outfall.

B&L Response: The detail that is included in the plans is representative and includes variables to adapt the outlet control based on actual field conditions. Sizing the stone aprons on an individual basis is not feasible for this project and they all shall conform to the dimensions stated on DWG. MD-5. The majority of the existing culvert and swale outlets do not have stone aprons or any form of erosion and scour protection. This project will provide these elements to reduce erosive forces during heavy storm events, reduce sediment transportation and maintain sustainability into the future. New swales include rolled erosion control product and seeding to establish vegetation and reduce erosion within the new swales. Stone armoring will be kept to a minimum in all cases and only be provided at the outlets of the swales.

3. *DEP Comment:* The Drainage Table (*MT*-1) should be revised to include all of the culvert repair and replacement sites included on the Culvert Repair Details (CD-1 to CD-10).

B&L Response: The Drainage Table (MT-1) has been revised to include repair and replacement sites included on the Culvert Repair Details (CD-1 to CD-10).



4. DEP Comment: The Typical Stream Dewatering Detail shown on Erosion and Sediment Control Detail 4 (ESCD-4) includes a temporary diversion specification consisting of an impermeable barrier placed on one side of the watercourse with a small dewatered area behind it, and does not include any diversion or bypass pumping of the total stream flow volume. This detail must be revised to include an acceptable bypass system or pumparound method. Pumps and hoses should be available for diversion and dewatering of stream flow during streambank or bed excavations below the ordinary high water elevation, and a dewatering filter area should be established in an adjacent upland vegetated area to manage turbid water created during stream excavation work. It is recommended that this work be performed when there is minimal flow within the channel, and preferably when the channel is completely dry.

B&L Response: The Typical Stream Dewatering Detail shown on ESCD-4 has been revised to include a diversion detail for bypass pumping of the total stream flow. Language has been added to ESCD-4 stating pumps and hoses shall be available for diversion and dewatering of stream flow during streambank or streambed excavations and work should be performed when there is minimal flow within the channel, preferably when the channel is completely dry.

5. *DEP Comment: Dewatering Plan - A suitable upland area for disposal of turbid water pumped from the work zone should be established prior to the start of excavation within the stream channel below the OHW elevation. Preferable practices for work area dewatering operations include:*

• Providing outlet-controlled discharge to a stable, well-vegetated location as far from the receiving channel as possible to allow for fill infiltration and to avoid short-circuiting, identifying and prioritizing the use of existing low areas or natural depressions adjacent to the work area;

• Where natural depressions or low areas are not available, the use of vegetated filter strip areas that can receive low to moderate discharge volumes provided sufficient outlet protection (e.g. perforated pipe at end-of-hose, level spreader, stone outlet) to prevent reconcentrated flows or scour.

• Use of infiltration pits or trenches situated in soil material with good infiltrative capacity, or the creation of temporary berms or impoundments in areas of infiltrative soils;

• Use of temporary sediment traps situated singularly or in series as necessary to provide sufficient settling;

• Installation of well point(s) (deep sumps) situated in the furthest upstream location(s) possible within each active work section in order to draw down clean water from well below the surface elevation, thereby creating a groundwater cone of depression that will more effectively result in dryer surface conditions;



• Use of straw-bale type impoundments or dikes only where no other practice is feasible, and in areas where runoff would normally be in the form of sheet-flow only (i.e. where slopes are gentle and no concentrated flows would arise).

B&L Response: The mentioned notes have been added to ESCD-4 as dewatering plan notes.

6. DEP Comment: The proposed use of Fiber logs as the primary sediment barrier practice for the project is not consistent with New York Standards and Specifications for Erosion and Sediment Control (2016) "Blue Book" description of this practice. Fiber rolls are intended to dissipate energy on streambanks, channels, and water bodies or to reduce sheet flow on slopes, and do not function as filtering devices. Please limit the use of Fiber rolls to soil stabilization applications on slopes and streambanks and replace this specification with an approved perimeter sediment control practice such as Silt Fence. Similarly, please replace the Fiber Log check dam detail on Sheet ESCD-1 with the Stone Check Dam specification (Blue Book, Figure 3.1).

B&L Response: The reference pertaining to the use of Fiber Logs as the primary sediment barrier has been removed from the SWPPP and the construction plans. Fiber logs have been included in the contract for installation on an as needed basis during construction to minimize erosion potential. Fiber logs are useful on a temporary basis because of their easy set up and maintenance and are only intended to be use on a temporary basis, such as for the temporary stream diversions as shown on ESCD-4.

Fiber rolls for soil stabilization applications on slopes and streambanks have been replaced with Silt Fence in the contract drawings.

A stone check dam detail has been added to ESCD-2.

7. DEP Comment: Silt fence and Fiber Logs are specified on Drawing ESCP-37 and are shown roughly parallel to the trail on both sides of the boardwalk that traverses NYS Wetland AS-20. These sediment barriers must be removed from wetland areas. Equipment entry into wetland areas should be strictly limited to construction of boardwalk structural components such as piers and post sections and should include the use of temporary wetland timber matting if rutting of wetland soils occurs. Notes should be added to the plans to assure that disturbance to the ground surface and vegetation under and around the boardwalk is avoided and that no compaction of the soil occurs.

B&L Response: All sediment barriers have been removed from the NYS Wetland AS-20 area.

Notes have been added to the Boardwalk Detail on MD-4 and the Erosion and Sediment Control Plans ESCP-37 and ESCP-38 to minimize disturbance to the ground surface and vegetation under and around the boardwalk to the greatest extent possible.



8. DEP Comment: The use of staging and access areas to store railroad ties, such as those observed at the E-11 access road should be prohibited during all phases of this project. Ties should be transferred directly from the ballast area to waiting containers for removal to approved off-site disposal areas.

B&L Response: There will be no tie removal or storage in Phase 2 of the project.

9. *DEP Comment:* The staging and material stockpile area proposed to be constructed to the north of Sta. 139+00 (adjacent to the Gate W-7 access road) is too close to a highly saturated and rutted soil area. Please remove this staging and stockpile area from the plans and supporting documents.

B&L Response: As discussed and stated in a letter from Joe Damrath to Tom Baird dated June 1, 2018, the W-7 staging area will remain in the originally proposed location. A revised plan has been developed and is attached to this letter increasing the size of the stockpile area and adding a requirement for the contractor to remove all stone and geotextile from the area and perform deep ripping after the stone has been removed.

10. *DEP Comment:* Erosion and sediment control practices must be inspected daily and repaired promptly at active stream crossing and bridge abutment construction areas. Mulch or rolled erosion control products must be applied at the end of each day at all locations where steep slopes are disturbed immediately adjacent to streams or waterbodies. Similarly, rutting or disturbance of steep slopes resulting from removal and transport of bridge demolition debris should be stabilized promptly.

B&L Response: Inspection of Erosion and sediment controls will occur daily by the inspector that will be on site. Section 2.5 of the SWPPP will be revised to include stabilization of steep slopes adjacent to streams and waterways at the end of each work day.

11. *DEP Comment:* As discussed in the revised SWPPP narrative, the use of staked orange construction fencing will be required for all Phase 2 soil disturbing activities that will occur within 50 feet of protected water resources and must be installed prior to the start of earth moving operations in these areas. As specified in the Sequence of Construction for the Phase 2 Trail Work, the locations of this orange construction fence should correspond to the resources shown on ESCP-1 through ESCP-88 in Appendix N, and delineation must be completed and reviewed by the Engineer and DEP at least one week prior to any work taking place near these sensitive areas.

B&L Response: The installation of orange construction fencing is the first item listed in the sequence of construction for the trail portion of the project, listed on page 23 of the SWPPP.



12. DEP Comment: Please revise the Contract Drawings and narrative to better define and quantify the wetland losses that will result from the proposed Phase 2 activities. The 3/29/18 Final plans should be revised to show all permanent impacts to wetlands by adding blue shading to these areas as was done in Appendix N of the 2/22/18 Contract Drawings. In addition, please clarify and describe how the requirement for avoidance, minimization, and mitigation will be addressed for this project, as applicable.

B&L Response: Wetland loses were depicted on the plans submitted to DEC and USACE for clarification purposes and were approved by both agencies on December 26, 2017 and March 12, 2018, respectively. All documentation regarding wetland mitigation and discussions was sent to DEP on March 23, 2018. The complete Joint Application as submitted to USACE and DEC has been included as Appendix U of the revised SWPPP and includes this information.

The requirement of avoidance, minimization and mitigation will be enforced through by Resident engineer and one full-time inspector that will be on site each day. Orange construction fence and staking out of the limits in sensitive areas will guide the contractor to stay on the trail.

13. DEP Comment: Section 4.0 - Good Housekeeping BMPs — Please add the following language consistent with DEP's Land Use Permit Special Conditions: No fuel storage, except for what is necessary for one day of work, will be allowed on City property. Spill control kits containing absorbents must be kept on site at all times whenever work is conducted on City property. No releasing, dumping, spilling or overnight storage of any petroleum-based oil, hydraulic fluid, fuels or chemicals shall be permitted on City property. All spills and releases must be immediately reported to the DEP Police at 914-593-7500 or 888-426-7433.

B&L Response: Language consistent with DEP's Land Use Permit Special Conditions has been added to Section 4.0 of the SWPPP.



The above comments were provided by DEP and has resulted in modifications to the Phase 2 SWPPP, as noted above.

Please contact me at (518) 218-1801 if you have any questions concerning the project or the responses to your comments above.

Sincerely, BARTON & LOGUIDICE, D.P.C.

Than Charte

Thomas C. Baird, P.E. Associate

CMH/TCB

cc: C. Laing, DEP Chris White, Ulster County

enclosed:	Construction Drawings:	DWG. TS-1 R1
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		DWG. AP-2A R1
	Gate W-7 Staging area cor	respondence



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~	A 540±00	RT.	10.0	-	-	-	_	-	-	_	150.0		-	-	_	-	-	-	-			TOTAL	3,100.0	4
-	A 540400	рт	20.0	-	<u> </u>	<u> </u>	15.2	0.0	20	-	130.0	25.0	-	-	-	-		-	57.0					
-	A 550+65		20.0	-	-	-	10.3	9.8	2.0	-	-	25.0	-	-	-	-	-	-	57.0	ITEM 203.5	1990006 - ES	TABLISHIN	IG NEW DITCH	IES A
-	A 556+75	LT	12.0	-	-	-	15.3	9.8	2.0	-	-	25.0	-	-	-	-	-	-	57.0	SLOPES				
-	A 574+50	-	-	12	-	-	-	-	-	-	-	-	-	-	-	20.0	-	-	-	ITEM 621.5	1000015 - GR	ADING CL	EANING AND R	RESH
-	A 562+00	-	-	12	-	-	-	-	-	-	-	-	-	-	-	20.0	-	-	-	EXISTING D	ITCHES			
-	A 603+35	RT	25.0	-			19.5	12.8	3.0	-	-	-	25.0	-	-	-	-	-	69.4	NOTES				
	-			1	1	1	15.6	14.6	34	-	-	-	_	20.0	_	_		_	40.3	1				

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Vincent Sapienza Commissioner

Paul V. Rush, P.E. Deputy Commissioner Bureau of Water Supply prush@dep.nyc.gov

71 Smith Avenue Kingston, NY 12401 T: (845) 340-7800 F: (845) 334-7175 June 1, 2018

Mr. Thomas C. Baird Barton and Loguidice, D.P.C 10 Airline Drive, Suite 200 Albany, NY 12205

Re: Ashokan Rail Trail Stormwater Pollution Prevention Plan (SWPPP) DEP Project Log# 2015-AS-0118-SP.2 (T) Hurley, (T) Olive, Ulster County

Dear Mr. Baird,

The New York City Department of Environmental Protection (DEP) met with Tom Baird, Chris Hannett & Steve Freeman (Barton and Loguidice, D.P.C.) and Hans Taylor (Taylor-Montgomery, LLC) today at the junction of the Ashokan Rail Trail and the W-7 access road to resolve issues defined in the email sent by DEP on May 31, 2018. This email outlined concerns raised by DEP during meetings held on May 21 and May 24, 2018. The issues raised by DEP included the need for additional protection measures at Wetland "O", allocations for equipment access for stockpiling of materials at Station 140+00 (turtle breeding habitat), and the proper documentation for planned and unplanned deviations from the approved SWPPP.

1) Protection Measures at Wetland "O"

It was concluded that the SWPPP would be amended to allocate for super silt fence (see attached; Blue Book page 5.54-5.56). This additional protection measure will be installed along both sides of the haul road from Station 131+00 to 138+50 to serve as both a construction and a sediment barrier. To increase visibility, the upper portion of the posts and silt fence will be spray painted fluorescent orange. Upon completion of the installation, DEP will be notified and provided the opportunity to inspect before commencement of vehicular traffic. In addition, the railroad ties will be left in place at this location for the duration of hauling activities to prevent excessive rutting from heavy equipment. Heavy stone will be placed on top of the ties at this location to a sufficient depth and thickness to decrease the stress to machinery from hauling over uneven ground.

2) Stockpile and laydown area at W-7

DEP discussed alternatives to using the sand borrow pit due to avoid further damage to wetland "O" from heavy construction traffic. Since super silt fence will be employed to protect the wetland, DEP's concern regarding use of this area has been addressed, except for the turtle breeding habitat issue. B&L stated that they would provide information regarding the truck turning radius to assure there is enough room, and to better define the limits of disturbance. In addition, B&L will prepare a restoration plan for the turtle habitat that includes complete removal of stockpiles material and deep ripping of the sand layer to offset any compaction that may occur from heavy equipment operation. Therefore, with these items addressed DEP has no objection to using this location for equipment and material laydown.

3) Updating the SWPPP and Keeping it Current

One of the most important aspects of a SWPPP is identifying deficiencies and making the necessary adjustments to the plans and documents when issues arise such as those discussed above. DEP appreciates the prompt attention to these matters, and will expedite our review and approval of authorized plan modifications. However, it is essential that unauthorized deviations from the approved SWPPP (such as exceeding the limits of disturbance) should also be identified, quantified, and repaired as necessary. Please ensure that any deviations to the plan as described above are quickly identified and addressed through inspection.

If you have any questions regarding this letter please contact me at (845) 340-7234.

Sincerely

Joseph Darnrath, CPESC, CPSWQ, PWS Supervisor WOH Regulatory & Engineering Programs Stormwater Section

cc: C. Laing, DEP J. Hairabedian, DEP D. Doyle, Ulster County C. White, Ulster County C. Hannett, I.E., B&L H. Taylor, Taylor-Montgomery

STANDARD AND SPECIFICATIONS FOR SILT FENCE



Definition & Scope

A temporary barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil by temporarily ponding the sediment laden runoff allowing settling to occur. The maximum period of use is limited by the ultraviolet stability of the fabric (approximately one year).

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

- 1. Maximum allowable slope length and fence length will not exceed the limits shown in the Design Criteria for the specific type of silt fence used ; and
- 2. Maximum ponding depth of 1.5 feet behind the fence; and
- 3. Erosion would occur in the form of sheet erosion; and
- 4. There is no concentration of water flowing to the barrier; and
- 5. Soil conditions allow for proper keying of fabric, or other anchorage, to prevent blowouts.

Design Criteria

- 1. Design computations are not required for installations of 1 month or less. Longer installation periods should be designed for expected runoff.
- All silt fences shall be placed as close to the disturbed area as possible, but at least 10 feet from the toe of a slope steeper than 3H:1V, to allow for maintenance and

roll down. The area beyond the fence must be undisturbed or stabilized.

 The type of silt fence specified for each location on the plan shall not exceed the maximum slope length and maximum fence length requirements shown in the following table:

		Slope Length/Fence Length (fL)							
Slope	Steepness	Standard	Reinforced	Super					
<2%	< 50:1	300/1500	N/A	N/A					
2-10%	50:1 to 10:1	125/1000	250/2000	300/2500					
10-20%	10:1 to 5:1	100/750	150/1000	200/1000					
20-33%	5:1 to 3:1	60/500	80/750	100/1000					
33-50%	3:1 to 2:1	40/250	70/350	100/500					
>50%	> 2:1	20/125	30/175	50/250					

Standard Silt Fence (SF) is fabric rolls stapled to wooden stakes driven 16 inches in the ground.

Reinforced Silt Fence (RSF) is fabric placed against welded wire fabric with anchored steel posts driven 16 inches in the ground.

Super Silt Fence (SSF) is fabric placed against chain link fence as support backing with posts driven 3 feet in the ground.

4. Silt fence shall be removed as soon as the disturbed area has achieved final stabilization.

The silt fence shall be installed in accordance with the appropriate details. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. Butt joints are not acceptable. A detail of the silt fence shall be shown on the plan. See Figure 5.30 on page 5.56 for Reinforced Silt Fence as an example of details to be provided.

Criteria for Silt Fence Materials

 Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance.

Fabric Proparties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	110	ASTM D 4632
Elongation at Failure (%)	20	ASTM D 4632
Mullen Burst Strength (PSI)	300	ASTM D 3786
Puncture Strength (lbs)	60	ASTM D 4833
Minimum Trapezoidal Tear Strength (lbs)	50	ASTM D 4533
Flow Through Rate (gal/ min/sf)	25	ASTM D 4491
Equivalent Opening Size	40-80	US Std Sieve ASTM D 4751
Minimum UV Residual (%)	70	ASTM D 4355

- 2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.5 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot. Posts for super silt fence shall be standard chain link fence posts.
- Wire Fence for reinforced silt fence: Wire fencing shall be a minimum 14 gage with a maximum 6 in. mesh opening, or as approved.
- 4. Prefabricated silt fence is acceptable as long as all material specifications are met.

Reinforced Silt Fence



Page 5.55

New York State Standards and Specifications For Erosion and Sediment Control Super Silt Fence



July 2016

Figure 5.30 Reinforced Silt Fence





Vincent Sapienza Commissioner

Paul V. Rush, P.E. Deputy Commissioner Bureau of Water Supply prush@dep.nyc.gov

71 Smith Avenue Kingston, NY 12401 T: (845) 340-7800 F: (845) 334-7175 July 6, 2018

Mr. Thomas C. Baird Barton and Loguidice, D.P.C 10 Airline Drive, Suite 200 Albany, NY 12205

Re: Ashokan Rail Trail Phase 2 Stormwater Pollution Prevention Plan (SWPPP) B&L Comment Letter dated June 26, 2018 DEP Project Log# 2015-AS-0118-SP.2 Parcel S/B/L 45.2-1-1 NYS Route 28 and 28A, (T) Hurley, (T) Olive, Ulster County

Dear Mr. Baird,

The New York City Department of Environmental Protection (DEP) has reviewed B&L's Ashokan Rail Trail Phase 2 comment letter dated June 26, 2018 and received by this office on 6/27/18. In addition, we reviewed Drawings TS-1 R1 (Typical Sections 1), MT-1 (Miscellaneous Tables 1), and AP-2A R1 (Access Road Plan 2A R1) last revised on 5/30/18 and submitted to DEP on 6/27/18.

These documents were submitted in response to DEP's 4/25/18 letter regarding the Phase 2 SWPPP documents previously submitted to us in March of 2018. Previously, plans and documentation for twelve temporary construction passing areas and improvements to access roads at Gates W-5, W-7, E-8 and E-8B were reviewed and approved by this office as an amendment to the Phase 1 SWPPP.

Following are comments on the submitted materials:

(1) DEP inspected the new swale locations described in B&L's comment letter and Table MT-1 and has no objections to the proposed new swale construction, provided that impacts to existing adjacent wetlands and watercourses are avoided, and downstream wetland hydrology is not impacted. Please note that REP must inspect and approve any new swale outlet locations that discharge directly into a watercourse, wetland or reservoir prior to the start of construction at that location. This requirement will be stipulated in the conditions of approval.

(2) B&L Response, Page 2, Paragraph 1 – This section contradicts the description of Item 621.51000015 on Table MT-1 which specifies grading, cleaning, and reshaping of existing ditches within 45,500 linear feet of existing swale length. Please delete Item 621.51000015 from the Table of Swale Cleaning and Grading included on MT-1 and elsewhere in the SWPPP documents.

(3) Where rock armoring is proposed at swale outlets or in areas where flow must be conveyed down a slope to a culvert, site specific vegetated or stone lined channel and outlet designs will be required at each location. The sizing

and design of outlet protection must be determined based on peak flow calculations based on the contributing sub-basin area and channel conditions. This information should be included in the Phase 2 SWPPP plans and documents, and described in the details and specifications. Please be aware that in all cases, placement of stone armoring in protected water resources should be kept to the absolute minimum necessary to prevent scour within the channel or at the culvert outfall.

If you have any questions regarding this letter please contact me at (845) 340-7234.

Sincerely

Joseph Damrath, CPESC, CPSWQ, PWS Supervisor WOH Regulatory & Engineering Programs Stormwater Section

cc: C. Laing, DEP J. Hairabedian, DEP D. Doyle, Ulster County C. White, Ulster County K. Ackerley, CWC G. Hoffstatter, (T) Hurley

ART_SWPPP_Phase2_BLletter062618_reply070618b.doc



August 6, 2018

Mr. Joseph Damrath, CPESC, CPSWQ, PWS Supervisor NYC Environmental Protection 71 Smith Avenue Kingston, NY 12401

Re: Ashokan Rail Trail Phase 2 SWPPP NYCDEP Comment Letter dated July 6, 2018

Subj: Ashokan Rail Trail Phase I Stormwater Pollution Prevention Plan (SWPPP)

File: 369.007.001

Dear Mr. Damrath:

Barton and Loguidice, D.P.C. ("B&L") has received your letter titled "Ashokan Rail Trail Phase 2 Stormwater Pollution Prevention Plan ("SWPPP")" dated July 6, 2018.

We have reviewed the letter and comments and offer the following responses:

1. DEP Comment: DEP inspected the new swale locations described in B&L's comment letter and Table MT—l and has no objections to the proposed new swale construction, provided that impacts to existing adjacent wetlands and watercourses are avoided, and downstream wetland hydrology is not impacted. Please note that REP must inspect and approve any new swale outlet locations that discharge directly into a watercourse, wetland or reservoir prior to the start of construction at that location. This requirement will be stipulated in the conditions of approval.

B&L Response: Comment Acknowledged. DEP will be notified prior to construction of new swales that discharge directly to a watercourse.

2. DEP Comment: B&L Response, Page 2, Paragraph 1 - This section contradicts the description of Item 621 .51000015 on Table MT-1 which specifies grading, cleaning, and reshaping of existing ditches within 45,500 linear feet of existing swale length. Please delete Item 621.51000015 from the Table of Swale Cleaning and Grading included on MT-1 and elsewhere in the SWPPP documents.

B&L Response: The standard name for NYSDOT Item 621.51000015 is "Grading



Cleaning and Reshaping Existing Ditches." For the purposes of this project, the work included for this item number has been modified from what its original name implies and it's specifications as noted on Drawing TS-1 R-1. The contractor will be required to perform all swale work for Item 621.51000015 as noted and depicted on drawing TS-1 R-1. The inclusion of modified Item 621.51000015 from the plans and SWPPP is necessary for a payment vehicle once the proper maintenance of the existing drainage swales is completed as described on Drawing TS-1 R-1 and in the B&L Response to DEP Comment #1 on April 25, 2018. We are requesting that the item number remains as modified on TS-1 R-1.

3. *DEP Comment:* Where rock armoring is proposed at swale outlets or in areas where flow must be conveyed down a slope to a culvert, site specific vegetated or stone lined channel and outlet designs will be required at each location. The sizing and design of outlet protection must be determined based on peak flow calculations based on the contributing sub—basin area and channel conditions. This information should be included in the Phase 2 SWPPP plans and documents, and described in the details and specifications. Please be aware that in all cases, placement of stone armoring in protected water resources should be kept to the absolute minimum necessary to prevent scour within the channel or at the culvert outfall.

B&L Response: Based on the calculated velocities and flows within the swales, the drainage swale stone aprons sized as detailed in the May 30, 2018 plans (6ft x 6ft) may accommodate velocities and flow rates of up to 4.7 ft/s and 3.7 ft³/s respectively. The highest flow rate and velocity within the swales were calculated based on the contributing area, slope, runoff coefficient, flow depth, rainfall intensity, and time of concentration for a 10 year design storm to be 3.7 ft³/s and 0.66 ft/s, respectively. Swales that exhibit these characteristics do not require stone aprons installed that are longer than 6 ft. A complete listing of each swale outlet and their associated characteristics including the contributing area, rainfall intensity, flow and velocities, etc. are included in the attached table.

B&L has concluded that the size for all of the stone aprons at the swale outlet locations are sufficient in size to accommodate the 10 year design storm according to the design procedures outlined in the *New York State Standards and Specifications for Erosion and Sediment Control, November 2016* (DEC Blue Book). It is recommended that the lower flow swales also be constructed at the 6ft x 6ft size since this is the minimum recommended size for a stone outlet.



If DEP has no further comments, please issue the approval of the Ashokan Rail Trail Phase 2 SWPPP and modifications as noted in the B&L letter to DEP dated June 26, 2018 and this letter.

Please contact me at (518) 218-1801 if you have any questions concerning the project or the responses to your comments above.

Sincerely, BARTON & LOGUIDICE, D.P.C.

This CBanto

Thomas C. Baird, P.E. Associate

CMH/TCB

- cc: C. Laing, DEP Chris White, Ulster County
- enclosed: Peak Swale Flow and Velocities Table DEC Blue Book Rock Outlet design standard

Ashokan Rail Trail Calculations by: CMH 7/31/2018



Peak Swale Flow and Velocities

CENTERLIN	INTERLINE STATION				SLOPE	CONTRIBUTING	TIME OF	TIME OF	INTENSITY	FLOW (Q)	Velocity (based	Length of
		APRON	SIDE	LENGTH	(%)	AREA	CONCENTRATION	CONCENTRATION	(IN/HR)	(CF/S)	on Q) (ft/s)	Apron (FT)
FROM	10	LUCATION			4.450/	(ACRE)	(IVIINUTES)	(HOURS)	0.07	1.00	0.54	
A 17+00	A 23+25	A 23+25	RI	625.0	1.15%	1.10	36.4	0.6	2.27	1.00	0.56	6
A 17+00	A 23+25	A 23+25	LI	625.0	1.15%	0.89	36.4	0.6	2.27	0.81	0.53	6
A 34+00	A 43+25	A 43+25	LT	925.0	0.75%	1.26	66./	1.1	1.54	0.78	0.45	6
A 34+00	A 35+75	A 35+75	RT	175.0	0.75%	0.29	12.6	0.2	4.07	0.47	0.39	6
A 42+00	A 43+00	A 43+00	RT	100.0	0.75%	0.02	7.2	0.1	5.03	0.04	0.17	6
A 73+00	A 74+25	A 73+00	LT	125.0	0.15%	0.33	20.2	0.3	3.13	0.41	0.21	6
A 76+00	A 77+50	A 77+50	LT	150.0	0.15%	0.96	24.2	0.4	2.85	1.09	0.28	6
A 75+00	A 76+00	A 75+00	RT	100.0	0.15%	0.05	16.1	0.3	3.54	0.07	0.12	6
A 76+00	A 77+50	A 77+75	LT	150.0	0.15%	0.13	24.2	0.4	2.85	0.15	0.16	6
A 76+00	A 77+50	A 77+75	RT	150.0	0.15%	0.06	24.2	0.4	2.85	0.07	0.12	6
A 90+75	A 94+00	A 90+75	LT	325.0	0.25%	2.35	40.6	0.7	2.12	1.99	0.39	6
A 94+00	A 100+50	A 100+50	LT	650.0	0.13%	10.90	148.2	2.5	0.85	3.71	0.36	6
A 102+75	A 104+50	A 102+50	LT	175.0	0.15%	3.50	28.2	0.5	2.65	3.71	0.38	6
A 140+00	A 142+50	A 142+50	RT	250.0	0.10%	0.16	49.4	0.8	1.87	0.12	0.13	6
A 156+00	A 159+75	A 156+00	LT	375.0	0.50%	0.15	33.1	0.6	2.41	0.14	0.23	6
A 178+00	A 216+25	A 178+00	RT	3,825.0	0.42%	20.50	370.3	6.2	0.48	3.94	0.55	6
A 181+00	A 217+75	A 181+00	LT	3,675.0	0.38%	5.80	371.5	6.2	0.48	1.11	0.39	6
A 236+00	A 261+00	A 236+50	LT	2,500.0	0.40%	3.50	246.6	4.1	0.62	0.87	0.37	6
A 237+00	A 260+00	A 237+00	RT	2,300.0	0.40%	9.90	228.4	3.8	0.62	2.46	0.49	6
A 270+50	A 272+75	-	LT	225.0	0.00%	-	-	-	-	N/A	-	-
A 270+50	A 272+75	-	RT	225.0	0.00%	-	-	-	-	N/A	-	-
A 315+75	A 321+75	A 315+75	LT	600.0	0.64%	2.00	47.0	0.8	1.91	1.53	0.51	6
A 330+00	A 340+00	A 340+00	LT	1,000.0	0.30%	1.68	114.1	1.9	1.02	0.69	0.31	6
A 322+00	A 330+00	A 322+50	RT	800.0	0.28%	0.60	94.2	1.6	1.17	0.28	0.24	6
A 330+00	A 338+75	A 338+75	RT	875.0	0.30%	0.74	99.8	1.7	1.13	0.33	0.25	6
A 352+00	A 359+25	A 359+25	LT	725.0	0.30%	7.20	82.7	1.4	1.3	3.74	0.49	6
A 366+50	A 398+50	-	LT	3,200.0	0.12%	-	-	-	-	N/A	-	-
A 398+50	A 404+00	A 404+00	LT	550.0	0.15%	3.17	88.7	1.5	1.23	1.56	0.30	6
A 377+75	A 385+75	A 386+00	RT	800.0	0.16%	0.30	126.4	2.1	0.96	0.12	0.15	6
A 412+25	A 423+00	A 412+25	LT	1,075.0	0.33%	2.10	116.5	1.9	1.01	0.85	0.34	6
A 428+50	A 436+00	A 436+00	LT	750.0	0.65%	3.20	58.0	1.0	1.69	2.16	0.57	6
A 413+25	A 423+50	A 413+25	RT	1,025.0	0.35%	0.50	108.5	1.8	1.06	0.21	0.23	6
A 428+50	A 435+00	A 435+00	RT	650.0	0.72%	0.30	47.8	0.8	1.89	0.23	0.31	6
A 440+00	A 452+00	A 452+00	LT	1,200.0	0.26%	5.10	146.3	2.4	0.85	1.73	0.38	6
A 444+00	A 447+50	A 447+50	RT	350.0	0.21%	0.29	48.0	0.8	1.89	0.22	0.20	6
A 463+50	A 474+00	-	LT	1,050.0	0.21%	-	-	-	-	N/A	-	
A 474+00	A 488+00	A 488+00	LT	1,400.0	0.34%	2.60	150.3	2.5	0.85	0.88	0.35	6
A 463+50	A 472+00	A 472+00	RT	850.0	0.20%	0.72	119.6	2.0	1.01	0.29	0.21	6
A 474+00	A 487+75	A 488+00	RT	1,375.0	0.33%	1.23	150.3	2.5	0.85	0.42	0.28	6
A 510+75	A 515+75	A 515+75	LT	500.0	0.76%	2.56	35.8	0.6	2.31	2.37	0.62	6
A 510+75	A 515+25	A 515+25	RT	450.0	0.69%	0.27	33.9	0.6	2.36	0.25	0.31	6
A 520+25	A 522+75	A 522+75	LT	250.0	0.80%	2.21	17.5	0.3	3.31	2.93	0.66	6
A 520+25	A 522+50	A 522+50	RT	225.0	0.72%	0.15	16.5	0.3	3.42	0.21	0.30	6
A 538+50	A 540+50	A 538+50	RT	200.0	0.25%	0.23	25.0	0.4	2.79	0.26	0.22	6
A 538+50	A 540+50	A 538+50	LT	200.0	0.25%	0.45	25.0	0.4	2.79	0.50	0.27	6
A 540+75	A 557+00	A 557+00	RT	1,625.0	0.52%	1.49	140.8	2.3	0.9	0.54	0.36	6
A 540+75	A 557+00	A 557+00	LT	1,625.0	0.52%	2.18	140.8	2.3	0.9	0.78	0.40	6
A 585+00	A 603+50	-	RT	1,850.0	0.44%	1.59	175.1	2.9	0.78	0.50	0.33	6
A 580+75	A 586+25	A 580+50	LT	550.0	0.10%	0.96	108.6	1.8	1.06	0.41	0.18	6

STANDARD AND SPECIFICATIONS FOR ROCK OUTLET PROTECTION



Definition & Scope

A **permanent** section of rock protection placed at the outlet end of the culverts, conduits, or channels to reduce the depth, velocity, and energy of water, such that the flow will not erode the receiving downstream reach.

Conditions Where Practice Applies

This practice applies where discharge velocities and energies at the outlets of culverts, conduits, or channels are sufficient to erode the next downstream reach. This applies to:

- 1. Culvert outlets of all types.
- 2. Pipe conduits from all sediment basins, dry storm water ponds, and permanent type ponds.
- 3. New channels constructed as outlets for culverts and conduits.

Design Criteria

The design of rock outlet protection depends entirely on the location. Pipe outlet at the top of cuts or on slopes steeper than 10 percent, cannot be protected by rock aprons or riprap sections due to re-concentration of flows and high velocities encountered after the flow leaves the apron.

Many counties and state agencies have regulations and design procedures already established for dimensions, type and size of materials, and locations where outlet protection is required. Where these requirements exist, they shall be followed.

Tailwater Depth

The depth of tailwater immediately below the pipe outlet

must be determined for the design capacity of the pipe. If the tailwater depth is less than half the diameter of the outlet pipe, and the receiving stream is wide enough to accept divergence of the flow, it shall be classified as a Minimum Tailwater Condition; see Figure 3.16 on page 3.42 as an example. If the tailwater depth is greater than half the pipe diameter and the receiving stream will continue to confine the flow, it shall be classified as a Maximum Tailwater Condition; see Figure 3.17 on page 3.43 as an example. Pipes which outlet onto flat areas with no defined channel may be assumed to have a Minimum Tailwater Condition; see Figure 3.16 on page 3.42 as an example.

Apron Size

The apron length and width shall be determined from the curves according to the tailwater conditions:

Minimum Tailwater – Use Figure 3.16 on page 3.42 Maximum Tailwater – Use Figure 3.17 on page 3.43

If the pipe discharges directly into a well defined channel, the apron shall extend across the channel bottom and up the channel banks to an elevation one foot above the maximum tailwater depth or to the top of the bank, whichever is less.

The upstream end of the apron, adjacent to the pipe, shall have a width two (2) times the diameter of the outlet pipe, or conform to pipe end section if used.

Bottom Grade

The outlet protection apron shall be constructed with no slope along its length. There shall be no overfall at the end of the apron. The elevation of the downstream end of the apron shall be equal to the elevation of the receiving channel or adjacent ground.

Alignment

The outlet protection apron shall be located so that there are no bends in the horizontal alignment.

Materials

The outlet protection may be done using rock riprap, grouted riprap, or gabions. Outlets constructed on the bank of a stream or wetland shall not use grouted rip-rap, gabions or concrete.

Riprap shall be composed of a well-graded mixture of rock size so that 50 percent of the pieces, by weight, shall be larger than the d_{50} size determined by using the charts. A

well-graded mixture, as used herein, is defined as a mixture composed primarily of larger rock sizes, but with a sufficient mixture of other sizes to fill the smaller voids between the rocks. The diameter of the largest rock size in such a mixture shall be 1.5 times the d_{50} size.

Thickness

The minimum thickness of the riprap layer shall be 1.5 times the maximum rock diameter for d_{50} of 15 inches or less; and 1.2 times the maximum rock size for d_{50} greater than 15 inches. The following chart lists some examples:

D ₅₀ (inches)	d _{max} (inches)	Minimum Blanket Thick- ness (inches)				
4	6	9				
6	9	14				
9	14	20				
12	18	27				
15	22	32				
18	27	32				
21	32	38				
24	36	43				

Rock Quality

Rock for riprap shall consist of field rock or rough unhewn quarry rock. The rock shall be hard and angular and of a quality that will not disintegrate on exposure to water or weathering. The specific gravity of the individual rocks shall be at least 2.5.

Filter

A filter is a layer of material placed between the riprap and the underlying soil surface to prevent soil movement into and through the riprap. Riprap shall have a filter placed under it in all cases.

A filter can be of two general forms: a gravel layer or a plastic filter cloth. The plastic filter cloth can be woven or non-woven monofilament yarns, and shall meet these base requirements: thickness 20-60 mils, grab strength 90-120 lbs; and shall conform to ASTM D-1777 and ASTM D-1682.

Gravel filter blanket, when used, shall be designed by comparing particle sizes of the overlying material and the base material. Design criteria are available in Standard and Specification for Anchored Slope and Channel Stabilization on page 4.7.

Gabions

Gabions shall be made of hexagonal triple twist mesh with heavily galvanized steel wire. The maximum linear dimension of the mesh opening shall not exceed 4 ½ inches and the area of the mesh opening shall not exceed 10 square inches.

Gabions shall be fabricated in such a manner that the sides, ends, and lid can be assembled at the construction site into a rectangular basket of the specified sizes. Gabions shall be of single unit construction and shall be installed according to manufacturer's recommendations.

The area on which the gabion is to be installed shall be graded as shown on the drawings. Foundation conditions shall be the same as for placing rock riprap, and filter cloth shall be placed under all gabions. Where necessary, key, or tie, the structure into the bank to prevent undermining of the main gabion structure.

Maintenance

Once a riprap outlet has been installed, the maintenance needs are very low. It should be inspected after high flows for evidence of scour beneath the riprap or for dislodged rocks. Repairs should be made immediately.

Design Procedure

- 1. Investigate the downstream channel to assure that nonerosive velocities can be maintained.
- 2. Determine the tailwater condition at the outlet to establish which curve to use.
- 3. Use the appropriate chart with the design discharge to determine the riprap size and apron length required. It is noted that references to pipe diameters in the charts are based on full flow. For other than full pipe flow, the parameters of depth of flow and velocity must be used to adjust the design discharges.
- 4. Calculate apron width at the downstream end if a flare section is to be employed.

Design Examples are demonstrated in Appendix B.

Construction Specifications

- 1. The subgrade for the filter, riprap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- 2. The rock or gravel shall conform to the specified grad-

ing limits when installed respectively in the riprap or filter.

- 3. Filter cloth shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps, whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- 4. Rock for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The rock for riprap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogenous with the smaller rocks and spalls filling the voids between the larger rocks. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.





Figure 3.17

Outlet Protection Design—Maximum Tailwater Condition Chart (Design of Outlet Protection from a Round Pipe Flowing Full, Maximum Tailwater Condition: $T_w \ge 0.5D_o$) (USDA - NRCS)



Figure 3.18 Riprap Outlet Protection Detail (1)



Figure 3.19 Riprap Outlet Protection Detail (2)



Figure 3.20 Riprap Outlet Protection Detail (3)





Vincent Sapienza Commissioner

Paul V. Rush, P.E. Deputy Commissioner Bureau of Water Supply prush@dep.nyc.gov

71 Smith Avenue Kingston, NY 12401 T: (845) 340-7800 F: (845) 334-7175

STORMWATER POLLUTION PREVENTION PLAN DETERMINATION

August 16, 2018

Mr. Dennis Doyle, Director of Planning Ulster County Planning Department 244 Fair Street, P.O. Box 1800 Kingston, NY 12402

Re: Ashokan Rail Trail Phase 2 Stormwater Pollution Prevention Plan (SWPPP) DEP Project Log# 2015-AS-0118-SP.2 Parcel S/B/L 45.2-1-1 NYS Route 28 and 28A, (T) Hurley, (T) Olive, Ulster County

Dear Mr. Doyle,

This letter is to inform you that your submission of the Stormwater Pollution Prevention Plan (SWPPP) relating to Phase 2 of the above referenced regulated activity pursuant to the "Rules and Regulations for the Protection from Contamination, Degradation, and Pollution of the New York City Water Supply and its Sources" (Watershed Regulations) was approved on August 16, 2018. This approval is issued and based upon the rules and regulations contained in Article 11 of the New York State Public Health Law; the New York State Department of Environmental Conservation (NYSDEC) General Permit No. GP-0-15-002 and the Watershed Regulations (as amended on April 4, 2010), Section 18-39.

GENERAL DESCRIPTION:

This submission includes a revised SWPPP narrative dated 8/10/18, a previously submitted Engineering Report dated February 2018, a set of Contract Drawings (Appendix N) dated 5/30/18 and last revised on 8/15/18, and Appendices A through R last revised on 2/26/18. Previously, plans and documentation for twelve temporary construction passing areas and improvements to access roads at Gates W-5, W-7, E-8 and E-8B were reviewed and approved by this office as an amendment to the Phase 1 SWPPP.

According to the 8/10/18 SWPPP narrative, Phase 2 will consist of trail construction, including installation of a new bridge at the existing Butternut Creek culvert crossing. Culverts will be repaired or replaced at locations specified in the Final Plans and Culvert Repair Details, and will include properly sized stone aprons at the culvert outlets (see RFB-UC18-152C, Addendum A). A boardwalk will be constructed at the NYS Wetland AS-20 crossing and other site amenities such as benches and fencing will be installed during Phase 2, following final grading. The project area drains to tributaries of the Ashokan Reservoir (including Butternut Creek, a NYSDEC class A(T) watercourse) and the Ashokan Reservoir, a NYSDEC class AA(T) drinking water supply.

The project submission consists of the following items:

Table A: Consultant: Barton and Loguidice, D.P.C./Thomas C. Baird, P.E., CPESC

Title	Dated	Last Revision Received
The Ashokan Rail Trail Phase 2 Stormwater Pollution Prevention Plan (SWPPP), (T) Hurley, (T) Olive, SWPPP Narrative and Engineering Report, Appendices A - V	February 2018	8/16/18
The Ashokan Rail Trail Phase Stormwater Pollution Prevention Plan (SWPPP), (T) Hurley, (T) Olive, Appendix N, Contract Drawings, RFB-UC18-152C, Addendum #1 and Addendum A	5/30/18	8/16/18

CONDITIONS OF APPROVAL:

This approval is granted by the New York City Department of Environmental Protection (DEP) with conditions. Failure to comply with the conditions listed below may be the cause for the initiation of an enforcement action:

- 1. DEP Regulatory and Engineering Programs (REP) staff shall inspect and approve any new swale outlet locations that discharge directly into a watercourse, wetland or reservoir prior to the start of construction at that location. REP must be notified at least two business days prior to the start of swale construction at a given location.
- 2. The Stormwater Pollution Prevention Plan documentation listed in Table "A" must be included with the plans and available on site during all phases of clearing, grading and construction. All contractors involved in earth moving activities should become familiar with the specifications and procedures contained in this document, in addition to the design plans.
- 3. The regulated activity must be conducted in compliance with the plans as approved, listed in Table "A" above, all applicable accepted standards, and all applicable laws, rules and regulations which form the basis of this approval and the associated conditions. The approved documents shall not be modified or amended without the prior written approval of the Department. Alteration or modification of any project in a manner which would require an amended SWPPP pursuant to Part III, C of the NYSDEC General Permit No. GP-0-15-002 shall require review and approval by DEP.

- 4. The approval of this plan is based solely upon the material submitted and is granted based upon the accuracy of such material. In the event the material submitted is inaccurate or misleading, this approval is not valid, and any construction of the project is in violation of the Watershed Regulations.
- 5. The applicant must schedule a pre-construction conference prior to the start of Phase 2 work. Present at the meeting should be the applicant, the engineer, the contractor, and DEP staff.
- 6. The applicant shall have a qualified professional (licensed professional engineer or a certified professional in erosion and sediment control) conduct an assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction. Following the commencement of construction, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. An inspection report should be kept in a site logbook and shall be maintained on-site and be made available to the permitting authority upon request.
- 7. The design professional approving this plan, or his representative, shall receive a minimum of forty-eight (48) hours advance notice prior to the commencement of construction activity so that inspections can be scheduled to monitor the construction progress.
- 8. This approval letter must be included with the plans and documentation, and must be available on site during all phases of clearing, grading and construction. All contractors involved in earth moving activities must become familiar with the specifications and procedures contained in this document, in addition to the design plans.
- 9. This approval constitutes an acceptance and approval by DEP of only the physical design of the stormwater system for proposed installation and operation on a watershed of the New York City Water Supply. An approval from DEP of the stormwater system design does not affect any existing property rights, title, or interest, including without limitation, any public or private restrictions upon the use of the land. Therefore, this determination shall not be considered to be a grant or waiver of any property right, or construed to invalidate any rule or regulation enforceable by any local or regional authority having jurisdiction.
- 10. General construction practices shall be undertaken in accordance with the environmental controls indicated on the approved plans and in accordance with the <u>New York Standards</u> and <u>Specifications for Erosion and Sediment Control.</u>

11. The SWPPP must be kept current. The SWPPP shall be amended the if there is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants, and which has not otherwise been addressed in the SWPPP; or the SWPPP proves to be ineffective in either eliminating or significantly minimizing pollutants from sources identified in the SWPPP, or achieving the general objectives of controlling pollutants in stormwater discharges from the construction activity.

12. DEP reserves the right to modify, suspend or revoke this approval when:

a) The scope of the approved activity is exceeded or a violation of any condition of the approval or provisions of pertinent regulations is found;

b) The approval was obtained by misrepresentation or failure to disclose relevant facts;c) New material information is discovered; or

d) Environmental conditions, relevant technology, or applicable law or regulation have materially changed since the approval was issued.

- 13. All erosion and sediment controls must be properly installed and maintained until the site has been stabilized and the risk of erosion eliminated. Final stabilization is defined in the General Permit as "all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 80% cover for the area has been established or equivalent stabilization measures (such as the use of mulch or blankets) have been employed."
- 14. The applicant is required to submit as-built drawings for all stormwater management and water quality facilities. Within thirty (30) days of the completion of the stormwater management facility, a copy of the "as built plans" must be submitted to DEP. When a SWPPP requires the services of a design engineer, the "as built plans" must also be certified.
- 15. This approval shall expire and thereafter be null and void unless construction is completed within five (5) years of the date of issuance. An application for a renewal of an approval must be submitted to DEP no less than 180 days prior to the expiration. Following expiration of the approval, the SWPPP may be resubmitted to DEP for consideration of a new approval.
- 16. When installed the stormwater system must be operated and maintained in accordance with the approved plans, the approved maintenance schedule, the Watershed Regulations and all other applicable regulations and/or standards. Whenever sediment is removed from any part of the system it shall be done in such a manner as to cause no nuisance, and the material shall be disposed of in accordance with applicable regulations.

This approval and all conditions of the approval are binding on the easement holder of the property where the Stormwater Pollution Prevention practices are to be located. Any references to the "applicant" in this approval or in any conditions of this approval shall be deemed to refer to the easement holder of such property.

The terms of this approval are subject to the rules and regulations cited above. DEP reserves the right to modify, suspend or revoke this approval as set forth in Section 18-26 of the Watershed Regulations. Should modification, suspension or revocation of the approval be necessary, DEP will notify you, via certified mail or personal service, prior to modifying, suspending or revoking the approval. The notice will state the alleged facts or conduct which appear to warrant the intended action, and explain the procedures to be followed.

This approval constitutes an acceptance and approval by DEP of only the physical design of the stormwater system for proposed installation and operation on a watershed of the New York City Water Supply. An approval from DEP of the stormwater system design does not affect any existing property rights, title, or interest, including without limitation, any public or private restrictions upon the use of the land. Therefore, this determination shall not be considered to be a grant or waiver of any property right, or construed to invalidate any rule or regulation enforceable by any local or regional authority having jurisdiction.

If you have any questions regarding this approval, please contact Jon Hairabedian at (845) 340-7228.

Determination of Approval

cc:

Joseph J./Damirath, CPESC, CPSWQ, PWS Supervisor, Stormwater Section WOH Regulatory & Engineering Programs

C. Laing, DEP T. Baird, Barton and Loguidice C. Hannett, Barton and Loguidice C. White, Ulster County K. Ackerley, CWC G. Hoffstatter, (T) Hurley Recommended for Approval:

Jon R. Hairabedian Associate Project Manager, Stormwater Section WOH Regulatory & Engineering Programs