11/8/2017 – no response received. Based on email exchanges below and phone call, FEMA advised us to use the original 2001 LC data and proceed with the project.

On 10/24/2017 11:07 PM, Grace, John wrote:

Fay,

Here is the attachment, sorry it wasn’t sent in the previous email I was using my phone and must have done something wrong.

In regards to number #2, I will get back to you after I discuss it with Dick and Kerry.

Thank you,

John

**From:** Fay Rubin [<mailto:Fay.Rubin@unh.edu>]   
**Sent:** Tuesday, October 24, 2017 10:15 AM  
**To:** Grace, John [<John.Grace@fema.dhs.gov>](mailto:John.Grace@fema.dhs.gov)  
**Cc:** Bogdan, Kerry [<Kerry.Bogdan@fema.dhs.gov>](mailto:Kerry.Bogdan@fema.dhs.gov); Verville, Richard [<Richard.Verville@fema.dhs.gov>](mailto:Richard.Verville@fema.dhs.gov)  
**Subject:** Re: FW: Regression equations in Pisacataqua/Salmon Falls Wathershed

John,  
  
Thank you for your email. A couple of follow-ups:  
  
1.  The attachment did not get forwarded.  Please resend.  
2.  AECOM did receive this data from USGS (but please resend just to be certain we're using the correct version).   The concern about using this data is that it is no longer available online from USGS, as explained in the memo I sent, and our understanding was that the modeling inputs were to be publically available.  Based on your email, we will proceed with the original 2001 data and the USGS equations.  
  
Would you please also send me a written response to the memo I submitted that documents your decision to move forward in this way so that I have it for my files?    
  
Thanks,  
Fay

On 10/24/2017 7:46 AM, Grace, John wrote:

Fay,

Kerry reached out to USGS and they provided the data for the coverage needed, attached.  There is some uncertainty if this data was provided to AECOM a few weeks ago, either way this should resolve the issue they are having.

Thank you,

John

**From:** Bogdan, Kerry   
**Sent:** Monday, October 23, 2017 1:40 PM  
**To:** Grace, John [<John.Grace@fema.dhs.gov>](mailto:John.Grace@fema.dhs.gov)  
**Subject:** FW: Regression equations in Pisacataqua/Salmon Falls Wathershed

FYI…..

**From:** Stewart, Gregory [<mailto:gstewart@usgs.gov>]   
**Sent:** Monday, October 23, 2017 12:53 PM  
**To:** Bogdan, Kerry [<Kerry.Bogdan@fema.dhs.gov>](mailto:Kerry.Bogdan@fema.dhs.gov)  
**Subject:** Fwd: Regression equations in Pisacataqua/Salmon Falls Wathershed

Kerry,

I think this should take care of the issue for AE COM. Scott thought he took care of this 2 weeks ago as my email explained, but maybe this was a different AE COM group working on a different project.

Greg

PS: Our FTP site has been going up and down so we thought it best to just "zip" the coverage so they had it.

---------- Forwarded message ----------  
From: **Stewart, Gregory** <[gstewart@usgs.gov](mailto:gstewart@usgs.gov)>  
Date: Mon, Oct 23, 2017 at 12:51 PM  
Subject: Re: Regression equations in Pisacataqua/Salmon Falls Wathershed  
To: "Burm, Jeffrey" <[Jeffrey.Burm@aecom.com](mailto:Jeffrey.Burm@aecom.com)>  
Cc: "Dickson, Ed" <[Ed.Dickson@aecom.com](mailto:Ed.Dickson@aecom.com)>, "Pope, Ben" <[Ben.Pope@aecom.com](mailto:Ben.Pope@aecom.com)>, "Currie, Jason" <[Jason.Currie@aecom.com](mailto:Jason.Currie@aecom.com)>, Scott Olson <[solson@usgs.gov](mailto:solson@usgs.gov)>

Jeff,

I have attached the coverage you will need. In my discussion with Scott he did put this on an FTP site for Ben Pope from your Raleigh office several weeks ago. Scott explained that you must use the 2001 NLCD data and the 2011 will not work.

There was an issue with the USGS FTP site so it is not there right now. Scott built a .zip file (attached). Please let me know if the .zip file has any issues and this doesn't work for you.

Greg

On Fri, Oct 20, 2017 at 1:17 PM, Burm, Jeffrey <[Jeffrey.Burm@aecom.com](mailto:Jeffrey.Burm@aecom.com)> wrote:

Sounds good. Thanks for your time and enjoy the weekend.

Thanks,

Jeff

(O) 617 371-4536

(C) 617 833-5242

**From:** Stewart, Gregory [mailto:[gstewart@usgs.gov](mailto:gstewart@usgs.gov)]   
**Sent:** Friday, October 20, 2017 1:16 PM  
**To:** Burm, Jeffrey  
**Cc:** Dickson, Ed; Pope, Ben; Currie, Jason; Scott Olson  
**Subject:** Re: Regression equations in Pisacataqua/Salmon Falls Wathershed

I am not sure. Scott is out today. I believe this is a different coverage. We will close the loop on this on Monday when Scott is back. Thanks,

Greg

On Fri, Oct 20, 2017 at 11:35 AM, Burm, Jeffrey <[Jeffrey.Burm@aecom.com](mailto:Jeffrey.Burm@aecom.com)> wrote:

Thanks Greg. Just for clarification do you mean that it was only sent Scott or recently sent? I ask because he sent us a coverage a couple of weeks back and we’re wondering if it is the same.

Thanks,

Jeff

(O) 617 371-4536

(C) 617 833-5242

**From:** Stewart, Gregory [mailto:[gstewart@usgs.gov](mailto:gstewart@usgs.gov)]   
**Sent:** Friday, October 20, 2017 10:42 AM  
**To:** Dickson, Ed  
**Cc:** Burm, Jeffrey; Pope, Ben; Currie, Jason; Scott Olson  
**Subject:** Re: Regression equations in Pisacataqua/Salmon Falls Wathershed

Ed and Jeff,

We have the correct coverage. It was just sent to Scott and he is on leave today, but will send it over to you on Monday. This 2011 coverage should not be used, as you noted, due to the large changes from the original coverage map the regression equation was based on.

Greg

On Fri, Oct 20, 2017 at 9:04 AM, Dickson, Ed <[Ed.Dickson@aecom.com](mailto:Ed.Dickson@aecom.com)> wrote:

Good morning – The issue is not necessarily with the equations themselves but more likely with how the current publically available land use data has been updated since the equations were published.

It appears that the delineation of %W in the latest version of the MRLC NLCD is vastly different than that of the dataset used to create the equations.  Overall, the latest watershed wide dataset contains roughly 45% more wetlands than the original land use dataset the regression equations are based on.  Therefore the discharges produced are significantly lower using the latest land use data.  Some fluctuation in overall %W can be expected but such a significant increase is a cause for concern.

Ed

Edward A. Dickson, PE, CFM

Project Manager, Water, Southeast

AECOM

D: +1-704-295-2428

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[ed.dickson@aecom.com](mailto:ed.dickson@aecom.com)

**From:** Burm, Jeffrey   
**Sent:** Friday, October 20, 2017 7:48 AM  
**To:** Stewart, Gregory  
**Cc:** Pope, Ben; Dickson, Ed; Currie, Jason  
**Subject:** RE: Regression equations in Pisacataqua/Salmon Falls Wathershed

Hey Greg,

Thanks for getting back to me. Please see the attached memo that was submitted to UNH (Fay Rubin) that summarizes the issue pretty well. I have also included our engineers that are familiar with the issue, who can discuss it much better than me.

Thanks,

Jeff

(O) 617 371-4536

(C) 617 833-5242

**From:** Stewart, Gregory [<mailto:gstewart@usgs.gov>]   
**Sent:** Friday, October 20, 2017 6:56 AM  
**To:** Burm, Jeffrey  
**Subject:** Re: Regression equations in Pisacataqua/Salmon Falls Wathershed

Jeff,

I am not sure what you are seeing. We are using the USGS regression equations. Are you using the NH equations? For both MA and NH we are using the published equations. There was an issue with the preliminary MA equations, but that was never released to the public, just MA DOT. They just updated Streamstats (version 4) I know there were some national issues, but I have not heard anything with local issues (in NH or anything). We use the equations from the report when doing our calculations.

Greg

On Tue, Oct 17, 2017 at 11:32 AM, Burm, Jeffrey <[Jeffrey.Burm@aecom.com](mailto:Jeffrey.Burm@aecom.com)> wrote:

Hey Greg,

I hope all is well. We worked together several years ago during the FEMA Map Modernization program. I wanted to reach out to you to gather some information regarding the Merrimack River Watershed work that you are doing for FEMA Region 1. We are working in the adjacent watershed (Piscataqua/Salmon Falls) and have experienced some abnormalities related the most recent regression equations in that the regression discharges deviate from discharges calculated via gage analysis at a number of locations. The regression estimates underpredict discharges across the entire range of recurrence intervals relative to calculated gage discharges.

I’m wondering what methods and hydrology you are using in the Merrimack River Watershed. As we work through the issue with FEMA we’d like to maintain some consistency between the two watersheds as applicable.

This issue may be easier to discuss in person, so let me know if that is beneficial.

Thanks,

Jeff

Jeffrey Burm, CFM

Associate, Project Manager

D 617.371.4536 C 617.833.5242

[jeffrey.burm@aecom.com](mailto:jeffrey.burm@aecom.com)

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