

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

April 14, 2011

Enbridge Energy, Limited Partnership
c/o Mr. Rich Adams
Vice President, Operations
Superior City Centre
Second Floor
1409 Hammond Ave.
Superior, Wisconsin 54880

Re: U.S. EPA Notice of Required Flood Inundation Modeling of Talmadge Creek and Kalamazoo River in response to the Administrative Order issued by U.S. EPA on July 27, 2010 and Supplement to the Administrative Order issued by U.S. EPA on September 23, 2010, pursuant to §311(c) of the Clean Water Act (Docket No. CWA 1321-5-10-001)

Dear Mr. Adams:

The United States Environmental Protection Agency (U.S. EPA) directs Enbridge Energy, Limited Partnership, Enbridge Pipelines (Lakehead) L.L.C., Enbridge Pipelines (Wisconsin), and Enbridge Energy Partners, L.P. (herein collectively referred to as "Enbridge") to perform modeling activities described herein. These directives are issued pursuant to the Administrative Order ("Order") issued by the U.S. EPA on July 27, 2010 and a Supplement to Order for Compliance Under Section 311(c) of the Clean Water Act issued ("Supplement") by the U.S. EPA on September 23, 2010.

BACKGROUND

U.S. Geological Survey (USGS) developed a flood inundation model of the Kalamazoo River from the confluence of the Talmadge Creek and Kalamazoo River to the USGS Gauge Station 04105500 in Battle Creek, Michigan. This model was used to predict the extent of the flood on the overbank areas of the Kalamazoo River on July 25, 2010. The USGS modeling showed that "[t]he elevated river deposited the spilled oil onto flood plains, and on top of submerged channel islands..." (Flood Inundation Maps for a 15 Mile Reach of the Kalamazoo River from Marshall to Battle Creek Michigan, USGS, 2010, <http://pubs.usgs.gov/sim/3135/>).

The 2010 USGS modeling assisted the U.S. EPA in initially estimating the extent of flooding and thus aided the U.S. EPA's assessment of the response actions necessary to address the oil spill. The U.S. EPA directs Enbridge to perform further modeling of the July 25, 2010 flood event as well as other scenarios described herein to assist in evaluating continued response actions.

SCOPE

U.S. EPA directs Enbridge to perform modeling as described below.

1. Develop flood inundation maps of the Kalamazoo River from mile post (MP) MP-2.0 (confluence of the Kalamazoo River and Talmadge Creek) through Morrow Dam (corresponding to approximately MP-40.0) using U.S. Army Corps of Engineers HEC-RAS modeling systems. An inundation map for each of the following scenarios shall be prepared:
 - a. Scenario 1, using the following data:
 - i. The July 25, 2010 flood event using predicted flow rates in the downstream reach of the Kalamazoo River between USGS Station 04105500 in Battle Creek and Morrow Lake Dam.
 - ii. The peak flow rate at USGS Station 04105500 in Battle Creek between July 25, 2010 and July 27, 2010.
 - iii. The peak flow rate at USGS Station 04103500 in Marshall between July 25, 2010 and July 27, 2010.
 - b. Scenario 2 - the 100-year frequency event (1% exceedance probability);
 - c. Scenario 3 - the 50-year frequency event (2% exceedance probability);
 - d. Scenario 4 - the 25-year frequency event (4% exceedance probability).

Data used to calibrate and enhance the model and corresponding maps shall be according to USGS standards for data collection and shall include, but not be limited to, the following data collected in April 2011 pursuant to the approved Aerial Imagery Plan: 1) Light Detection and Ranging (LIDAR) imagery data; 2) survey of river transects every 2,000 feet or less using land-based survey methods (can be enhanced with acoustic bathymetry data); and 3) bridge crossing survey data.

2. Update the existing USGS flood inundation model results between MP-2.0 and the USGS Station 04105500 in Battle Creek using LIDAR data acquired during execution of the approved Aerial Imagery Plan in April 2011. Enbridge shall verify that sufficient river transects and bridge crossing data are used to accurately represent the extent of flooding and shall collect any data (e.g., river transects, survey data, etc.) necessary to augment existing data.
3. Develop flood extent polygons for the Kalamazoo River between MP-2.0 through Morrow Dam (approximately MP-40.0) for each of the following events: July 25, 2010; 100-year flood event; 50-year flood event; and 25-year flood event. The polygons shall be prepared in a Geographic Information System (GIS) based system.
4. Provide comprehensive maps representing the predicted flood extent for the July 25, 2010 event using the data generated from the above items.

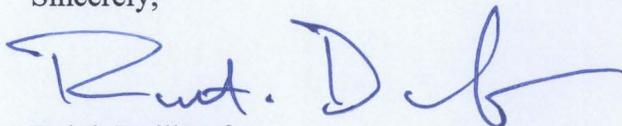
5. Provide comprehensive maps representing the 100-year, 50-year and 25-year frequency events using the data generated from the above items.

U.S. EPA understands that stream flow data may be limited or not be available between Morrow Dam and USGS Station 04105500 at Battle Creek. Therefore, Enbridge may use recorded conditions at Morrow Dam as starting water surface elevation calculations. If recorded conditions are not available, Enbridge shall calculate the predicted water surface elevation over Morrow Dam's overflow weir based on predicted flow rates from watershed modeling.

The model and results shall be submitted to the U.S. EPA in electronic and printed format. Five copies of the printed documents as well as the electronic model shall be submitted to U.S. EPA no later than 12:00 hours Eastern, May 10, 2011.

If you have any questions regarding this directive, please contact me immediately at (231) 301-0559.

Sincerely,



Ralph Dollhopf
Federal On-Scene Coordinator and Incident Commander
U.S. EPA, Region 5

cc: L. Kirby-Miles, U.S. EPA, ORC
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