

Appendix 14-B

Descriptions of On-Site Streams

Appendix 14-B
CPV Valley Energy Project
Description of On-site Streams

This narrative provides a description of the streams that traverse the CPV Valley Energy Site, including general observed hydrological conditions, bank height, streambed sediment characteristics, flow velocities, bank vegetation and general geography. This information is based on site visits; photos of specific reach locations identified below are included. In order to more fully characterize stream and bank conditions, including aquatic ecology, a stream habitat assessment based on the EPA stream biomonitoring protocols (e.g., Stream Habitat data forms completed from several site locations) will be conducted during an appropriate season and reported in a future submittal associated with the CPV Valley Energy Project SEQR process.

Two main streams traverse the site and flow east toward Route 17M. Carpenter Creek is the northernmost stream crossing a majority of the site. In the eastern part of the site, an unnamed tributary stream joins Carpenter Creek from the south near Route 17M. Carpenter Creek is essentially comprised of two sections, identified as Reach 1 and Reach 2, while the southern tributary stream has been identified as Reach 3. A number of small, man-made drainage swales also join Carpenter Creek from the adjacent fields.

Reach 1 (photos 1, 2 and 3) of Carpenter Creek enters the site near the existing site access road along Route 6 in the western part of the site, and flows east toward the center of the site. Reach 2 (photos 3, 4 and 5) of Carpenter Creek begins after the confluence of Reach 1 with the southern tributary stream, Reach 3 (photo 6). The southern tributary stream (Reach 3) enters the site from the south via a culvert beneath I-84, and initially flows northeast along the site's southern/eastern boundary with I-84. After the confluence of Reach 1 and Reach 3, Reach 2 of Carpenter Creek continues to flow northeast beneath Route 17M via a culvert. The stream ultimately joins Monhagen Brook approximately 1,000 feet to the east of Route 17M.

Reach 1 – Carpenter Creek from Rt. 6 to Tributary Channel Confluence

Reach 1 of Carpenter Creek is relatively uniform in width, depth and flow velocity from its entry point on the site (Route 6 culvert) (photos 1 and 2) to where it joins Reach 2 of Carpenter Creek and the southern tributary stream (Reach 3) (photo 3). The main channel of Reach 1 is approximately 4 to 6 feet wide and ranges from 4 to 6 inches in depth during normal flow periods (observed in the months of January, May and July). Channel flow is typically 0.5 to 1 foot per second within this reach of the channel. The channel bed contains mostly sand and gravel, with frequent cobbles both below and above the water surface. The banks are generally steep, 2:1 slopes and average 4 feet in height above the mean water line. It appears that the channel has been dredged and straightened in the past due to the presence of dredge spoils along portions of the banks (including a raised road in one area) and the relatively straight lines of the channel as it passes through the adjacent hayfields. Several man-made drainage channels join the

main channel at perpendicular angles from the hayfields. Carpenter Creek remains relatively uniform in its shape and flow characteristics through Reach 1, until it is joined by the southern channel.

Reach 2 – Carpenter Creek to Route 17M Culvert

As Carpenter Creek flows east, passing through forested/shrub wetland and then wet meadow communities, it slowly broadens and slows its velocity. At the confluence of Reach 2 and 3, where Carpenter Creek is joined by the southern tributary stream, approximately 700 feet before reaching the Rt. 17M culvert, the channel broadens to approximately 10 to 12 feet in width and 6 to 10 inches in depth (photo 4). Here the velocity is typically 0.1 to 0.5 feet per second, with almost no noticeable flow. The channel bottom is mostly silt and mud, with communities of aquatic weeds present. The channel banks are 1 to 1.5 feet in height and nearly vertical, with gently sloping meadow/marsh and shrub swamp community beyond. Over the last 20 foot length of the stream where it enters the culvert at Route 17M, the stream broadens to approximately 15 feet in width. The culvert at Route 17M is an approximately 10 ft. wide by 8 ft. high, open-bottom concrete box culvert with concrete wingwalls (photo 5).

Reach 3 – Southern Channel from Route I-84 to Carpenter Creek

The southern tributary stream enters the site from a culvert within the I-84 right-of-way. From the culvert it flows approximately 1,000 feet northeast, parallel to the I-84 west-bound on-ramp, and then veers north into the site. This channel is typically 10 to 12 feet wide and 6 to 10 inches deep (photo 6). Flow velocity is 0.1 to 0.5 inches per second. Like Reach 2, the banks of this segment are nearly vertical and 1 to 1.5 feet high, with an adjacent wet meadow/shallow marsh community.

100-Year Floodplain

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Wawayanda Township, New York (Community Panel No. 360639 0010B) (map of site portion attached), the 100-year floodplain has not been mapped for the on-site streams.



PHOTO 1. Reach 1, Carpenter Creek upstream view to west with Route 6 in background.



PHOTO 2. Reach 1, Carpenter Creek downstream view to east (180 deg. opposite from photo 1).



PHOTO 3. Reach 1, Carpenter Creek downstream near confluence with Reach 2, view to northeast.



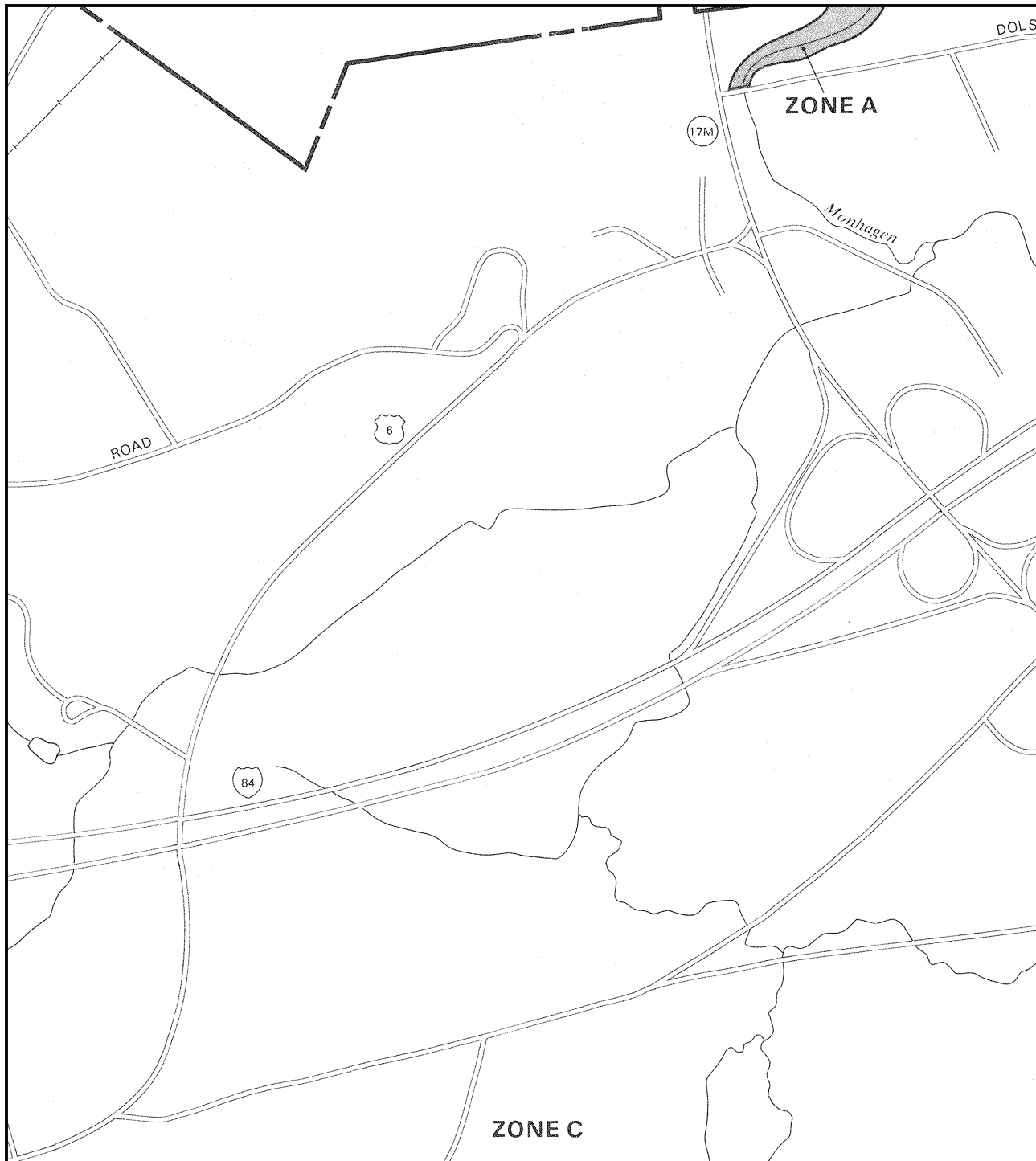
PHOTO 4. Reach 2, Carpenter Creek upstream view to southwest.



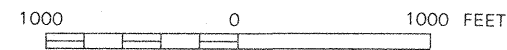
PHOTO 5. Reach 2, Carpenter Creek downstream concrete box culvert at Route 17M, view to east.



PHOTO 6. Reach 3, southern tributary stream downstream view from I-84 to north.



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
WAWAYANDA,
NEW YORK
ORANGE COUNTY

PANEL 10 OF 15
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
360639 0010 B

EFFECTIVE DATE:
MARCH 4, 1985



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov