Reach 2b (Intersection CR 40/ CR 56- Hensonville Market)

Reach 2b includes the section of Batavia Kill beginning at the intersection of County Routes 40 and 56 in Maplecrest, and runs downstream to the area adjacent to the Hensonville Market. The reach is approximately 1.9 miles in length and ranges in drainage area from 11 mi^2 to 13.4 mi^2. The channel receives four unnamed seasonal tributaries through reach 2b. The stream reach is located in Valley Zone 3 and has an average valley slope of 1.3% **(Figure V-11)**.

Stream Morphology/Stability

During the project period, the GCSWCD did not conduct detailed assessments of this reach because observations indicted that it is in physically stable condition. The reach sinuosity ranges from moderate to low, and varies from 1.12 through the top of the reach, to nearly straight (1.0) as it runs adjacent to County Route 40, and returns to a sinuosity of 1.11 as it approaches the Hensonville market. The segment was delineated, based on stream type, into five sub- reaches. Beginning at the bridge at County Routes 40 and 56, and continuing to where Van Loan Hill and County Route 40 impinge on the floodplain, the Batavia Kill is a B stream type. Beginning at a bedrock sill across the stream and continuing for 1,200 feet and ending above the bridge at Wedding Bells Lane (bridge No. 2-26927-0), the reach is a C4. Below this C4 and extending for 1,000 feet to the bridge above Wedding Bells Lane, the stream becomes an F; it becomes more entrenched as it approaches the bridge. The fourth sub-reach is a 3,500 foot long C type channel. The fifth sub-reach, at the end of the segment, has been identified as B3c.

The Phase I Inventory and Assessment process characterized the reach as having very low streambank erosion with only 300 feet of stream bank erosion noted on the entire 1.9 mile long reach **(Figure VI-26a, Photo A,B,C,D,E,F)**. Stream profile (the slope of the stream bed) is controlled by bedrock exposures at the top of the reach as well as near the bottom, and the remnants of an old K-Dam fisheries structure located near the top of the reach **(Figure VI-26a, photo G)** also appears to exert some control on the profile.

In 1998, a single cross section was measured in this sub-reach behind the Harp and Eagle in Hensonville. The cross section was used to obtain information about the stream's hydraulic geometry (width, depth, cross sectional area). This cross section was resurveyed in 2000 and the GCSWCD determined that it had remained stable over that time period **(Figure VI-27)**.

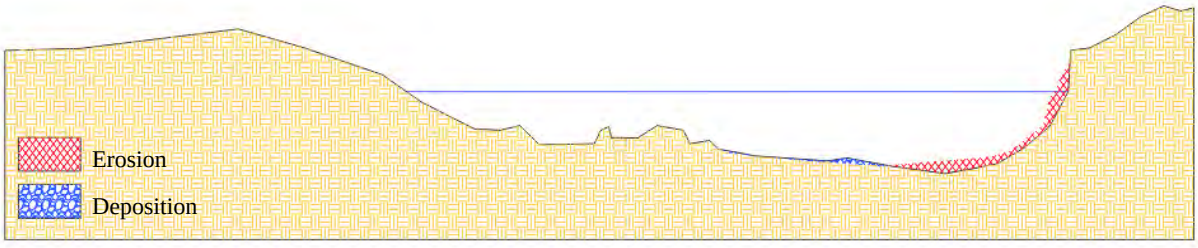


Figure 27: Overlay of 1998 and 2000 monitoring cross section showing erosion and deposition indicating good stability during the monitoring period.

The channel dimensions of width/depth and entrenchment at the cross section have remained essentially unchanged with only minor scour at the cross section. The channel scour is conceivably caused by a slow change in bed feature from a riffle to a pool and potentially results from the September 1999 flood event. The reach was reexamined after the September 1999 flood event and the reach appeared to have maintained its stability.

Riparian Vegetation

The riparian vegetation throughout the reach is primarily forest, with a mix of deciduous and evergreens. The understory structure is shrub dominated by willow along the immediate stream corridor. As discussed previously, the extremely stable nature of the streambed and controlled flows below the flood control dam have allowed extensive establishment of grasses and sedges within the formerly active stream channel. In the summer months, the reach has good stream cover and appears to be very favorable for fisheries habitat.

Water Quality

During the assessment of this reach, the GCSWCD did not note any direct water quality impacts. No clay exposures were inventoried, and the reach is not considered to be a significant contributor to system turbidity. There are several residential structures in close proximity to the stream in this reach, but it is unknown if there are any impacts to water quality due to on-site wastewater treatment. In Phase II of the CWC septic rehabilitation and replacement program, several of these properties may qualify for CWC funded inspections, pump outs and rehabilitation as appropriate. Water quality impacts due to roadside drainage are also minimal in this reach. NYCDEP completed acquisition of a large stream side parcel for water quality protection during the course of this project.

Infrastructure

Management reach 2b is characterized by fairly low impacts either to or from infrastructure. The reach includes only one county bridge crossing at Wedding Bell Lane (#2-26927-0) and the bridge structure does not appear to be impacting stream stability. The hydraulic opening of the bridge is more than adequate to accommodate the bankfull discharge, and

the bridge exhibits no signs of backwater deposition or bridge scour. Immediately upstream of the bridge, approximately 600 feet of channel is influenced by County Route 40 which is a factor in the increased channel entrenchment **(Figure VI-26a, photo A,E)**. This entrenchment also extends a short distance below the bridge, but despite this entrenchment the channel appears to be stable under the current flow regime.

Reach 2b Summary

Reach 2b exhibits a very high degree of stability as the result of reduced discharge and sediment supply below the flood control structure, and the presence of good riparian vegetation. While most of the reach is characterized by low entrenchment, with effective floodplain structure, the channel is moderately entrenched over a short segment where County Route 40 runs parallel to the stream. This entrenchment does not appear to be a problem, but should be monitored for potential future impacts to the stream. Management activities must be undertaken in a manner that will not increase entrenchment.

Table VI-6: Management Recommendations Reach 2b.

Reach 2b: Intersection of County Routes 40 and 56 to Hensonville Market	
Intervention Level	Protection
Stream Morphology	1. Prevent further entrenchment of stream reach above and below Wedding Bell Lane. 2. See general recommendations
Riparian Zone	See general recommendations
Water Quality	See general recommendations
Infrastructure	See general recommendations
Habitat	See general recommendations
Further Assessment	1. Continue to monitor stability. Establish additional cross sections in entrenched section above Wedding Bell Lane. Implement detailed monitoring protocols if instability is observed. 2. Assess the benefits of additional habitat improvements.


A

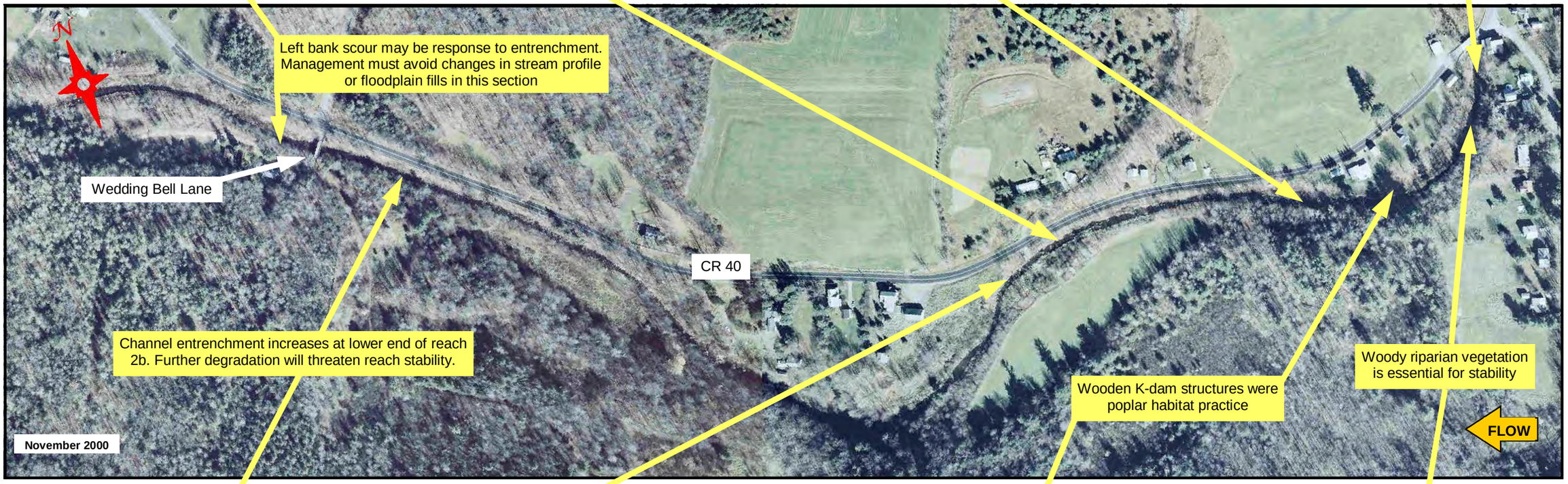

B

Presence of floodplain and riparian Buffer promotes stability in reach 2b


C


D

Rock rip-rap on left bank controls lateral erosion




E


F


G


H

Batavia Kill Stream Management Plan

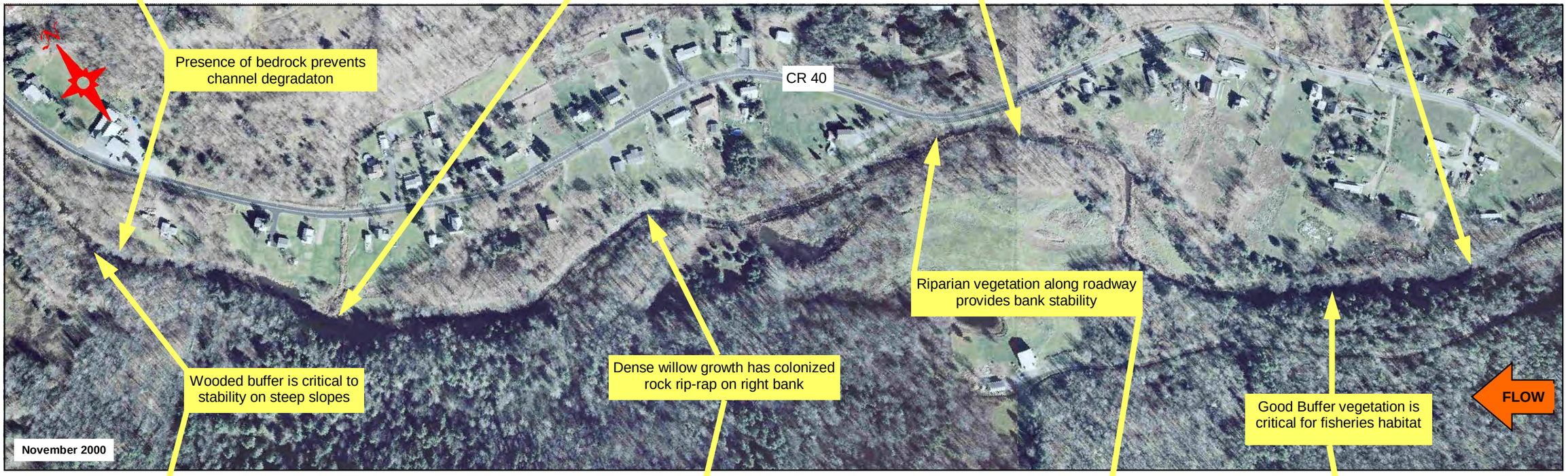
Figure VI-26a: Reach 2b-Upper


A


B


C


D




E


F


G


H

Batavia Kill Stream Management Plan

Figure VI-26b: Reach 2b-Lower