Appendix: Moodna Creek Dam Removal
New Windsor, NY

Design Report

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NOT FOR DISTRIBUTION

Prepared for:

American Rivers
American Rivers - Northeast Region
37 Phillips Place #2
Northampton, MA 01060

inter·fluve inc.

3602 Atwood Avenue
Suite 3
Madison, WI 53714
608-441-0342
www.interfluve.com

Introduction

American Rivers, the NY State Department of Environmental Conservation, the Moodna Watershed Coalition, the NY State Department of Parks, Recreation and Historic Preservation, Finova Group Inc. and the Orange County Department of Planning have been actively pursuing the removal of the Moodna Creek Dam. The Moodna Creek dam was breached during floods in 1999 and 2007, causing the main channel of Moodna Creek to migrate beyond the left abutment and partially abandoning both the recent historic channel and the dam structure. Sediment has accumulated upstream of the dam, but the historic channel remains partially intact.

Inter-Fluve was hired to discuss concept designs and expedite final designs for the removal of the structure and any associated river restoration deemed necessary. After review of survey information, channel morphology and infrastructure, we recommend full removal of the structure without any major sediment removal. Some bank stabilization is warranted at the dam removal site, and we also recommend some stabilization downstream of the dam site, in order to protect the existing building and lot. The discussion of the design presented below is intended to accompany the Final Design Plan Set which contains additional information pertinent to the project.

Project Site

The Moodna Creek dam is located approximately 7,300 feet from the confluence of Moodna Creek with the Hudson River. Moodna Creek drains a watershed area of 173 square miles, running 15.5 miles from the confluence of Cromline Creek and Otter Kill (Figure 1). Moodna Creek has 75 acres of tidal marsh, located at the estuary between Route 9W and the Hudson River, and home to rare plants and animals. Moodna Creek is listed as a Class C stream by NY State and is used by whitewater kayakers. The length of the surveyed project area of Moodna Creek is 2187 feet (see plans). The average width through the section is approximately 150 feet. Bankfull width varies between 80-240 feet depending on the location. The Moodna Creek valley is situated in post Wisconsinan glacial till atop Ordovician shale and gray sandstone. Outcrops of bedrock are present at the site on the right bank upstream of the dam structure. The channel bed is comprised of primarily course material, including gravel dominated runs and pools, and cobble and boulder riffles. Sands and fines can be found both on depositional point bars and in overbank deposits. The dam is 70 feet long and 4 feet high with approximately 2 feet embedded (Figure 2). Adjacent to the dam are abutting structures made up of concrete, steel and fencing. Directly downstream of the dam on the right bank exists a commercial building approximately 90 feet from the top of bank at the bank failure site. The project site is located 1.3 miles upstream of the confluence to the Hudson River.

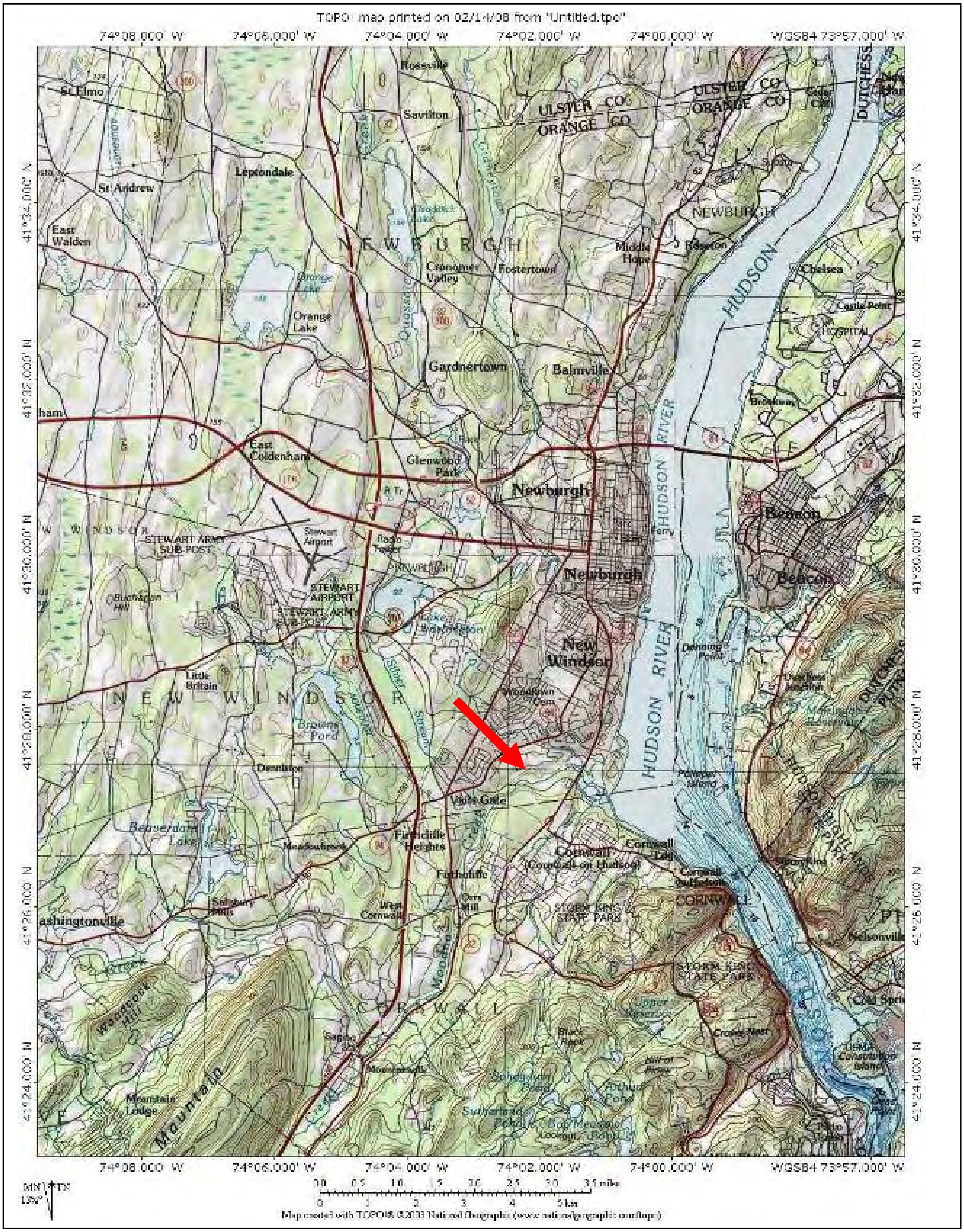

Figure 1. Topographic map of lower Moodna Creek. Project area shown by arrow.

Two circular concrete intake structures are still present on the right bank abutment area, and the dam appears to extend into the bank several feet. Cyclone fencing extends up the slope toward Forge Hill Road but is not an effective barrier. An 18” thick concrete cutoff wall extends 12 feet from the dam into the bank. The dam was originally designed to be installed with four feet of vertical embedment and cutoff walls extending 12 feet into the right bank and 8 feet into the left bank. The left bank has since eroded and only a remnant remains surrounded by large boulders.

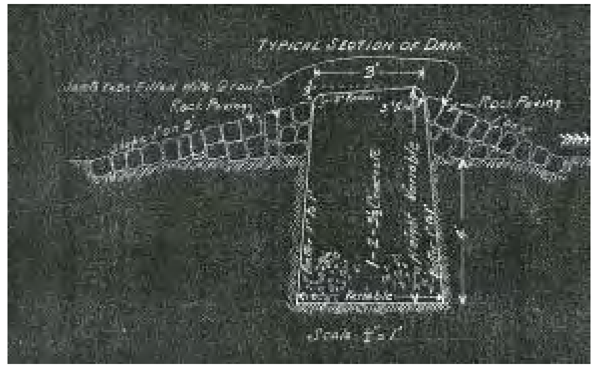

Figure 2. Cross section of preliminary dam design plans (Woodhull 1943)

Site Buildings - The adjacent building is abandoned. Efforts to contact the landowner, Finova Corporation, have not yet been successful.

Natural Resources – Moodna Creek currently has Class C status according to the NY state stream classification system. Under New York State’s Environmental Conservation Law (ECL), Title 5 of Article 15, certain waters of the state are protected on the basis of their classification. Streams designated as C or higher are collectively referred to as "protected streams". A Protection of Waters Permit is required to physically disturb the bed or banks (up to 50 ft) of any stream with a classification standard of C or higher. NYSDEC Region 3 has stated that there are no mapped wetlands at the site, and that wetland delineation is not required under state regulations. Final word on the need for wetland delineation will come from the US Army Corps of Engineers as part of the permitting process currently underway. The Moodna Creek dam removal site is within the mapped boundary for rare animals (Figure 3). A request for project screening was submitted to the Natural Heritage Program on February 20th, 2008. The Natural Heritage Program has been contacted and an opinion is pending.

Figure 3. NY State mapped area of rare animal species in the Moodna Creek dam removal area (project area shown as star).

Hydrology

The drainage area above the project reach is approximately 173 mi^2. Using regression equations and the gage transfer methods developed for the state of New York (Lumia et al, 2006) the value of river discharge at various frequency intervals was obtained (Table 1). Moodna Creek is an ungaged stream so a gage transfer was performed utilizing the Wappinger Creek watershed as the gaged stream for calculating the weighted estimate of discharge for specified recurrence intervals. Wappinger Creek gage is 12 miles from the Moodna Creek project site, within the same New York hydrologic region, and has a watershed size of 181 mi^2 satisfying the 50/150 percent size comparison criteria. Flood values from the gage transfer analysis are also shown in Table 1. The noted methods in the gage transfer used the full regression values for Moodna Creek.

Table 1. Results of gage transfer analysis of Moodna Creek hydrology

Return Interval	Gage Transfer (ft^3/s)	Drainage-Area Only Regression (ft^3/s)	Full Regression (ft^3/s)
100 YR	15400	14110	17050
10 YR	6540	7080	8620
2 YR	2750	3440	4110

The results of the gage transfer analysis were used for channel design purposes, since this method is based on recorded data from the same precipitation region in NY. Observations of field indicators were also relied upon to supplement flow estimates for the channel design.

Restoration Design

The intent of this design is to economically restore natural stream processes influenced by the presence of the relic dam structure. Currently the channel is bypassing the dam and takes a sharp left bend causing adverse effects to the right bank downstream of the dam. An alignment allowing channel migration through the dam footprint coupled with native riparian vegetation will allow the stream corridor to regain some of the function that is currently lacking. The banks of the right channel through the dam site will be protected with lower bank treatment of boulders at a slope of 2H:1V in the areas of high shear stress and vegetated fabric in areas of low shear at a slope of 3H:1V. These applications are done with biodegradable materials that will provide erosion control during the time required for vegetation to take hold and eventually become the primary component of bank stability. The upper slopes will receive either a covering of erosion control fabric or straw mulch depending on the steepness of the slope. Due to the low slope of the channel, riffle features were not incorporated into the design. Two natural grade control riffles upstream of the project site guard against any future headcuts that might move upstream if future channel modification at the dam site take place.

The planting plan for the site incorporates riparian hardwood trees, shrubs, and herbaceous species characteristic of the area. The intent is for the stream corridor to remain un-mowed, allowing the riparian area to function free of disturbance. Further details on the restoration design can be found in the plan sheets for the project.

Upstream Infrastructure Impact – Inter-Fluve completed an analysis of the potential base level change caused by the structure removal. Calculations of sediment movement and potential scour were conducted for upstream grade controlling riffles. Our analysis indicates no risk potential for undermining the Forge Hill Road Bridge support piers due to upstream migrating headcuts associated with the removal of the Moodna Creek Dam. Analysis of potential base level change caused by the dam removal was done by examining the potential for the existing scour hole immediately downstream of the dam to translate upstream in the old channel if the flow is recaptured. The scour hole could translate upstream slightly but would dissipate among existing riffle-pools located just downstream of the flow split (Figure 4).

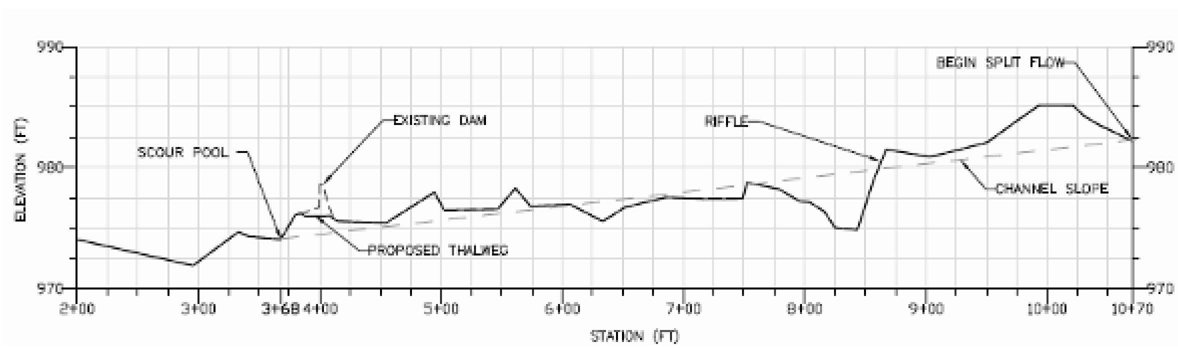

Figure 4. Longitudinal profile through the historic channel alignment

Further analysis was conducted examining the potential scour and sediment movement in the grade controlling riffles upstream of the dam under both existing and proposed conditions using HEC-RAS output and the Shields Equation with a dimensionless Shields parameter of 0.047 (Meyer-Peter, 1948 and Gessler, 1971). The median particle size (D50) was calculated at the HEC-RAS cross sections located on the grade controlling riffles to examine the movement of channel bed sediments under the 100-year recurrence flow, see Table 2. Comparing the results of the Shields Equation under the existing conditions versus proposed conditions demonstrates there is virtually no change in the potential for sediment movement resulting from project implementation through the upstream grade controlling riffles. Comparison of the sediment observed in the field demonstrates that under a 100-year flood event there would be minimal movement of the armored layer through the grade controlling riffles. The calculated D50 of mobile sediment is significantly smaller than the median particle size of the armored layer of the riffles.

Table 2. Incipient motion calculations at 100-year recurrence flow under existing and proposed conditions

River Station (ft)	Existing D50 (mm)	Proposed D50 (mm)	Difference (mm)	Location Description
774	125	124	-1	340’ upstream dam
1249	213	212	-1	815’ upstream dam

There are three major grade controlling riffles upstream of the dam structure. These three riffles were in existence prior to any deposition in the dam area, and probably prior to the dam’s construction. The dam has a hydraulic head of roughly two feet, and so its hydraulic effect is localized. Following dam removal, sand, gravel and smaller cobbles will move through the reach, but these are normal sizes for mobile sediment in the reach, and the removal of the dam will not greatly effect sediment mobilization. The island formed in the wide segment upstream of the dam is partially vegetated and has become a more permanent stream feature. It is likely that the island will change in dimension as this reach of the creek is dynamic.

Bank Erosion Area – The bank downstream of the removal project area consists of loosely consolidated gravel and cobble till with two layers of compacted fill making up the top two feet of the bank (Figure 5). This exposed bank is currently vertical or with a negative (concave) slope directly in the hydraulic path of large floods. The site characteristics make this bank highly susceptible to erosion from snowmelt and storm flood events. Figure 6 shows the potential meander limits for Moodna Creek in the project area. It should be noted that this is an approximation of *potential* meander limits based on available soils information, geomorphic reconnaissance, current bank stabilization and topographic data. Bedrock outcrops bound

Figure 5. Eroding bank approximately 50 feet downstream of the dam removal project area

the right bank on the Forge Hill Road side near the dam, and the historic valley wall is approximately 100 feet to the north of the current left bank. The areas of potential migration are limited to historic floodplain areas at the lower elevations. The meander limits shown are not the product of a full meander limit study, which would require more intensive soils and geotechnical investigation, and should not be used for planning purposes without validation.

Figure 6. Aerial photograph of the Moodna Creek Dam removal project area. Approximate potential meander limits are shown as dashed orange lines. Areas of recent soil loss due to floodplain and bank erosion in 1999 and 2007 are shown in yellow.

It is difficult to determine a base rate for bank retreat or meander migration, but recent floods have resulted in the right bank of the channel moving approximately 38 feet toward the existing buildings on the right bank downstream of the dam. Examination of bank vegetation, bar development and erosion indicates that various sections of the channel downstream of Forge Hill Road have moved from 60 to 140 feet during single events. The channel throughout the reach is self armoring at the toe, as large cobbles and boulders tend to drop out to the angle of repose during smaller flood events, as finer sediment is winnowed from the upper banks.

Moodna Creek is unusual in that its lower reaches are dominated by cobble and boulder riffle substrates, and sand and gravel bars with a relative absence of fine sediment. Thus smaller flows are resisted by channel armoring and migration is slow. Conversely, near bankfull or larger floods are the major drivers of channel migration in this lower system. The capacity for the channel to move drastically is real and represents a definite threat to the buildings adjacent to the Moodna Creek dam site. The presence of bedrock and the proposed toe protection demonstrates that the dam removal will have no impact on future bank failures downstream of the dam site. At high flows, the dam is negligible in hydraulic effect, and bank erosion downstream may happen regardless of whether the dam is in place or removed.

We recommend stabilization of the vertical bank to prevent potential movement of contaminated sediments. Although not specified in the scope of work, we have provided a conceptual design cross-section that demonstrates possible methods for bank stabilization at the site (see plans). This plan will need to be coordinated with any potential contaminated sediment removal issues that may result from the bank stabilization.

Hydraulics

A thorough survey of the project area was conducted by Inter-Fluve Inc. staff, including a longitudinal profile shot 400 feet downstream and 1750 feet upstream of the dam in order to develop a reach level hydraulic model for use in project design. Modeling was performed using HEC-RAS v. 4.0 (beta), and verified in HEC-RAS version 3.1.3. Cross sections were located to capture pertinent hydraulic conditions of the reach. It was not possible to calibrate the existing or proposed conditions models developed for the project for other flow events due to data limitations. Roughness values were horizontally varied for the channel under existing conditions (.03/.04) and proposed (.02/.03/.04). Floodplain roughness was estimated at .10 in the riparian zone under proposed conditions, and .10 under existing conditions. Figure 6 below shows estimated flood profiles under existing and proposed conditions in the project reach at the estimated 100 year (YR) event, the 10 YR, and 2 YR events predicted by the regression equations. The dam is located at river station 428 feet.

The elevation of the FEMA base (100-year) flood will drop in elevation except within the 8 foot reach at the dam location, where the hydraulic jump created from the dam spillway is eliminated under proposed conditions. With the removal of the hydraulic jump under the proposed conditions, the water surface elevation is no longer at critical depth at the 428 cross section. Water surface elevations associated with smaller frequency events produce similar results based on proposed conditions.

Table 1: Flow elevations (using the relative project datum of survey) immediately upstream of the project area under existing and proposed conditions

	290 ft^3/s	2 YR	10 YR	100 YR
Proposed Conditions	977.9’	980.6’	982.6’	986.0’
Existing Conditions	978.1’	981.0’	983.0’	986.3’

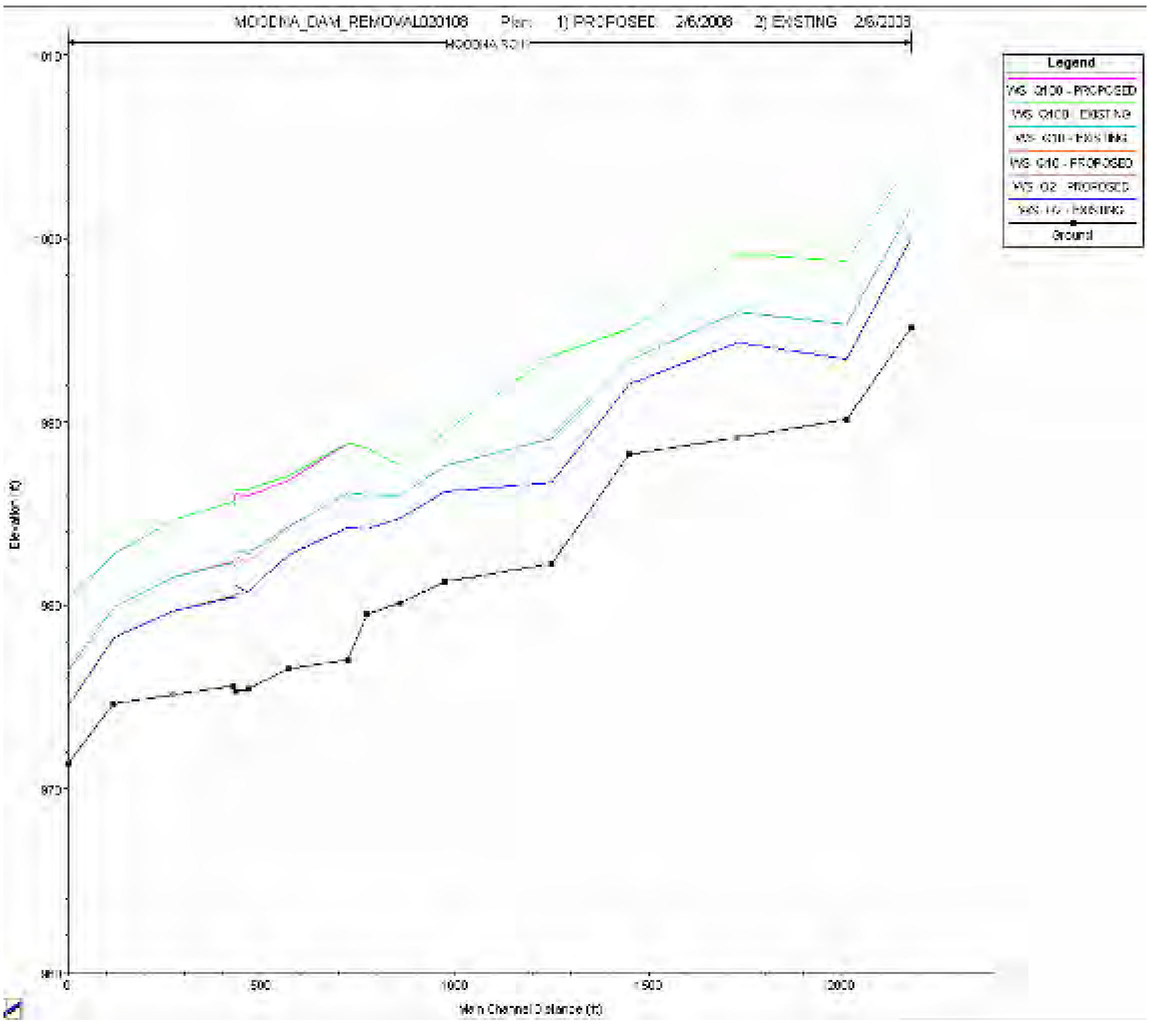

Figure 6: Flood profiles through the extended project area

Sediment Characterization

In the depositional field upstream of the dam, we conducted pebble counts at 31 locations deemed representative of obvious patterns in sediment sizes. In lieu of obvious patterns in sediment size, pebble counts were conducted across cross sections. In order to approximate the difference in sediment gradation for the armor layer versus the subarmor layer, a 4-6 inch layer of sediment was removed from the surface and pebble counts were conducted in the armor layer.

In order to better characterize the distribution of sediment in the impounded sediment area, pebble counts were conducted via actual field measurement or via digital photographic documentation and laboratory measurement. Digital photos were taken at a standard height with an 18” metal ruler as a field calibration gauge. Computer assisted pebble counts were performed using Adobe Acrobat and a Digital Gravelometer (Sedimetrics Inc., Graham et al. 2005a and b). Radial distortion was not examined, and the comparison data set was small (n=6) but Adobe derived digital photo derived pebble count data was simply calibrated against actual field measurements and showed good correlation of D50 and D84 values (r^2=.98, r^2 =.96 respectively). Digital Gravelometer analysis did not correlate well with either field or Adobe counts, and was not used in the facies mapping.

The median grain size of the armor layer at the 31 pebble count locations ranged from 10 to 120 mm in diameter, or from medium gravel to small cobble. The largest grains were measured in sample 600 with a D16, D50, and D84 of 25, 120, and 242 mm respectively, while medium gravel dominated sample number 621 with a D16, D50, and D84 measured at 4, 10, and 21 mm respectively. The median grain size of 74% of the samples is coarse or very coarse gravel measuring between 16 and 32 mm and 32 and 64 mm respectively. The median grain size of 7 samples is characterized as small cobble, and only 1 sample is medium gravel.

Bed material is usually sorted so that the smaller grains are transported further downstream whereas the larger grains are deposited first. This generally held true for the sediment in the impoundment of Moodna Creek. The majority of samples with an armor layer characterized by small cobble are located within the upstream half of the study area and the sample with the largest grains, sample 600 is located furthest upstream. This upper impoundment area is the historic riffle location and was the thalweg area prior to the dam breach, and thus sediment sizes here may be a more a reflection of historic riffle armoring than differential sediment deposition patterns caused by the dam (Figure 7).

The middle of the study area is dominated by coarse or very coarse gravel, and the downstream and outer extents of the study area contain the smallest median grain sizes. Sample 621, the armor layer sample with the smallest median grain size, is the furthest downstream sample on the outside of the meander bend. Downstream from all of the armor layer samples, the impounded sediment is composed of small gravel and sand. As flows moved sediment across the study area, the larger grains were deposited upstream and the sand was deposited on the downstream and outside extents.

The dam is at elevation 978 (local assumed datum), whereas much of the impoundment sediment is above elevation 980, with approximately 20% of the impounded sediment between elevation 984-985. This much course sediment nearly 4 feet above the dam structure suggests deposition of bedload moving during a large flood event. Analysis of aerial photographs show that some of this material existed prior to the 1999 flood, but large sections of eroded bank would have introduced significant load into the channel that was not present as aggradation or deposited bars between the source area (left bank downstream of Forge Hill Road) and the impoundment. Much of this material would have dropped out in the wide section upstream of the dam.

Figure 7. Moodna Creek showing historic riffle (red arrow) and scour pool (yellow arrow) locations

Channel avulsion and sediment - The large flood that caused the creek to avulse resulted from long term accumulation of sand, gravel and cobble sediment upstream of the dam along the left bank. The right bank thalweg appears to have scoured during this depositional period, and remains (see plans). We speculate, based on field evidence, that as the right bank bar upstream of the impoundment area extended downstream, flood water traveled over the left bank and reentered the main channel 25 feet to the left of the left abutment. A headcut formed at this location and subsequent incision removed smaller material, causing the stream to occupy the current boulder riffle channel. The upstream end of the sediment depositional area appears to be a remnant riffle, with its crest elevation is approximately 5 feet above the height of the dam. A deep scour pool remains at the downstream end of this riffle (Figure 7). The dam protrudes only 2-3 feet from the channel bottom, and is causing local scour, deposition and avulsion effects similar to those seen around large woody debris, in this case a single large log. Removal of the dam will have some local influence on channel movement. Most likely, the channel will resume its course toward the right bank, but the split flow will be maintained for an indefinite time.

Potential contaminants

The geomorphic assessment and survey did not find significant impounded sediment smaller than sand (see plans). The potential of contaminants to bind soil particles generally decreases with increasing sediment size, and most state regulations call for sieve sampling to determine the percentage of fines (passing the #200 sieve) and thus gauge the appropriate sampling plan. 200 sieve size. Because initial discussions of design options did not include the removal of any sediment from the channel, it was determined initially that sieve sampling would not be included. Discussions with NYDEC staff indicated that submittal of permits would not need to include sieve sampling if no dredging was planned.

Analysis of aerial photographs and vegetation growth on the bar indicates that the bulk of the gravel and sand material currently upstream of the dam was deposited after 1996, most likely during large floods that eroded the left bank just downstream of the Forge Hill Road bridge. This became channel bedload and likely transported quickly through the steep riffle (see XS 1249 of plans), depositing in the wide area upstream of the dam. Unless the banks are contaminated in the source area, it is unlikely that this material contains contaminated sediment.

Upland disposal – Our restoration plan does not call for the removal of any sediment from the channel or banks. The only material removed off site will be the concrete spillway and the appurtenant structures. Qualified contractors will be required to locate a nearby suitable facility for off-site disposal of demolished material.

Construction

Final plans call for the demolition of the structures and removal, followed by bank stabilization. This is a relatively simple project involving the following steps:

- *Staging and setup* – This project requires only the use of a medium sized excavator. Transport truck access can be gained through the existing driveway behind the building. Access to the stream can be gained down the bank at the dam location.
- Minimal *clearing and grubbing* along the impacted bank area – Some small trees and shrubs will need to be removed prior to construction, but this work is minimal.
- Simple *dewatering* of the dam site – We recommend the use of Super Sacks or equivalent, which are essentially large gravel filled sandbags that conform to irregular channel bottoms. Contractors will install the dewatering sacks downstream of the dam and isolate the work area into the backwater channel. A temporary coffer dam could also be installed

upstream of the dam and the in-situ groundwater could be pumped out of the work area to keep the excavation area relatively dry. In-situ water could be pumped up the slope into a suitable settling basin and clean water could then be allowed to drain back into the stream.

- *Removal of appurtenant structures* and fencing - The concrete and metal structures, including the fence, would likely be removed on the banks prior to dam excavation.
- *Removal of the concrete dam* and grading of the channel bed – The dam removed from the far side working back toward shore. The dam would be hammered into 10-15 pieces and then each piece removed. The channel and gravel bar would be smooth graded upon excavation of each piece, so that no redisturbance of soils would be needed after the structure is removed.
- *Installation of toe protection* – The hydraulics of the site call for large boulders as toe protection. Geotextile filter fabric and gravel base will be installed upon excavation of the scour depth. Boulders are then installed to the depth of scour or to bedrock, whichever is encountered first. Boulders will be interplanted with cottonwood and black willow posts, and chinking stone and filter gravel will be hand placed to fill in large gaps.
- *Installation of bioengineering treatment* – The upper slope treatment is essentially a fabric encapsulated lift pulled back to match the existing slope. Soil will be compacted in 6 inch lifts, and a layer of clean topsoil will be imported to ensure growth of seed.
- *Planting* – Native shrubs and trees have been selected, and the seed mix will also consist of native grasses appropriate for the site and the planting season. The contract documents should include a watering plan and guarantee to ensure planting success.
- *Site cleanup and repair* – Tracks and excavated transition areas will be smoothed out, blanketed or mulched and seeded prior to leaving the site.

Construction of the proposed channel is expected to occur during low flow periods (July – October), within established construction windows acceptable to State and Federal fisheries regulatory agencies. Access areas for equipment are delineated on the plans. The removal of approximately 3-4 small trees will be required as part of this process, however trees will be planted as integral parts of the bioengineering bank stabilization. Dewatering of the main channel will occur to isolate the work area. Clean water from the backwater channel upstream will be pumped or cofferdamed around the project area to avoid any transport of sediment off site. The existing left bank channel will continue to carry low flows around the project area, so this dewatering is essentially isolating a backwater area and not the active low flow channel. Construction for the project is expected to require approximately two weeks to complete, but is dependant on material availability, weather, and other factors. The plans were prepared with the assumption that someone from Inter-Fluve would be on hand to provide over-sight during much of the construction process. There were no geotechnical borings or utility locates performed as part of the design, thus slight field adjustments to the design can be expected to occur during construction.

Cost Estimates

Construction oversight assumes full time oversight during critical periods of the construction process (dam removal and bank stabilization). The Engineer's Opinion of Probable cost enclosed reflects the costs of materials, labor, equipment, contractor overhead, and oversight expenses representing the total cost of the project. *All construction estimates should assume a 20% contingency*. This contingency provides a buffer for fluctuations in materials, labor and equipment costs, and variation in quantity estimates.

It is important to understand that these costs are dynamic and based on typical contractor costs. Although they may seem large there are ample means by which to reduce them through the development of working relationships with partners, donations of materials, and fit in the field changes toward a lower cost option/component of the design. Typical costs for bioengineering bank restoration range from $15-$25 per face foot, or $15-$25 per layer of treatment. This cost is variable depending on the toe treatment, which is in this case large boulders. We have shown a price per boulder due to the large size.

Permits

Under this scope of work, Inter-Fluve has filed the following permits as recommended by the NYSDEC:

- NYSDEC and USACE Joint Application for Permit
- Full Environmental Assessment Form (Part 1 only)
- Structural Archaeological Assessment Form (Part 1 only) as a Supplement to the Joint Application for Permit.

Completed permit application forms are included in the Appendix. The following section, paraphrased largely from NYSDEC documents, is given as a summary of potential permitting issues:

Freshwater Wetlands Permit - NYDEC regulations state that a freshwater wetlands permit is required for any physical disturbance, within the boundary or within the 100 foot adjacent area, of a state protected freshwater wetland. However, the NYDEC has stated that the Moodna Creek project area is not within state mapped wetlands. If the activity will involve a discharge to ground water, a SPDES permit will be required

Protection of Waters Permit - A NYS Protection of Waters permit is required for the disturbance of the bed or banks of a protected stream, which includes water bodies in the course of a stream of 10 acres or less, with a water classification and standard of C (T) or higher (A and B classifications). Moodna Creek is a class C stream. In addition to a stream classified as C (T) or above, a Protection of Waters Permit is required if you intend to excavate or place fill in any navigable waters of the state with a classification and standard of C or D. In addition to the water body or watercourse itself, adjacent and contiguous wetlands are also subject to permitting. Care must be taken to stabilize all disturbed areas after construction and all necessary precautions must be taken to prevent contamination of the stream or water body by silt, sediment, fuels, solvents, lubricants, or any other pollutant associated with the project. A Protection of Waters permit is also required when excavating or placing fill in navigable waters of the state below the mean high water level, including adjacent and contiguous marshes and wetlands.

The Protection of Waters Permit Program regulates five different categories of activities:

- Disturbance of the Bed or Banks of a *Protected Stream* or Other Watercourse. Moodna is a protected stream (Class C)
- Construction, Reconstruction or Repair of *Dams* and *Other Impoundment Structures*. Since the dam is under 6 feet in height, this section of the permit does not apply.
- Construction, Reconstruction or Expansion of *Docking and Mooring Facilities*. This section of the permit is not applicable to the project.
- Excavation or Placement of Fill in *Navigable Waters* and Their Adjacent and Contiguous Wetlands. Moodna Creek is a navigable waterway.
- *Water Quality Certification* for Placing Fill or Undertaking Activities Resulting in a Discharge to Waters of the United States. The US Army Corps of Engineers will need to make a determination as to whether or not the project falls under the state's programmatic general permit for this activity.

In accordance with Section 401 of the Clean Water Act, applicants for a Federal license or permit for activities (including but not limited to the construction or operation of facilities that may result in any discharge into waters of the United States) are required to apply for and obtain a Water Quality Certification from DEC indicating that the proposed activity will not violate water quality standards. Water Quality Certification is required for placing fill or undertaking activities resulting in a discharge to waters of the United States where, for example, a permit is required from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.

An exemption from the requirement to obtain an individual Water Quality Certification is for certain activities deemed to have an insignificant effect on water quality, which have been issued a U.S. Army Corps of Engineers Nationwide 404 Permit and for which DEC has correspondingly issued a blanket statewide Water Quality Certification.

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