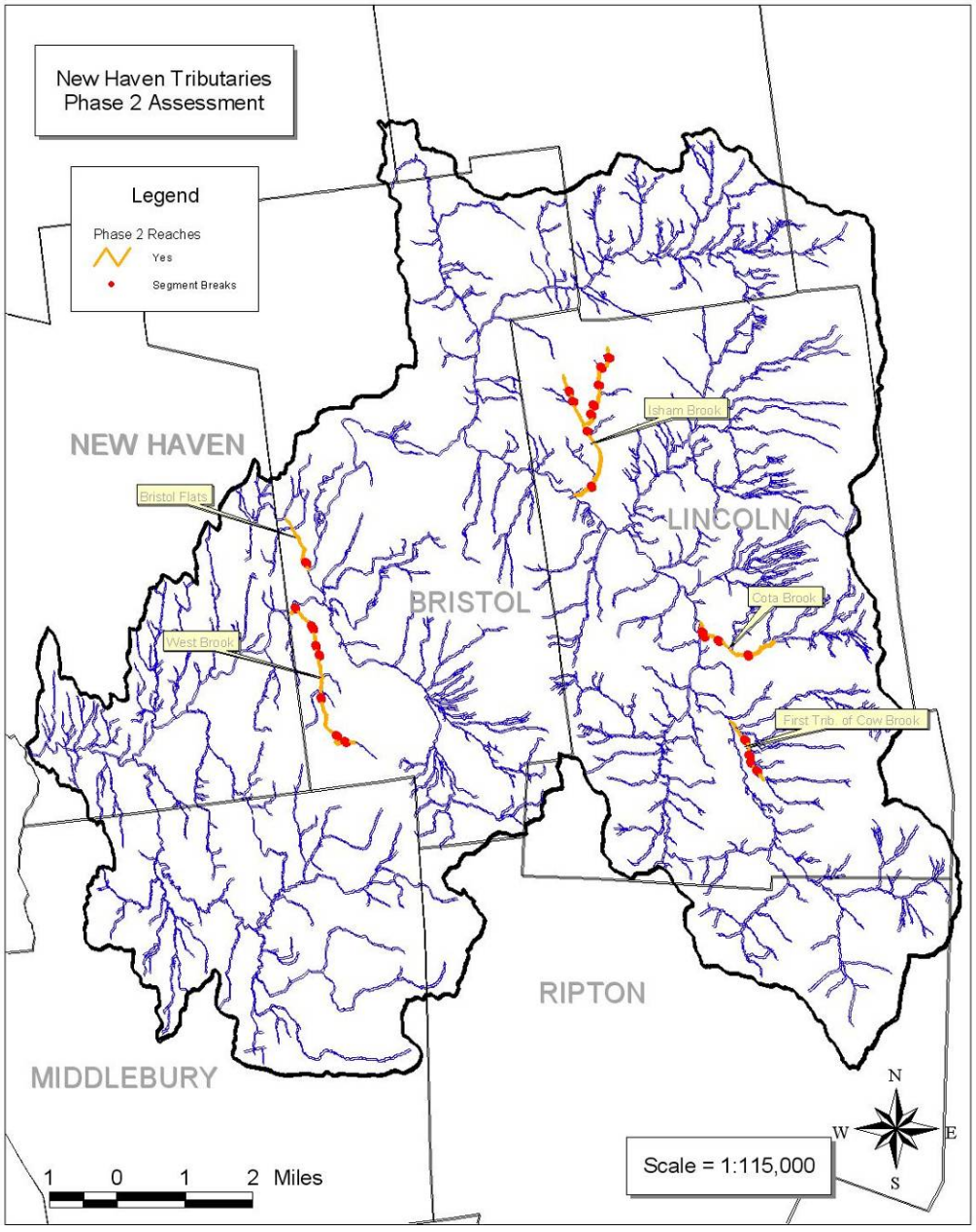
New Haven Tributaries
Stream Geomorphic Assessment
Phase 2 Report
June, 2007



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1.0 Executive Summary

The New Haven River, a tributary of the Otter Creek, is located in both the Champlain Valley and Green Mountain regions of Vermont in the towns of Bristol, Lincoln, Middlebury, New Haven, Ripton and Starksboro. The watershed encompasses approximately 75,000 acres and the primary land use is forest. With the exception of the Village of Bristol, where development is dense, there is limited but increasing residential development dispersed throughout the watershed.

Thirteen reaches were selected for Phase 2 Stream Geomorphic Assessment (SGA) following completion of the Phase 1 SGA. These reaches were selected based on Phase 1 Impact scores as well as potential conflicts with infrastructure. A total of 11 miles of river were assessed on 13 reaches which were divided into 39 segments. Seven of those segments were not assessed due to flooding from beaver dams.

A Phase 2 SGA field checks Phase 1 data and updates it where necessary, providing an understanding of reference conditions, departure from reference and likely causes for departure from reference (disequilibrium). Reference condition is the state the river would be in without human impacts occurring in the watershed. It is based on the understanding that all streams, left un-managed, will find a width, slope and pattern that are self-maintaining and will provide for sediment and flood transport in equilibrium over the long term.

Many of the streams assessed here are not adjacent to roads and they do not have significant amounts of rip-rap or berming along the banks. Development within the river corridor is relatively low compared to other areas in Vermont. The single biggest impact in the assessed watersheds is from historic channel straightening. Four of the 11 stream miles assessed in this Phase 2 project (36%) were historically moved and straightened, most likely for agricultural land use. Moving and straightening streams results in both bed and bank erosion, which can lead to disequilibrium.

Another significant impact throughout the watershed is from undersized bridges and culverts. Eighteen of 23 structures that were assessed in this study are channel constrictions. Channel constrictions impede both sediment and water flow throughout the watershed. Over time, these structures need to be replaced with properly sized ones.

This study was completed to assist the communities of Lincoln and Bristol with establishing a Fluvial Erosion Hazard Zone. This zone is identified by using information gathered through Stream Geomorphic Assessments to determine the width of river corridor necessary for re-establishing channel equilibrium. When implemented by towns, it prevents development from occurring in those areas that are most likely to erode over time, reducing future, costly conflicts between property owners and the river.

Twenty one of the 32 segments assessed in this Phase 2 report are either in or near equilibrium condition. A number of these segments provide flood and sediment storage that can benefit the entire watershed. River corridor conservation has been recommended for selected segments that are currently undeveloped and provide flood and sediment attenuation.

2.0 Project Overview

2.1 Project Partners

The Addison County Regional Planning Commission (ACRPC), as part of a Federal Emergency Management Administration (FEMA) grant through Vermont Emergency Management (VEM) and the Department of Environmental Conservation River Management Section, hired Landslide Natural Resource Planning Incorporated (LNRP) to complete a Phase 2 Stream Geomorphic Assessment of select tributaries of the New Haven River in Addison County, Vermont.

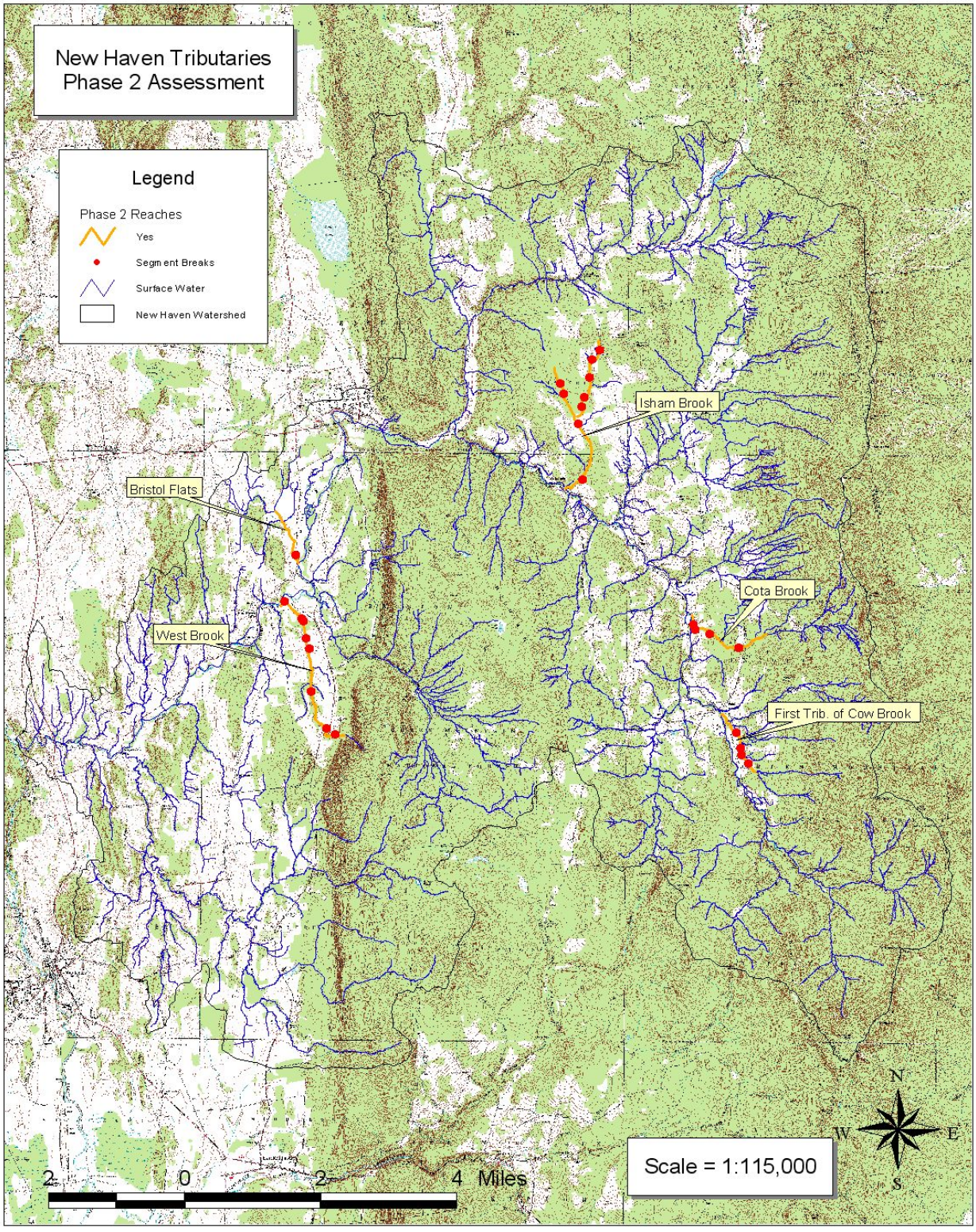
2.2 Description of Study Area

Phase 2 Assessments were completed on West Brook, Bristol Flats, Isham, and the First Tributary of Cow Brook. Thirteen reaches on 11 stream miles were assessed and these were divided further into 39 segments. Thirty two of the segments were assessed and seven were not due to flooding from beaver activity. These reaches were selected based on Phase 1 Impact scores as well as potential conflicts with infrastructure.

2.3 Goals and Objectives of the Project

This SGA was completed to assist the towns of Lincoln and Bristol with planning for and avoiding erosion and flood hazards in the future. The Phase 2 SGA data collected on the New Haven tributaries is necessary for the development of a Fluvial Erosion Hazard Zone (FEH). An FEH zone is a corridor along both sides of the stream channel that is defined by the type of stream, its sensitivity rating and its current adjustment process. This area defines the space the river is likely to erode in the future. Maps of the FEH will be available to the towns of Lincoln and Bristol to incorporate into their local planning efforts.

2.4 Reach Locator Map



3.0 Background Information

3.1 Geographic Setting

The New Haven River is located in both the Champlain Valley and Green Mountain regions of Vermont. It is a tributary of the Otter Creek River and is 116 square miles. The River is located in the Addison County towns of Bristol, Lincoln, Middlebury, New Haven, Ripton and Starksboro in the north half of Addison county. Like most of the rest of Vermont, the watershed was primarily forested prior to European settlement. With the introduction of agriculture in the late 1800's (originally sheep farming, now dairy) the area was deforested for pasture and crop production (Albers). Today, this watershed has returned to forest land with increasing amounts of land being converted to residential use.

3.2 Geologic Setting

The New Haven River Watershed is located in two of Vermont's major geologic regions: About three quarters of the watershed, including the headwaters and the steeper streams assessed here, is located in the Green Mountains, the remaining western quarter of the watershed is located in the Champlain Valley. The Green Mountains are dominated by glacial till and bedrock geology with very steep slopes. The Champlain Valley is comprised of clay and sand deposits from ancient Lake Vermont (Meeks, Johnson). The underlying geology and the resultant soils drive the physical characteristics of streams and also affect water chemistry and aquatic habitat.

3.3 Geomorphic Setting

The New Haven Tributaries assessed here are by reference about 57% Transport Sediment Regime (A and B stream types) and 43% Coarse Equilibrium/Fine Deposition Sediment Regime (C and E stream types). Phase 1 reference stream types are based on confinement, slope and sinuosity. A streams are in confined valleys, have gradients greater than 4%, are generally straight and have very little access to flood plain. B streams are still in confined valleys, though wider than A's and they have slopes between 2 and 4% with some meanders. C and E type streams are in unconfined valley settings with a slope of less than 2%; they consistently meander and have good access to floodplain. The Phase 2 study uses field measurements to determine both reference and current stream types.

4.0 Methods

4.1 Fluvial Geomorphic and Habitat Assessment Protocols

The State of Vermont has developed a three phase geomorphic based protocol for watershed assessment. The first phase is considered the "remote sensing" level which evaluates geology, soils, slope, and watershed size to establish a provisional reference stream type for each reach. The Stream Geomorphic Assessment Tool Version 4.53 (SGAT), an ArcView extension, was used to facilitate the collection of data (Davis). The Phase 1 study quantifies human impacts in the watershed and assigns a provisional impact rating to each reach.

The Phase 1 information helps set the stage for understanding what the major watershed impacts are and can assist in identifying areas to focus additional assessment resources. The Phase 2 Assessment includes the collection of field measurements and observations to check against the Phase 1 reference stream types and impact ratings. This information can be used to identify

Fluvial Erosion Hazard (FEH) zones as well as for identification of areas for different types of restoration activities. Phase 3 assessments involve detailed surveys and are only completed on those reaches that will benefit from active stream restoration activities. All Phase 2 data is located in Appendix B.

4.2 Rapid Geomorphic Assessment (RGA)

The RGA is useful in evaluating current stream processes, departures from a reference condition, and stages of channel evolution for a given reach. Three separate RGA forms are used in the Phase II Assessment, one for unconfined streams, one for confined streams, and one for naturally occurring Plane-Bed streams. Parameters evaluated in the RGA are summarized as follows:

- Degree of channel degradation or incision;
- Degree of channel aggradation;
- Degree of channel widening;
- Change in channel planform.

Refer to the VT ANR Protocols for more on the RGA (VTANR, March 2006).

Once the RGA is completed and the current "condition" is rated, a stage of channel evolution is identified. One of two channel evolution models is used: either the F-stage model or the D-stage model.

In the F-stage model, a channel loses floodplain access by undergoing degradation due to a disturbance. This degradation is typically followed by channel widening (Stage III), then aggradation and planform adjustments (Stage IV), before then regaining stability with regard to its water and sediment loads (Stage V).

In the D-stage model, aggradation, widening, and planform changes are the main adjustment processes, with degradation being limited, sometimes by resistant bed material or grade controls. The D-stage process can include moderate entrenchment and loss of bed features (Stage IIb), channel widening (Stage IIc), bed aggradation, bar formation (Stage IId), and regaining a balance similar to reference condition (Stage III). Please refer to the VT ANR Protocol Appendix C for more information on channel evolution models (VTANR, March 2006).

Parameters for the RGA as well as a Rapid Habitat Assessment were scored and assigned to the correlating "condition" category describing departure from a reference condition and degree of adjustment as follows:

- Reference – Reaches in dynamic equilibrium, having stream geomorphic processes and habitats found in mostly undisturbed streams.
- Good – Reaches having stream geomorphology or habitat that is slightly impacted by human or natural disturbance, showing signs of minor adjustment, but functioning for the most part.
- Fair – Reaches in moderate adjustment, having major changes in channel form, process or habitat.
- Poor – Reaches experiencing extreme adjustment or departure from their reference stream type or habitat condition.

In some cases, where a score lies at one end limit of a category, the condition category that best described the reach can be selected.

A Stream Sensitivity Rating is then generated for each reach or segment according to stream type and geomorphic condition. The range of sensitivity ratings includes: very low, low, moderate, high, very high and extreme. These indicate the sensitivity of a reach or segment to ongoing disturbance or stressors.

4.3 QA/QC Summary Report

To assure a high level of confidence in this Phase 2 Assessment, strict quality assurance and quality controls were followed. These procedures included both manual and automated reviews of all data by LNRP as well as by the Department of Environmental Conservation River Management Program. A copy of the QA/QC report is in Appendix D.

5.0 Analyzing River Processes

The goal of geomorphologically based river assessment and restoration is to reduce conflicts between human built infrastructure and rivers by re-establishing natural water and sediment relations (equilibrium) to the greatest extent possible. The Phase 1 and 2 Stream Geomorphic Assessments determine natural equilibrium (reference) and current stream types (departure from reference) to inform this planning process. This section of the report describes the different stressors and constraints in the watershed that affect stream geomorphology. Because this assessment is on non-contiguous tributaries of the New Haven River, river processes are analyzed for each tributary immediately before the reach by reach descriptions.

5.1 Hydrologic Alterations

The volume and rate at which water and sediment flow through a stream system, combined with the resistance of the bed material, work together to form the channel over the long-term life of a river. Alterations to this natural "hydrologic regime" can push a stream into disequilibrium, leading to increased erosion hazards. Hydrologic stressors and physical constraints that impact the volume and rate of water and sediment moving through the stream system were analyzed to aid in our understanding of current channel adjustment processes. Among the things that can affect the hydrology of a watershed are dams, loss of wetlands, deforestation, development and related increases in storm water runoff, and ditching related to roads, farm fields and skid ruts (VT DEC Phase 2 Protocols). Development greater than 10% is considered to alter the hydrologic cycle in a watershed.

Deforestation has affected most of the state of Vermont, with almost complete clearing occurring by the end of the 19th century and re-forestation to 75% forest cover by the end of the 20th century. It is likely that the New Haven and its tributaries are still re-bounding from the loss and the gradual re-growth of forest cover, and some of the historic incision and subsequent widening found in the watershed may be related to the increased flows resulting from the historic loss of trees.

Hydrologic alterations were rated on a scale of low, moderate, high and extreme based on corridor development, percentage of urban development, storm water inputs and loss of wetlands. See the Hydrologic Stressors Table in Appendix A.

5.2 Sediment Load Indicators

Erosion is a factor influencing the sediment regimes and adjustment processes on-going in the watershed. Changes to the amount and flow of sediment can lead to channel aggradation or degradation. Stream bank erosion is a natural process, but increases and decreases to it can disrupt the streams ability to maintain an even flow of sediment and water moving throughout the system. The Phase 2 Assessment quantifies on-going erosion impacts by measuring eroding banks and inventorying gullies, dams, steep riffles, mass failures and in-stream channel bars. See the Hydrologic Stressors Table in Appendix A.

5.3 Channel Slope and Depth Modifiers

Erosion and mass failures can be triggered by incision that is the result of changes within the stream corridor and watershed including channel straightening, corridor encroachments, hard armoring, berming and channel constrictions. These impacts directly or indirectly affect channel slope and depth. Natural channel spanning grade control also affects channel depth by arresting degradation. Thirty percent of the assessed reaches were historically straightened (4 miles out of 11 miles assessed). Straightening a river increases the stream power by concentrating flow, reducing bed resistance, and causing incision (downcutting) leading to widening.

Along with straightening and channelization, berms and hard armoring were common river management practices in the past, though not prevalent on the tributaries assessed here. See the Hydrologic Stressors Table in Appendix A.

5.4 Boundary Condition and Riparian Modifiers

Riparian buffers provide many important functions for streams including: increased bank stability, reduction of overland surface water flow and shading the channel to reduce water temperatures. Streams that have lost riparian vegetation have less resistance to lateral movement and tend to erode more quickly. Streams that have a lot of ledge, either in the bed or banks, are naturally more resistant to lateral and vertical migration. Development and roads are considered to be man-made constraints to lateral migration of streams. See the Hydrologic Stressors Table in Appendix A.

5.5 Constraints to Sediment Transport and Attenuation

Natural and human built constraints to sediment transport and attenuation (storage) exist throughout the watershed. These are separated into vertical constraints which keep the bed of the river from degrading and lateral constraints, which keep the river from moving sideways. Natural vertical constraints are channel spanning grade control and in this watershed, manmade constraints are culverts. Lateral constraints may be ledge or human built infrastructure such as roads and development. See the Departure Analysis Table in Appendix B.

5.6 Existing and Reference Sediment Regimes

All of the modifiers, alterations and constraints described above affect the current ability of the stream to store and move sediment. The Vermont DEC River Management Section has developed five different sediment regime descriptors to summarize reference and existing sediment transport capacity. These categories allow for a comparison of reference condition and existing sediment transport capacity and current channel adjustment, informing restoration project selection.

Streams that are in reference sediment regime fall into one of two categories: Transport and Coarse Equilibrium/Fine Deposition. Transport streams are those streams that are high gradient, naturally confined and have bedrock, boulder or cobble substrates. Coarse Equilibrium/Fine Deposition are streams that are in unconfined valleys and naturally provide areas for flood and sediment storage through flood plain access. Streams that are undergoing channel evolution will fall into one of the following three categories: Confined Source and Transport, Unconfined Source and Transport and Fine Source and Transport. Confined Source and Transport are high gradient streams that have more erodable bed material and may be experiencing channel degradation and are located in naturally confined valley types. Unconfined Source and Transport are streams that have more erodable bed material, are located in unconfined valley settings and have experienced bank armoring and/or channel straightening. Finally, there are streams that are Fine Source and Transport/Coarse Deposition. These streams are located in unconfined valley settings with erodable bed material undergoing widening or planform adjustment. The latter two sediment regime types have been converted from natural Coarse Equilibrium/Fine Deposition type streams to transport type streams.

Streams that have been converted from Coarse Equilibrium/Fine Deposition to transport reduce sediment and flood attenuation (storage) capacity on that reach as well as watershed wide. This increases flood and erosion hazards downstream. See Sediment Regime Maps in Appendix A.

5.7 Sensitivity Analysis

The Vermont DEC River management Section has developed a five level sensitivity rating for streams based on current stream type and geomorphic condition. The rating scale is low, moderate, high, very high, and extreme. Sensitivity ratings are based on how rapidly a given stream type is expected to adjust (move laterally or horizontally) given its current geomorphic condition.

Sensitivity ratings assist in restoration project selection by identifying areas where rapid channel planform adjustment may occur in the presence of valuable human-built infrastructure. See the Sensitivity Analysis Map and Table in Appendix A.

6.0 Sub-Watershed and Reach Summaries

6.1 West Brook

West Brook begins in a flat wetland area just above Green Mountain Campground in Bristol, cascading down the steep, forested slopes of the Green Mountains to the relatively flat agricultural Champlain valley where it joins the New Haven River. There is beaver activity in the first assessed reach, at the mouth of the West Brook and near the end of the reach, making these two segments un-assessable. Hydrologic alterations are moderate in the valley and low in the upper reaches. However, the two downstream sub-watersheds have between 5 and 10% urban development.

Overall, sediment load indicators are rated “high” for West Brook, primarily due to the high percentages of crop land use in all three of the sub-watersheds, significant erosion and numerous depositional features in the stream channel, particularly flood chutes. Stream power and

boundary resistance have not been increased in this sub-watershed, though there are two segments with significant alterations: M10-S1.02B was likely straightened and moved to the west valley wall for agriculture and M10-S1.02C has been entirely denuded of riparian vegetation and the banks are collapsing due to cows having full access to the stream corridor. There is also a paved reservoir adjacent to M10-S1.03C with an outflow into the channel.

Riparian buffers are generally intact on the West Brook, with the exception of the segment noted above and hard armoring in the form of rip-rap is almost non-existent, as is the case on all of the New Haven Tributaries assessed in this report. There are a number of culverts throughout the watershed acting as vertical constraints and channel constrictions. Seven of the 9 assessed segments have been converted to Fine Source and Transport/Coarse Deposition type sediment regimes, however, all of these converted streams are in Stage IV of the F channel evolution model and are currently in widening and planform adjustment. Sensitivity is rated very high for all but two of the sub-reaches.

M10-S1.01 – This reach is located at the north end of West Brook, at the confluence with the New Haven, north and south of the Cove Road in Bristol. It is in a very broad valley and was divided into four segments due to beaver activity on segments A and C. It is an E stream type by reference and currently and is at the high end of fair geomorphic condition. The dominant adjustment processes are widening and planform. Crop land use is rated extreme and depositional features are greater than 5/mile throughout the reach. Urban development within the watershed is between 5 and 10% but less than 5% in the stream corridor. None of this reach was found to be straightened and there are no corridor encroachments. Greater than 20% of both the right and left riparian areas have no vegetation. It is rated very highly sensitive, making it vulnerable to rapid geomorphic change. The habitat condition was found to be good. It is currently in Fine Source and Transport sediment regime, though very close to Coarse Equilibrium/Fine deposition. Between 5 and 20% of segment B and greater than 20% of segment D have eroding banks.

Establishment of riparian buffer area where it is absent would reduce the sediment load entering the stream due to agricultural land use in the watershed.

Segment A

M10-S1.02 – This reach is located up against the left valley wall and is in a very broad valley. It is an E stream type by reference and currently, and was segmented due to riparian buffers and channel width. The channel width changes dramatically between segments due to soil type. Segments A and C are quite narrow due to clay soils and segment B being much wider due to sandy loam soils. The riparian buffer is also significantly different between the

segments, with A and C being primarily pasture and B being woody vegetation and crop land. Segments B and C are greater than 20% straightened, with C being 48% straightened. This reach was very likely moved out of the valley and put up against the left valley wall to increase agricultural land. Segment C runs through a cow pasture with cows accessing the stream throughout the segment. In some places the banks are severely eroding.

There are multiple flood chutes and depositional features throughout the reach and crop land use is high. Urban development is between 5 and 10% in the sub-watershed, but is less than 5% in the corridor. The right and left banks have no buffer on greater than 20% of their length.

Segment B

Segment C

Segment A is periodically pastured to keep it open, according to a neighbor. Segment C has no riparian vegetation and would benefit from the cows being fenced out of the stream.

M10-S1.03 – The first three segments of this reach are located in a very broad valley and they are currently and by reference stream type E. Segment D is in a semi-confined valley and is currently and by reference a B stream type. Stream sensitivity is very high for segments A-C and very low for segment B.

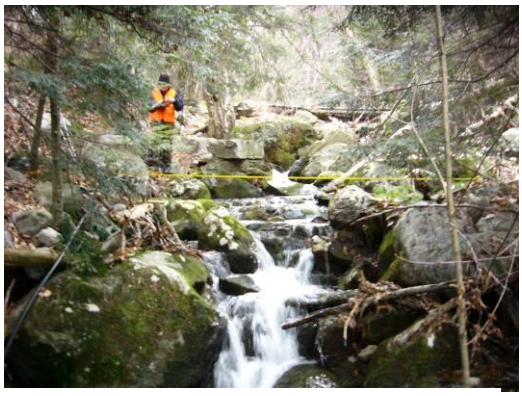
There are 18 flood chutes and 1 avulsion and crop land use is high throughout the reach. Depositional features are greater than 5/mile and urban development and corridor development are both low. There are no encroachments or straightening but there are three channel constricting culverts, one on each of segments A-C. Segment C has a tarmac filled reservoir adjacent to it that has an overflow pipe into the stream. There is a mass failure at the site of the pipe. Riparian condition is greater than 100' throughout most of the reach, though the left bank of segment C has 51-100' and the right bank of segment D has 26-50'of buffer. Segments A-C are in Fine Source and Transport sediment regimes and D is in reference as a Transport type stream.

Structure replacement is recommended for culverts in segments A and C. The segment B culvert is a long, new structure that goes under route 116 and does not have deposition above or scour below it.

Segment A

Segment B

Segment C



Segment D

6.2 Bristol Flats

Bristol Flats is located entirely in the Champlain Valley and flows south to the New Haven at Route 116 just north of the River Road in Bristol. Hydrologic alterations are moderate due to watershed wide urban development of between 5 and 10%. However, they are high in M11-S1.02, not assessed here, due to urban development of between 10 and 20%. Crop land use in the sub-watershed is extreme, though erosion and depositional features are not correspondingly high, perhaps due to heavy clay soils and historic straightening. There is an increase in channel slope due to straightening and a decrease in boundary resistance due to riparian vegetation. Development within the floodplain is encroaching at the downstream end of this reach. There are one channel spanning ledge and one culvert acting as vertical constraints. There is a headcut in segment A and it has been converted to a Fine Source and Transport/Coarse Deposition sediment regime. Sensitivity is very high to high.

M11-S1.01 – This reach is located at the confluence with the New Haven River in a very broad valley and it was segmented due to a headcut propagating at the downstream end. The entire reach is a C stream type by reference but segment A has degraded to an F stream type making it an Unconfined Source and Transport sediment regime type currently. Segment B is a reference stream type C as well as reference sediment regime of Course Equilibrium/Fine Deposition. The

head cut may have started when the arch near the confluence with the New Haven was undermined during a 2005 spot flood. A temporary bridge now carries Route 116 traffic.

The dominant adjustment process for segment A is incision and widening and planform for segment B. Crop land use in the sub-watershed is extreme and depositional features are between 2 and 5/mile. Urban development in the watershed is low and not significant within the corridor. Greater than 20% of the reach has been straightened and encroachments are insignificant, however, development within the floodplain at the down stream end is increasing. There are three storm water inputs and segment A has more than 5 depositional features/mile. The riparian buffer is 5-25' along both banks.

The head cut in segment A should be monitored and possibly arrested to avoid it propagating upstream. Woody vegetation should be allowed to grow into the riparian area.

Segment A

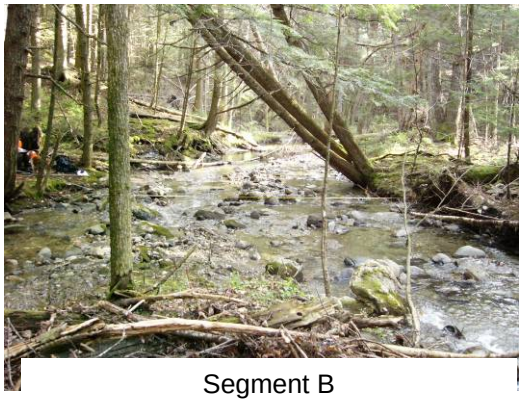
Segment B

6.3 Isham

Isham Brook is located entirely in the Green Mountain Region of Vermont in the Town of Lincoln. Hydrologic alterations come in the form of corridor development and wetland loss, resulting in a moderate and low rating. Sediment load is generally high due to crop land use, depositional features and significant channel migration resulting in erosion. There is natural grade control (ledge) spread throughout the watershed and beaver activity is high in the upper reaches. Depositional features are generally greater than 5/mile and riparian buffers are intact. There are no human caused increases in stream power or decreases in boundary resistance, although widening is by far the dominant adjustment process in the sub-watershed. This may be a result of historic deforestation and significant ledge throughout the watershed.
The lower reaches are Transport type sediment regimes and the upper reaches are Coarse Equilibrium/Fine Deposition. Stream sensitivity is high and very high throughout the sub-watershed.

M17-S1.01 – This reach is located at the confluence with the New Haven River. It was segmented based on stream types. Segment A is located in a semi-confined valley and is a reference stream type A and segment B is in a narrowly confined valley and is a reference stream type B. Segment A is a Transport type stream both currently and in reference. Segment B is also a Transport stream type by reference but is currently a Confined Source and Transport type. Sensitivity is high and the dominant channel adjustment is aggradation and widening for both segments, though it is minor on segment A. Crop land use is high in the sub-watershed, though the riparian buffer is greater than 100' on both banks. There are multiple flood chutes and braiding throughout the reach. Development within the corridor is low and less than 5% in the watershed. There are two channel spanning ledges – one in each segment and there are no storm water inputs. None of the segment was straightened and there are only minor road encroachments. Segment A has two channel constricting bridges with deposition above them.

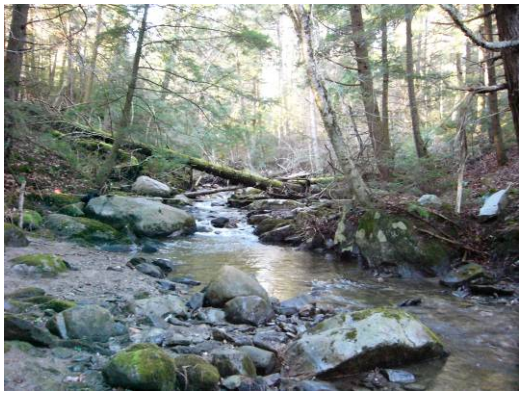
Segment A



Segment B

Structure replacement with corridor conservation is recommended for this reach.

M17-S1.02 – This reach is located in a broad valley and the last 813' were segmented due to a large beaver dam. It is a B stream type by reference and currently. It is in good geomorphic condition and is in stage IIb of the D stage channel evolution model with widening as the dominant adjustment. It is a reference Transport type sediment regime but is currently Confined Source and Transport due to widening. It has six flood chutes, two steep riffles, and greater than 5 depositional features/mile. Cropland use in the sub-watershed is high, but the riparian buffer within the corridor is greater than 100' on both the right and left banks. There is a debris jam at the down stream end of the reach. In other places, someone is cutting fallen trees, presumably to prevent jamming. Urban land use within the corridor is not significant and is less than 5% in the sub-watershed. There are five channel spanning grade controls – two at the down stream end and three near the upstream end. There is a significant beaver pond at the upstream end. There are no encroachments into the corridor. The sensitivity is rated as moderate. It has one undersized bridge with deposition and scour above and below it.



Segment A

This reach is a great candidate for corridor conservation due to the lack of encroachments and great riparian buffer and new housing being built in the area.

M17-S1.03 – This reach was segmented due to beaver activity. Segment A is a large beaver pond and segment B is the final 883' of the reach before the stream turns into a wetland. It is located in a very broad valley and is a C stream type currently and by reference and is in reference geomorphic condition. Stream sensitivity is high. There is low cropland use within the watershed and few depositional features. Urban development within the corridor is not significant and it is less than 5% in the watershed. There is one channel spanning grade control. Riparian buffers are greater than 100' on both the right and left banks.

Segment B

This reach is a good candidate for corridor conservation as new development is beginning to encroach into the area adjacent to the corridor.

M17-S1-t1.01 – This reach was segmented due to slope, channel width and soil type. Segments A and C are C stream types by reference but are currently entrenched and incised making them F type channels. Segment B is an E stream type currently and by reference. All three segments are located in a very broad valley, are very sensitive and widening is the dominant adjustment process, though it is minor on segment B. The entire reach is Coarse Equilibrium/Fine Deposition by reference and segment B is currently. Segments A and C are Fine Source and Transport. Crop land use in the watershed is high and depositional features are greater than 5/mile on segments A and C. There are also a number of flood chutes, avulsions and significant erosion on segments A and C. There are a number of grade controls near the confluence with Isham Brook. There are no encroachments and riparian buffers are greater than 100' on both banks. There is significant erosion on segments A and C.

Segment A

M17-S1-t1.02 – This reach is located in a very broad valley and was segmented due to a beaver pond in the middle of it. It is a C stream type by reference and currently and is in Coarse Equilibrium/Fine Deposition sediment regime. It is in reference geomorphic condition. The sub-watershed is rated high from crop land use. Segment A has greater than 5 depositional features/mile, two flood chutes and two mass failures. Segment C has between 2 and 5 depositional features/mile. Segment C has 196' of berm set back from the bank on one side and the riparian buffer is greater than 100'on both banks. There is beaver activity at the upstream end of the reach as well. There is a bridge and a culvert that are channel constrictions on segment C, but only one has deposition and that is below the structure.

Segment A

6.4 Cota

Cota Brook is located entirely in the Green Mountain region of Vermont in the Town of Lincoln. Hydrologic alterations are significant in the downstream (at the confluence with the New Haven) portion of the stream. Sediment load is increased significantly throughout the assessed reaches, except at the confluence where the stream has been converted to a transport sediment regime. Stream power and boundary resistance have not been altered, except in the downstream most segment. Four of the assessed segments are natural attenuation areas with three of those currently having increased sediment. Much of Cota Brook is in reference geomorphic condition. Sensitivity ranges from very high to moderate.

T5.01 – This reach is at the confluence with the New Haven River on the River Street in Lincoln. It was segmented four times due to planform and slope. Segments A, B and D are all C stream types by reference. Segment C is a B by reference as well as currently. Segment A was moved, channelized, and hard armored (rip-rap) after the 1998 flood making it currently a G stream type. Segments B and D are currently C stream types in good geomorphic condition. Segment C is currently a B stream type in reference geomorphic condition. Sensitivity is very high on segment A, high on B and D and moderate on C. There is a road along the entire right corridor of segment A and one homestead with an undersized pedestrian bridge. There are no other encroachments.

Segment A

Segment A is entirely straightened and though no alluvial fan was identified either during the Phase 1 or in the field, it is likely that segments A and B had historic alluvial fans that have been concealed by human alterations to the landscape. Depositional features are greater than 5/mile in segments B-D. There is no riparian buffer on segment A, but the remainder of the reach has greater than 100' on both banks, except for the left bank of segment B, which is 26-50'.

Segments B, C and D are good candidates for corridor conservation. Segment A could be restored by working with the current landowners who are not using the horse ring. Otherwise, that segment would benefit from riparian plantings.

Segment B

Segment C

T5.02 – This reach was segmented due to slope and valley confinement. Segment A is located in a very broad valley while segment B is in a narrowly confined valley. Segment A is a C stream type currently and by reference and is in reference geomorphic condition, making it a Coarse Equilibrium/Fine Deposition sediment regime type. Segment B is a B stream type currently and by reference is also in reference geomorphic condition making it a Transport sediment regime type.

Sensitivity is high on Segment A and moderate on Segment B. The reach is not straightened and there is one camp on Segment A and two on Segment B. There is one bridge on Segment B that

is not a channel constriction. Depositional features are greater than five/mile on both segments. Segment A has one flood chute but segment B has 8 flood chutes. The left bank of segment A has greater than 20% erosion but the remainder of the banks are all between 5 and 20% eroding. There are three mass failures in Segment B. Corridor development is rated high in T5-S4.01, immediately upstream of Segment B and one of the sub-watersheds and corridors at the edge of the watershed has almost 8% urban development and the corridor development impact is rated low. On T5-S2.01, also upstream of Segment B, both banks have greater than 20% with no riparian buffer. These factors may account for the sediment and planform adjustment occurring on Segment B.

This reach is a good candidate for corridor conservation, particularly given the new camps that are being built within the corridor. However, upstream impacts should be explored further and with remediation pursued where necessary.

Segment A

Segment B

6.5 First Tributary of Cow

This stream is located in a high elevation valley of the Green Mountain Region of Vermont, in the Town of Lincoln. Hydrologic alterations are generally minimal, except on one segment that has development within the corridor. Sediment load ranges from high to moderate, the slope is increased due to straightening and boundary resistance is decreased due to loss of riparian vegetation. All but one segment is in Coarse Equilibrium/Fine deposition sediment regime. Segment C of T6.02 has been converted to a Fine Source and Transport/Coarse Deposition sediment regime. Sensitivity is high on all segments except T6.02C, which has been dredged and channelized upstream of a bridge.

T6.01 – This is short reach located in a very broad valley type. It is a C stream type by reference as well as currently. It is in good geomorphic condition and its sensitivity is high. It is Coarse Equilibrium/Fine Deposition sediment regime type by reference but it is currently Fine Source and Transport/Coarse Deposition. Sensitivity is rated high for this reach. There is one house in the corridor but no roads or channel constrictions. Right bank erosion is greater than 20% and

depositional features are greater than 5 per mile. Corridor and sub-watershed development are not significant on this reach and the left buffer is greater than 100' but the right buffer is 5-25'

Further encroachments into this reach should be prevented through corridor conservation due to its strategic location at the confluence with the New Haven and the significant development impacts upstream.

T6.02 – This reach is located in a very broad valley type and is a C stream type by reference. It was segmented five times due to riparian buffer, sediment size and planform and slope. Three of the five segments are C stream types currently and Segment C is a G stream type due to incision and entrenchment resulting from channelization, windrowing and berming just upstream of an undersized bridge. The entire reach was extensively straightened, with all but Segment A being 100% straightened. It was likely moved east toward the valley wall to make way for agricultural use of the land. The entire reach is Coarse Equilibrium/Fine Deposition sediment regime by reference with Segments A and D being currently in reference regime. Segments B,C and E are all currently Unconfined Source and Transport. Sensitivity is high for all segments except for C, which is extreme. Segments A, C, D and E all have channel constrictions. There is significant development in Segment A, but it is limited within the corridor upstream. There are seven flood chutes spread throughout the reach and Segment B has three steep riffles. The entire reach has greater than 5 depositional features/mile. Corridor development impact is low for the entire reach. The right riparian buffer is greater than 100' for the entire reach. The left buffer is 26-50' for Segments A and D, 5-25 for Segment B and greater than 100 for Segments C and E.

Segment A

Segment B

Segment C

With the replacement of undersized structures throughout the reach, segments A, B, D and E would re-gain equilibrium. Segment C could be restored to equilibrium.

Segment D

Segment E

7.0 References

Albers, Jan. Hands on the Land: A History of the Vermont Landscape. MIT Press, Cambridge MA, 2000.

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Johnson, Charles W. The Nature of Vermont. The University Press of New England Hanover, New Hampshire and London England, 1980.

Meeks, Harold A. Vermont's Land and Resources. The New England Press, Shelburne, Vermont, 1986.

Vermont Agency of Natural Resources. Vermont Stream Geomorphic Assessment Phase 1 Handbook – Watershed Assessment Using Maps, Existing Data, and Windshield Surveys. April, 2005.

Vermont Agency of Natural Resources. Vermont Stream Geomorphic Assessment Phase 2 Handbook – Rapid Stream Assessment Field Protocols. March, 2006.

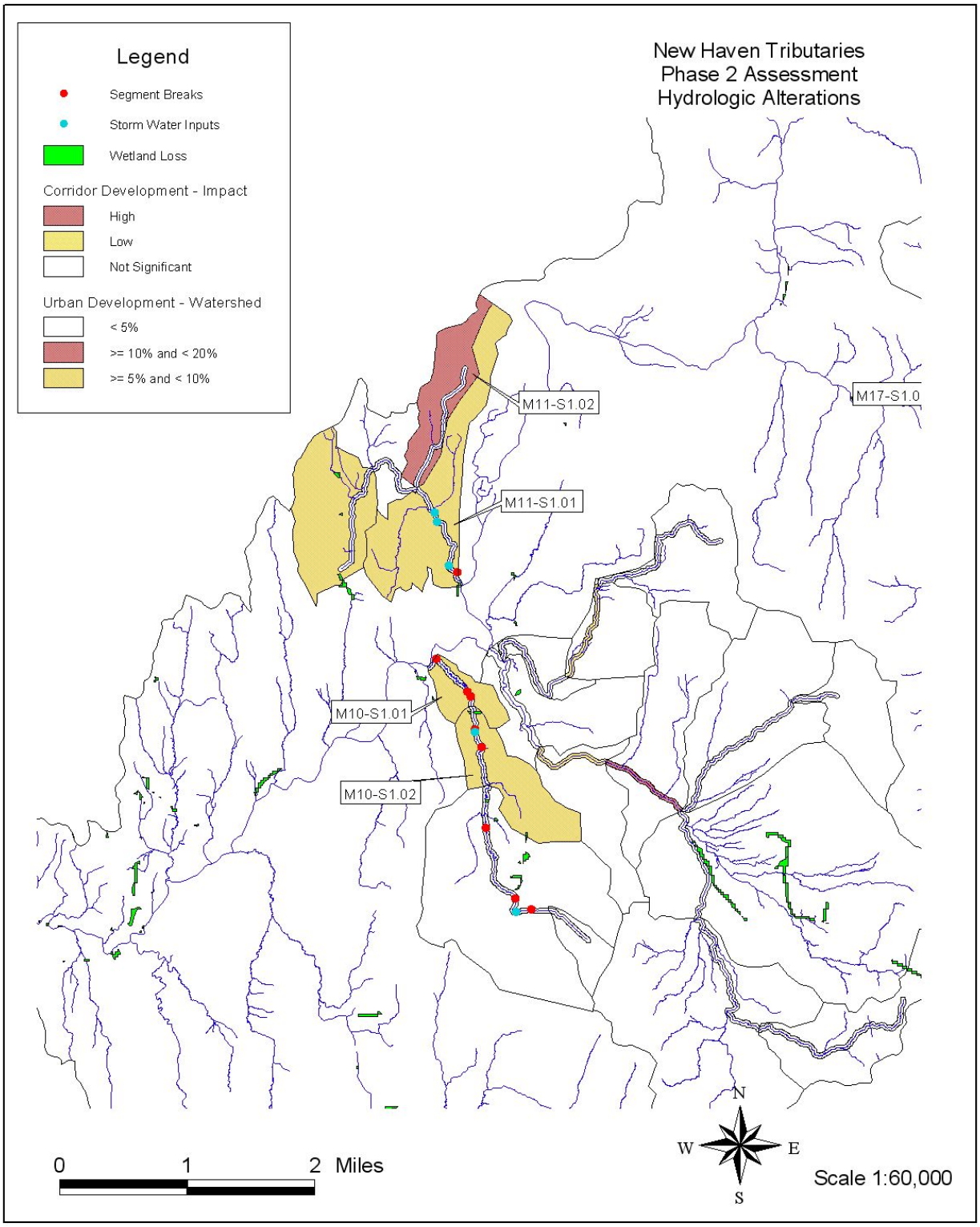
Vermont Agency of Natural Resources. Vermont Geomorphic Assessment, Appendix P, Mapping Channel Impacts Using the Reach Indexing Tool. January, 2005.

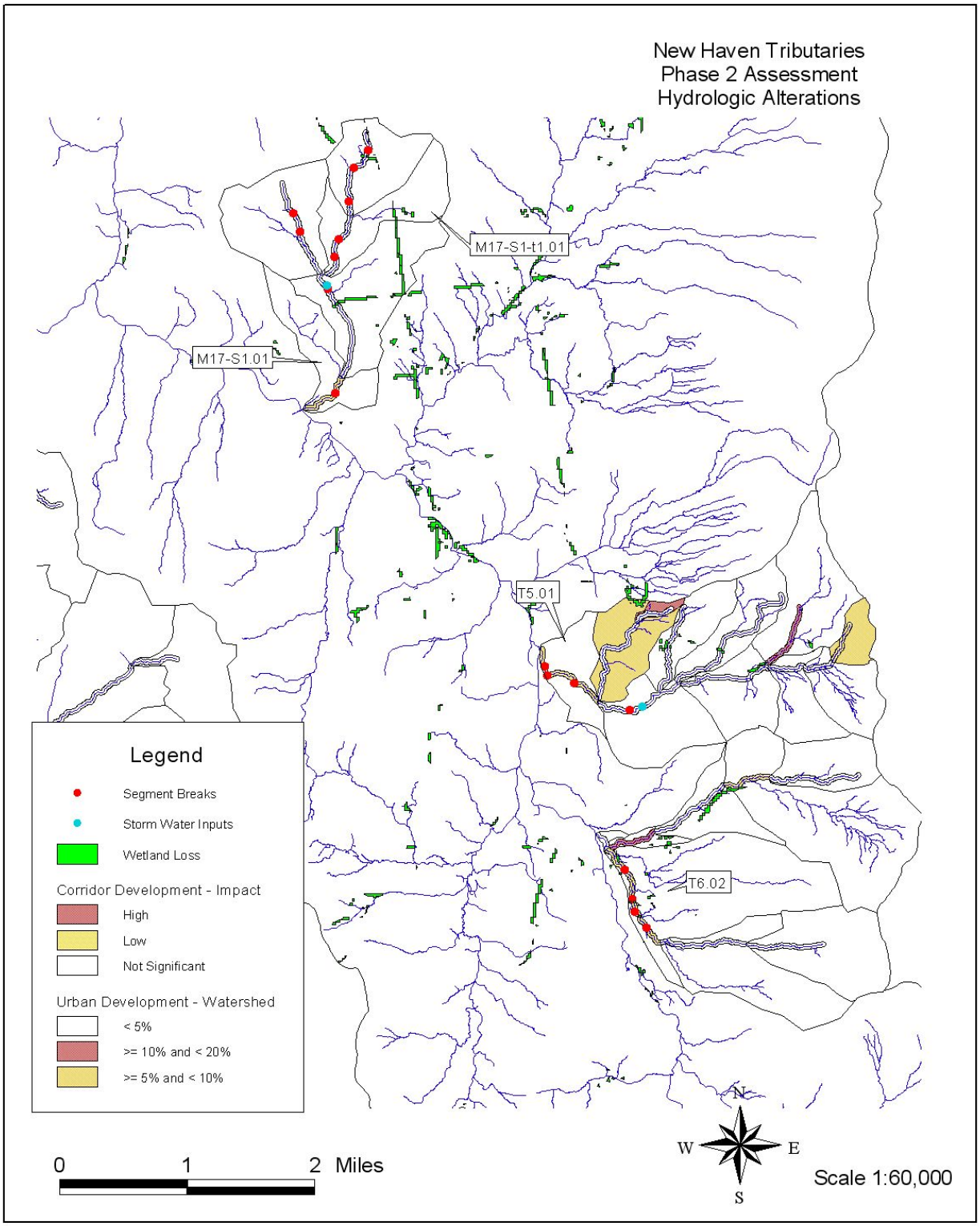
Vermont Agency of Natural Resources, River Corridor Planning Guide to Identify and Develop River Corridor Protection and Restoration Projects. Partially Drafted River Management Program. February 20, 2007.

New Haven Tribs Phase 2 Stream Geomorphic Assessment

Appendix A

Hydrologic Alterations

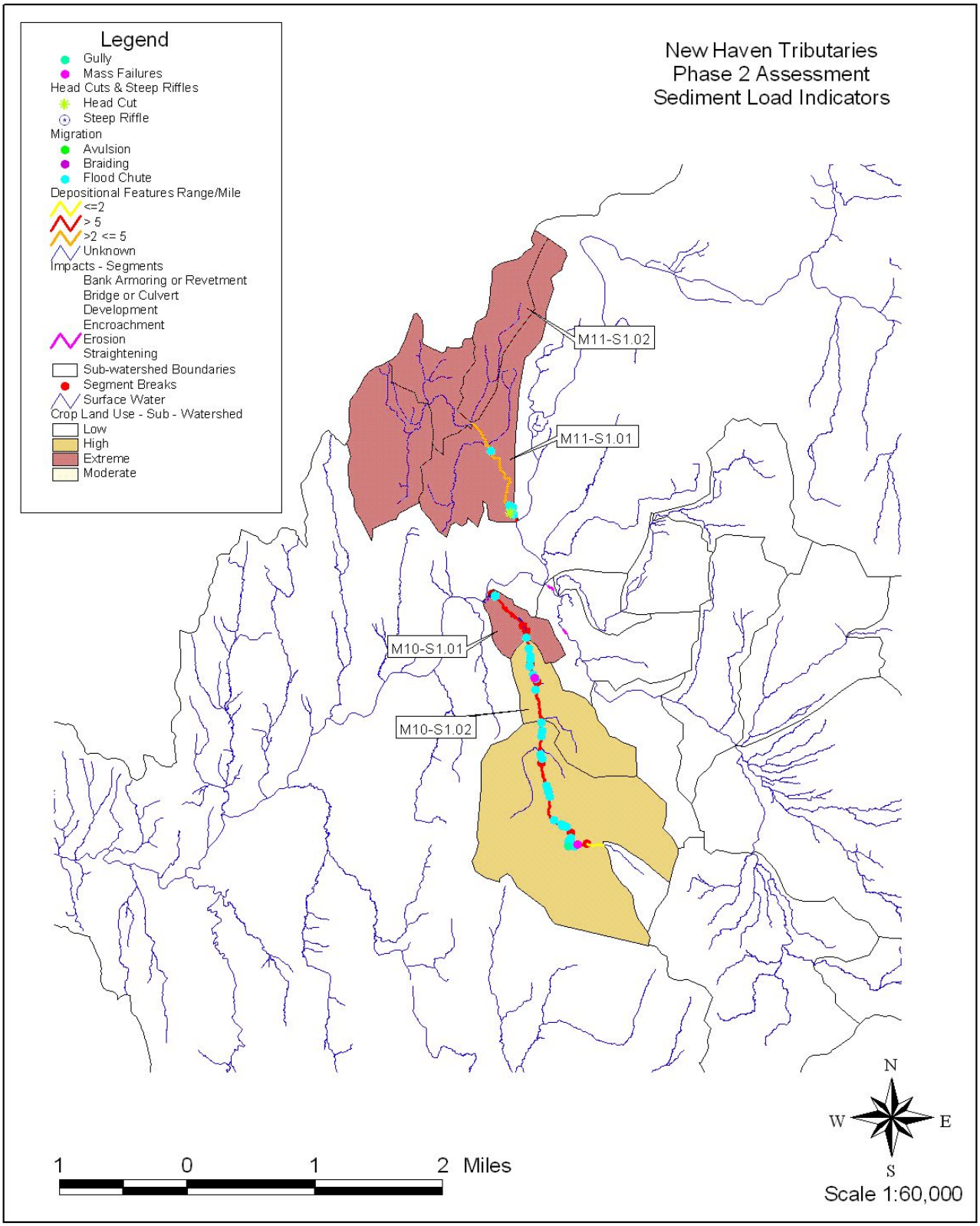


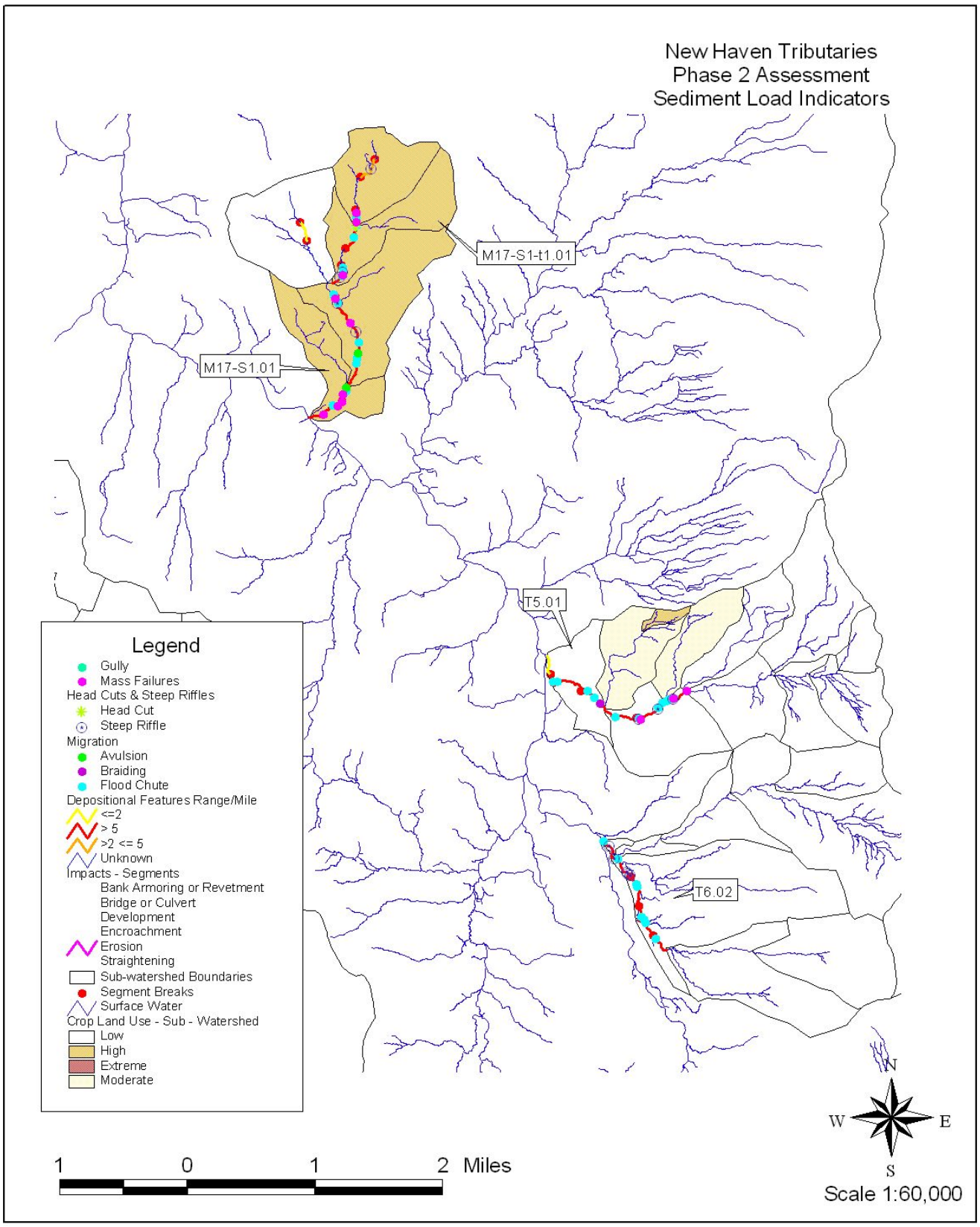

New Haven Tributaries
Phase 2 Assessment
Hydrologic Alterations
M17-S1-t1.01
M17-S1.01
T5.01
T6.02
Legend
Segment Breaks
Storm Water Inputs
Wetland Loss
Corridor Development - Impact
High
Low
Not Significant
Urban Development - Watershed
< 5%
>= 10% and < 20%
>= 5% and < 10%
0
1
2 Miles
N
W
E
S
Scale 1:60,000

Hydrologic Stressors

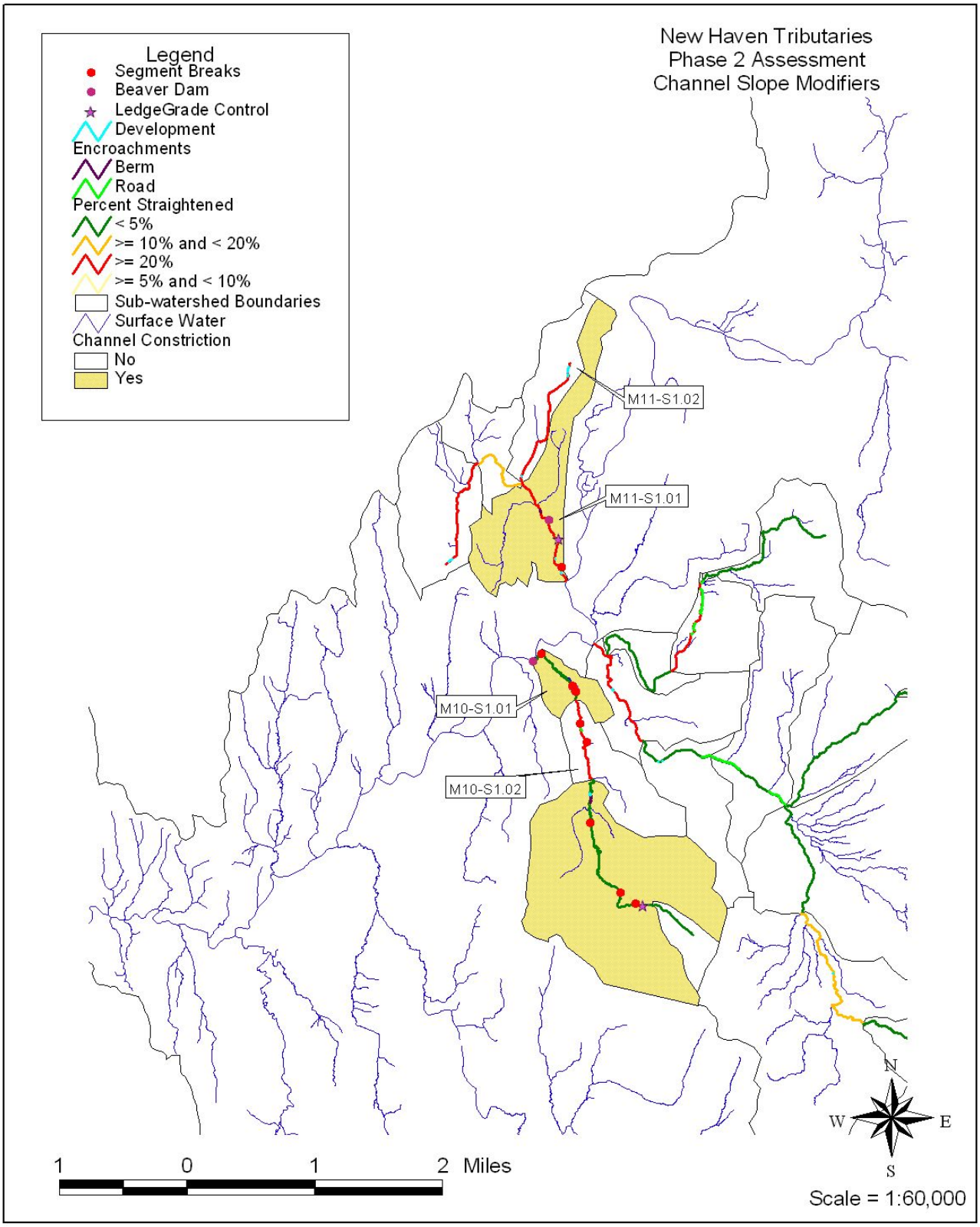
	Watershed Input Stressors		Reach Modification Stressors	
River Segment	Hydrologic	Sediment Load Increase	Stream Power	Boundary Resistance
M10-S1.01-A	N/A	N/A	N/A	N/A
M10-S1.01-B	Moderate	High	None	None
M10-S1.01-C	N/A	N/A	N/A	N/A
M10-S1.01-D	Moderate	High	None	None
M10-S1.02-A	Moderate	High	None	None
M10-S1.02-B	Moderate	High	Increase - Slope (straightening)	None
M10-S1.02-C	Moderate	High	None	Decrease - Stream Bank/Riparian
M10-S1.03-A	Low	High	Increase - Depth (berm)	None
M10-S1.03-B	Low	Moderate	None	None
M10-S1.03-C	Low	High	Increase - Slope (constriction)	None
M10-S1.03-D	Low	Low	None	Increase - Ledge
M11-S1.01-A	Moderate	High	Increase - Slope (straightening)	Decrease - Stream Bank/Riparian
M11-S1.01-B	Moderate	Moderate	Increase - Slope (straightening)	Decrease - Stream Bank/Riparian
M17-S1.01-A	Moderate	High	None	Increase - Ledge
M17-S1.01-B	Moderate	High	None	Increase - Ledge
M17-S1.02-A	Low	High	None	Increase - Ledge
M17-S1.02-B	N/A	N/A	N/A	N/A
M17-S1.03-A	N/A	N/A	N/A	N/A
M17-S1.03-B	Low	Low	None	Increase - Ledge
M17-S1.03-C	N/A	N/A	N/A	N/A
M17-S1-t1.01-A	Low	High	None	Increase - Ledge
M17-S1-t1.01-B	Low	Low	None	None
M17-S1-t1.01-C	Low	High	None	None
M17-S1-t1.02-A	Low	High	None	None
M17-S1-t1.02-B	N/A	N/A	N/A	N/A
M17-S1-t1.02-C	Low	Low	None	None
M17-S1-t1.02-D	N/A	N/A	N/A	N/A
T5.01-A	High	Low	Increase - Slope & Depth (straightening, dredging)	Increase - rip-rap; Decrease - dredging
T5.01-B	Low	Moderate	None	None
T5.01-C	Low	Moderate	None	Increase - Ledge
T5.01-D	Low	High	None	None
T5.02-A	Low	High	None	None
T5.02-B	Low	High	None	None
T6.01-0	Low	High	None	Decrease - Stream Bank/Riparian
T6.02-A	High	Moderate	Increase - Slope (straightening, development)	Decrease - Grade Control (grader blade)
T6.02-B	Low	High	Increase - Slope (straightening)	Decrease - Stream Bank/Riparian
T6.02-C	Low	High	Increase - Slope & Depth (straightening, dredging, berming)	Decrease - Windrowing
T6.02-D	Low	Moderate	Increase - Slope (straightening)	None
T6.02-E	Low	High	Increase - Slope (straightening)	None

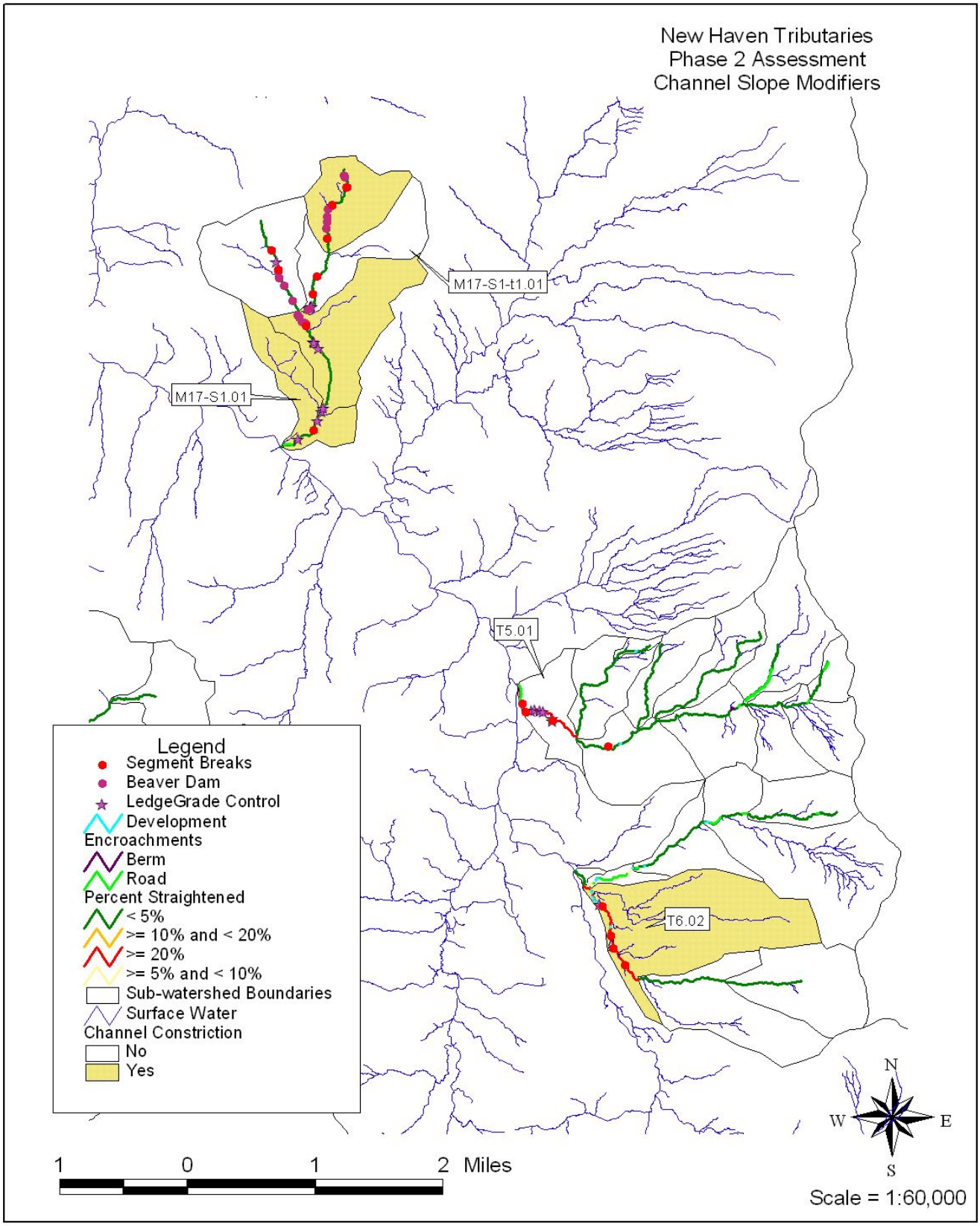
Sediment Load Indicators



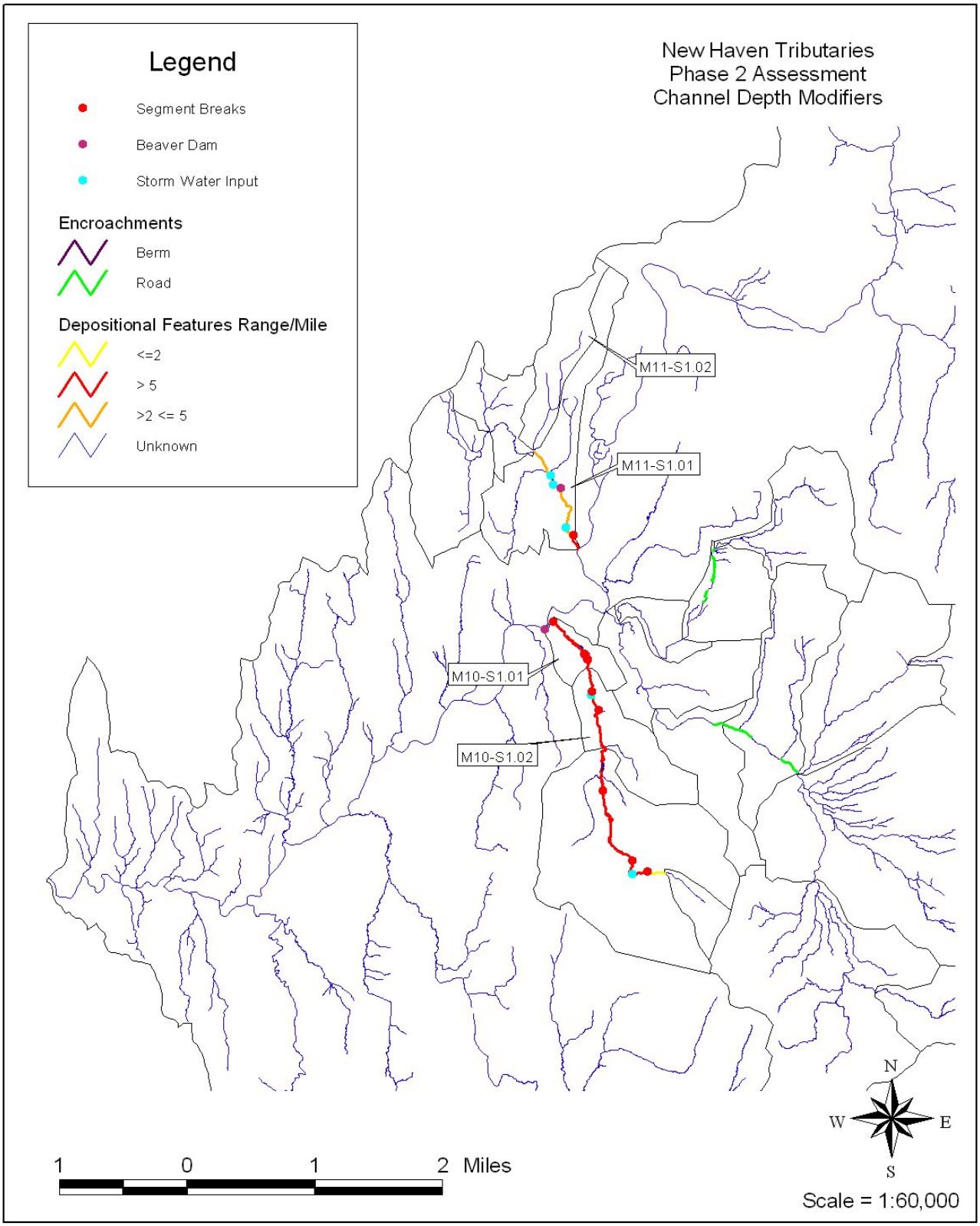

New Haven Tributaries
Phase 2 Assessment
Sediment Load Indicators
M17-S1-t1.01
M17-S1.01
T5.01
T6.02
Legend
Gully
Mass Failures
Head Cuts & Steep Riffles
Head Cut
Steep Riffle
Migration
Avulsion
Braiding
Flood Chute
Depositional Features Range/Mile
<=2
> 5
>2 <= 5
Unknown
Impacts - Segments
Bank Armoring or Revetment
Bridge or Culvert
Development
Encroachment
Erosion
Straightening
Sub-watershed Boundaries
Segment Breaks
Surface Water
Crop Land Use - Sub - Watershed
Low
High
Extreme
Moderate
1 0 1 2 Miles
N
W
E
S
Scale 1:60,000

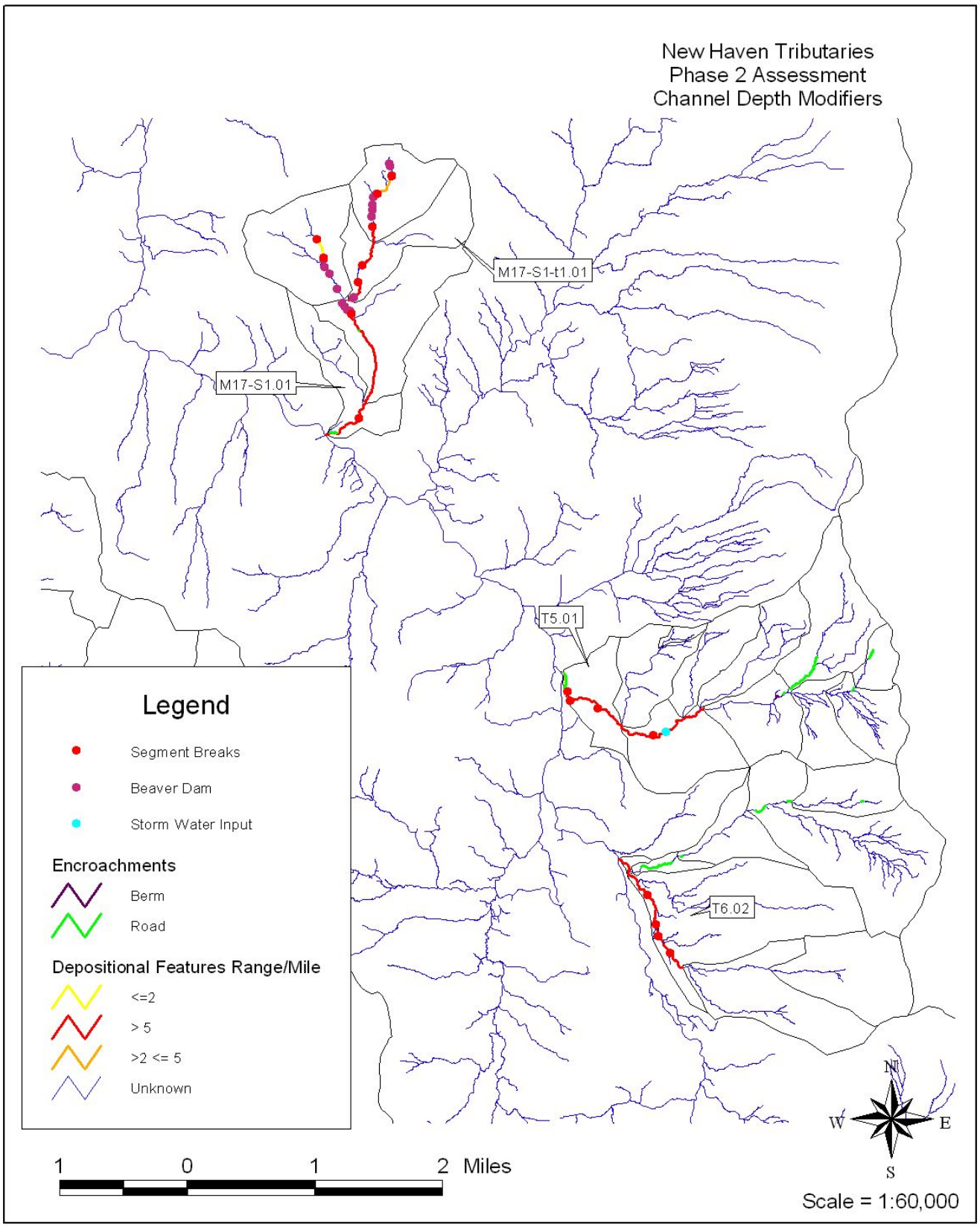
Channel Slope Modifiers



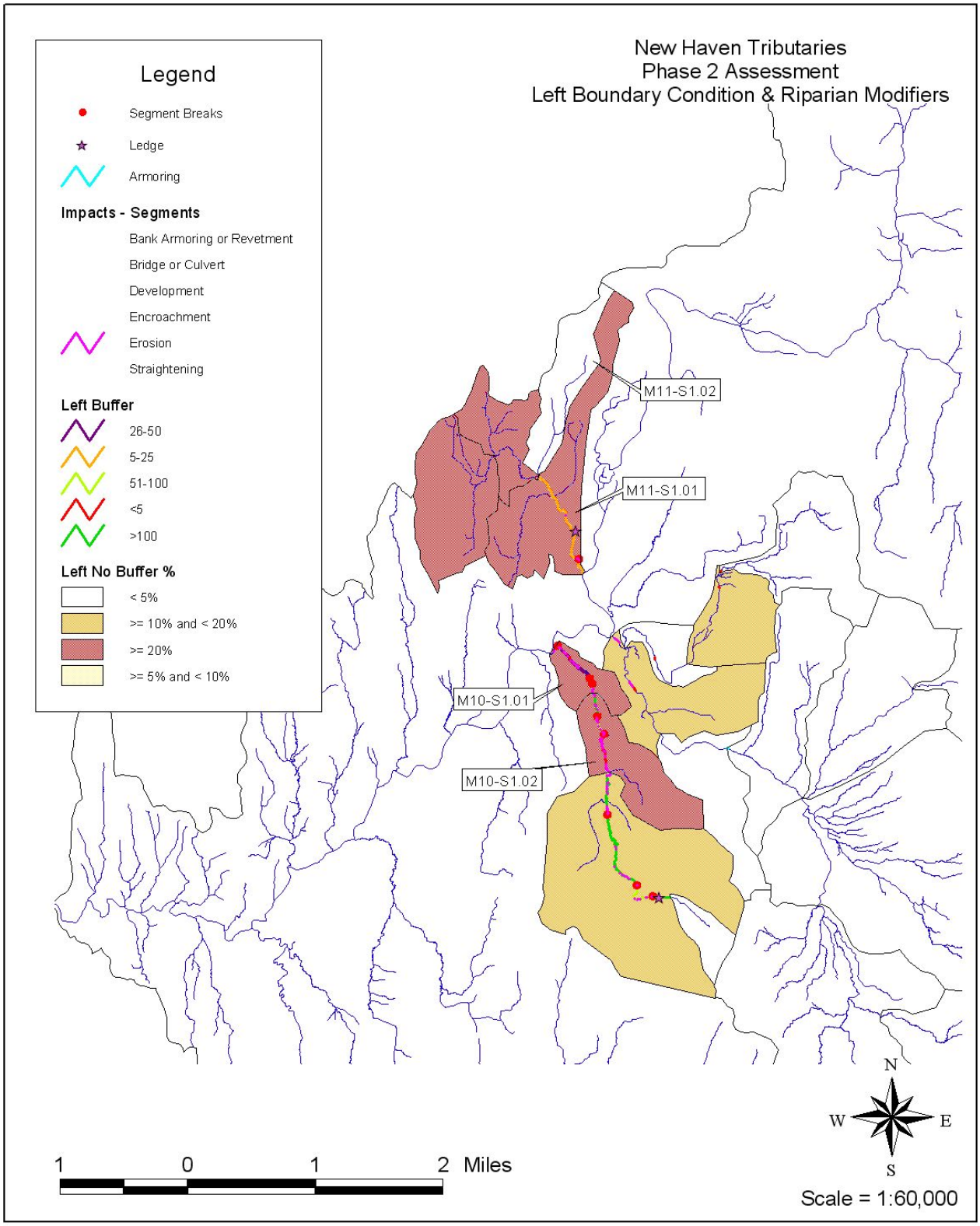

New Haven Tributaries
Phase 2 Assessment
Channel Slope Modifiers
M17-S1-t1.01
M17-S1.01
T5.01
T6.02
Legend
Segment Breaks
Beaver Dam
LedgeGrade Control
Development
Encroachments
Berm
Road
Percent Straightened
< 5%
>= 10% and < 20%
>= 20%
>= 5% and < 10%
Sub-watershed Boundaries
Surface Water
Channel Constriction
No
Yes
1 0 1 2 Miles
N
W
E
S
Scale = 1:60,000

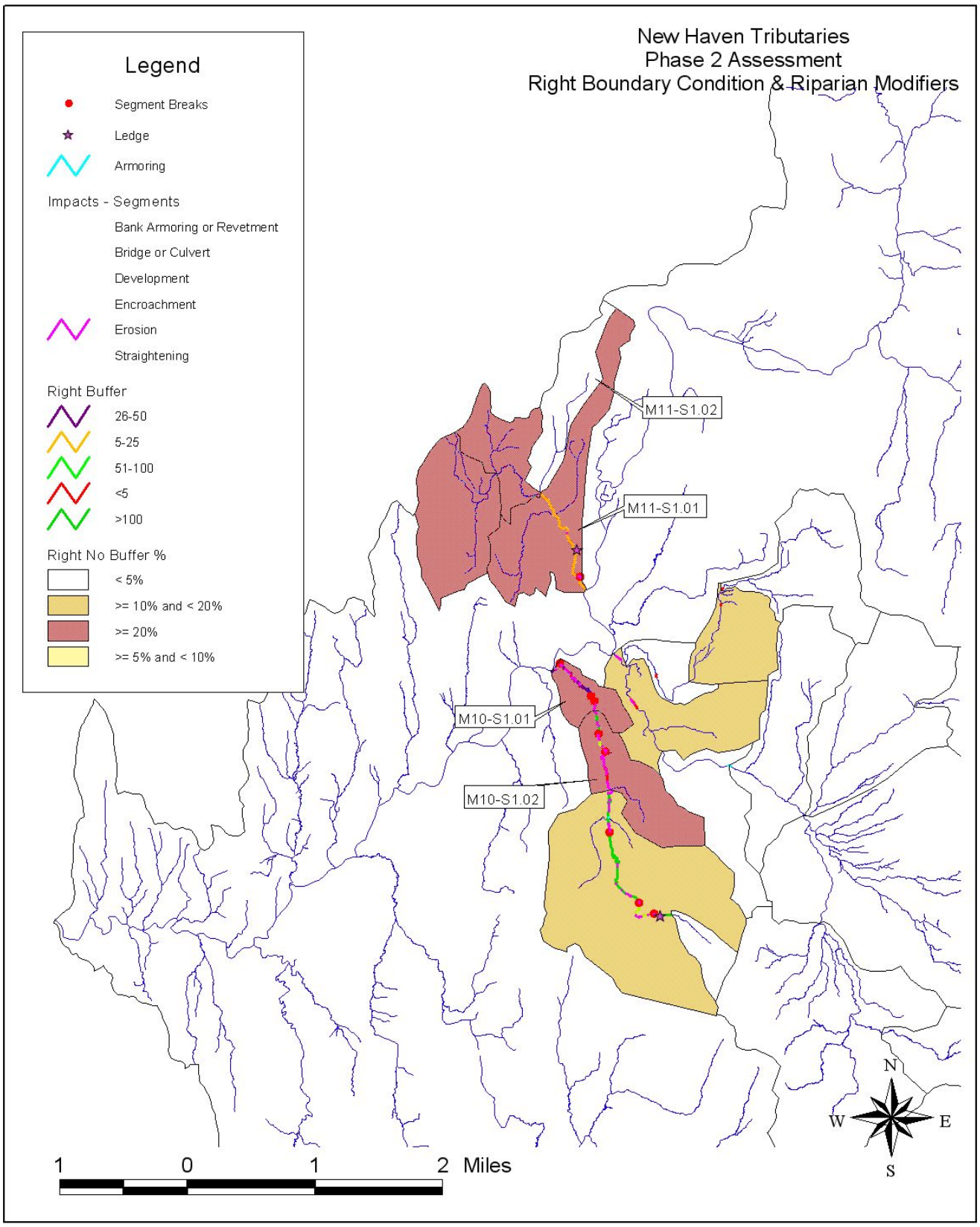
Channel Depth Modifiers

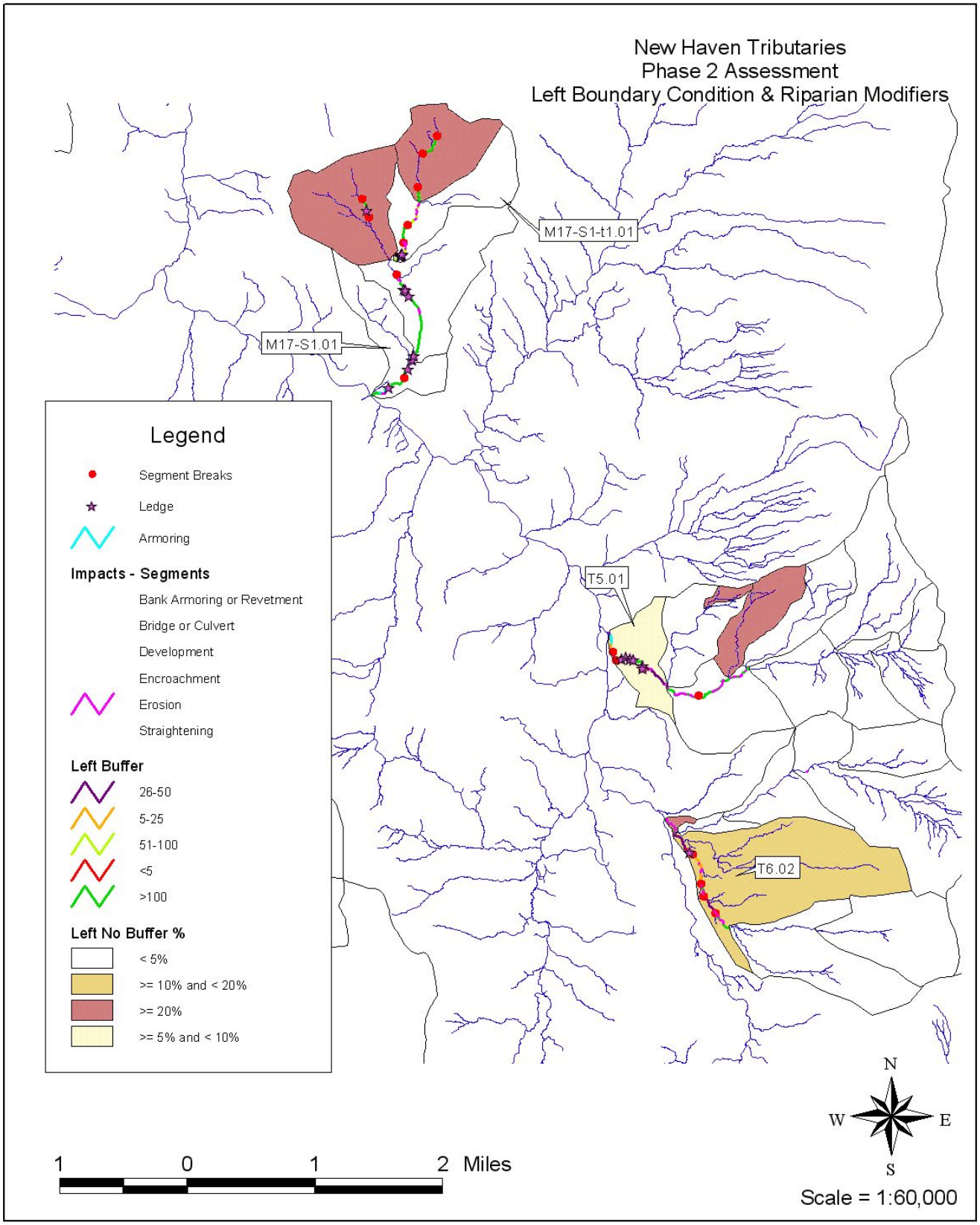


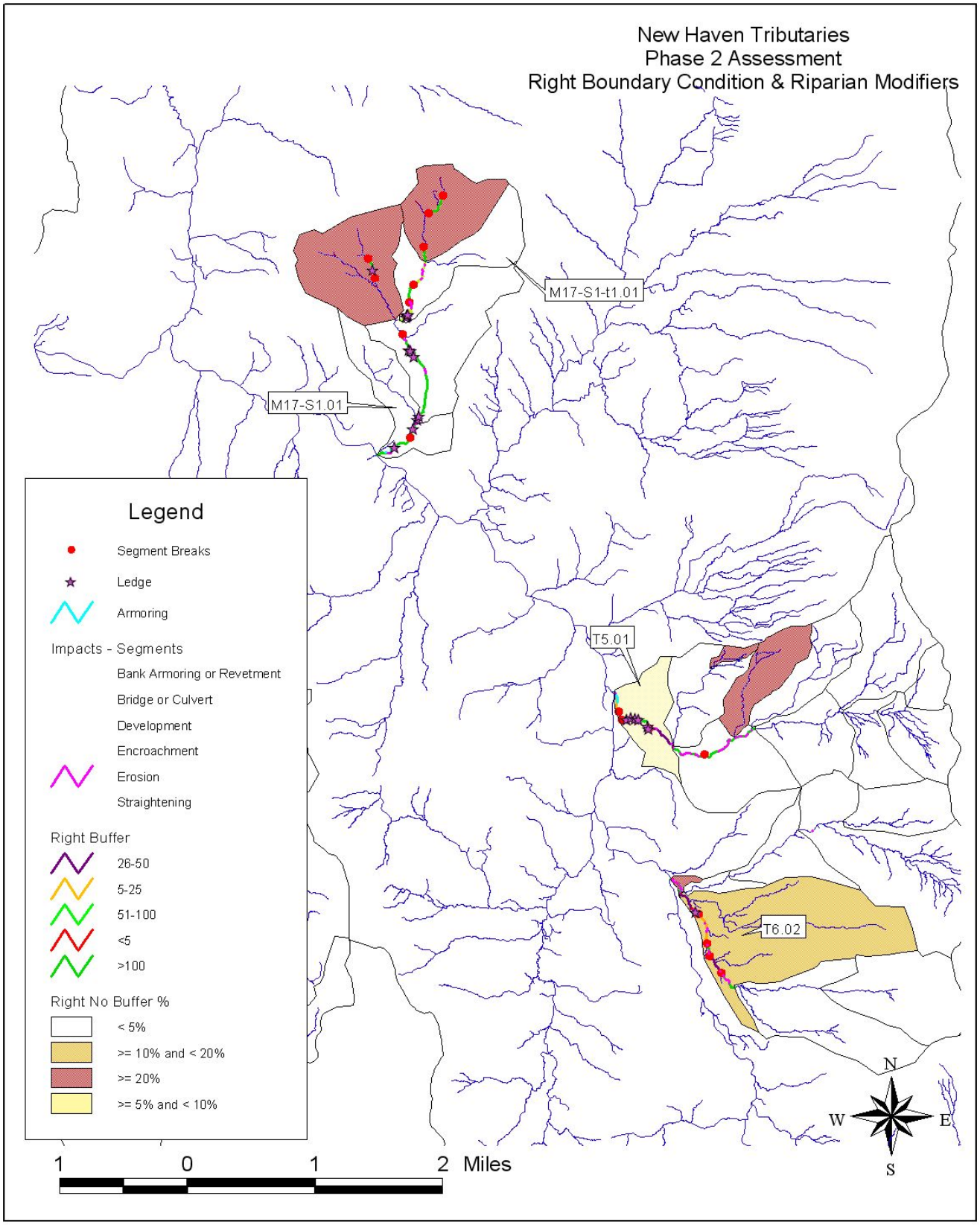

New Haven Tributaries
Phase 2 Assessment
Channel Depth Modifiers
M17-S1-t1.01
M17-S1.01
T5.01
T6.02
Legend
Segment Breaks
Beaver Dam
Storm Water Input
Encroachments
Berm
Road
Depositional Features Range/Mile
<=2
> 5
>2 <= 5
Unknown
1 0 1 2 Miles
N
W
E
S
Scale = 1:60,000

Boundary Condition and Riparian Modifiers




New Haven Tributaries
Phase 2 Assessment
Right Boundary Condition & Riparian Modifiers
Legend
Segment Breaks
Ledge
Armoring
Impacts - Segments
Bank Armoring or Revetment
Bridge or Culvert
Development
Encroachment
Erosion
Straightening
Right Buffer
26-50
5-25
51-100
<5
>100
Right No Buffer %
< 5%
>= 10% and < 20%
>= 20%
>= 5% and < 10%
M11-S1.02
M11-S1.01
M10-S1.01
M10-S1.02
1 0 1 2 Miles
N
W
E
S


New Haven Tributaries
Phase 2 Assessment
Left Boundary Condition & Riparian Modifiers
M17-S1-t1.01
M17-S1.01
T5.01
T6.02
Legend
Segment Breaks
Ledge
Armoring
Impacts - Segments
Bank Armoring or Revetment
Bridge or Culvert
Development
Encroachment
Erosion
Straightening
Left Buffer
26-50
5-25
51-100
<5
>100
Left No Buffer %
< 5%
>= 10% and < 20%
>= 20%
>= 5% and < 10%
N
W
E
S
1 0 1 2 Miles
Scale = 1:60,000

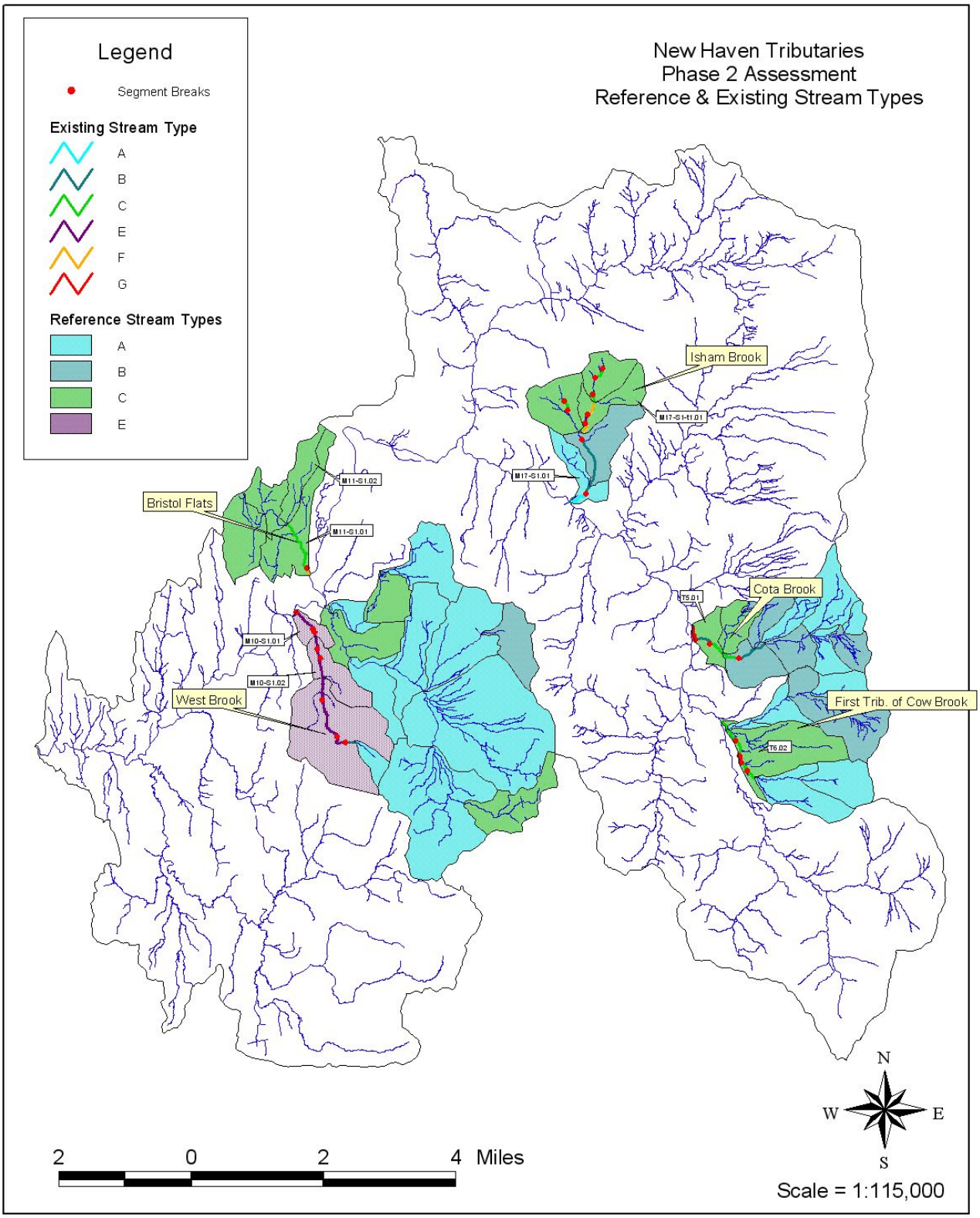

New Haven Tributaries
Phase 2 Assessment
Right Boundary Condition & Riparian Modifiers
M17-S1-t1.01
M17-S1.01
T5.01
T6.02
Legend
Segment Breaks
Ledge
Armoring
Impacts - Segments
Bank Armoring or Revetment
Bridge or Culvert
Development
Encroachment
Erosion
Straightening
Right Buffer
26-50
5-25
51-100
<5
>100
Right No Buffer %
< 5%
>= 10% and < 20%
>= 20%
>= 5% and < 10%
1 0 1 2 Miles
N
W
E
S

Constraints to Sediment Transport and Attenuation

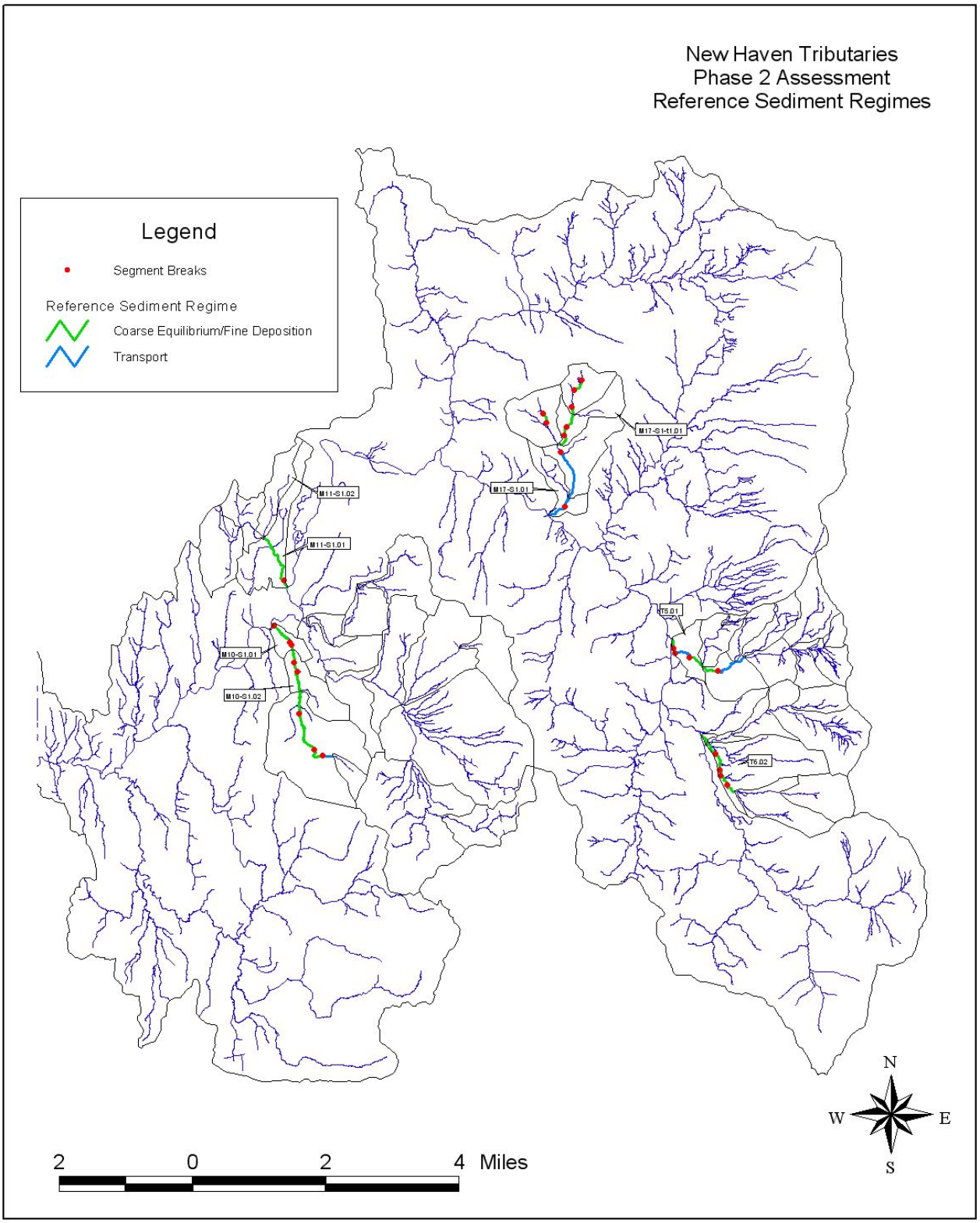
Departure Analysis

	Constraints		Transport		Attenuation		
River Segment	Vertical	Lateral	Natural	Converted	Natural	Increased	Asset
M10-S1.01-A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M10-S1.01-B	Culvert	None		X		X	X
M10-S1.01-C	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M10-S1.01-D	None	None		X		X	X
M10-S1.02-A	Culvert	None		X		X	
M10-S1.02-B	Culvert	None		X		X	
M10-S1.02-C	Culvert	None		X		X	
M10-S1.03-A	Culvert	Berm (partial)		X		X	
M10-S1.03-B	None	None		X		X	
M10-S1.03-C	Culvert	None				X	
M10-S1.03-D	Ledge	None	X				
M11-S1.01-A	None	Development		X	X		
M11-S1.01-B	Ledge & Culvert	None					
M17-S1.01-A	Ledge	Road (partial)	X			X	
M17-S1.01-B	Ledge	None	X			X	
M17-S1.02-A	Ledge	None	X			X	
M17-S1.02-B	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M17-S1.03-A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M17-S1.03-B	Ledge	None					
M17-S1.03-C	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M17-S1-t1.01-A	Ledge	None		X	X	X	X
M17-S1-t1.01-B	None	None					
M17-S1-t1.01-C	None	None		X		X	
M17-S1-t1.02-A	None	None				X	
M17-S1-t1.02-B	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M17-S1-t1.02-C	Culvert	Berm (partial)					
M17-S1-t1.02-D	N/A	N/A	N/A	N/A	N/A	N/A	N/A
T5.01-A	None	Road		X	X		
T5.01-B	None	None			X	X	X
T5.01-C	Ledge	None	X				
T5.01-D	None	None			X	X	X
T5.02-A	None	None			X	X	
T5.02-B	None	None	X				
T6.01-0	None	None			X	X	X
T6.02-A	None	Development				X	
T6.02-B	None	None				X	
T6.02-C	None	Berm (partial)		X			
T6.02-D	None	Berm (partial)			X	X	X
T6.02-E	None	Berm (partial)				X	

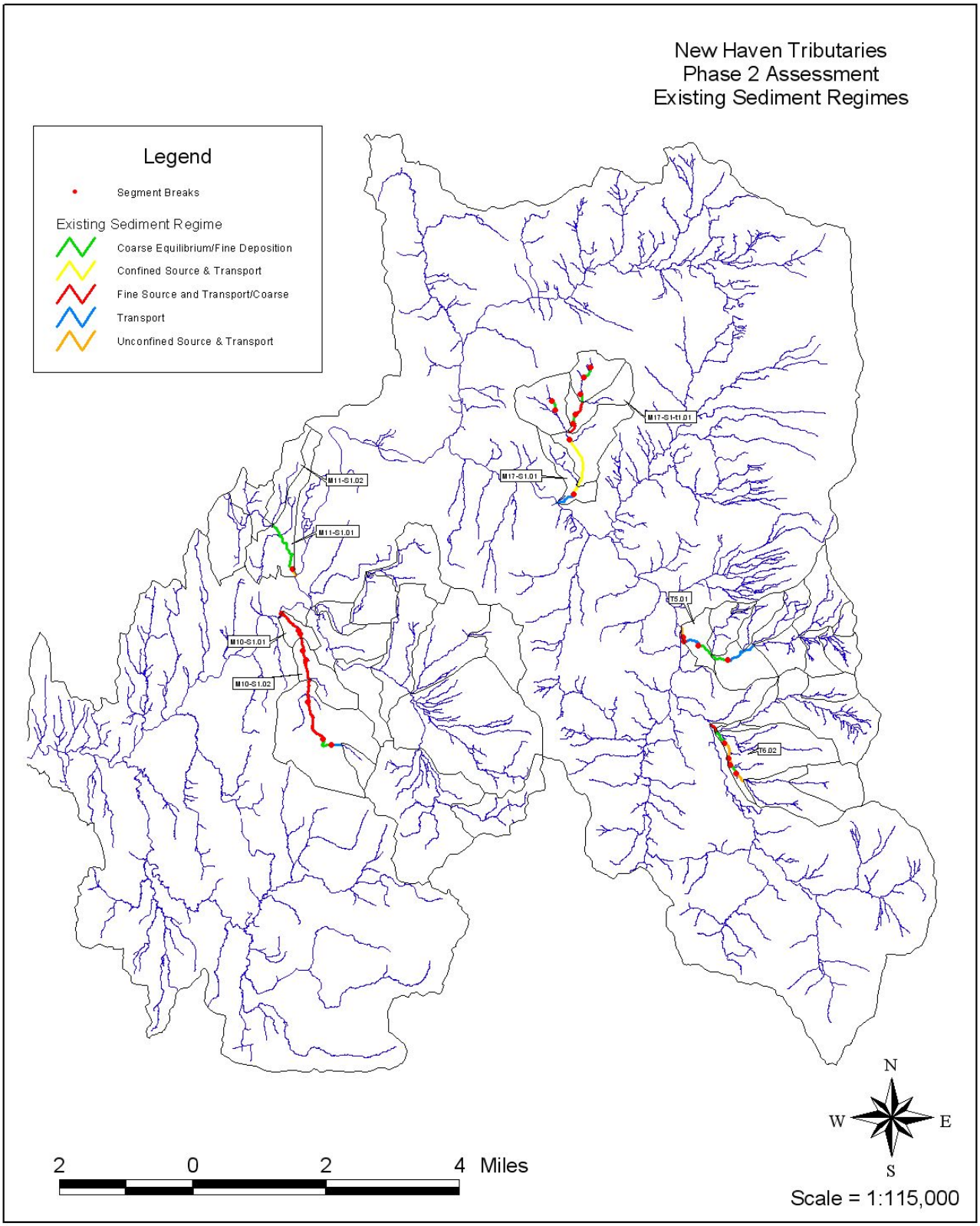
Existing and Reference Stream Types



Reference Sediment Regimes



Existing Sediment Regimes



Sensitivity Analysis

Sensitivity Analysis

River Segment	Sensitivity	Channel Evolution	Dominant Adjusment	Prioritization
M10-S1.01-A	n/a	n/a		
M10-S1.01-B	Very High	IV	Widening & Planform	
M10-S1.01-C	n/a	n/a		
M10-S1.01-D	Very High	IV	Widening & Planform	
M10-S1.02-A	High	IV	Planform	
M10-S1.02-B	Very High	IV	Widening & Planform	
M10-S1.02-C	Very High	IV	Widening & Planform	
M10-S1.03-A	Very High	IV	Widening & Planform	
M10-S1.03-B	Very High	IV	Widening & Planform	
M10-S1.03-C	Very High	IV	Planform	
M10-S1.03-D	Very Low	I	None	
M11-S1.01-A	Very High	II	Incision & Widening	
M11-S1.01-B	High	IV	Planform	
M17-S1.01-A	High	IV	Aggradation w/ minor Widening	
M17-S1.01-B	High	IV	Aggradation & Widening	
M17-S1.02-A	Moderate	IIb	Widening	
M17-S1.02-B	n/a	n/a		
M17-S1.03-A	n/a	n/a		
M17-S1.03-B	High	I	None	
M17-S1.03-C	n/a	n/a		
M17-S1-t1.01-A	Very High	III	Widening	
M17-S1-t1.01-B	Very High	I	Minor Widening	
M17-S1-t1.01-C	Very High	III	Widening	
M17-S1-t1.02-A	High	I	Minor Planform	
M17-S1-t1.02-B	n/a	n/a		
M17-S1-t1.02-C	High	I	Minor Planform	
M17-S1-t1.02-D	n/a	n/a		
T5.01-A	Very High	II	Degradation	
T5.01-B	High	IV	Minor Widening & Planform	
T5.01-C	Moderate	I	None	
T5.01-D	High	IV	Minor Widening & Planform	
T5.02-A	High	I	Planform & Widening	
T5.02-B	Moderate	I	Widening	
T6.01-0	High	IV	Aggradation & Planform	
T6.02-A	High	I	Planform	
T6.02-B	High	IV	Widening & Planform	
T6.02-C	Extreme	II	Widening & Degradation	
T6.02-D	High	I	Planform	
T6.02-E	High	IV	Widening & Planform	

Appendix B

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **West Brook** | Reach # **M10-S1.01** | Segment: **A** | Completion Date:

Organization: **Addison County RPC** | Observers: | Why Not assessed: **beaver dam** | Rain:

Segment Length (ft): **603** | Segment Location:

Step 1. Valley and Floodplain

1.1 Segmentation

1.2 Alluvial Fan

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope		
Continuous w/ W/in 1 Bankfill		
Texture		

1.5 Valley Features

Valley Width (ft) **0**

Width Determination

Confinement Type

Rock Gorge?

Human-caused changed valley width?

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**0**
2.2 Max Depth (ft)	**0.00**
2.3 Mean Depth (ft)	**0.00**
2.4 Floodprone Width (ft)	**0**
2.5 Aband. Floodpln	**0.00**
2.6 Width/Depth Ratio	**0.00**
2.7 Entrenchment Ratio	**0.00**
2.8 Incision Ratio	**0.00**
2.9 Sinuosity	
2.10 Riffles Type	
2.11 Riffle/Step Spacing (ft)	**0**

2.12 Substrate Composition

Silt/Clay Present?

Detritus **0** %

Large Woody **0**

2.13 Average Largest Particle on

Bed **0.0**

Bar **0.0**

2.14 Stream Type

Stream Type:

Bed Material:

Subclass Slope:

Bed Form:

2.15 Reference Stream Type (if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

	Left	Right
Typical Bank Slope		
Bank Texture		
Upper		
Material Type		
Consistency		
Lower		
Material Type		
Consistency		
Bank Erosion		
Erosion Length (ft)	**40**	**0**
Erosion Height (ft)	**3.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant		
Sub-dominant		
Bank Canopy		
Canopy %		
Mid-Channel Canopy		

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant		
Sub-dominant		
Buffer Veg. Type		
Dominant		
Sub-dominant		

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant		
Sub-dominant		

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	
4.2 Adjacent Wetlands	
4.3 Flow Status	
4.4 # of Debris Jams	**0**
4.5 Impoundments	
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	
4.9 # of Beaver Dams	**1**
Affected Length (ft)	**15**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**0**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	

5.4 Stream Ford or Animal	**No**
5.5 Straightening	**No**
Straightening Length:	**0**
5.5 Dredging	**None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | page 1 of 2 | June 14, 2007 | **FIT: Yes**

Stream: **West Brook** | Reach # **M10-S1.01** | Segment: **B** | Completion Date: **November 30, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **No**

Segment Length (ft): **2,544** | Segment Location: **Upstream and downstream of Cave Road.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Flat**	**Flat**
Continuous w/	**Sometimes**	**Sometimes**
W/in 1 Bankfill	**Sometimes**	**Sometimes**
Texture	**Silt/Clay**	**Silt/Clay**

1.5 Valley Features

Valley Width (ft): **254**

Width Determination: **Measured**

Confinement Type: **Very Broad**

Rock Gorge?: **No**

Human-caused changed valley width?: **no**

Notes:

This reach had seven bank slumps with flow on both sides that could be construed to be islands.

Step 2. Stream Channel

2.1 Bankfull Width	**11**
2.2 Max Depth (ft)	**1.80**
2.3 Mean Depth (ft)	**1.10**
2.4 Floodprone Width (ft)	**239**
2.5 Aband. Floodpln	**2.90**
2.6 Width/Depth Ratio	**10.00**
2.7 Entrenchment Ratio	**21.73**
2.8 Incision Ratio	**1.61**
2.9 Sinuosity	**High**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**46**

2.12 Substrate Composition

Bedrock	**0**	%
Boulder	**0**	%
Cobble	**4**	%
Coarse Gravel	**26**	%
Fine Gravel	**40**	%
Sand	**30**	%

Silt/Clay Present?: **Yes**

Detritus: **1** %

Large Woody: **17**

2.13 Average Largest Particle on

Bed	**3.0**	**inches**
Bar	**0.5**	**inches**

2.14 Stream Type

Stream Type: **E**

Bed Material: **Gravel**

Subclass Slope: **None**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Silt/Clay**	**Silt/Clay**
Consistency	**Cohesive**	**Cohesive**
Lower		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**410**	**228**
Erosion Height (ft)	**2.07**	**1.89**
Revetmt. Type	**Hard Bank**	**None**
Revetmt. Length (ft)	**81**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Herbaceous**	**Herbaceous**
Sub-dominant	**Shrubs/Saplin**	**Shrubs/Saplin**

Bank Canopy	Left	Right
Canopy %	**1-25**	**1-25**

Mid-Channel Canopy: **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**26-50**	**26-50**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Herbaceous**	**Herbaceous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Hay**	**Hay**
Sub-dominant	**Crop**	**Crop**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**Abundant**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**1**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
2	**8**	**3**

Diagonal	Delta	Island
1	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
2	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal: **No**

5.5 Straightening: **No**

Straightening Length: **0**

5.5 Dredging: **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **West Brook** | Reach # **M10-S1.01** | Segment: **C** | Completion Date:

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: **beaver dam** | Rain:

Segment Length (ft): **259** | Segment Location:

Step 1. Valley and Floodplain

1.1 Segmentation

1.2 Alluvial Fan

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope		
Continuous w/ W/in 1 Bankfill		
Texture		

1.5 Valley Features

Valley Width (ft) **0**

Width Determination

Confinement Type

Rock Gorge?

Human-caused changed valley width?

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**0**
2.2 Max Depth (ft)	**0.00**
2.3 Mean Depth (ft)	**0.00**
2.4 Floodprone Width (ft)	**0**
2.5 Aband. Floodpln	**0.00**
2.6 Width/Depth Ratio	**0.00**
2.7 Entrenchment Ratio	**0.00**
2.8 Incision Ratio	**0.00**
2.9 Sinuosity	
2.10 Riffles Type	
2.11 Riffle/Step Spacing (ft)	**0**

2.12 Substrate Composition

Silt/Clay Present?

Detritus **0** %

Large Woody **0**

2.13 Average Largest Particle on

Bed **0.0**

Bar **0.0**

2.14 Stream Type

Stream Type:

Bed Material:

Subclass Slope:

Bed Form:

2.15 Reference Stream Type (if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope

Bank Texture	Left	Right
Upper		
Material Type		
Consistency		
Lower		
Material Type		
Consistency		

Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**0**
Erosion Height (ft)	**0.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant		
Sub-dominant		
Bank Canopy		
Canopy %		
Mid-Channel Canopy		

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant		
Sub-dominant		
Buffer Veg. Type		
Dominant		
Sub-dominant		

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant		
Sub-dominant		

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	
4.2 Adjacent Wetlands	
4.3 Flow Status	
4.4 # of Debris Jams	**0**
4.5 Impoundments	
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	
4.9 # of Beaver Dams	**3**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**0**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	

5.4 Stream Ford or Animal	**No**
5.5 Straightening	**No**
Straightening Length:	**0**
5.5 Dredging	**None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **West Brook** | Reach # **M10-S1.01** | Segment: **D** | Completion Date: **November 30, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **No**

Segment Length (ft): **392** | Segment Location: **Southern end of reach from beaver dam to private drive/reach break.**

Step 1. Valley and Floodplain

1.1 Segmentation: **Planform and Scope**

1.2 Alluvial Fan: **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Flat**	**Flat**
Continuous w/	**Sometimes**	**Sometimes**
W/in 1 Bankfill	**Sometimes**	**Sometimes**
Texture	**Silt/Clay**	**Silt/Clay**

1.5 Valley Features

Valley Width (ft): **254**

Width Determination: **Measured**

Confinement Type: **Very Broad**

Rock Gorge?: **No**

Human-caused changed valley width?: **no**

Notes:

The stream theme for this segment is very far east of the actual stream.

Step 2. Stream Channel

2.1 Bankfull Width	**11**
2.2 Max Depth (ft)	**1.80**
2.3 Mean Depth (ft)	**1.10**
2.4 Floodprone Width (ft)	**239**
2.5 Aband. Floodpln	**2.90**
2.6 Width/Depth Ratio	**10.00**
2.7 Entrenchment Ratio	**21.73**
2.8 Incision Ratio	**1.61**
2.9 Sinuosity	**High**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**46**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**0** %
Cobble	**4** %
Coarse Gravel	**26** %
Fine Gravel	**40** %
Sand	**30** %

Silt/Clay Present?: **Yes**

Detritus: **1** %

Large Woody: **4**

2.13 Average Largest Particle on

Bed: **3.0** **inches**

Bar: **0.5** **inches**

2.14 Stream Type

Stream Type: **E**

Bed Material: **Gravel**

Subclass Slope: **None**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Silt/Clay**	**Silt/Clay**
Consistency	**Cohesive**	**Cohesive**
Lower		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**98**	**92**
Erosion Height (ft)	**2.00**	**1.67**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Deciduous**	**Deciduous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy: **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Deciduous**	**Deciduous**
Sub-dominant	**Coniferous**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**Abundant**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
4	**3**	**0**

Diagonal	Delta	Island
4	**0**	**1**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
1	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal: **No**

5.5 Straightening: **No**

Straightening Length: **0**

5.5 Dredging: **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **West Brook** | Reach # **M10-S1.02** | Segment: **A** | Completion Date: **November 28, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **No**

Segment Length (ft): **1,045** | Segment Location: **Northern most segment in this reach, accessible from private road.**

Step 1. Valley and Floodplain

1.1 Segmentation **Banks and Buffers**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**8**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Steep**	**Flat**
Continuous w/	**Sometimes**	**Always**
W/in 1 Bankfill	**Sometimes**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft) **472**

Width Determination **Estimated**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

The downstream 300' of this segment is is forested and belongs with M10-S1.01C. The majority of this segment is periodically pastured to keep it open, according to a neighbor. It appears that they would have access to the stream when pastured, unless an electric fence is used.

Step 2. Stream Channel

2.1 Bankfull Width	**5**
2.2 Max Depth (ft)	**1.30**
2.3 Mean Depth (ft)	**1.00**
2.4 Floodprone Width (ft)	**48**
2.5 Aband. Floodpln	**2.30**
2.6 Width/Depth Ratio	**4.50**
2.7 Entrenchment Ratio	**10.60**
2.8 Incision Ratio	**1.77**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Sedimented**
2.11 Riffle/Step Spacing (ft)	**27**

2.12 Substrate Composition

Bedrock	**0**	%
Boulder	**0**	%
Cobble	**1**	%
Coarse Gravel	**36**	%
Fine Gravel	**17**	%
Sand	**45**	%

Silt/Clay Present? **Yes**

Detritus **1** %

Large Woody **28**

2.13 Average Largest Particle on

Bed **4.0** **inches**

Bar **0.1** **inches**

2.14 Stream Type

Stream Type: **E**

Bed Material: **Gravel**

Subclass Slope: **None**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Gravel**	**Gravel**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**101**	**195**
Erosion Height (ft)	**2.57**	**2.67**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Herbaceous**	**Herbaceous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**0**	**0**

Mid-Channel Canopy **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**26-50**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Herbaceous**	**Herbaceous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Some**
4.2 Adjacent Wetlands	**Some**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**2**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
2	**0**	**0**

Diagonal	Delta	Island
1	**0**	**2**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
3	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal **No**

5.5 Straightening **Yes**

Straightening Length: **16**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**
Stream: **West Brook**
Organization: **Addison County RPC**
Segment Length (ft): **947**

Phase 2 Segment Summary

Reach # **M10-S1.02**
Observers: **Amy Sheldon**
Segment Location: **The forested mid-section of this segment.**

June 14, 2007 **FIT: Yes**
Segment: **B** Completion Date: **November 28, 2006**
Why Not assessed: Rain: **No**

Step 1. Valley and Floodplain

1.1 Segmentation **Banks and Buffers**
1.2 Alluvial Fan **None**
1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**296**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Steep**	**Flat**
Continuous w/	**Sometimes**	**Always**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Silt/Clay**	**Silt/Clay**

1.5 Valley Features
Valley Width (ft): **428**
Width Determination: **Estimated**
Confinement Type: **Very Broad**
Rock Gorge?: **No**
Human-caused changed valley width?: **no**

Notes:

The soils are sandier and rockier than segments A & C.

Step 2. Stream Channel

2.1 Bankfull Width	**12**
2.2 Max Depth (ft)	**1.40**
2.3 Mean Depth (ft)	**1.00**
2.4 Floodprone Width (ft)	**30**
2.5 Aband. Floodpln	**2.40**
2.6 Width/Depth Ratio	**11.60**
2.7 Entrenchment Ratio	**2.55**
2.8 Incision Ratio	**1.71**
2.9 Sinuosity	**High**
2.10 Riffles Type	**Sedimented**
2.11 Riffle/Step Spacing (ft)	**37**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**1** %
Cobble	**13** %
Coarse Gravel	**16** %
Fine Gravel	**22** %
Sand	**48** %

Silt/Clay Present?: **Yes**
Detritus: **5** %
Large Woody: **20**

2.13 Average Largest Particle on

Bed	**5.5**	**inches**
Bar	**0.1**	**inches**

2.14 Stream Type
Stream Type: **E**
Bed Material: **Gravel**
Subclass Slope: **None**
Bed Form: **Riffle-Pool**

2.15 Reference Stream Type
(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks
Typical Bank Slope: **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Silt/Clay**	**Silt/Clay**
Consistency	**Cohesive**	**Cohesive**
Lower		
Material Type	**Gravel**	**Gravel**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**28**	**339**
Erosion Height (ft)	**2.00**	**2.86**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy: **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**51-100**	**51-100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**Deciduous**	**Deciduous**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**Hay**

	Amount	Mean Height
Mass Failures	**One**	**18.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**None**
4.2 Adjacent Wetlands	**None**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**2**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**1**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
4	**0**	**2**

Diagonal	Delta	Island
4	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
4	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal: **No**
5.5 Straightening: **Yes**
Straightening Length: **330**
5.5 Dredging: **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **West Brook** | Reach # **M10-S1.02** | Segment: **C** | Completion Date: **November 28, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **No**

Segment Length (ft): **2,012** | Segment Location: **Active pasture at south end of reach.**

Step 1. Valley and Floodplain

1.1 Segmentation **Banks and Buffers**

1.2 Alluvial Fan **Yes**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Steep**	**Flat**
Continuous w/	**Sometimes**	**Always**
W/in 1 Bankfill	**Sometimes**	**Always**
Texture	**Silt/Clay**	**Silt/Clay**

1.5 Valley Features

Valley Width (ft)	**472**
Width Determination	**Estimated**
Confinement Type	**Very Broad**
Rock Gorge?	**No**

Human-caused changed valley width? **no**

Notes:

Island bars are created from bank slumping. Cows have total access to all of this reach and have denuded it of vegetation and crushed a good portion of the banks. The cross section data is from segment A.

Step 2. Stream Channel

2.1 Bankfull Width	**5**
2.2 Max Depth (ft)	**1.30**
2.3 Mean Depth (ft)	**1.00**
2.4 Floodprone Width (ft)	**48**
2.5 Aband. Floodpln	**2.30**
2.6 Width/Depth Ratio	**4.50**
2.7 Entrenchment Ratio	**10.60**
2.8 Incision Ratio	**1.77**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Sedimented**
2.11 Riffle/Step Spacing (ft)	**27**

2.12 Substrate Composition

Bedrock	**0**	%
Boulder	**0**	%
Cobble	**1**	%
Coarse Gravel	**36**	%
Fine Gravel	**17**	%
Sand	**45**	%

Silt/Clay Present?	**Yes**
Detritus	**0** %
# Large Woody	**2**

2.13 Average Largest Particle on

Bed	**4.0**	**inches**
Bar	**0.1**	**inches**

2.14 Stream Type

Stream Type:	**E**
Bed Material:	**Gravel**
Subclass Slope:	**None**
Bed Form:	**Riffle-Pool**

2.15 Reference Stream Type
(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Silt/Clay**	**Silt/Clay**
Consistency	**Cohesive**	**Cohesive**
Lower		
Material Type	**Silt/Clay**	**Silt/Clay**
Consistency	**Cohesive**	**Cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**904**	**946**
Erosion Height (ft)	**2.44**	**2.56**
Revetmt. Type	**Rip-Rap**	**None**
Revetmt. Length (ft)	**79**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Pasture**	**Pasture**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**0**	**0**

Mid-Channel Canopy **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**<5**	**<5**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Herbaceous**	**Herbaceous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Pasture**	**Pasture**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Some**
4.2 Adjacent Wetlands	**Some**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**0**

Diagonal	Delta	Island
1	**0**	**4**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
1	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal	**Yes**
5.5 Straightening	**Yes**
Straightening Length:	**966**
5.5 Dredging	**None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **West Brook** Reach # **M10-S1.03** Segment: **A** Completion Date: **November 29, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon, Allen Rathbun** Why Not assessed: Rain: **No**

Segment Length (ft): **2,521** Segment Location: **From reach break (parallel to Bristol Notch Road) south to where landcover changes to**

Step 1. Valley and Floodplain

1.1 Segmentation **Banks and Buffers**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**399**	**0**
Roads	**398**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**164**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Steep**	**Hilly**
Continuous w/	**Never**	**Never**
W/in 1 Bankfill	**Never**	**Sometimes**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft) **520**

Width Determination **Estimated**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

This segment was historically pastured, but has not been for 20 years. There is a berm along the left bank. The landowner walked the segment with me.

Step 2. Stream Channel

2.1 Bankfull Width	**4**
2.2 Max Depth (ft)	**2.70**
2.3 Mean Depth (ft)	**1.70**
2.4 Floodprone Width (ft)	**12**
2.5 Aband. Floodpln	**5.10**
2.6 Width/Depth Ratio	**2.53**
2.7 Entrenchment Ratio	**2.86**
2.8 Incision Ratio	**1.89**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Sedimented**
2.11 Riffle/Step Spacing (ft)	**29**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**0** %
Cobble	**0** %
Coarse Gravel	**0** %
Fine Gravel	**10** %
Sand	**90** %

Silt/Clay Present? **Yes**

Detritus **5** %

Large Woody **5**

2.13 Average Largest Particle on

Bed **N/A**

Bar **N/A**

2.14 Stream Type

Stream Type: **E**

Bed Material: **Sand**

Subclass Slope: **None**

Bed Form: **Dune-Ripple**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Silt/Clay**	**Silt/Clay**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**643**	**414**
Erosion Height (ft)	**3.00**	**3.42**
Revetmt. Type	**None**	**Rip-Rap**
Revetmt. Length (ft)	**0**	**18**

Near Bank Veg. Type	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**0**	**0**

Mid-Channel Canopy **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**51-100**
Sub-dominant	**None**	**>100**

Buffer Veg. Type	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**Mixed Trees**	**Herbaceous**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Shrubs/Saplin**
Sub-dominant	**None**	**Hay**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**Abundant**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**3**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**0**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
5	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **West Brook** Reach # **M10-S1.03** Segment: **B** Completion Date: **November 29, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Why Not assessed: Rain: **No**

Segment Length (ft): **4,350** Segment Location: **From where corridor becomes all forested to just south of Route 116.**

Step 1. Valley and Floodplain

1.1 Segmentation **Banks and Buffers**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Steep**	**Steep**
Continuous w/	**Never**	**Never**
W/in 1 Bankfill	**Never**	**Never**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft) **162**

Width Determination **Estimated**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

There is a tributary coming in from the left bank not far from Route 116 that is rejuvinating.

Step 2. Stream Channel

2.1 Bankfull Width	**7**
2.2 Max Depth (ft)	**1.80**
2.3 Mean Depth (ft)	**1.40**
2.4 Floodprone Width (ft)	**14**
2.5 Aband. Floodpln	**3.20**
2.6 Width/Depth Ratio	**5.14**
2.7 Entrenchment Ratio	**1.94**
2.8 Incision Ratio	**1.78**
2.9 Sinuosity	**High**
2.10 Riffles Type	**Sedimented**
2.11 Riffle/Step Spacing (ft)	**29**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**0** %
Cobble	**0** %
Coarse Gravel	**0** %
Fine Gravel	**10** %
Sand	**90** %

Silt/Clay Present? **Yes**

Detritus **5** %

Large Woody **35**

2.13 Average Largest Particle on

Bed **N/A**

Bar **N/A**

2.14 Stream Type

Stream Type: **E**

Bed Material: **Sand**

Subclass Slope: **None**

Bed Form: **Dune-Ripple**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Silt/Clay**	**Silt/Clay**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**58**	**231**
Erosion Height (ft)	**2.67**	**2.88**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Coniferous**	**Coniferous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Coniferous**	**Coniferous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**Abundant**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**5**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
2	**4**	**0**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
8	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**Yes**

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **West Brook** | Reach # **M10-S1.03** | Segment: **C** | Completion Date: **November 30, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **No**

Segment Length (ft): **1,421** | Segment Location: **South of Rt. 116 until slope steepens.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	0	0
Roads	0	0
Railroads	0	0
Improved Paths	0	0
Development	0	0

1.4 Adjacent Side	Left	Right
Hillside Slope	Steep	Steep
Continuous w/	Sometimes	Sometimes
W/in 1 Bankfill	Sometimes	Sometimes
Texture	Sand	Sand

1.5 Valley Features

Valley Width (ft) **108**

Width Determination **Measured**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

There is a pipe entering this segment from a paved resevoir that is not adjacent to the stream. The bank behind the pipe is failing. The culvert in this reach is undersized and causing sediment deposition.

Step 2. Stream Channel

2.1 Bankfull Width	10
2.2 Max Depth (ft)	1.50
2.3 Mean Depth (ft)	1.10
2.4 Floodprone Width (ft)	24
2.5 Aband. Floodpln	1.80
2.6 Width/Depth Ratio	9.27
2.7 Entrenchment Ratio	2.37
2.8 Incision Ratio	1.20
2.9 Sinuosity	High
2.10 Riffles Type	Sedimented
2.11 Riffle/Step Spacing (ft)	29

2.12 Substrate Composition

Bedrock	0 %
Boulder	6 %
Cobble	26 %
Coarse Gravel	38 %
Fine Gravel	15 %
Sand	15 %

Silt/Clay Present? **No**

Detritus **5** %

Large Woody **30**

2.13 Average Largest Particle on

Bed **N/A**

Bar **N/A**

Not Evaluated

2.14 Stream Type

Stream Type: **E**

Bed Material: **Gravel**

Subclass Slope: **c**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

E **4** **c** **Riffle-Pool**

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	Sand	Sand
Consistency	Non-cohesive	Non-cohesive
Lower		
Material Type	Boulder/Cobbl	Boulder/Cobbl
Consistency	Non-cohesive	Non-cohesive

Bank Erosion	Left	Right
Erosion Length (ft)	121	128
Erosion Height (ft)	4.00	5.00
Revetmt. Type	None	None
Revetmt. Length (ft)	0	0

Near Bank Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	Deciduous	None

Bank Canopy	Left	Right
Canopy %	76-100	76-100

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	51-100	51-100
Sub-dominant	None	None

Buffer Veg. Type	Left	Right
Dominant	Mixed Trees	Mixed Trees
Sub-dominant	None	None

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	Forest	Forest
Sub-dominant	None	None

	Amount	Mean Height
Mass Failures	One	10.00
Gullies	One	20.00

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	Abundant
4.2 Adjacent Wetlands	Abundant
4.3 Flow Status	Moderate
4.4 # of Debris Jams	3
4.5 Impoundments	None
Impoundmt. Location	
4.6 # of Stormwater Inputs	1
4.7 Upstream Flow	Diversion
4.9 # of Beaver Dams	0
Affected Length (ft)	0

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
10	19	4

Diagonal	Delta	Island
13	0	2

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
5	0	1	0

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	0	No

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **West Brook** | Reach # **M10-S1.03** | Segment: **D** | Completion Date: **December 5, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon, Ty Mack** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **728** | Segment Location: **Begins where slope increases.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	0	0
Roads	0	0
Railroads	0	0
Improved Paths	0	0
Development	0	0

1.4 Adjacent Side	Left	Right
Hillside Slope	Steep	Steep
Continuous w/	Always	Always
W/in 1 Bankfill	Always	Always
Texture	Cobble	Cobble

1.5 Valley Features

Valley Width (ft) **44**

Width Determination **Measured**

Confinement Type **Semi-confined**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	20
2.2 Max Depth (ft)	2.40
2.3 Mean Depth (ft)	1.40
2.4 Floodprone Width (ft)	30
2.5 Aband. Floodpln	2.40
2.6 Width/Depth Ratio	14.00
2.7 Entrenchment Ratio	1.51
2.8 Incision Ratio	1.00
2.9 Sinuosity	Low
2.10 Riffles Type	Complete
2.11 Riffle/Step Spacing (ft)	30

2.12 Substrate Composition

Bedrock	0 %
Boulder	55 %
Cobble	26 %
Coarse Gravel	14 %
Fine Gravel	4 %
Sand	1 %

Silt/Clay Present? **No**

Detritus **2** %

Large Woody **11**

2.13 Average Largest Particle on

Bed **N/A**

Bar **N/A**

Not Evaluated

2.14 Stream Type

Stream Type: **B**

Bed Material: **Boulder**

Subclass Slope: **None**

Bed Form: **Step-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

B 2 Non Step-Pool

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Moderate**

Bank Texture	Left	Right
Upper		
Material Type	Boulder/Cobbl	Boulder/Cobbl
Consistency	Non-cohesive	Non-cohesive
Lower		
Material Type	Boulder/Cobbl	Boulder/Cobbl
Consistency	Non-cohesive	Non-cohesive

Bank Erosion	Left	Right
Erosion Length (ft)	0	0
Erosion Height (ft)	0.00	0.00
Revetmt. Type	None	None
Revetmt. Length (ft)	0	0

Near Bank Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	None	None

Bank Canopy	Left	Right
Canopy %	76-100	76-100

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	>100	26-50
Sub-dominant	None	None

Buffer Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	None	None

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	Forest	Forest
Sub-dominant	None	Hay

	Amount	Mean Height
Mass Failures	None	0.00
Gullies	None	0.00

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	None
4.2 Adjacent Wetlands	None
4.3 Flow Status	Moderate
4.4 # of Debris Jams	0
4.5 Impoundments	None
Impoundmt. Location	
4.6 # of Stormwater Inputs	0
4.7 Upstream Flow	None
4.9 # of Beaver Dams	0
Affected Length (ft)	0

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	0	0

Diagonal	Delta	Island
0	0	0

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	0	0	0

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	0	No

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **Bristol Flats** Reach # **M11-S1.01** Segment: **A** Completion Date: **December 5, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon, Ty Mack** Why Not assessed: Rain: **Yes**

Segment Length (ft): **726** Segment Location: **At confluence with New Haven.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**193**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Flat**	**Steep**
Continuous w/	**Never**	**Never**
W/in 1 Bankfill	**Sometimes**	**Never**
Texture	**Sand**	**Not Evalua**

1.5 Valley Features

Valley Width (ft) **500**

Width Determination **Estimated**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

This reach has a temporary bridge on it that was placed when the existing arch was unermined within the past two years. There is a headcut migrating up this segment.

Step 2. Stream Channel

2.1 Bankfull Width	**21**
2.2 Max Depth (ft)	**1.70**
2.3 Mean Depth (ft)	**0.80**
2.4 Floodprone Width (ft)	**29**
2.5 Aband. Floodpln	**1.70**
2.6 Width/Depth Ratio	**26.25**
2.7 Entrenchment Ratio	**1.37**
2.8 Incision Ratio	**1.00**
2.9 Sinuosity	**Low**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**74**

2.12 Substrate Composition

Bedrock	**0**	%
Boulder	**0**	%
Cobble	**8**	%
Coarse Gravel	**38**	%
Fine Gravel	**28**	%
Sand	**26**	%

Silt/Clay Present? **No**

Detritus **0** %

Large Woody **0**

2.13 Average Largest Particle on

Bed **3.0** **inches**

Bar **2.0** **inches**

2.14 Stream Type

Stream Type: **F**

Bed Material: **Gravel**

Subclass Slope: **None**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Steep**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Gravel**	**Gravel**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**36**	**0**
Erosion Height (ft)	**2.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Herbaceous**	**Herbaceous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**0**	**0**

Mid-Channel Canopy **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**5-25**	**5-25**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Herbaceous**	**Herbaceous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Bare**	**Residential**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**None**
4.2 Adjacent Wetlands	**Some**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**2**	**2**

Diagonal	Delta	Island
1	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
3	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**1**	**No**

5.4 Stream Ford or Animal **No**

5.5 Straightening **Yes**

Straightening Length: **352**

5.5 Dredging **None**

Note:

Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **Bristol Flats** Reach # **M11-S1.01** Segment: **B** Completion Date: **December 5, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon, Ty Mack** Why Not assessed: Rain: **Yes**

Segment Length (ft): **4,619** Segment Location: **North end of reach from just beyond headcut to end.**

Step 1. Valley and Floodplain

1.1 Segmentation **Channel Dimensions**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**219**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**132**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Flat**	**Steep**
Continuous w/	**Sometimes**	**Never**
W/in 1 Bankfill	**Sometimes**	**Sometimes**
Texture	**Silt/Clay**	**Boulder**

1.5 Valley Features

Valley Width (ft) **500**

Width Determination **Estimated**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**7**
2.2 Max Depth (ft)	**1.50**
2.3 Mean Depth (ft)	**0.80**
2.4 Floodprone Width (ft)	**39**
2.5 Aband. Floodpln	**1.80**
2.6 Width/Depth Ratio	**9.00**
2.7 Entrenchment Ratio	**5.35**
2.8 Incision Ratio	**1.20**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**120**

2.12 Substrate Composition

Bedrock	**0**	%
Boulder	**0**	%
Cobble	**4**	%
Coarse Gravel	**23**	%
Fine Gravel	**33**	%
Sand	**40**	%

Silt/Clay Present? **Yes**

Detritus **0** %

Large Woody **2**

2.13 Average Largest Particle on

Bed **60.0** mm

Bar **100.0** mm

2.14 Stream Type

Stream Type: **C**

Bed Material: **Gravel**

Subclass Slope: **None**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Silt/Clay**	**Silt/Clay**
Consistency	**Cohesive**	**Cohesive**
Lower		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**186**	**33**
Erosion Height (ft)	**2.00**	**2.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Herbaceous**	**Herbaceous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**0**	**0**

Mid-Channel Canopy **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**5-25**	**51-100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Herbaceous**	**Herbaceous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Residential**	**Pasture**
Sub-dominant	**Pasture**	**Residential**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**None**
4.2 Adjacent Wetlands	**Abundant**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**1**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**3**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**1**
Affected Length (ft)	**318**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
1	**2**	**2**

Diagonal	Delta	Island
1	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
2	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal **No**

5.5 Straightening **Yes**

Straightening Length: **3,328**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **First Trib of Isham** | Reach # **M17-S1-t1.01** | Segment: **A** | Completion Date: **November 9, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **1,091** | Segment Location: **First trib of Isham, first reach, begins in beaver ponds and ends where valley slope**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	0	0
Roads	0	0
Railroads	0	0
Improved Paths	0	0
Development	0	0

1.4 Adjacent Side	Left	Right
Hillside Slope	Flat	Flat
Continuous w/	Always	Always
W/in 1 Bankfill	Always	Always
Texture	Sand	Sand

1.5 Valley Features

Valley Width (ft)	660
Width Determination	Estimated
Confinement Type	Very Broad
Rock Gorge?	No

Human-caused changed valley width? **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	17
2.2 Max Depth (ft)	0.90
2.3 Mean Depth (ft)	0.70
2.4 Floodprone Width (ft)	23
2.5 Aband. Floodpln	1.70
2.6 Width/Depth Ratio	23.57
2.7 Entrenchment Ratio	1.36
2.8 Incision Ratio	1.89
2.9 Sinuosity	Moderate
2.10 Riffles Type	Complete
2.11 Riffle/Step Spacing (ft)	94

2.12 Substrate Composition

Bedrock	0 %
Boulder	9 %
Cobble	35 %
Coarse Gravel	35 %
Fine Gravel	8 %
Sand	13 %

Silt/Clay Present?	No
Detritus	0 %
# Large Woody	18

2.13 Average Largest Particle on

Bed	10.5	inches
Bar	3.8	inches

2.14 Stream Type

Stream Type:	F
Bed Material:	Gravel
Subclass Slope:	b
Bed Form:	Riffle-Pool

2.15 Reference Stream Type
(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Steep**

Bank Texture	Left	Right
Upper		
Material Type	Sand	Sand
Consistency	Non-cohesive	Non-cohesive
Lower		
Material Type	Gravel	Gravel
Consistency	Non-cohesive	Non-cohesive

Bank Erosion	Left	Right
Erosion Length (ft)	227	40
Erosion Height (ft)	2.67	2.00
Revetmt. Type	None	None
Revetmt. Length (ft)	0	0

Near Bank Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	None	Deciduous

Bank Canopy	Left	Right
Canopy %	76-100	76-100

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	51-100	>100
Sub-dominant	None	None

Buffer Veg. Type	Left	Right
Dominant	Mixed Trees	Mixed Trees
Sub-dominant	None	None

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	Forest	Forest
Sub-dominant	Hay	None

	Amount	Mean Height
Mass Failures	One	6.00
Gullies	None	0.00

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	Some
4.2 Adjacent Wetlands	Some
4.3 Flow Status	Moderate
4.4 # of Debris Jams	2
4.5 Impoundments	None
Impoundmt. Location	
4.6 # of Stormwater Inputs	0
4.7 Upstream Flow	None
4.9 # of Beaver Dams	2
Affected Length (ft)	40

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	9	2

Diagonal	Delta	Island
1	0	0

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
3	0	0	0

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
2	0	No

5.4 Stream Ford or Animal	No
5.5 Straightening	No
Straightening Length:	0
5.5 Dredging	None

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: No**

Stream: **First Trib of Isham** | Reach # **M17-S1-t1.01** | Segment: **B** | Completion Date: **November 8, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **981** | Segment Location: **Middle of the reach, much lower gradient.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	0	0
Roads	0	0
Railroads	0	0
Improved Paths	0	0
Development	0	0

1.4 Adjacent Side	Left	Right
Hillside Slope	Flat	Flat
Continuous w/	Always	Always
W/in 1 Bankfill	Always	Always
Texture	Sand	Sand

1.5 Valley Features

Valley Width (ft): **660**

Width Determination: **Estimated**

Confinement Type: **Very Broad**

Rock Gorge?: **No**

Human-caused changed valley width?: **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	6
2.2 Max Depth (ft)	1.00
2.3 Mean Depth (ft)	0.76
2.4 Floodprone Width (ft)	10
2.5 Aband. Floodpln	1.90
2.6 Width/Depth Ratio	7.37
2.7 Entrenchment Ratio	1.75
2.8 Incision Ratio	1.90
2.9 Sinuosity	High
2.10 Riffles Type	Complete
2.11 Riffle/Step Spacing (ft)	10

2.12 Substrate Composition

Bedrock	0 %
Boulder	0 %
Cobble	0 %
Coarse Gravel	10 %
Fine Gravel	0 %
Sand	90 %

Silt/Clay Present?: **Yes**

Detritus: **0** %

Large Woody: **15**

2.13 Average Largest Particle on

Bed **2.0** **inches**

Bar **0.1** **inches**

2.14 Stream Type

Stream Type: **E**

Bed Material: **Sand**

Subclass Slope: **None**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

E **5** **Non Dune-Ripple**

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	Sand	Sand
Consistency	Non-cohesive	Non-cohesive
Lower		
Material Type	Silt/Clay	Silt/Clay
Consistency	Cohesive	Cohesive

Bank Erosion	Left	Right
Erosion Length (ft)	0	0
Erosion Height (ft)	0.00	0.00
Revetmt. Type		
Revetmt. Length (ft)	0	0

Near Bank Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	None	None

Bank Canopy	Left	Right
Canopy %	76-100	76-100

Mid-Channel Canopy: **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	>100	>100
Sub-dominant	None	None

Buffer Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	None	None

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	Forest	Forest
Sub-dominant	None	None

	Amount	Mean Height
Mass Failures		0.00
Gullies		0.00

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	Some
4.2 Adjacent Wetlands	Abundant
4.3 Flow Status	Moderate
4.4 # of Debris Jams	0
4.5 Impoundments	None
Impoundmt. Location	
4.6 # of Stormwater Inputs	0
4.7 Upstream Flow	None
4.9 # of Beaver Dams	0
Affected Length (ft)	0

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	5	0

Diagonal	Delta	Island
0	0	0

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	0	0	0

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	0	No

5.4 Stream Ford or Animal

5.5 Straightening

Straightening Length: **0**

5.5 Dredging

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **First Trib of Isham** | Reach # **M17-S1-t1.01** | Segment: **C** | Completion Date: **November 9, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **1,255** | Segment Location: **Upstream 1200' of reach.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	0	0
Roads	0	0
Railroads	0	0
Improved Paths	0	0
Development	0	0

1.4 Adjacent Side	Left	Right
Hillside Slope	Flat	Flat
Continuous w/	Always	Always
W/in 1 Bankfill	Always	Always
Texture	Sand	Sand

1.5 Valley Features

Valley Width (ft): **660**

Width Determination: **Estimated**

Confinement Type: **Very Broad**

Rock Gorge?: **No**

Human-caused changed valley width?: **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	17
2.2 Max Depth (ft)	1.00
2.3 Mean Depth (ft)	0.70
2.4 Floodprone Width (ft)	23
2.5 Aband. Floodpln	1.70
2.6 Width/Depth Ratio	23.57
2.7 Entrenchment Ratio	1.36
2.8 Incision Ratio	1.70
2.9 Sinuosity	Moderate
2.10 Riffles Type	Complete
2.11 Riffle/Step Spacing (ft)	94

2.12 Substrate Composition

Bedrock	0 %
Boulder	9 %
Cobble	35 %
Coarse Gravel	35 %
Fine Gravel	8 %
Sand	13 %

Silt/Clay Present?: **No**

Detritus: **0** %

Large Woody: **18**

2.13 Average Largest Particle on

Bed **10.5** inches

Bar **3.8** inches

2.14 Stream Type

Stream Type: **F**

Bed Material: **Gravel**

Subclass Slope: **b**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Steep**

Bank Texture	Left	Right
Upper		
Material Type	Sand	Sand
Consistency	Non-cohesive	Non-cohesive
Lower		
Material Type	Gravel	Gravel
Consistency	Non-cohesive	Non-cohesive

Bank Erosion	Left	Right
Erosion Length (ft)	217	230
Erosion Height (ft)	1.80	2.00
Revetmt. Type	None	None
Revetmt. Length (ft)	0	0

Near Bank Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	None	Deciduous

Bank Canopy	Left	Right
Canopy %	76-100	76-100

Mid-Channel Canopy: **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	51-100	>100
Sub-dominant	None	None

Buffer Veg. Type	Left	Right
Dominant	Mixed Trees	Mixed Trees
Sub-dominant	None	None

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	Forest	Forest
Sub-dominant	Hay	None

	Amount	Mean Height
Mass Failures	None	0.00
Gullies	None	0.00

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	Some
4.2 Adjacent Wetlands	Some
4.3 Flow Status	Moderate
4.4 # of Debris Jams	3
4.5 Impoundments	None
Impoundmt. Location	
4.6 # of Stormwater Inputs	0
4.7 Upstream Flow	None
4.9 # of Beaver Dams	0
Affected Length (ft)	0

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	9	2

Diagonal	Delta	Island
1	0	0

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
2	0	0	0

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	1	No

5.4 Stream Ford or Animal: **No**

5.5 Straightening: **No**

Straightening Length: **0**

5.5 Dredging: **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **First Trib of Isham** | Reach # **M17-S1-t1.02** | Segment: **A** | Completion Date: **November 9, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **719** | Segment Location: **Upstream of t1.01c and downstream of beaver pond complex.**

Step 1. Valley and Floodplain

1.1 Segmentation **Flow Status**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Flat**	**Hilly**
Continuous w/	**Always**	**Always**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft) **400**

Width Determination **Estimated**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

This reach was segmented due to major upstream beaver activity.

Step 2. Stream Channel

2.1 Bankfull Width	**8**
2.2 Max Depth (ft)	**1.00**
2.3 Mean Depth (ft)	**0.63**
2.4 Floodprone Width (ft)	**32**
2.5 Aband. Floodpln	**1.70**
2.6 Width/Depth Ratio	**13.33**
2.7 Entrenchment Ratio	**3.81**
2.8 Incision Ratio	**1.70**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**22**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**10** %
Cobble	**31** %
Coarse Gravel	**21** %
Fine Gravel	**15** %
Sand	**23** %

Silt/Clay Present?	**Yes**
Detritus	**0** %
# Large Woody	**13**

2.13 Average Largest Particle on

Bed	**12.0**	**inches**
Bar	**6.0**	**inches**

2.14 Stream Type

Stream Type: **C**

Bed Material: **Gravel**

Subclass Slope: **b**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Moderate**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Gravel**	**Gravel**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**0**
Erosion Height (ft)	**0.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Deciduous**	**Deciduous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Mixed Trees**	**Mixed Trees**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**Multiple**	**3.50**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**Some**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**1**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**14**	**3**

Diagonal	Delta	Island
1	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
2	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal **Yes**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Stream: **First Trib of Isham** Reach # **M17-S1-t1.02** Segment: **B** Completion Date:

Organization: **Addison County RPC** Observers: Why Not assessed: **beaver dam** Rain:

Segment Length (ft): **1,697** Segment Location:

Step 1. Valley and Floodplain

1.1 Segmentation

1.2 Alluvial Fan

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope		
Continuous w/		
W/in 1 Bankfill		
Texture		

1.5 Valley Features

Valley Width (ft) **0**

Width Determination

Confinement Type

Rock Gorge?

Human-caused changed valley width?

Notes:

Step 2. Stream Channel

2.1 Bankfull Width **0**

2.2 Max Depth (ft) **0.00**

2.3 Mean Depth (ft) **0.00**

2.4 Floodprone Width (ft) **0**

2.5 Aband. Floodpln **0.00**

2.6 Width/Depth Ratio **0.00**

2.7 Entrenchment Ratio **0.00**

2.8 Incision Ratio **0.00**

2.9 Sinuosity

2.10 Riffles Type

2.11 Riffle/Step Spacing (ft) **0**

2.12 Substrate Composition

Silt/Clay Present?

Detritus **0** %

Large Woody **0**

2.13 Average Largest Particle on

Bed **0.0**

Bar **0.0**

2.14 Stream Type

Stream Type:

Bed Material:

Subclass Slope:

Bed Form:

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope

Bank Texture	Left	Right
Upper		
Material Type		
Consistency		
Lower		
Material Type		
Consistency		

Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**0**
Erosion Height (ft)	**0.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant		
Sub-dominant		

Bank Canopy	Left	Right
Canopy %		
Mid-Channel Canopy		

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant		
Sub-dominant		

Buffer Veg. Type	Left	Right
Dominant		
Sub-dominant		

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant		
Sub-dominant		

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps

4.2 Adjacent Wetlands

4.3 Flow Status

4.4 # of Debris Jams **0**

4.5 Impoundments

Impoundmt. Location

4.6 # of Stormwater Inputs **0**

4.7 Upstream Flow

4.9 # of Beaver Dams **5**

Affected Length (ft) **0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**0**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and
Step 4.8 - Channel Constrictions
are on The second page of this
report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **First Trib of Isham** Reach # **M17-S1-t1.02** Segment: **C** Completion Date: **November 9, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Why Not assessed: Rain: **Yes**

Segment Length (ft): **1,118** Segment Location: **Upstream end of reach, u/s of beaver pond complex.**

Step 1. Valley and Floodplain

1.1 Segmentation **Flow Status**

1.2 Alluvial Fan **No**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**196**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Flat**	**Hilly**
Continuous w/	**Always**	**Always**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft) **400**

Width Determination **Estimated**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

This reach was segmented due to significant beaver activity both upstream and downstream.

Step 2. Stream Channel

2.1 Bankfull Width	**8**
2.2 Max Depth (ft)	**1.00**
2.3 Mean Depth (ft)	**0.63**
2.4 Floodprone Width (ft)	**32**
2.5 Aband. Floodpln	**1.70**
2.6 Width/Depth Ratio	**13.33**
2.7 Entrenchment Ratio	**3.81**
2.8 Incision Ratio	**1.70**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**22**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**10** %
Cobble	**31** %
Coarse Gravel	**21** %
Fine Gravel	**15** %
Sand	**23** %

Silt/Clay Present? **Yes**

Detritus **0** %

Large Woody **13**

2.13 Average Largest Particle on

Bed **12.0** **inches**

Bar **6.0** **inches**

2.14 Stream Type

Stream Type: **C**

Bed Material: **Gravel**

Subclass Slope: **b**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Moderate**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Gravel**	**Gravel**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**0**
Erosion Height (ft)	**0.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Deciduous**	**Deciduous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Mixed Trees**	**Mixed Trees**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**Some**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**14**	**3**

Diagonal	Delta	Island
1	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
1	**0**	**No**

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **First Trib of Isham** Reach # **M17-S1-t1.02** Segment: **D** Completion Date:

Organization: **Addison County RPC** Observers: Why Not assessed:**beaver dam** Rain:

Segment Length (ft): **867** Segment Location:

Step 1. Valley and Floodplain

1.1 Segmentation

1.2 Alluvial Fan

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**10**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope		
Continuous w/		
W/in 1 Bankfill		
Texture		

1.5 Valley Features

Valley Width (ft) **0**

Width Determination

Confinement Type

Rock Gorge?

Human-caused changed valley width?

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**0**
2.2 Max Depth (ft)	**0.00**
2.3 Mean Depth (ft)	**0.00**
2.4 Floodprone Width (ft)	**0**
2.5 Aband. Floodpln	**0.00**
2.6 Width/Depth Ratio	**0.00**
2.7 Entrenchment Ratio	**0.00**
2.8 Incision Ratio	**0.00**
2.9 Sinuosity	
2.10 Riffles Type	
2.11 Riffle/Step Spacing (ft)	**0**

2.12 Substrate Composition

Silt/Clay Present?

Detritus **0** %

Large Woody **0**

2.13 Average Largest Particle on

Bed **0.0**

Bar **0.0**

2.14 Stream Type

Stream Type:

Bed Material:

Subclass Slope:

Bed Form:

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope

Bank Texture	Left	Right
Upper		
Material Type		
Consistency		
Lower		
Material Type		
Consistency		
Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**0**
Erosion Height (ft)	**0.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**
Near Bank Veg. Type	Left	Right
Dominant		
Sub-dominant		
Bank Canopy	Left	Right
Canopy %		
Mid-Channel Canopy		

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant		
Sub-dominant		
Buffer Veg. Type	Left	Right
Dominant		
Sub-dominant		

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant		
Sub-dominant		

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	
4.2 Adjacent Wetlands	
4.3 Flow Status	
4.4 # of Debris Jams	**0**
4.5 Impoundments	
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	
4.9 # of Beaver Dams	**3**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**0**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | page 1 of 2 | June 14, 2007 | **FIT: Yes**

Stream: **Isham** | Reach # **M17-S1.01** | Segment: **A** | Completion Date: **November 6, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon & Amy Diller** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **1,791** | Segment Location: **From confluence upstream to where the slope decreases and valley widerns.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **No**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	0	0
Roads	346	0
Railroads	0	0
Improved Paths	0	0
Development	0	0

1.4 Adjacent Side	Left	Right
Hillside Slope	Very Steep	Very Steep
Continuous w/	Always	Always
W/in 1 Bankfill	Always	Always
Texture	Boulder	Boulder

1.5 Valley Features

Valley Width (ft): **97**

Width Determination: **Measured**

Confinement Type: **Semi-confined**

Rock Gorge?: **No**

Human-caused changed valley width?: **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	25
2.2 Max Depth (ft)	3.00
2.3 Mean Depth (ft)	0.76
2.4 Floodprone Width (ft)	32
2.5 Aband. Floodpln	3.00
2.6 Width/Depth Ratio	32.63
2.7 Entrenchment Ratio	1.28
2.8 Incision Ratio	1.00
2.9 Sinuosity	Low
2.10 Riffles Type	Complete
2.11 Riffle/Step Spacing (ft)	45

2.12 Substrate Composition

Bedrock	9 %
Boulder	26 %
Cobble	33 %
Coarse Gravel	15 %
Fine Gravel	6 %
Sand	11 %

Silt/Clay Present?	Yes
Detritus	0 %
# Large Woody	38

2.13 Average Largest Particle on

Bed	15.0	inches
Bar	18.0	inches

2.14 Stream Type

Stream Type: **A**

Bed Material: **Cobble**

Subclass Slope: **None**

Bed Form: **Step-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Steep**

Bank Texture	Left	Right
Upper		
Material Type	Sand	Gravel
Consistency	Non-cohesive	Non-cohesive
Lower		
Material Type	Boulder/Cobbl	Boulder/Cobbl
Consistency	Non-cohesive	Non-cohesive

Bank Erosion	Left	Right
Erosion Length (ft)	0	173
Erosion Height (ft)	0.00	4.00
Revetmt. Type	None	Rip-Rap
Revetmt. Length (ft)	0	109

Near Bank Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	None	None

Bank Canopy	Left	Right
Canopy %	76-100	76-100

Mid-Channel Canopy: **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	>100	>100
Sub-dominant	None	None

Buffer Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	None	None

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	Forest	Forest
Sub-dominant	None	None

	Amount	Mean Height
Mass Failures	Multiple	18.33
Gullies	None	0.00

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	Some
4.2 Adjacent Wetlands	None
4.3 Flow Status	Moderate
4.4 # of Debris Jams	0
4.5 Impoundments	None
Impoundmt. Location	
4.6 # of Stormwater Inputs	0
4.7 Upstream Flow	None
4.9 # of Beaver Dams	0
Affected Length (ft)	0

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
3	3	22

Diagonal	Delta	Island
3	0	0

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
1	0	0	0

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	0	No

5.4 Stream Ford or Animal: **No**

5.5 Straightening: **No**

Straightening Length: **0**

5.5 Dredging: **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **Isham** | Reach # **M17-S1.01** | Segment: **B** | Completion Date: **November 6, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon, Amy Diller** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **816** | Segment Location: **Upper end of reach, lower sloped than rest.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **No**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Steep**	**Steep**
Continuous w/	**Sometimes**	**Sometimes**
W/in 1 Bankfill	**Sometimes**	**Sometimes**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft)	**127**
Width Determination	**Measured**
Confinement Type	**Narrow**
Rock Gorge?	**No**

Human-caused changed valley width? **no**

Notes:

Debris jam d/s and ledge u/s trap sediment. Numerous flood chutes and a broader valley compared to A.

Step 2. Stream Channel

2.1 Bankfull Width	**28**
2.2 Max Depth (ft)	**2.80**
2.3 Mean Depth (ft)	**0.73**
2.4 Floodprone Width (ft)	**65**
2.5 Aband. Floodpln	**2.70**
2.6 Width/Depth Ratio	**38.77**
2.7 Entrenchment Ratio	**2.30**
2.8 Incision Ratio	**0.96**
2.9 Sinuosity	**Low**
2.10 Riffles Type	**Sedimented**
2.11 Riffle/Step Spacing (ft)	**60**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**8** %
Cobble	**30** %
Coarse Gravel	**26** %
Fine Gravel	**23** %
Sand	**13** %

Silt/Clay Present?	**Yes**
Detritus	**0** %
# Large Woody	**15**

2.13 Average Largest Particle on

Bed	**13.0**	**inches**
Bar	**9.5**	**inches**

2.14 Stream Type

Stream Type:	**B**
Bed Material:	**Gravel**
Subclass Slope:	**None**
Bed Form:	**Riffle-Pool**

2.15 Reference Stream Type (if different from Phase 1)

B 3 Non Riffle-Pool

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Steep**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Gravel**	**Gravel**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**119**	**0**
Erosion Height (ft)	**3.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Coniferous**	**Coniferous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Coniferous**	**Coniferous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**One**	**30.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Some**
4.2 Adjacent Wetlands	**None**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**1**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**6**

Diagonal	Delta	Island
2	**0**	**1**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
2	**0**	**1**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal	**No**
5.5 Straightening	**No**
Straightening Length:	**0**
5.5 Dredging	**None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **Isham** Reach # **M17-S1.02** Segment: **A** Completion Date: **November 9, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Why Not assessed: Rain: **Yes**

Segment Length (ft): **4,295** Segment Location: **Downstream and upstream of Isham Hollow Road.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**42**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**131**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Steep**	**Steep**
Continuous w/	**Always**	**Sometimes**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft) **120**

Width Determination **Measured**

Confinement Type **Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

Numerous blowdowns (fallen trees), a large number of which were cut. This reach segmented due to beaver dams in upstream portion.

Step 2. Stream Channel

2.1 Bankfull Width	**29**
2.2 Max Depth (ft)	**3.10**
2.3 Mean Depth (ft)	**1.60**
2.4 Floodprone Width (ft)	**43**
2.5 Aband. Floodpln	**3.10**
2.6 Width/Depth Ratio	**18.12**
2.7 Entrenchment Ratio	**1.48**
2.8 Incision Ratio	**1.00**
2.9 Sinuosity	**Low**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**53**

2.12 Substrate Composition

Bedrock	**0**	%
Boulder	**31**	%
Cobble	**24**	%
Coarse Gravel	**13**	%
Fine Gravel	**11**	%
Sand	**21**	%

Silt/Clay Present? **No**

Detritus **20** %

Large Woody **58**

2.13 Average Largest Particle on

Bed **15.6** **inches**

Bar **14.0** **inches**

2.14 Stream Type

Stream Type: **B**

Bed Material: **Cobble**

Subclass Slope: **None**

Bed Form: **Step-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Shallow**

Bank Texture	Left	Right
Upper		
Material Type	**Silt/Clay**	**Silt/Clay**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Gravel**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**330**	**280**
Erosion Height (ft)	**2.00**	**3.33**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Coniferous**	**Coniferous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Mixed Trees**	**Mixed Trees**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**Multiple**	**10.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**None**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**6**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
2	**2**	**21**

Diagonal	Delta	Island
1	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
4	**0**	**1**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
2	**0**	**No**

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **Isham** | Reach # **M17-S1.02** | Segment: **B** | Completion Date:

Organization: **Addison County RPC** | Observers: | Why Not assessed: **beaver dam** | Rain:

Segment Length (ft): **813** | Segment Location:

Step 1. Valley and Floodplain

1.1 Segmentation

1.2 Alluvial Fan

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope		
Continuous w/ W/in 1 Bankfill		
Texture		

1.5 Valley Features

Valley Width (ft) **0**

Width Determination

Confinement Type

Rock Gorge?

Human-caused changed valley width?

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**0**
2.2 Max Depth (ft)	**0.00**
2.3 Mean Depth (ft)	**0.00**
2.4 Floodprone Width (ft)	**0**
2.5 Aband. Floodpln	**0.00**
2.6 Width/Depth Ratio	**0.00**
2.7 Entrenchment Ratio	**0.00**
2.8 Incision Ratio	**0.00**
2.9 Sinuosity	
2.10 Riffles Type	
2.11 Riffle/Step Spacing (ft)	**0**

2.12 Substrate Composition

Silt/Clay Present?

Detritus **0** %

Large Woody **0**

2.13 Average Largest Particle on

Bed **0.0**

Bar **0.0**

2.14 Stream Type

Stream Type:

Bed Material:

Subclass Slope:

Bed Form:

2.15 Reference Stream Type (if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope

Bank Texture	Left	Right
Upper		
Material Type		
Consistency		
Lower		
Material Type		
Consistency		

Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**0**
Erosion Height (ft)	**0.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant		
Sub-dominant		
Bank Canopy		
Canopy %		
Mid-Channel Canopy		

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant		
Sub-dominant		
Buffer Veg. Type		
Dominant		
Sub-dominant		

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant		
Sub-dominant		

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	
4.2 Adjacent Wetlands	
4.3 Flow Status	
4.4 # of Debris Jams	**0**
4.5 Impoundments	
Impoundmt. Location	
4.6 # of Stormwater Inputs	**1**
4.7 Upstream Flow	
4.9 # of Beaver Dams	**5**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**0**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
2	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	

5.4 Stream Ford or Animal	**No**
5.5 Straightening	**No**
Straightening Length:	**0**
5.5 Dredging	**None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **Isham** | Reach # **M17-S1.03** | Segment: **A** | Completion Date:

Organization: **Addison County RPC** | Observers: | Why Not assessed: **beaver dam** | Rain:

Segment Length (ft): **2,291** | Segment Location:

Step 1. Valley and Floodplain

1.1 Segmentation

1.2 Alluvial Fan

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope		
Continuous w/ W/in 1 Bankfill		
Texture		

1.5 Valley Features

Valley Width (ft) **0**

Width Determination

Confinement Type

Rock Gorge?

Human-caused changed valley width?

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**0**
2.2 Max Depth (ft)	**0.00**
2.3 Mean Depth (ft)	**0.00**
2.4 Floodprone Width (ft)	**0**
2.5 Aband. Floodpln	**0.00**
2.6 Width/Depth Ratio	**0.00**
2.7 Entrenchment Ratio	**0.00**
2.8 Incision Ratio	**0.00**
2.9 Sinuosity	
2.10 Riffles Type	
2.11 Riffle/Step Spacing (ft)	**0**

2.12 Substrate Composition

Silt/Clay Present?

Detritus **0** %

Large Woody **0**

2.13 Average Largest Particle on

Bed **0.0**

Bar **0.0**

2.14 Stream Type

Stream Type:

Bed Material:

Subclass Slope:

Bed Form:

2.15 Reference Stream Type (if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope

Bank Texture	Left	Right
Upper		
Material Type		
Consistency		
Lower		
Material Type		
Consistency		
Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**0**
Erosion Height (ft)	**0.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**
Near Bank Veg. Type	Left	Right
Dominant		
Sub-dominant		
Bank Canopy	Left	Right
Canopy %		
Mid-Channel Canopy		

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant		
Sub-dominant		
Buffer Veg. Type	Left	Right
Dominant		
Sub-dominant		

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant		
Sub-dominant		

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	
4.2 Adjacent Wetlands	
4.3 Flow Status	
4.4 # of Debris Jams	**0**
4.5 Impoundments	
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	
4.9 # of Beaver Dams	**4**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**0**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	

5.4 Stream Ford or Animal	**No**
5.5 Straightening	**No**
Straightening Length:	**0**
5.5 Dredging	**None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **Isham** | Reach # **M17-S1.03** | Segment: **B** | Completion Date: **November 8, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **883** | Segment Location: **Upsream end of Isham Brook**

Step 1. Valley and Floodplain

1.1 Segmentation **Other Reason**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	0	0
Roads	0	0
Railroads	0	0
Improved Paths	0	0
Development	0	0

1.4 Adjacent Side	Left	Right
Hillside Slope	Flat	Hilly
Continuous w/	Sometimes	Always
W/in 1 Bankfill	Sometimes	Always
Texture	Silt/Clay	Silt/Clay

1.5 Valley Features

Valley Width (ft): **526**

Width Determination: **Measured**

Confinement Type: **Very Broad**

Rock Gorge?: **No**

Human-caused changed valley width?: **no**

Notes:

Segmented for beaver dams downstream and wetlands upstream.

Step 2. Stream Channel

2.1 Bankfull Width	7
2.2 Max Depth (ft)	1.30
2.3 Mean Depth (ft)	0.70
2.4 Floodprone Width (ft)	22
2.5 Aband. Floodpln	1.80
2.6 Width/Depth Ratio	10.00
2.7 Entrenchment Ratio	3.09
2.8 Incision Ratio	1.38
2.9 Sinuosity	Low
2.10 Riffles Type	Sedimented
2.11 Riffle/Step Spacing (ft)	14

2.12 Substrate Composition

Bedrock	8 %
Boulder	2 %
Cobble	9 %
Coarse Gravel	15 %
Fine Gravel	25 %
Sand	41 %

Silt/Clay Present?: **No**

Detritus: **2** %

Large Woody: **23**

2.13 Average Largest Particle on

Bed **6.0** **inches**

Bar **4.0** **inches**

2.14 Stream Type

Stream Type: **C**

Bed Material: **Gravel**

Subclass Slope: **b**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Moderate**

Bank Texture	Left	Right
Upper		
Material Type	Silt/Clay	Silt/Clay
Consistency	Non-cohesive	Non-cohesive
Lower		
Material Type	Sand	Sand
Consistency	Non-cohesive	Non-cohesive

Bank Erosion	Left	Right
Erosion Length (ft)	0	0
Erosion Height (ft)	0.00	0.00
Revetmt. Type	None	None
Revetmt. Length (ft)	0	0

Near Bank Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	Deciduous	None

Bank Canopy	Left	Right
Canopy %	76-100	76-100

Mid-Channel Canopy: **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	>100	>100
Sub-dominant	None	None

Buffer Veg. Type	Left	Right
Dominant	Mixed Trees	Coniferous
Sub-dominant	None	None

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	Forest	Shrubs/Saplin
Sub-dominant	None	Forest

	Amount	Mean Height
Mass Failures	None	0.00
Gullies	None	0.00

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	None
4.2 Adjacent Wetlands	Abundant
4.3 Flow Status	Moderate
4.4 # of Debris Jams	0
4.5 Impoundments	None
Impoundmt. Location	
4.6 # of Stormwater Inputs	0
4.7 Upstream Flow	None
4.9 # of Beaver Dams	0
Affected Length (ft)	0

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	3	0

Diagonal	Delta	Island
0	0	0

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	0	0	0

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	0	No

5.4 Stream Ford or Animal: **No**

5.5 Straightening: **No**

Straightening Length: **0**

5.5 Dredging: **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: No**

Stream: **Isham** Reach # **M17-S1.03** Segment: **C** Completion Date: **November 8, 2006**

Organization: **Addison County RPC** Observers: **ADs** Why Not assessed: **wetland** Rain: **Yes**

Segment Length (ft): **1,437** Segment Location: **Northernmost end of reach.**

Step 1. Valley and Floodplain

1.1 Segmentation

1.2 Alluvial Fan

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope		
Continuous w/ W/in 1 Bankfill		
Texture		

1.5 Valley Features

Valley Width (ft) **0**

Width Determination

Confinement Type

Rock Gorge?

Human-caused changed valley width?

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**0**
2.2 Max Depth (ft)	**0.00**
2.3 Mean Depth (ft)	**0.00**
2.4 Floodprone Width (ft)	**0**
2.5 Aband. Floodpln	**0.00**
2.6 Width/Depth Ratio	**0.00**
2.7 Entrenchment Ratio	**0.00**
2.8 Incision Ratio	**0.00**
2.9 Sinuosity	
2.10 Riffles Type	
2.11 Riffle/Step Spacing (ft)	**0**

2.12 Substrate Composition

Silt/Clay Present?

Detritus **0** %

Large Woody **0**

2.13 Average Largest Particle on

Bed **0.0**

Bar **0.0**

2.14 Stream Type

Stream Type:

Bed Material:

Subclass Slope:

Bed Form:

2.15 Reference Stream Type (if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope

Bank Texture	Left	Right
Upper		
Material Type		
Consistency		
Lower		
Material Type		
Consistency		
Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**0**
Erosion Height (ft)	**0.00**	**0.00**
Revetmt. Type		
Revetmt. Length (ft)	**0**	**0**
Near Bank Veg. Type	Left	Right
Dominant		
Sub-dominant		
Bank Canopy	Left	Right
Canopy %		
Mid-Channel Canopy		

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant		
Sub-dominant		
Buffer Veg. Type	Left	Right
Dominant		
Sub-dominant		

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant		
Sub-dominant		

	Amount	Mean Height
Mass Failures		**0.00**
Gullies		**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps

4.2 Adjacent Wetlands

4.3 Flow Status

4.4 # of Debris Jams **0**

4.5 Impoundments

Impoundmt. Location

4.6 # of Stormwater Inputs **0**

4.7 Upstream Flow

4.9 # of Beaver Dams **0**

Affected Length (ft) **0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**0**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	

5.4 Stream Ford or Animal

5.5 Straightening

Straightening Length: **0**

5.5 Dredging

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **Cota** Reach # **T5.01** Segment: **A** Completion Date: **November 16, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Why Not assessed: Rain: **Yes**

Segment Length (ft): **894** Segment Location: **Between the New Haven River and the bridge on the River Road.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**697**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**101**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Hilly**	**Hilly**
Continuous w/	**Never**	**Never**
W/in 1 Bankfill	**Never**	**Never**
Texture	**Not Evalua**	**Not Evalua**

1.5 Valley Features

Valley Width (ft): **355**

Width Determination: **Estimated**

Confinement Type: **Very Broad**

Rock Gorge?: **No**

Human-caused changed valley width?: **no**

Notes:

Moved, rip-rapped and channelized after 1998 flood; one slightly undersized pedestrian bridge.

Step 2. Stream Channel

2.1 Bankfull Width	**15**
2.2 Max Depth (ft)	**1.80**
2.3 Mean Depth (ft)	**1.40**
2.4 Floodprone Width (ft)	**19**
2.5 Aband. Floodpln	**4.40**
2.6 Width/Depth Ratio	**10.43**
2.7 Entrenchment Ratio	**1.32**
2.8 Incision Ratio	**2.44**
2.9 Sinuosity	**Low**
2.10 Riffles Type	**Not Applicable**
2.11 Riffle/Step Spacing (ft)	**0**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**11** %
Cobble	**31** %
Coarse Gravel	**28** %
Fine Gravel	**10** %
Sand	**20** %

Silt/Clay Present?: **No**

Detritus: **0** %

Large Woody: **0**

2.13 Average Largest Particle on

Bed **8.0** **inches**

Bar **N/A** **inches**

2.14 Stream Type

Stream Type: **G**

Bed Material: **Gravel**

Subclass Slope: **None**

Bed Form: **Plane Bed**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Steep**

Bank Texture	Left	Right
Upper		
Material Type	**Boulder/Cobbl**	**Boulder/Cobbl**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Boulder/Cobbl**	**Boulder/Cobbl**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**20**
Erosion Height (ft)	**0.00**	**4.00**
Revetmt. Type	**Rip-Rap**	**Hard Bank**
Revetmt. Length (ft)	**438**	**437**

Near Bank Veg. Type	Left	Right
Dominant	**Lawn**	**Lawn**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**0**	**0**

Mid-Channel Canopy: **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**5-25**	**5-25**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Herbaceous**	**Herbaceous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Residential**	**Residential**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**None**
4.2 Adjacent Wetlands	**None**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
0	**0**	**0**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
0	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal: **No**

5.5 Straightening: **Yes**

Straightening Length: **887**

5.5 Dredging: **None**

Note:

Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **Cota** | Reach # **T5.01** | Segment: **B** | Completion Date: **November 10, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **399** | Segment Location: **From River Road bridge to dramatic change in slope at base of segment C.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	0	0
Roads	0	0
Railroads	0	0
Improved Paths	0	0
Development	0	0

1.4 Adjacent Side	Left	Right
Hillside Slope	Flat	Hilly
Continuous w/	Always	Always
W/in 1 Bankfill	Always	Always
Texture	Sand	Sand

1.5 Valley Features

Valley Width (ft): **188**

Width Determination: **Estimated**

Confinement Type: **Broad**

Rock Gorge?: **No**

Human-caused changed valley width?: **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	21
2.2 Max Depth (ft)	1.20
2.3 Mean Depth (ft)	0.90
2.4 Floodprone Width (ft)	64
2.5 Aband. Floodpln	1.60
2.6 Width/Depth Ratio	23.33
2.7 Entrenchment Ratio	3.06
2.8 Incision Ratio	1.33
2.9 Sinuosity	Moderate
2.10 Riffles Type	Complete
2.11 Riffle/Step Spacing (ft)	36

2.12 Substrate Composition

Bedrock	0 %
Boulder	2 %
Cobble	43 %
Coarse Gravel	31 %
Fine Gravel	10 %
Sand	14 %

Silt/Clay Present?	Yes
Detritus	2 %
# Large Woody	4

2.13 Average Largest Particle on

Bed	8.3	inches
Bar	5.0	inches

2.14 Stream Type

Stream Type: **C**

Bed Material: **Gravel**

Subclass Slope: **None**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	Gravel	Gravel
Consistency	Non-cohesive	Non-cohesive
Lower		
Material Type	Boulder/Cobbl	Boulder/Cobbl
Consistency	Non-cohesive	Non-cohesive

Bank Erosion	Left	Right
Erosion Length (ft)	0	0
Erosion Height (ft)	0.00	0.00
Revetmt. Type	None	None
Revetmt. Length (ft)	0	0

Near Bank Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	Deciduous	Deciduous

Bank Canopy	Left	Right
Canopy %	76-100	76-100

Mid-Channel Canopy: **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	26-50	>100
Sub-dominant	None	None

Buffer Veg. Type	Left	Right
Dominant	Mixed Trees	Mixed Trees
Sub-dominant	None	None

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	Forest	Forest
Sub-dominant	None	None

	Amount	Mean Height
Mass Failures	None	0.00
Gullies	None	0.00

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	None
4.2 Adjacent Wetlands	Some
4.3 Flow Status	Moderate
4.4 # of Debris Jams	0
4.5 Impoundments	None
Impoundmt. Location	
4.6 # of Stormwater Inputs	0
4.7 Upstream Flow	None
4.9 # of Beaver Dams	0
Affected Length (ft)	0

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
1	3	7

Diagonal	Delta	Island
0	0	0

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
1	0	0	0

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	0	No

5.4 Stream Ford or Animal: **No**

5.5 Straightening: **No**

Straightening Length: **0**

5.5 Dredging: **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **Cota** Reach # **T5.01** Segment: **C** Completion Date: **November 16, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Why Not assessed: Rain: **Yes**

Segment Length (ft): **1,496** Segment Location: **Mid reach where slope increases dramatically.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Hilly**	**Hilly**
Continuous w/	**Sometimes**	**Sometimes**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Other**	**Other**

1.5 Valley Features

Valley Width (ft) **46**

Width Determination **Measured**

Confinement Type **Narrowly**

Rock Gorge? **Yes**

Human-caused changed valley width? **no**

Notes:

Beautiful gorge.

Step 2. Stream Channel

2.1 Bankfull Width	**29**
2.2 Max Depth (ft)	**2.90**
2.3 Mean Depth (ft)	**1.60**
2.4 Floodprone Width (ft)	**43**
2.5 Aband. Floodpln	**2.90**
2.6 Width/Depth Ratio	**18.37**
2.7 Entrenchment Ratio	**1.47**
2.8 Incision Ratio	**1.00**
2.9 Sinuosity	**Low**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**30**

2.12 Substrate Composition

Bedrock	**28** %
Boulder	**14** %
Cobble	**10** %
Coarse Gravel	**24** %
Fine Gravel	**13** %
Sand	**11** %

Silt/Clay Present?	**No**
Detritus	**5** %
# Large Woody	**3**

2.13 Average Largest Particle on

Bed	**10.0**	**inches**
Bar	**4.0**	**inches**

2.14 Stream Type

Stream Type: **B**

Bed Material: **Cobble**

Subclass Slope: **None**

Bed Form: **Step-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

B 3 Non Step-Pool

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Steep**

Bank Texture	Left	Right
Upper		
Material Type	**Boulder/Cobbl**	**Boulder/Cobbl**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Bedrock**	**Bedrock**
Consistency	**Cohesive**	**Cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**0**
Erosion Height (ft)	**0.00**	**0.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Coniferous**	**Coniferous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Coniferous**	**Coniferous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**None**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
5	**1**	**7**

Diagonal	Delta	Island
0	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
2	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and
Step 4.8 - Channel Constrictions
are on The second page of this
report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **Cota** Reach # **T5.01** Segment: **D** Completion Date: **November 10, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Why Not assessed: Rain: **Yes**

Segment Length (ft): **1,374** Segment Location: **Upstream of gorge/segment C.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	0	0
Roads	0	0
Railroads	0	0
Improved Paths	0	0
Development	0	0

1.4 Adjacent Side	Left	Right
Hillside Slope	Flat	Hilly
Continuous w/	Always	Always
W/in 1 Bankfill	Always	Always
Texture	Sand	Sand

1.5 Valley Features

Valley Width (ft) **188**

Width Determination **Estimated**

Confinement Type **Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	21
2.2 Max Depth (ft)	1.20
2.3 Mean Depth (ft)	0.90
2.4 Floodprone Width (ft)	64
2.5 Aband. Floodpln	1.60
2.6 Width/Depth Ratio	23.33
2.7 Entrenchment Ratio	3.06
2.8 Incision Ratio	1.33
2.9 Sinuosity	Moderate
2.10 Riffles Type	Complete
2.11 Riffle/Step Spacing (ft)	36

2.12 Substrate Composition

Bedrock	0 %
Boulder	2 %
Cobble	43 %
Coarse Gravel	31 %
Fine Gravel	10 %
Sand	14 %

Silt/Clay Present? **Yes**

Detritus **2** %

Large Woody **4**

2.13 Average Largest Particle on

Bed **8.3** **inches**

Bar **5.0** **inches**

2.14 Stream Type

Stream Type: **C**

Bed Material: **Gravel**

Subclass Slope: **None**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	Gravel	Gravel
Consistency	Non-cohesive	Non-cohesive
Lower		
Material Type	Boulder/Cobbl	Boulder/Cobbl
Consistency	Non-cohesive	Non-cohesive

Bank Erosion	Left	Right
Erosion Length (ft)	191	0
Erosion Height (ft)	2.50	0.00
Revetmt. Type	None	None
Revetmt. Length (ft)	0	0

Near Bank Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	Deciduous	Deciduous

Bank Canopy	Left	Right
Canopy %	76-100	76-100

Mid-Channel Canopy **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	>100	>100
Sub-dominant	None	None

Buffer Veg. Type	Left	Right
Dominant	Mixed Trees	Mixed Trees
Sub-dominant	None	None

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	Forest	Forest
Sub-dominant	None	None

	Amount	Mean Height
Mass Failures	None	0.00
Gullies	None	0.00

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	None
4.2 Adjacent Wetlands	Some
4.3 Flow Status	Moderate
4.4 # of Debris Jams	0
4.5 Impoundments	None
Impoundmt. Location	
4.6 # of Stormwater Inputs	0
4.7 Upstream Flow	None
4.9 # of Beaver Dams	0
Affected Length (ft)	0

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
1	3	7

Diagonal	Delta	Island
0	0	0

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
2	0	0	1

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	0	No

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **Cota** Reach # **T5.02** Segment: **A** Completion Date: **November 15, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Why Not assessed: Rain: **Yes**

Segment Length (ft): **1,643** Segment Location: **Downstream of Geary Road.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	0	0
Roads	0	0
Railroads	0	0
Improved Paths	0	0
Development	0	0

1.4 Adjacent Side	Left	Right
Hillside Slope	Flat	Flat
Continuous w/	Always	Always
W/in 1 Bankfill	Always	Always
Texture	Sand	Sand

1.5 Valley Features

Valley Width (ft) **255**

Width Determination **Measured**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

Historic dredging in left bank outside of channel.

Step 2. Stream Channel

2.1 Bankfull Width	23
2.2 Max Depth (ft)	2.40
2.3 Mean Depth (ft)	1.80
2.4 Floodprone Width (ft)	153
2.5 Aband. Floodpln	3.00
2.6 Width/Depth Ratio	12.50
2.7 Entrenchment Ratio	6.78
2.8 Incision Ratio	1.25
2.9 Sinuosity	Moderate
2.10 Riffles Type	Complete
2.11 Riffle/Step Spacing (ft)	40

2.12 Substrate Composition

Bedrock	0	%
Boulder	14	%
Cobble	28	%
Coarse Gravel	21	%
Fine Gravel	5	%
Sand	32	%

Silt/Clay Present? **No**

Detritus **5** %

Large Woody **45**

2.13 Average Largest Particle on

Bed **250.0** mm

Bar **120.0** mm

2.14 Stream Type

Stream Type: **C**

Bed Material: **Gravel**

Subclass Slope: **b**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

C 4 b Riffle-Pool

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Steep**

Bank Texture	Left	Right
Upper		
Material Type	Sand	Sand
Consistency	Non-cohesive	Non-cohesive
Lower		
Material Type	Boulder/Cobbl	Boulder/Cobbl
Consistency	Non-cohesive	Non-cohesive

Bank Erosion	Left	Right
Erosion Length (ft)	424	292
Erosion Height (ft)	3.40	3.67
Revetmt. Type	None	None
Revetmt. Length (ft)	0	0

Near Bank Veg. Type	Left	Right
Dominant	Coniferous	Coniferous
Sub-dominant	Deciduous	Deciduous

Bank Canopy	Left	Right
Canopy %	76-100	76-100

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	>100	>100
Sub-dominant	None	None

Buffer Veg. Type	Left	Right
Dominant	Mixed Trees	Mixed Trees
Sub-dominant	None	None

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	Forest	Forest
Sub-dominant	None	None

	Amount	Mean Height
Mass Failures	None	0.00
Gullies	None	0.00

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	Some
4.2 Adjacent Wetlands	Some
4.3 Flow Status	Moderate
4.4 # of Debris Jams	1
4.5 Impoundments	None
Impoundmt. Location	
4.6 # of Stormwater Inputs	0
4.7 Upstream Flow	None
4.9 # of Beaver Dams	0
Affected Length (ft)	0

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
9	5	10

Diagonal	Delta	Island
5	0	0

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
1	0	0	0

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	0	No

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs**

Phase 2 Segment Summary

June 14, 2007 **FIT: Yes**

Stream: **Cota** Reach # **T5.02** Segment: **B** Completion Date: **November 5, 2006**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Why Not assessed: Rain: **Yes**

Segment Length (ft): **2,754** Segment Location: **Upstream of Geary Road.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**57**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Steep**	**Hilly**
Continuous w/	**Sometimes**	**Sometimes**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft) **119**

Width Determination **Measured**

Confinement Type **Narrowly**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**28**
2.2 Max Depth (ft)	**2.90**
2.3 Mean Depth (ft)	**2.00**
2.4 Floodprone Width (ft)	**46**
2.5 Aband. Floodpln	**3.30**
2.6 Width/Depth Ratio	**13.75**
2.7 Entrenchment Ratio	**1.65**
2.8 Incision Ratio	**1.14**
2.9 Sinuosity	**Low**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**30**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**24** %
Cobble	**36** %
Coarse Gravel	**10** %
Fine Gravel	**15** %
Sand	**15** %

Silt/Clay Present?	**No**
Detritus	**5** %
# Large Woody	**25**

2.13 Average Largest Particle on

Bed	**250.0**	**mm**
Bar	**140.0**	**mm**

2.14 Stream Type

Stream Type: **B**

Bed Material: **Cobble**

Subclass Slope: **None**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Steep**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Boulder/Cobbl**	**Boulder/Cobbl**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**276**	**388**
Erosion Height (ft)	**2.83**	**2.50**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Coniferous**	**Coniferous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Coniferous**	**Coniferous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**Multiple**	**10.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Some**
4.2 Adjacent Wetlands	**None**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**3**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**1**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
4	**3**	**5**

Diagonal	Delta	Island
3	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
8	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
3	**0**	**No**

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **First Trib of Cow** | Reach # **T6.01** | Segment: **0** | Completion Date: **November 16, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **927** | Segment Location: **The mouth of Cow Brook in South Lincoln.**

Step 1. Valley and Floodplain

1.1 Segmentation **None**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Flat**	**Flat**
Continuous w/	**Always**	**Always**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft) **853**

Width Determination **Estimated**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

There is a 100'+ long MCB in this short reach.

Step 2. Stream Channel

2.1 Bankfull Width	**24**
2.2 Max Depth (ft)	**2.00**
2.3 Mean Depth (ft)	**1.30**
2.4 Floodprone Width (ft)	**99**
2.5 Aband. Floodpln	**2.60**
2.6 Width/Depth Ratio	**18.23**
2.7 Entrenchment Ratio	**4.17**
2.8 Incision Ratio	**1.30**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Sedimented**
2.11 Riffle/Step Spacing (ft)	**134**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**0** %
Cobble	**30** %
Coarse Gravel	**40** %
Fine Gravel	**10** %
Sand	**20** %

Silt/Clay Present? **No**

Detritus **0** %

Large Woody **3**

2.13 Average Largest Particle on

Bed **6.6** **inches**

Bar **5.5** **inches**

2.14 Stream Type

Stream Type: **C**

Bed Material: **Gravel**

Subclass Slope: **b**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Boulder/Cobbl**	**Boulder/Cobbl**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**130**	**311**
Erosion Height (ft)	**3.00**	**2.75**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**51-75**

Mid-Channel Canopy **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**5-25**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**None**	**Hay**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**None**
4.2 Adjacent Wetlands	**Some**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
2	**4**	**1**

Diagonal	Delta	Island
4	**1**	**1**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
1	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
1	**0**	**No**

5.4 Stream Ford or Animal **No**

5.5 Straightening **No**

Straightening Length: **0**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **First Trib of Cow** | Reach # **T6.02** | Segment: **A** | Completion Date: **November 7, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon, Tim Bouton** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **1,362** | Segment Location: **Downstream and upstream of where Cow crosses the South Lincoln Road.**

Step 1. Valley and Floodplain

1.1 Segmentation: **Banks and Buffers**

1.2 Alluvial Fan: **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**282**	**150**

1.4 Adjacent Side

	Left	Right
Hillside Slope	**Flat**	**Flat**
Continuous w/	**Always**	**Always**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft)	**1,603**
Width Determination	**Estimated**
Confinement Type	**Very Broad**
Rock Gorge?	**No**

Human-caused changed valley width? **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**17**
2.2 Max Depth (ft)	**2.00**
2.3 Mean Depth (ft)	**1.10**
2.4 Floodprone Width (ft)	**227**
2.5 Aband. Floodpln	**2.40**
2.6 Width/Depth Ratio	**15.36**
2.7 Entrenchment Ratio	**13.43**
2.8 Incision Ratio	**1.20**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**66**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**1** %
Cobble	**27** %
Coarse Gravel	**22** %
Fine Gravel	**12** %
Sand	**38** %

Silt/Clay Present?	**No**
Detritus	**5** %
# Large Woody	**0**

2.13 Average Largest Particle on

Bed	**8.0**	**inches**
Bar	**4.0**	**inches**

2.14 Stream Type

Stream Type:	**C**
Bed Material:	**Gravel**
Subclass Slope:	**None**
Bed Form:	**Riffle-Pool**

2.15 Reference Stream Type
(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Gravel**	**Gravel**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**47**	**158**
Erosion Height (ft)	**2.00**	**2.33**
Revetmt. Type	**Rip-Rap**	**Rip-Rap**
Revetmt. Length (ft)	**63**	**103**

Near Bank Veg. Type	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy: **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**26-50**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Hay**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**Abundant**
4.3 Flow Status	**High**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
3	**7**	**1**

Diagonal	Delta	Island
2	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
1	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
4	**0**	**No**

5.4 Stream Ford or Animal	**No**
5.5 Straightening	**Yes**
Straightening Length:	**354**
5.5 Dredging	**None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **First Trib of Cow** | Reach # **T6.02** | Segment: **B** | Completion Date: **November 27, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **No**

Segment Length (ft): **1,431** | Segment Location: **North of Masterson Road.**

Step 1. Valley and Floodplain

1.1 Segmentation **Banks and Buffers**

1.2 Alluvial Fan **No**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**0**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**81**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Flat**	**Flat**
Continuous w/	**Always**	**Always**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft)	**622**
Width Determination	**Estimated**
Confinement Type	**Very Broad**
Rock Gorge?	**No**

Human-caused changed valley width? **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**15**
2.2 Max Depth (ft)	**1.60**
2.3 Mean Depth (ft)	**1.00**
2.4 Floodprone Width (ft)	**127**
2.5 Aband. Floodpln	**3.00**
2.6 Width/Depth Ratio	**15.00**
2.7 Entrenchment Ratio	**8.47**
2.8 Incision Ratio	**1.87**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**66**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**3** %
Cobble	**32** %
Coarse Gravel	**30** %
Fine Gravel	**7** %
Sand	**28** %

Silt/Clay Present?	**No**
Detritus	**2** %
# Large Woody	**1**

2.13 Average Largest Particle on

Bed	**10.0**	**inches**
Bar	**4.0**	**inches**

2.14 Stream Type

Stream Type:	**C**
Bed Material:	**Gravel**
Subclass Slope:	**None**
Bed Form:	**Riffle-Pool**

2.15 Reference Stream Type
(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Boulder/Cobbl**	**Boulder/Cobbl**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**177**	**126**
Erosion Height (ft)	**2.00**	**2.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Deciduous**	**Deciduous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**5-25**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Deciduous**	**Deciduous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Hay**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**Abundant**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
1	**6**	**2**

Diagonal	Delta	Island
1	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
2	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal	**No**
5.5 Straightening	**Yes**
Straightening Length:	**1,633**
5.5 Dredging	**None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **First Trib of Cow** | Reach # **T6.02** | Segment: **C** | Completion Date: **November 27, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **No**

Segment Length (ft): **550** | Segment Location: **Immediately south of Masterson Road.**

Step 1. Valley and Floodplain

1.1 Segmentation **Planform and Scope**

1.2 Alluvial Fan **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**125**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Flat**	**Flat**
Continuous w/	**Always**	**Always**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft) **712**

Width Determination **Estimated**

Confinement Type **Very Broad**

Rock Gorge? **No**

Human-caused changed valley width? **no**

Notes:

Entrenched and incised due to windrowing and straightening after the 1998 flood. The structure d/s remains undersized, though it is new.

Step 2. Stream Channel

2.1 Bankfull Width	**12**
2.2 Max Depth (ft)	**1.80**
2.3 Mean Depth (ft)	**1.50**
2.4 Floodprone Width (ft)	**15**
2.5 Aband. Floodpln	**4.40**
2.6 Width/Depth Ratio	**8.20**
2.7 Entrenchment Ratio	**1.23**
2.8 Incision Ratio	**2.44**
2.9 Sinuosity	**Low**
2.10 Riffles Type	**Not Applicable**
2.11 Riffle/Step Spacing (ft)	**0**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**4** %
Cobble	**30** %
Coarse Gravel	**39** %
Fine Gravel	**14** %
Sand	**13** %

Silt/Clay Present? **No**

Detritus **1** %

Large Woody **1**

2.13 Average Largest Particle on

Bed	**7.0**	**inches**
Bar	**5.0**	**inches**

2.14 Stream Type

Stream Type: **G**

Bed Material: **Gravel**

Subclass Slope: **None**

Bed Form: **Riffle-Pool**

2.15 Reference Stream Type

(if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Boulder/Cobbl**	**Boulder/Cobbl**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**76**	**57**
Erosion Height (ft)	**2.00**	**2.33**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Coniferous**	**Coniferous**
Sub-dominant	**Deciduous**	**Deciduous**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy **Open**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Mixed Trees**	**Mixed Trees**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**None**
4.2 Adjacent Wetlands	**None**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
1	**0**	**2**

Diagonal	Delta	Island
1	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
1	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal **No**

5.5 Straightening **Yes**

Straightening Length: **542**

5.5 Dredging **None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **First Trib of Cow** | Reach # **T6.02** | Segment: **D** | Completion Date: **November 7, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon, Tim Bouton** | Why Not assessed: | Rain: **Yes**

Segment Length (ft): **987** | Segment Location: **South of Masterson Road and segment C.**

Step 1. Valley and Floodplain

1.1 Segmentation: **Banks and Buffers**

1.2 Alluvial Fan: **None**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**70**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side	Left	Right
Hillside Slope	**Flat**	**Flat**
Continuous w/	**Always**	**Always**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft)	**1,603**
Width Determination	**Estimated**
Confinement Type	**Very Broad**
Rock Gorge?	**No**

Human-caused changed valley width? **no**

Notes:

The bridge in this segment is at a small VAST trail crossing but it has abutments.

Step 2. Stream Channel

2.1 Bankfull Width	**17**
2.2 Max Depth (ft)	**2.00**
2.3 Mean Depth (ft)	**1.10**
2.4 Floodprone Width (ft)	**227**
2.5 Aband. Floodpln	**2.40**
2.6 Width/Depth Ratio	**15.36**
2.7 Entrenchment Ratio	**13.43**
2.8 Incision Ratio	**1.20**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**66**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**1** %
Cobble	**27** %
Coarse Gravel	**22** %
Fine Gravel	**12** %
Sand	**38** %

Silt/Clay Present?	**No**
Detritus	**5** %
# Large Woody	**4**

2.13 Average Largest Particle on

Bed	**8.0**	**inches**
Bar	**4.0**	**inches**

2.14 Stream Type

Stream Type:	**C**
Bed Material:	**Gravel**
Subclass Slope:	**None**
Bed Form:	**Riffle-Pool**

2.15 Reference Stream Type (if different from Phase 1)

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Gravel**	**Gravel**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**0**	**52**
Erosion Height (ft)	**0.00**	**2.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy: **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**26-50**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Shrubs/Saplin**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Hay**	**Shrubs/Saplin**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**Abundant**
4.3 Flow Status	**High**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
2	**3**	**0**

Diagonal	Delta	Island
2	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
2	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal	**No**
5.5 Straightening	**Yes**
Straightening Length:	**748**
5.5 Dredging	**None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

Project: **New Haven Tribs** | **Phase 2 Segment Summary** | | June 14, 2007 | **FIT: Yes**

Stream: **First Trib of Cow** | Reach # **T6.02** | Segment: **E** | Completion Date: **November 27, 2006**

Organization: **Addison County RPC** | Observers: **Amy Sheldon** | Why Not assessed: | Rain: **No**

Segment Length (ft): **926** | Segment Location: **South end of reach before the valley steepens sharply.**

Step 1. Valley and Floodplain

1.1 Segmentation: **Banks and Buffers**

1.2 Alluvial Fan: **No**

1.3 Corridor Encroachments

Length (ft)	One	Both
Berms	**103**	**0**
Roads	**0**	**0**
Railroads	**0**	**0**
Improved Paths	**0**	**0**
Development	**0**	**0**

1.4 Adjacent Side

	Left	Right
Hillside Slope	**Flat**	**Flat**
Continuous w/	**Always**	**Always**
W/in 1 Bankfill	**Always**	**Always**
Texture	**Sand**	**Sand**

1.5 Valley Features

Valley Width (ft)	**622**
Width Determination	**Estimated**
Confinement Type	**Very Broad**
Rock Gorge?	**No**

Human-caused changed valley width? **no**

Notes:

Step 2. Stream Channel

2.1 Bankfull Width	**15**
2.2 Max Depth (ft)	**1.60**
2.3 Mean Depth (ft)	**1.00**
2.4 Floodprone Width (ft)	**127**
2.5 Aband. Floodpln	**2.40**
2.6 Width/Depth Ratio	**15.00**
2.7 Entrenchment Ratio	**8.47**
2.8 Incision Ratio	**1.50**
2.9 Sinuosity	**Moderate**
2.10 Riffles Type	**Complete**
2.11 Riffle/Step Spacing (ft)	**66**

2.12 Substrate Composition

Bedrock	**0** %
Boulder	**3** %
Cobble	**32** %
Coarse Gravel	**30** %
Fine Gravel	**7** %
Sand	**28** %

Silt/Clay Present?	**No**
Detritus	**2** %
# Large Woody	**4**

2.13 Average Largest Particle on

Bed	**10.0**	**inches**
Bar	**4.0**	**inches**

2.14 Stream Type

Stream Type:	**C**
Bed Material:	**Gravel**
Subclass Slope:	**b**
Bed Form:	**Riffle-Pool**

2.15 Reference Stream Type (if different from Phase 1)

C 4 b Riffle-Pool

Step 3. Riparian Features

3.1 Stream Banks

Typical Bank Slope: **Undercut**

Bank Texture	Left	Right
Upper		
Material Type	**Sand**	**Sand**
Consistency	**Non-cohesive**	**Non-cohesive**
Lower		
Material Type	**Boulder/Cobbl**	**Boulder/Cobbl**
Consistency	**Non-cohesive**	**Non-cohesive**

Bank Erosion	Left	Right
Erosion Length (ft)	**314**	**64**
Erosion Height (ft)	**3.00**	**4.00**
Revetmt. Type	**None**	**None**
Revetmt. Length (ft)	**0**	**0**

Near Bank Veg. Type	Left	Right
Dominant	**Deciduous**	**Deciduous**
Sub-dominant	**None**	**None**

Bank Canopy	Left	Right
Canopy %	**76-100**	**76-100**

Mid-Channel Canopy: **Closed**

3.2 Riparian Buffer

Buffer Width	Left	Right
Dominant	**>100**	**>100**
Sub-dominant	**None**	**None**

Buffer Veg. Type	Left	Right
Dominant	**Deciduous**	**Deciduous**
Sub-dominant	**None**	**None**

3.3 Riparian Corridor

Corridor Land	Left	Right
Dominant	**Forest**	**Forest**
Sub-dominant	**None**	**None**

	Amount	Mean Height
Mass Failures	**None**	**0.00**
Gullies	**None**	**0.00**

Step 4. Flow & Flow Modifiers

4.1 Springs / Seeps	**Abundant**
4.2 Adjacent Wetlands	**Abundant**
4.3 Flow Status	**Moderate**
4.4 # of Debris Jams	**0**
4.5 Impoundments	**None**
Impoundmt. Location	
4.6 # of Stormwater Inputs	**0**
4.7 Upstream Flow	**None**
4.9 # of Beaver Dams	**0**
Affected Length (ft)	**0**

Step 5. Channel Bed and Planform Changes

5.1 Bar Types

Mid	Point	Side
2	**3**	**0**

Diagonal	Delta	Island
2	**0**	**0**

5.2 Other Features

Flood	Neck Cutoff	Avulsion	Braiding
1	**0**	**0**	**0**

5.3 Steep Riffles and Head Cuts

Steep Riffles	Head Cuts	Trib Rejuv.
0	**0**	**No**

5.4 Stream Ford or Animal	**No**
5.5 Straightening	**Yes**
Straightening Length:	**917**
5.5 Dredging	**None**

Note:
Step 1.6 - Grade Controls and Step 4.8 - Channel Constrictions are on The second page of this report - Steps 6 through 7.

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:

Step 7. Rapid Geomorphic Assessment Data

Confinement Type

Channel Evolution Model
Channel Evolution Stage
Geomorphic Condition
Stream Sensitivity

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type

Habitat Stream Condition

Stream: **West Brook** Reach # **M10-S1.01** Segment: **B** Completion Date: **November 30,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **No**

Segment Length (ft): **2,544** Segment Location: **Upstream and downstream of Cave Road.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Instream	**7.00**	**Yes**	**Yes**	**Yes**	**Yes**

Problem **Deposition Below**

Narrative:
Widening and Planform

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**15**	**None**	**No**
7.2 Channel Aggradation	**12**	**None**	**No**
7.3 Widening Channel	**11**		**No**
7.4 Change in Planform	**11**		**No**
Total Score	**49**		
Geomorphic Rating	**0.6125**		

Channel Evolution Model **F**
Channel Evolution Stage **IV**
Geomorphic Condition **Fair**
Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **Low**

	Score
6.1 Epifaunal Substrate - Available Cover	**11**
6.2 Pool Substrate	**13**
6.3 Pool Variability	**15**
6.4 Sediment Deposition	**11**
6.5 Channel Flow Status	**18**
6.6 Channel Alteration	**20**
6.7 Channel Sinuosity	**18**
6.8 Bank Stability	**Left: 9 Right: 9**
6.9 Bank Vegetation Protection	**Left: 7 Right: 7**
6.10 Riparian Vegetation Zone Width	**Left: 7 Right: 7**
Total Score	**152**
Habitat Rating	**0.76**

Habitat Stream Condition **Good**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:

Step 7. Rapid Geomorphic Assessment Data

Confinement Type

Channel Evolution Model
Channel Evolution Stage
Geomorphic Condition
Stream Sensitivity

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type

Habitat Stream Condition

Stream: **West Brook** Reach # **M10-S1.01** Segment: **D** Completion Date: **November 30,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **No**

Segment Length (ft): **392** Segment Location: **Southern end of reach from beaver dam to private drive/reach break.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
Widening and Planform

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**15**	**None**	**No**
7.2 Channel Aggradation	**12**	**None**	**No**
7.3 Widening Channel	**11**		**No**
7.4 Change in Planform	**11**		**No**
Total Score	**49**		
Geomorphic Rating	**0.6125**		

Channel Evolution Model **F**
Channel Evolution Stage **IV**
Geomorphic Condition **Fair**
Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **Low**

	Score
6.1 Epifaunal Substrate - Available Cover	**11**
6.2 Pool Substrate	**13**
6.3 Pool Variability	**15**
6.4 Sediment Deposition	**11**
6.5 Channel Flow Status	**18**
6.6 Channel Alteration	**20**
6.7 Channel Sinuosity	**18**
6.8 Bank Stability	**Left: 9 Right: 9**
6.9 Bank Vegetation Protection	**Left: 7 Right: 7**
6.10 Riparian Vegetation Zone Width	**Left: 7 Right: 7**
Total Score	**152**
Habitat Rating	**0.76**

Habitat Stream Condition **Good**

Stream: **West Brook** Reach # **M10-S1.02** Segment: **A** Completion Date: **November 28,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **No**

Segment Length (ft): **1,045** Segment Location: **Northern most segment in this reach, accessible from private road.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Instream	**4.00**	**Yes**	**Yes**	**Yes**	**Yes**
Problem	**Deposition Above,Scour Above**				

Narrative:
Planform

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**15**	**None**	**No**
7.2 Channel Aggradation	**15**	**None**	**No**
7.3 Widening Channel	**13**		**No**
7.4 Change in Planform	**12**		**No**
Total Score	**55**		
Geomorphic Rating	**0.6875**		
Channel Evolution Model	**F**		
Channel Evolution Stage	**IV**		
Geomorphic Condition	**Good**		
Stream Sensitivity	**High**		

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **Low**

	Score
6.1 Epifaunal Substrate - Available Cover	**10**
6.2 Pool Substrate	**18**
6.3 Pool Variability	**16**
6.4 Sediment Deposition	**11**
6.5 Channel Flow Status	**18**
6.6 Channel Alteration	**20**
6.7 Channel Sinuosity	**15**
6.8 Bank Stability	**Left: 5 Right: 5**
6.9 Bank Vegetation Protection	**Left: 6 Right: 6**
6.10 Riparian Vegetation Zone Width	**Left: 9 Right: 7**
Total Score	**146**
Habitat Rating	**0.73**
Habitat Stream Condition	**Good**

Stream: **West Brook** Reach # **M10-S1.02** Segment: **B** Completion Date: **November 28,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **No**

Segment Length (ft): **947** Segment Location: **The forested mid-section of this segment.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Instream	**5.00**	**Yes**	**Yes**	**Yes**	**Yes**

Problem **None**

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**16**	**None**	**No**
7.2 Channel Aggradation	**14**	**None**	**No**
7.3 Widening Channel	**10**		**No**
7.4 Change in Planform	**11**		**No**
Total Score	**51**		
Geomorphic Rating	**0.6375**		

Channel Evolution Model **F**

Channel Evolution Stage **IV**

Geomorphic Condition **Fair**

Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **Low**

	Score
6.1 Epifaunal Substrate - Available Cover	**19**
6.2 Pool Substrate	**18**
6.3 Pool Variability	**18**
6.4 Sediment Deposition	**13**
6.5 Channel Flow Status	**18**
6.6 Channel Alteration	**20**
6.7 Channel Sinuosity	**18**
6.8 Bank Stability	**Left: 5 Right: 5**
6.9 Bank Vegetation Protection	**Left: 10 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 7**
Total Score	**171**
Habitat Rating	**0.855**

Habitat Stream Condition **Referen**

Narrative:

This reach experiences increased sediment and flow from the reach just upstream of it. It would be interesting to monitor its recovery if the cows were kept out of the pasture in segment C and a buffer was allowed to grow up.

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Instream	**6.00**	**Yes**	**Yes**	**No**	**Yes**

Problem **None**

Narrative:
Planform

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**13**	**None**	**No**
7.2 Channel Aggradation	**15**	**None**	**No**
7.3 Widening Channel	**11**		**No**
7.4 Change in Planform	**11**		**No**
Total Score	**50**		
Geomorphic Rating	**0.625**		

Channel Evolution Model **F**
Channel Evolution Stage **IV**
Geomorphic Condition **Fair**
Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **Low**

	Score
6.1 Epifaunal Substrate - Available Cover	**5**
6.2 Pool Substrate	**9**
6.3 Pool Variability	**5**
6.4 Sediment Deposition	**11**
6.5 Channel Flow Status	**18**
6.6 Channel Alteration	**13**
6.7 Channel Sinuosity	**11**
6.8 Bank Stability	**Left: 1 Right: 1**
6.9 Bank Vegetation Protection	**Left: 1 Right: 1**
6.10 Riparian Vegetation Zone Width	**Left: 1 Right: 1**
Total Score	**78**
Habitat Rating	**0.39**

Habitat Stream Condition **Fair**

Stream: **West Brook** Reach # **M10-S1.03** Segment: **A** Completion Date: **November 29,**

Organization: **Addison County RPC** Observers: **Amy Sheldon, Allen Rathbun** Rain: **No**

Segment Length (ft): **2,521** Segment Location: **From reach break (parallel to Bristol Notch Road) south to where landcover changes to**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Instream	**3.40**	**Yes**	**Yes**	**Yes**	**Yes**

Problem **Deposition Above**

Narrative:
Planform and Widening.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**14**	**None**	**No**
7.2 Channel Aggradation	**15**	**None**	**No**
7.3 Widening Channel	**14**		**No**
7.4 Change in Planform	**15**		**No**
Total Score	**58**		
Geomorphic Rating	**0.725**		

Channel Evolution Model **F**
Channel Evolution Stage **IV**
Geomorphic Condition **Good**
Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **Low**

	Score
6.1 Epifaunal Substrate - Available Cover	**8**
6.2 Pool Substrate	**9**
6.3 Pool Variability	**10**
6.4 Sediment Deposition	**8**
6.5 Channel Flow Status	**11**
6.6 Channel Alteration	**20**
6.7 Channel Sinuosity	**10**
6.8 Bank Stability	**Left: 6 Right: 6**
6.9 Bank Vegetation Protection	**Left: 9 Right: 8**
6.10 Riparian Vegetation Zone Width	**Left: 9 Right: 7**
Total Score	**121**
Habitat Rating	**0.605**

Habitat Stream Condition **Fair**

Stream: **West Brook** Reach # **M10-S1.03** Segment: **B** Completion Date: **November 29,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **No**

Segment Length (ft): **4,350** Segment Location: **From where corridor becomes all forested to just south of Route 116.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Instream	**5.00**	**Yes**	**Yes**	**Yes**	**Yes**

Problem **None**

Narrative:
Planform and Widening.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**15**	**None**	**Yes**
7.2 Channel Aggradation	**15**	**None**	**No**
7.3 Widening Channel	**13**		**No**
7.4 Change in Planform	**15**		**No**
Total Score	**58**		
Geomorphic Rating	**0.725**		

Channel Evolution Model **F**
Channel Evolution Stage **IV**
Geomorphic Condition **Good**
Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **Low**

	Score
6.1 Epifaunal Substrate - Available Cover	**8**
6.2 Pool Substrate	**9**
6.3 Pool Variability	**10**
6.4 Sediment Deposition	**8**
6.5 Channel Flow Status	**11**
6.6 Channel Alteration	**20**
6.7 Channel Sinuosity	**14**
6.8 Bank Stability	**Left: 6 Right: 6**
6.9 Bank Vegetation Protection	**Left: 10 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 9 Right: 7**
Total Score	**128**
Habitat Rating	**0.64**

Habitat Stream Condition **Fair**

Stream: **West Brook** Reach # **M10-S1.03** Segment: **C** Completion Date: **November 30,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **No**

Segment Length (ft): **1,421** Segment Location: **South of Rt. 116 until slope steepens.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Instream	**4.40**	**Yes**	**Yes**	**Yes**	**Yes**
Problem	**Deposition Above,Deposition Below,Scour**				

Narrative:
Planform

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**15**	**None**	**No**
7.2 Channel Aggradation	**12**	**None**	**No**
7.3 Widening Channel	**13**		**No**
7.4 Change in Planform	**10**		**No**
Total Score	**50**		
Geomorphic Rating	**0.625**		

Channel Evolution Model **F**
Channel Evolution Stage **IV**
Geomorphic Condition **Fair**
Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **Low**

	Score
6.1 Epifaunal Substrate - Available Cover	**18**
6.2 Pool Substrate	**15**
6.3 Pool Variability	**20**
6.4 Sediment Deposition	**10**
6.5 Channel Flow Status	**15**
6.6 Channel Alteration	**20**
6.7 Channel Sinuosity	**18**
6.8 Bank Stability	**Left: 4 Right: 4**
6.9 Bank Vegetation Protection	**Left: 9 Right: 9**
6.10 Riparian Vegetation Zone Width	**Left: 8 Right: 8**
Total Score	**158**
Habitat Rating	**0.79**

Habitat Stream Condition **Good**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken
Ledge	**Mid-Segment**	**7.00**	**6.00**		

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
In regime.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Confined**

	Score	STD	Historic
7.1 Channel Degradation	**20**	**None**	**Yes**
7.2 Channel Aggradation	**19**	**None**	**No**
7.3 Widening Channel	**15**		**No**
7.4 Change in Planform	**20**		**No**
Total Score	**74**		
Geomorphic Rating	**0.925**		

Channel Evolution Model	**F**
Channel Evolution Stage	**I**
Geomorphic Condition	**Referenc**
Stream Sensitivity	**Very Low**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**17**
6.2 Embeddedness	**18**
6.3 Velocity/Depth Patterns	**16**
6.4 Sediment Deposition	**18**
6.5 Channel Flow Status	**18**
6.6 Channel Alteration	**20**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 10 Right: 10**
6.9 Bank Vegetation Protection	**Left: 10 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 5**
Total Score	**180**
Habitat Rating	**0.9**

Habitat Stream Condition **Referen**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Bridge	**10.8**	**Yes**	**Yes**	**Yes**	**Yes**

Problem **Deposition Above**

Narrative:
Active incision (headcut) and widening.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**5**	**C to F**	**No**
7.2 Channel Aggradation	**15**	**None**	**No**
7.3 Widening Channel	**6**		**No**
7.4 Change in Planform	**8**		**No**
Total Score	**34**		
Geomorphic Rating	**0.425**		

Channel Evolution Model **F**
Channel Evolution Stage **II**
Geomorphic Condition **Fair**
Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**5**
6.2 Embeddedness	**18**
6.3 Velocity/Depth Patterns	**10**
6.4 Sediment Deposition	**11**
6.5 Channel Flow Status	**15**
6.6 Channel Alteration	**8**
6.7 Frequency of Riffles/Steps	**17**
6.8 Bank Stability	**Left: 3 Right: 8**
6.9 Bank Vegetation Protection	**Left: 7 Right: 7**
6.10 Riparian Vegetation Zone Width	**Left: 4 Right: 4**
Total Score	**117**
Habitat Rating	**0.585**

Habitat Stream Condition **Fair**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken
Dam	**Mid-Segment**	**0.00**	**0.00**		

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Instream	**3.70**	**Yes**	**Yes**	**Yes**	**Yes**
Problem	**None**				
Bridge	**9.00**	**Yes**	**Yes**	**No**	**Yes**
Problem	**None**				
Bridge	**5.20**	**Yes**	**Yes**	**Yes**	**Yes**
Problem	**Scour Above,Scour Below**				

Narrative:
Major historic straightening; planform.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**14**	**Other**	**Yes**
7.2 Channel Aggradation	**15**	**None**	
7.3 Widening Channel	**15**		
7.4 Change in Planform	**11**		
Total Score	**55**		
Geomorphic Rating	**0.6875**		

Channel Evolution Model
Channel Evolution Stage **IV**
Geomorphic Condition **Good**
Stream Sensitivity **High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**8**
6.2 Embeddedness	**11**
6.3 Velocity/Depth Patterns	**13**
6.4 Sediment Deposition	**18**
6.5 Channel Flow Status	**18**
6.6 Channel Alteration	**8**
6.7 Frequency of Riffles/Steps	**3**
6.8 Bank Stability	**Left: 8 Right: 8**
6.9 Bank Vegetation Protection	**Left: 7 Right: 7**
6.10 Riparian Vegetation Zone Width	**Left: 4 Right: 7**
Total Score	**120**
Habitat Rating	**0.6**

Habitat Stream Condition **Fair**

Stream: **First Trib of Isham** Reach # **M17-S1-t1.01** Segment: **A** Completion Date: **November 9,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **1,091** Segment Location: **First trib of Isham, first reach, begins in beaver ponds and ends where valley slope**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken
Ledge	**Downstream**	**2.00**	**1.00**		
Ledge	**Downstream**	**1.00**	**1.00**		
Ledge	**Downstream**	**1.00**	**1.00**		
Ledge	**Downstream**	**1.00**	**0.00**		
Ledge	**Downstream**	**1.00**	**0.00**		

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
Widening.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**5**	**C to F**	**Yes**
7.2 Channel Aggradation	**16**	**None**	**No**
7.3 Widening Channel	**12**		**No**
7.4 Change in Planform	**16**		**No**
Total Score	**49**		
Geomorphic Rating	**0.6125**		

Channel Evolution Model **F**
Channel Evolution Stage **III**
Geomorphic Condition **Fair**
Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**19**
6.2 Embeddedness	**14**
6.3 Velocity/Depth Patterns	**15**
6.4 Sediment Deposition	**15**
6.5 Channel Flow Status	**12**
6.6 Channel Alteration	**20**
6.7 Frequency of Riffles/Steps	**19**
6.8 Bank Stability	**Left: 9 Right: 9**
6.9 Bank Vegetation Protection	**Left: 8 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 8 Right: 10**
Total Score	**168**
Habitat Rating	**0.84**

Habitat Stream Condition **Good**

Stream: **First Trib of Isham** Reach # **M17-S1-t1.01** Segment: **B** Completion Date: **November 8,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **981** Segment Location: **Middle of the reach, much lower gradient.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
Minor widening.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**15**	**None**	**No**
7.2 Channel Aggradation	**15**	**None**	**No**
7.3 Widening Channel	**11**		**No**
7.4 Change in Planform	**17**		**No**
Total Score	**58**		
Geomorphic Rating	**0.725**		

Channel Evolution Model **F**
Channel Evolution Stage **I**
Geomorphic Condition **Good**
Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **Low**

	Score
6.1 Epifaunal Substrate - Available Cover	**6**
6.2 Pool Substrate	**5**
6.3 Pool Variability	**16**
6.4 Sediment Deposition	**9**
6.5 Channel Flow Status	**19**
6.6 Channel Alteration	**20**
6.7 Channel Sinuosity	**17**
6.8 Bank Stability	**Left: 5 Right: 5**
6.9 Bank Vegetation Protection	**Left: 7 Right: 7**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 10**
Total Score	**136**
Habitat Rating	**0.68**

Habitat Stream Condition **Good**

Stream: **First Trib of Isham** Reach # **M17-S1-t1.01** Segment: **C** Completion Date: **November 9,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **1,255** Segment Location: **Upstream 1200' of reach.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
Widening.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**5**	**C to F**	**Yes**
7.2 Channel Aggradation	**16**	**None**	**No**
7.3 Widening Channel	**12**		**No**
7.4 Change in Planform	**16**		**No**
Total Score	**49**		
Geomorphic Rating	**0.6125**		

Channel Evolution Model	**F**
Channel Evolution Stage	**III**
Geomorphic Condition	**Fair**
Stream Sensitivity	**Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**19**
6.2 Embeddedness	**14**
6.3 Velocity/Depth Patterns	**15**
6.4 Sediment Deposition	**15**
6.5 Channel Flow Status	**12**
6.6 Channel Alteration	**20**
6.7 Frequency of Riffles/Steps	**19**
6.8 Bank Stability	**Left: 9 Right: 9**
6.9 Bank Vegetation Protection	**Left: 8 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 8 Right: 10**
Total Score	**168**
Habitat Rating	**0.84**

Habitat Stream Condition **Good**

Stream: **First Trib of Isham** Reach # **M17-S1-t1.02** Segment: **A** Completion Date: **November 9,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **719** Segment Location: **Upstream of t1.01c and downstream of beaver pond complex.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
Minor planform.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**16**	**None**	**No**
7.2 Channel Aggradation	**17**	**None**	**No**
7.3 Widening Channel	**17**		
7.4 Change in Planform	**16**		
Total Score	**66**		
Geomorphic Rating	**0.825**		

Channel Evolution Model **F**
Channel Evolution Stage **I**
Geomorphic Condition **Referenc**
Stream Sensitivity **High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**16**
6.2 Embeddedness	**16**
6.3 Velocity/Depth Patterns	**17**
6.4 Sediment Deposition	**13**
6.5 Channel Flow Status	**17**
6.6 Channel Alteration	**20**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 9 Right: 9**
6.9 Bank Vegetation Protection	**Left: 10 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 10**
Total Score	**175**
Habitat Rating	**0.875**

Habitat Stream Condition **Referen**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:

Step 7. Rapid Geomorphic Assessment Data

Confinement Type

Channel Evolution Model
Channel Evolution Stage
Geomorphic Condition
Stream Sensitivity

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type

Habitat Stream Condition

Stream: **First Trib of Isham** Reach # **M17-S1-t1.02** Segment: **C** Completion Date: **November 9,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **1,118** Segment Location: **Upstream end of reach, u/s of beaver pond complex.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Instream	**2.00**	**Yes**	**Yes**	**Yes**	**Yes**
Problem	**Deposition Below**				
Bridge	**2.60**	**Yes**	**Yes**	**Yes**	**Yes**
Problem	**None**				

Narrative:
Minor planform.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**16**	**None**	
7.2 Channel Aggradation	**17**	**None**	
7.3 Widening Channel	**17**		
7.4 Change in Planform	**16**		
Total Score	**66**		
Geomorphic Rating	**0.825**		
Channel Evolution Model	**F**		
Channel Evolution Stage	**I**		
Geomorphic Condition	**Referenc**		
Stream Sensitivity	**High**		

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**16**
6.2 Embeddedness	**16**
6.3 Velocity/Depth Patterns	**17**
6.4 Sediment Deposition	**13**
6.5 Channel Flow Status	**17**
6.6 Channel Alteration	**20**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 9 Right: 9**
6.9 Bank Vegetation Protection	**Left: 10 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 10**
Total Score	**175**
Habitat Rating	**0.875**
Habitat Stream Condition	**Referen**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:

Step 7. Rapid Geomorphic Assessment Data

Confinement Type

Channel Evolution Model
Channel Evolution Stage
Geomorphic Condition
Stream Sensitivity

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type

Habitat Stream Condition

Stream: **Isham** Reach # **M17-S1.01** Segment: **A** Completion Date: **November 6,**

Organization: **Addison County RPC** Observers: **Amy Sheldon & Amy Diller** Rain: **Yes**

Segment Length (ft): **1,791** Segment Location: **From confluence upstream to where the slope decreases and valley widerns.**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken
Ledge	**Mid-Segment**	**14.00**	**12.00**		

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Bridge	**22.0**	**Yes**	**Yes**	**Yes**	**Yes**
Problem	**Deposition Above,Deposition Below**				
Bridge	**11.0**	**Yes**	**Yes**	**Yes**	**Yes**
Problem	**Deposition Above,Deposition Below,Scour**				

Narrative:
Addradation and minor widening.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Confined**

	Score	STD	Historic
7.1 Channel Degradation	**15**	**None**	**No**
7.2 Channel Aggradation	**14**	**None**	**No**
7.3 Widening Channel	**10**		**No**
7.4 Change in Planform	**17**		**No**
Total Score	**56**		
Geomorphic Rating	**0.7**		

Channel Evolution Model **F**
Channel Evolution Stage **IV**
Geomorphic Condition **Good**
Stream Sensitivity **High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**16**
6.2 Embeddedness	**15**
6.3 Velocity/Depth Patterns	**15**
6.4 Sediment Deposition	**11**
6.5 Channel Flow Status	**15**
6.6 Channel Alteration	**20**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 9 Right: 9**
6.9 Bank Vegetation Protection	**Left: 8 Right: 8**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 10**
Total Score	**164**
Habitat Rating	**0.82**

Habitat Stream Condition **Good**

Stream: **Isham** Reach # **M17-S1.01** Segment: **B** Completion Date: **November 6,**

Organization: **Addison County RPC** Observers: **Amy Sheldon, Amy Diller** Rain: **Yes**

Segment Length (ft): **816** Segment Location: **Upper end of reach, lower sloped than rest.**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken
Ledge	**Upstream**	**5.00**	**4.00**		

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Confined**

	Score	STD	Historic
7.1 Channel Degradation	**18**	**None**	**No**
7.2 Channel Aggradation	**10**	**None**	**No**
7.3 Widening Channel	**10**		**No**
7.4 Change in Planform	**13**		**No**
Total Score	**51**		
Geomorphic Rating	**0.6375**		

Channel Evolution Model **F**

Channel Evolution Stage **IV**

Geomorphic Condition **Fair**

Stream Sensitivity **High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**14**
6.2 Embeddedness	**9**
6.3 Velocity/Depth Patterns	**16**
6.4 Sediment Deposition	**5**
6.5 Channel Flow Status	**16**
6.6 Channel Alteration	**19**
6.7 Frequency of Riffles/Steps	**16**
6.8 Bank Stability	**Left: 5 Right: 5**
6.9 Bank Vegetation Protection	**Left: 7 Right: 7**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 10**
Total Score	**139**
Habitat Rating	**0.695**

Habitat Stream Condition **Good**

Narrative:

Aggradation and widening.

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken
Ledge	**Mid-Segment**	**0.00**	**0.00**		
Ledge	**Mid-Segment**	**0.00**	**0.00**		
Ledge	**Downstream**	**4.00**	**2.00**		
Ledge	**Downstream**	**14.00**	**10.00**		
Ledge	**Mid-Segment**	**2.00**	**1.00**		

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Bridge	**15.9**	**Yes**	**Yes**	**Yes**	**Yes**

Problem **Deposition Above,Deposition Below,Scour**

Narrative:
Widening

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Confined**

	Score	STD	Historic
7.1 Channel Degradation	**20**	**None**	**No**
7.2 Channel Aggradation	**15**	**None**	**No**
7.3 Widening Channel	**11**		**No**
7.4 Change in Planform	**13**		**No**
Total Score	**59**		
Geomorphic Rating	**0.7375**		

Channel Evolution Model **D**
Channel Evolution Stage **IIb**
Geomorphic Condition **Good**
Stream Sensitivity **Moderate**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**18**
6.2 Embeddedness	**15**
6.3 Velocity/Depth Patterns	**18**
6.4 Sediment Deposition	**10**
6.5 Channel Flow Status	**13**
6.6 Channel Alteration	**20**
6.7 Frequency of Riffles/Steps	**20**
6.8 Bank Stability	**Left: 8 Right: 8**
6.9 Bank Vegetation Protection	**Left: 10 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 7**
Total Score	**167**
Habitat Rating	**0.835**

Habitat Stream Condition **Good**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:

Step 7. Rapid Geomorphic Assessment Data

Confinement Type

Channel Evolution Model
Channel Evolution Stage
Geomorphic Condition
Stream Sensitivity

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type

Habitat Stream Condition

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:

Step 7. Rapid Geomorphic Assessment Data

Confinement Type

Channel Evolution Model
Channel Evolution Stage
Geomorphic Condition
Stream Sensitivity

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type

Habitat Stream Condition

Stream: **Isham** Reach # **M17-S1.03** Segment: **B** Completion Date: **November 8,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **883** Segment Location: **Upstream end of Isham Brook**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken
Ledge	**Upstream**	**2.00**	**2.00**		

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:

This reach is in equilibrium.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**17**	**None**	**No**
7.2 Channel Aggradation	**16**	**None**	**No**
7.3 Widening Channel	**17**		**No**
7.4 Change in Planform	**18**		**No**
Total Score	**68**		
Geomorphic Rating	**0.85**		

Channel Evolution Model **F**

Channel Evolution Stage **I**

Geomorphic Condition **Referenc**

Stream Sensitivity **High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**15**
6.2 Embeddedness	**15**
6.3 Velocity/Depth Patterns	**15**
6.4 Sediment Deposition	**18**
6.5 Channel Flow Status	**18**
6.6 Channel Alteration	**20**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 10 Right: 10**
6.9 Bank Vegetation Protection	**Left: 10 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 10**
Total Score	**179**
Habitat Rating	**0.895**

Habitat Stream Condition **Referen**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:

Step 7. Rapid Geomorphic Assessment Data

Confinement Type

Channel Evolution Model
Channel Evolution Stage
Geomorphic Condition
Stream Sensitivity

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type

Habitat Stream Condition

Stream: **Cota** Reach # **T5.01** Segment: **A** Completion Date: **November 16,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **894** Segment Location: **Between the New Haven River and the bridge on the River Road.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Bridge	**35.0**	**Yes**	**Yes**	**No**	**No**

Problem **Deposition Above,Deposition Below**

Narrative:
Degradation

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**3**	**C to G**	**No**
7.2 Channel Aggradation	**16**	**None**	**No**
7.3 Widening Channel	**11**		**No**
7.4 Change in Planform	**15**		**No**
Total Score	**45**		
Geomorphic Rating	**0.5625**		

Channel Evolution Model **F**
Channel Evolution Stage **II**
Geomorphic Condition **Fair**
Stream Sensitivity **Very High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**4**
6.2 Embeddedness	**11**
6.3 Velocity/Depth Patterns	**4**
6.4 Sediment Deposition	**18**
6.5 Channel Flow Status	**18**
6.6 Channel Alteration	**0**
6.7 Frequency of Riffles/Steps	**2**
6.8 Bank Stability	**Left: 10 Right: 10**
6.9 Bank Vegetation Protection	**Left: 4 Right: 4**
6.10 Riparian Vegetation Zone Width	**Left: 0 Right: 0**
Total Score	**85**
Habitat Rating	**0.425**

Habitat Stream Condition **Fair**

Stream: **Cota** Reach # **T5.01** Segment: **B** Completion Date: **November 10,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **399** Segment Location: **From River Road bridge to dramatic change in slope at base of segment C.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
Minor widening and planform.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**16**	**None**	
7.2 Channel Aggradation	**15**	**None**	
7.3 Widening Channel	**14**		
7.4 Change in Planform	**15**		
Total Score	**60**		
Geomorphic Rating	**0.75**		
Channel Evolution Model	**F**		
Channel Evolution Stage	**IV**		
Geomorphic Condition	**Good**		
Stream Sensitivity	**High**		

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**17**
6.2 Embeddedness	**16**
6.3 Velocity/Depth Patterns	**16**
6.4 Sediment Deposition	**15**
6.5 Channel Flow Status	**16**
6.6 Channel Alteration	**18**
6.7 Frequency of Riffles/Steps	**16**
6.8 Bank Stability	**Left: 9 Right: 8**
6.9 Bank Vegetation Protection	**Left: 9 Right: 9**
6.10 Riparian Vegetation Zone Width	**Left: 8 Right: 10**
Total Score	**167**
Habitat Rating	**0.835**
Habitat Stream Condition	**Good**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken
Ledge	**Mid-Segment**	**10.00**	**5.00**		
Waterfall	**Mid-Segment**	**36.00**	**36.00**		
Ledge	**Mid-Segment**	**3.00**	**2.00**		
Ledge	**Mid-Segment**	**10.00**	**6.00**		
Ledge	**Mid-Segment**	**0.00**	**5.00**		
Ledge	**Mid-Segment**	**0.00**	**2.00**		

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Confined**

	Score	STD	Historic
7.1 Channel Degradation	**17**	**None**	
7.2 Channel Aggradation	**18**	**None**	
7.3 Widening Channel	**15**		
7.4 Change in Planform	**20**		
Total Score	**70**		
Geomorphic Rating	**0.875**		

Channel Evolution Model **F**
Channel Evolution Stage **I**
Geomorphic Condition **Referenc**
Stream Sensitivity **Moderate**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**16**
6.2 Embeddedness	**9**
6.3 Velocity/Depth Patterns	**8**
6.4 Sediment Deposition	**11**
6.5 Channel Flow Status	**16**
6.6 Channel Alteration	**20**
6.7 Frequency of Riffles/Steps	**19**
6.8 Bank Stability	**Left: 10 Right: 10**
6.9 Bank Vegetation Protection	**Left: 9 Right: 9**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 10**
Total Score	**157**
Habitat Rating	**0.785**

Habitat Stream Condition **Good**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
Minor widening, planform.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**16**	**None**	
7.2 Channel Aggradation	**15**	**None**	
7.3 Widening Channel	**14**		
7.4 Change in Planform	**15**		
Total Score	**60**		
Geomorphic Rating	**0.75**		
Channel Evolution Model	**F**		
Channel Evolution Stage	**IV**		
Geomorphic Condition	**Good**		
Stream Sensitivity	**High**		

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**17**
6.2 Embeddedness	**16**
6.3 Velocity/Depth Patterns	**16**
6.4 Sediment Deposition	**15**
6.5 Channel Flow Status	**16**
6.6 Channel Alteration	**18**
6.7 Frequency of Riffles/Steps	**16**
6.8 Bank Stability	**Left: 9 Right: 8**
6.9 Bank Vegetation Protection	**Left: 9 Right: 9**
6.10 Riparian Vegetation Zone Width	**Left: 8 Right: 10**
Total Score	**167**
Habitat Rating	**0.835**
Habitat Stream Condition	**Good**

Stream: **Cota** Reach # **T5.02** Segment: **A** Completion Date: **November 15,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **1,643** Segment Location: **Downstream of Geary Road.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
Planform & Widening

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**16**	**None**	
7.2 Channel Aggradation	**16**	**None**	
7.3 Widening Channel	**14**		
7.4 Change in Planform	**14**		
Total Score	**60**		
Geomorphic Rating	**0.75**		

Channel Evolution Model	**F**
Channel Evolution Stage	**I**
Geomorphic Condition	**Referenc**
Stream Sensitivity	**High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**18**
6.2 Embeddedness	**18**
6.3 Velocity/Depth Patterns	**19**
6.4 Sediment Deposition	**15**
6.5 Channel Flow Status	**16**
6.6 Channel Alteration	**15**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 8 Right: 9**
6.9 Bank Vegetation Protection	**Left: 9 Right: 9**
6.10 Riparian Vegetation Zone Width	**Left: 8 Right: 8**
Total Score	**170**
Habitat Rating	**0.85**

Habitat Stream Condition **Referen**

Stream: **Cota** Reach # **T5.02** Segment: **B** Completion Date: **November 5,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **2,754** Segment Location: **Upstream of Geary Road.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Bridge	**35.0**	**Yes**	**Yes**	**No**	**Yes**
Problem	**Deposition Above,Deposition Below**				
Instream	**9.00**	**Yes**	**Yes**	**No**	**No**
Problem	**Deposition Below,Scour Above**				

Narrative:
Widening.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Confined**

	Score	STD	Historic
7.1 Channel Degradation	**20**	**None**	
7.2 Channel Aggradation	**20**	**None**	**No**
7.3 Widening Channel	**14**		
7.4 Change in Planform	**16**		
Total Score	**70**		
Geomorphic Rating	**0.875**		

Channel Evolution Model **F**
Channel Evolution Stage **I**
Geomorphic Condition **Referenc**
Stream Sensitivity **Moderate**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**17**
6.2 Embeddedness	**18**
6.3 Velocity/Depth Patterns	**20**
6.4 Sediment Deposition	**17**
6.5 Channel Flow Status	**14**
6.6 Channel Alteration	**16**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 8 Right: 8**
6.9 Bank Vegetation Protection	**Left: 9 Right: 9**
6.10 Riparian Vegetation Zone Width	**Left: 9 Right: 9**
Total Score	**172**
Habitat Rating	**0.86**

Habitat Stream Condition **Referen**

Stream: **First Trib of Cow** Reach # **T6.01** Segment: **0** Completion Date: **November 16,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **Yes**

Segment Length (ft): **927** Segment Location: **The mouth of Cow Brook in South Lincoln.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
Aggradation & Planform

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**17**	**None**	
7.2 Channel Aggradation	**11**	**None**	**No**
7.3 Widening Channel	**14**		**No**
7.4 Change in Planform	**13**		**No**
Total Score	**55**		
Geomorphic Rating	**0.6875**		

Channel Evolution Model **F**
Channel Evolution Stage **IV**
Geomorphic Condition **Good**
Stream Sensitivity **High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**8**
6.2 Embeddedness	**14**
6.3 Velocity/Depth Patterns	**14**
6.4 Sediment Deposition	**5**
6.5 Channel Flow Status	**15**
6.6 Channel Alteration	**19**
6.7 Frequency of Riffles/Steps	**10**
6.8 Bank Stability	**Left: 5 Right: 3**
6.9 Bank Vegetation Protection	**Left: 9 Right: 9**
6.10 Riparian Vegetation Zone Width	**Left: 10 Right: 7**
Total Score	**128**
Habitat Rating	**0.64**

Habitat Stream Condition **Fair**

Stream: **First Trib of Cow** Reach # **T6.02** Segment: **A** Completion Date: **November 7,**

Organization: **Addison County RPC** Observers: **Amy Sheldon, Tim Bouton** Rain: **Yes**

Segment Length (ft): **1,362** Segment Location: **Downstream and upstream of where Cow crosses the South Lincoln Road.**

1.6 Grade Controls

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken
Weir	**Downstream**	**2.00**	**1.00**		

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Bridge	**12.0**	**Yes**	**Yes**	**Yes**	**Yes**

Problem **None**

Narrative:
Planform

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**16**	**None**	**No**
7.2 Channel Aggradation	**16**	**None**	**No**
7.3 Widening Channel	**15**		**No**
7.4 Change in Planform	**12**		**No**
Total Score	**59**		
Geomorphic Rating	**0.7375**		

Channel Evolution Model **F**
Channel Evolution Stage **I**
Geomorphic Condition **Good**
Stream Sensitivity **High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**19**
6.2 Embeddedness	**15**
6.3 Velocity/Depth Patterns	**14**
6.4 Sediment Deposition	**14**
6.5 Channel Flow Status	**14**
6.6 Channel Alteration	**14**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 7 Right: 7**
6.9 Bank Vegetation Protection	**Left: 10 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 4 Right: 10**
Total Score	**156**
Habitat Rating	**0.78**

Habitat Stream Condition **Good**

Stream: **First Trib of Cow** Reach # **T6.02** Segment: **B** Completion Date: **November 27,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **No**

Segment Length (ft): **1,431** Segment Location: **North of Masterson Road.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions **None**

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?

Narrative:
Widening & Planform

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**16**	**Other**	**Yes**
7.2 Channel Aggradation	**18**	**None**	**No**
7.3 Widening Channel	**13**		**No**
7.4 Change in Planform	**15**		**No**
Total Score	**62**		
Geomorphic Rating	**0.775**		
Channel Evolution Model	**F**		
Channel Evolution Stage	**IV**		
Geomorphic Condition	**Good**		
Stream Sensitivity	**High**		

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**18**
6.2 Embeddedness	**15**
6.3 Velocity/Depth Patterns	**17**
6.4 Sediment Deposition	**16**
6.5 Channel Flow Status	**16**
6.6 Channel Alteration	**18**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 10 Right: 10**
6.9 Bank Vegetation Protection	**Left: 8 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 2 Right: 10**
Total Score	**168**
Habitat Rating	**0.84**
Habitat Stream Condition	**Good**

Stream: **First Trib of Cow** Reach # **T6.02** Segment: **C** Completion Date: **November 27,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **No**

Segment Length (ft): **550** Segment Location: **Immediately south of Masterson Road.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Bridge	**12.0**	**Yes**	**Yes**	**Yes**	**Yes**
Problem	**Deposition Above,Scour Above**				

Narrative:
Widening and degradation.

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**5**	**C to G**	**No**
7.2 Channel Aggradation	**15**	**None**	**No**
7.3 Widening Channel	**5**		**No**
7.4 Change in Planform	**10**		**No**
Total Score	**35**		
Geomorphic Rating	**0.4375**		

Channel Evolution Model **F**
Channel Evolution Stage **II**
Geomorphic Condition **Fair**
Stream Sensitivity **Extreme**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**13**
6.2 Embeddedness	**14**
6.3 Velocity/Depth Patterns	**10**
6.4 Sediment Deposition	**10**
6.5 Channel Flow Status	**15**
6.6 Channel Alteration	**5**
6.7 Frequency of Riffles/Steps	**6**
6.8 Bank Stability	**Left: 2 Right: 2**
6.9 Bank Vegetation Protection	**Left: 9 Right: 9**
6.10 Riparian Vegetation Zone Width	**Left: 9 Right: 10**
Total Score	**114**
Habitat Rating	**0.57**

Habitat Stream Condition **Fair**

Stream: **First Trib of Cow** Reach # **T6.02** Segment: **D** Completion Date: **November 7,**

Organization: **Addison County RPC** Observers: **Amy Sheldon, Tim Bouton** Rain: **Yes**

Segment Length (ft): **987** Segment Location: **South of Masterson Road and segment C.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Bridge	**10.2**	**Yes**	**Yes**	**Yes**	**Yes**

Problem **Scour Above**

Narrative:
Planform

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**16**	**None**	**No**
7.2 Channel Aggradation	**16**	**None**	**No**
7.3 Widening Channel	**15**		**No**
7.4 Change in Planform	**12**		**No**

Total Score	**59**
Geomorphic Rating	**0.7375**
Channel Evolution Model	**F**
Channel Evolution Stage	**I**
Geomorphic Condition	**Good**
Stream Sensitivity	**High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**19**
6.2 Embeddedness	**15**
6.3 Velocity/Depth Patterns	**14**
6.4 Sediment Deposition	**14**
6.5 Channel Flow Status	**14**
6.6 Channel Alteration	**14**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 7 Right: 7**
6.9 Bank Vegetation Protection	**Left: 10 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 4 Right: 10**
Total Score	**156**
Habitat Rating	**0.78**
Habitat Stream Condition	**Good**

Stream: **First Trib of Cow** Reach # **T6.02** Segment: **E** Completion Date: **November 27,**

Organization: **Addison County RPC** Observers: **Amy Sheldon** Rain: **No**

Segment Length (ft): **926** Segment Location: **South end of reach before the valley steepens sharply.**

1.6 Grade Controls **None**

Type	Location	Total	Total Height Above Water	Photo Taken	GPSTaken

4.8 Channel Constrictions

Type	Width	Photo Taken?	GPS Taken?	Channel Constriction?	Floodprone Constriction?
Bridge	**12.2**	**Yes**	**Yes**	**Yes**	**Yes**

Problem **None**

Narrative:
Widening & Planform

Step 7. Rapid Geomorphic Assessment Data

Confinement Type **Unconfined**

	Score	STD	Historic
7.1 Channel Degradation	**16**	**None**	**No**
7.2 Channel Aggradation	**18**	**None**	**No**
7.3 Widening Channel	**13**		**No**
7.4 Change in Planform	**15**		**No**
Total Score	**62**		
Geomorphic Rating	**0.775**		

Channel Evolution Model **F**
Channel Evolution Stage **IV**
Geomorphic Condition **Good**
Stream Sensitivity **High**

Step 6. Rapid Habitat Assessment Data

Stream Gradient Type **High**

	Score
6.1 Epifaunal Substrate - Available Cover	**18**
6.2 Embeddedness	**15**
6.3 Velocity/Depth Patterns	**17**
6.4 Sediment Deposition	**16**
6.5 Channel Flow Status	**16**
6.6 Channel Alteration	**18**
6.7 Frequency of Riffles/Steps	**18**
6.8 Bank Stability	**Left: 10 Right: 10**
6.9 Bank Vegetation Protection	**Left: 8 Right: 10**
6.10 Riparian Vegetation Zone Width	**Left: 2 Right: 10**
Total Score	**168**
Habitat Rating	**0.84**

Habitat Stream Condition **Good**

Reach	Segment	Sub-Rch?	Degradation			Aggradation			Widening		Planform		Geo. Score	Geo. Condition	Evol. Stage	Confinement Type	Sensitivity
			Score	STD	Historic	Score	STD	Historic	Score	Historic	Score	Historic					
T6.01	0	No	17	None		11	None	No	14	No	13	No	0.69	Good	IV	VB	High
T6.02	A	No	16	None	No	16	None	No	15	No	12	No	0.74	Good	I	VB	High
T6.02	B	No	16	Other	Yes	18	None	No	13	No	15	No	0.78	Good	IV	VB	High
T6.02	C	No	5	C to G	No	15	None	No	5	No	10	No	0.44	Fair	II	VB	Extreme
T6.02	D	No	16	None	No	16	None	No	15	No	12	No	0.74	Good	I	VB	High
T6.02	E	Yes	16	None	No	18	None	No	13	No	15	No	0.78	Good	IV	VB	High

Rapid Geomorphic Assessment

New Haven Tribs

Reach	Seg-ment	Sub-Rch?	Degradation			Aggradation			Widening		Planform		Geo. Score	Geo. Condition	Evol. Stage	Confin-ement Type	Sens-itivity
			Score	STD	Historic	Score	STD	Historic	Score	Historic	Score	Historic					
M10-S1.01	A	No											0.00				
M10-S1.01	B	No	15	None	No	12	None	No	11	No	11	No	0.61	Fair	IV	VB	Very
M10-S1.01	C	No											0.00				
M10-S1.01	D	No	15	None	No	12	None	No	11	No	11	No	0.61	Fair	IV	VB	Very
M10-S1.02	A	No	15	None	No	15	None	No	13	No	12	No	0.69	Good	IV	VB	High
M10-S1.02	B	No	16	None	No	14	None	No	10	No	11	No	0.64	Fair	IV	VB	Very
M10-S1.02	C	No	13	None	No	15	None	No	11	No	11	No	0.63	Fair	IV	VB	Very
M10-S1.03	A	No	14	None	No	15	None	No	14	No	15	No	0.73	Fair	IV	VB	Very
M10-S1.03	B	No	15	None	Yes	15	None	No	13	No	15	No	0.73	Fair	IV	VB	Very
M10-S1.03	C	Yes	15	None	No	12	None	No	13	No	10	No	0.63	Fair	IV	VB	Very
M10-S1.03	D	Yes	20	None	Yes	19	None	No	15	No	20	No	0.93	Reference		SC	Very
M11-S1.01	A	No	5	C to F	No	15	None	No	6	No	8	No	0.43	Fair	II	VB	Very
M11-S1.01	B	No	14	Other	Yes	15	None		15		11		0.69	Good	IV	VB	High
M17-S1-t1.01	A	No	5	C to F	Yes	16	None	No	12	No	16	No	0.61	Fair	III	VB	Very
M17-S1-t1.01	B	Yes	15	None	No	15	None	No	11	No	17	No	0.73	Good	I	VB	Very
M17-S1-t1.01	C	No	5	C to F	Yes	16	None	No	12	No	16	No	0.61	Fair	III	VB	Very
M17-S1-t1.02	A	No	16	None	No	17	None	No	17		16		0.83	Reference		VB	High
M17-S1-t1.02	B	No											0.00				
M17-S1-t1.02	C	No	16	None		17	None		17		16		0.83	Reference		VB	High
M17-S1-t1.02	D	No											0.00				
M17-S1.01	A	No	15	None	No	14	None	No	10	No	17	No	0.70	Good	IV	SC	High
M17-S1.01	B	Yes	18	None	No	10	None	No	10	No	13	No	0.64	Fair	IV	NW	High
M17-S1.02	A	No	20	None	No	15	None	No	11	No	13	No	0.74	Good	IIb	BD	Moderat
M17-S1.02	B	No											0.00				
M17-S1.03	A	No											0.00				
M17-S1.03	B	No	17	None	No	16	None	No	17	No	18	No	0.85	Reference		VB	High
M17-S1.03	C	No											0.00				
T5.01	A	No	3	C to G	No	16	None	No	11	No	15	No	0.56	Fair	II	VB	Very
T5.01	B	No	16	None		15	None		14		15		0.75	Good	IV	BD	High
T5.01	C	Yes	17	None		18	None		15		20		0.88	Reference		NC	Moderat
T5.01	D	No	16	None		15	None		14		15		0.75	Good	IV	BD	High
T5.02	A	Yes	16	None		16	None		14		14		0.75	Reference		VB	High
T5.02	B	No	20	None		20	None	No	14		16		0.88	Reference		NC	Moderat

Stream Geometry Data

New Haven Tribs

		Phase 2 Stream Type					Phase 1 Data	Phase 2 Channel Data											
Reach	Seg-ment	Stream Type	Bed Material	Bedform	Subcl. Slope	Sub Rch?	Slope	Channel width	Bankfull width	Max. depth	Mean depth	Floodpr. width	Abandn FldPln	W/D Ratio	Entrench-ment	Incision Ratio	Stage Evol.	Evol. Model	RGA Cond.	RHA Cond.
M10-S1.01	A					No	1.54	19.41												
M10-S1.01	B	E	Gravel	Riffle-Pool	None	No	1.54	19.41	11.0	1.8	1.1	239.0	2.9	10.00	21.73	1.61	IV	F	Fair	Good
M10-S1.01	C					No	1.54	19.41												
M10-S1.01	D	E	Gravel	Riffle-Pool	None	No	1.54	19.41	11.0	1.8	1.1	239.0	2.9	10.00	21.73	1.61	IV	F	Fair	Good
M10-S1.02	A	E	Gravel	Riffle-Pool	None	No	1.48	18.76	4.5	1.3	1.0	47.7	2.3	4.50	10.60	1.77	IV	F	Good	Good
M10-S1.02	B	E	Gravel	Riffle-Pool	None	No	1.48	18.76	11.6	1.4	1.0	29.6	2.4	11.60	2.55	1.71	IV	F	Fair	Reference
M10-S1.02	C	E	Gravel	Riffle-Pool	None	No	1.48	18.76	4.5	1.3	1.0	47.7	2.3	4.50	10.60	1.77	IV	F	Fair	Fair
M10-S1.03	A	E	Sand	Dune-Ripple	None	No	2.61	17.04	4.3	2.7	1.7	12.3	5.1	2.53	2.86	1.89	IV	F	Fair	Fair
M10-S1.03	B	E	Sand	Dune-Ripple	None	No	2.61	17.04	7.2	1.8	1.4	14.0	3.2	5.14	1.94	1.78	IV	F	Fair	Fair
M10-S1.03	C	E	Gravel	Riffle-Pool	c	Yes	2.61	17.04	10.2	1.5	1.1	24.2	1.8	9.27	2.37	1.20	IV	F	Fair	Good
M10-S1.03	D	B	Boulder	Step-Pool	None	Yes	2.61	17.04	19.6	2.4	1.4	29.6	2.4	14.00	1.51	1.00	I	F	Referen	Reference
M11-S1.01	A	F	Gravel	Riffle-Pool	None	No	0.56	18.25	21.0	1.7	0.8	28.7	1.7	26.25	1.37	1.00	II	F	Fair	Fair
M11-S1.01	B	C	Gravel	Riffle-Pool	None	No	0.56	18.25	7.2	1.5	0.8	38.5	1.8	9.00	5.35	1.20	IV		Good	Fair
M17-S1-t1.01	A	F	Gravel	Riffle-Pool	b	No	3.09	11.85	16.5	0.9	0.7	22.5	1.7	23.57	1.36	1.89	III	F	Fair	Good
M17-S1-t1.01	B	E	Sand	Riffle-Pool	None	Yes	3.09	11.85	5.6	1.0	0.76	9.8	1.9	7.37	1.75	1.90	I	F	Good	Good
M17-S1-t1.01	C	F	Gravel	Riffle-Pool	b	No	3.09	11.85	16.5	1.0	0.7	22.5	1.7	23.57	1.36	1.70	III	F	Fair	Good
M17-S1-t1.02	A	C	Gravel	Riffle-Pool	b	No	4.00	8.67	8.4	1.0	0.63	32.0	1.7	13.33	3.81	1.70	I	F	Referen	Reference
M17-S1-t1.02	B					No	4.00	8.67												
M17-S1-t1.02	C	C	Gravel	Riffle-Pool	b	No	4.00	8.67	8.4	1.0	0.63	32.0	1.7	13.33	3.81	1.70	I	F	Referen	Reference
M17-S1-t1.02	D					No	4.00	8.67												
M17-S1.01	A	A	Cobble	Step-Pool	None	No	6.25	19.07	24.8	3.0	0.76	31.7	3.0	32.63	1.28	1.00	IV	F	Good	Good
M17-S1.01	B	B	Gravel	Riffle-Pool	None	Yes	6.25	19.07	28.3	2.8	0.73	65.0	2.7	38.77	2.30	0.96	IV	F	Fair	Good
M17-S1.02	A	B	Cobble	Step-Pool	None	No	4.19	17.73	29.0	3.1	1.6	43.0	3.1	18.12	1.48	1.00	IIb	D	Good	Good
M17-S1.02	B					No	4.19	17.73												
M17-S1.03	A					No	2.17	10.20												
M17-S1.03	B	C	Gravel	Riffle-Pool	b	No	2.17	10.20	7.0	1.3	0.7	21.6	1.8	10.00	3.09	1.38	I	F	Referen	Reference
M17-S1.03	C					No	2.17	10.20												
T5.01	A	G	Gravel	Plane Bed	None	No	3.97	21.71	14.6	1.8	1.4	19.3	4.4	10.43	1.32	2.44	II	F	Fair	Fair
T5.01	B	C	Gravel	Riffle-Pool	None	No	3.97	21.71	21.0	1.2	0.9	64.2	1.6	23.33	3.06	1.33	IV	F	Good	Good
T5.01	C	B	Cobble	Step-Pool	None	Yes	3.97	21.71	29.4	2.9	1.6	43.1	2.9	18.37	1.47	1.00	I	F	Referen	Good
T5.01	D	C	Gravel	Riffle-Pool	None	No	3.97	21.71	21.0	1.2	0.9	64.2	1.6	23.33	3.06	1.33	IV	F	Good	Good
T5.02	A	C	Gravel	Riffle-Pool	b	Yes	4.18	19.72	22.5	2.4	1.8	152.5	3.0	12.50	6.78	1.25	I	F	Referen	Reference

	Phase 2 Stream Type					Phase 1 Data	Phase 2 Channel Data												
Reach	Seg-ment	Stream Type	Bed Material	Bedform	Subcl. Slope	Sub Rch?	Slope	Channel width	Bankfull width	Max. depth	Mean depth	Floodpr. width	Abandn FldPln	W/D Ratio	Entrench-ment	Incision Ratio	Stage Evol.	Evol. Model	RGA Cond.	RHA Cond.
T5.02	B	B	Cobble	Riffle-Pool	None	No	4.18	19.72	27.5	2.9	2.0	45.5	3.3	13.75	1.65	1.14	I	F	Referen	Reference
T6.01	0	C	Gravel	Riffle-Pool	b	No	2.41	23.77	23.7	2.0	1.3	98.9	2.6	18.23	4.17	1.30	IV	F	Good	Fair
T6.02	A	C	Gravel	Riffle-Pool	None	No	2.13	18.59	16.9	2.0	1.1	226.9	2.4	15.36	13.43	1.20	I	F	Good	Good
T6.02	B	C	Gravel	Riffle-Pool	None	No	2.13	18.59	15.0	1.6	1.0	127.0	3.0	15.00	8.47	1.87	IV	F	Good	Good
T6.02	C	G	Gravel	Riffle-Pool	None	No	2.13	18.59	12.3	1.8	1.5	15.1	4.4	8.20	1.23	2.44	II	F	Fair	Fair
T6.02	D	C	Gravel	Riffle-Pool	None	No	2.13	18.59	16.9	2.0	1.1	226.9	2.4	15.36	13.43	1.20	I	F	Good	Good
T6.02	E	C	Gravel	Riffle-Pool	b	Yes	2.13	18.59	15.0	1.6	1.0	127.0	2.4	15.00	8.47	1.50	IV	F	Good	Good

Appendix C

Appendix D

Phase 2 Quality Assurance Worksheet

Stream Name New Have Tributaries **Watershed** Otter Creek **Date** 14-Jun-07
QA Team Leader Amy Sheldon **Organization/A** Landslide, Inc.
ANR Team Leader Shannon Pytlik

Check one or more boxes to indicate the types of ANR sponsored training received by field team members.	**Phase 2**	✓	Segment/Reach sketch and map documentation completed	✓
	QA		Phase 1 Assessment used in Phase 2	✓
			ANR SGA Handbook Protocols and Databases used exclusively.	✓
			Other protocols used.	None

Phase 2 Step Number	Tool used to Collect Data	Confidence Level	Date Complete	Date Udated	Date of Local QA Team Review	Date of State QA Review	Comments
Step 1	Visual observations; tape measure; rod	High	Dec. 2006		April, 2007	May, 2007	
Step 2	Observations, rod, tape, ruler, digital camera.	High	Dec. 2006		April, 2007	May, 2007	
Step 3	Visual observations.	High	Dec. 2006		April, 2007	May, 2007	
Step 4	GPS, digital camera, visual obs.	High	Dec. 2006		April, 2007	May, 2007	
Step 5	Visual obs.	High	Dec. 2006		April, 2007	May, 2007	
Step 6	Visual obs.	High	Dec. 2006		April, 2007	May, 2007	
Step 7	Visual obs.	High	Dec. 2006		April, 2007	May, 2007	

**Note: A separate QA/QC written report was also completed

MEMORANDUM

TO: Amy Sheldon

FR: Shannon Pytlik, Agency of Natural Resources, River Management Section

DATE: May 14, 2007

RE: **New Haven Tribs Phase 2 QA**

Hi Amy – It looks like most of Phase 1 was not updated. Fields like flow regulation and dredging should not be left blank. I used the new list of Phase 1 updates to update the P1 data.

M10-S1.01 B

Phase 1 data for dredging, channel bars needs to be updated. Done. You don't have a sub-dominant buffer width selected, yet I see a lot of variability in the buffer on the areals. The width of the buffer does not vary much along the channel length – you can see the extent of mowing in the herbaceous area is very similar to the d/s scrub/shrub. Also no sub-dominant type, only herbaceous noted. I added scrub/shrub as sub-dominant.

Row 4 in degradation RGA not filled in. Done.

M10-S1.02A

Segment not noted as straightened? When I look in the DMS is shows straightening in the P1 and P2.

When you say "the majority of this segment is pastured" are they in the stream or in the corridor? It does not appear that they are fenced out of the stream, unless they use portable fencing.

You have a >100' buffer and a dominant corridor land use of pasture on the left bank. That is because it is only periodically pastured and shrubs are growing in. I changed the corridor land use to shrub/sapling.

M10-S1.02B

Road in corridor not indexed. I added it. The cross section shows a much wider stream than 5 feet.

This segment has one set of data in the DMS and another in the spreadsheet. The data in the DMS is correct. The cross sections got switched and have been corrected and re-uploaded.

The stream goes from 12 feet to 5 feet? Yes.

M10-S1.02C
Different data in the spreadsheet than in the DMS. The data in the DMS is correct. The cross sections got switched and have been corrected and re-uploaded.

M10-S1.03 A

You note a berm in the notes, yet it is not in your data or indexed? Added.

There seems to be a lot of fluctuation in the width of the channel through the segments. It goes from 4, 7, 10 to 20 feet. Yes there is a lot of variation. The soil types change dramatically from sandy loam to heavy clay which accounts for the wide range of widths.

M10-S1.03 B
Straightening states no, but then has a length? I think this is because the scattered FIT was probably uploaded at some point and this data is not replaced when the entry is zero. I have had this problem with other projects as well and I believe that you have notified the DMS managers and they are fixing it.

Why did you select 5 for the RGA degradation? I selected 5 because "poor" seemed the best fit with incision of 1.8 and entrenchment of 1.9. I changed Row two to "Fair" and the total score to 15. What is the other for STD? This is a holdover from when the DMS would not allow it to be poor without a STD.

M10-S1.03 C
Cross section should extend farther on the right bank. The way it is I cannot determine if that is a floodplain or valley wall. It is both and it is labeled RFPA/RVW.

M10-S1.03 D
What is the other for degradation STD? Typo.

M11-S1.01 A
I would say stage 3 of CEM based on the widening. There is an active headcut in this segment and not much migration. It's only 3' wider than reference. I would like to talk with you about this segment.

M11-S1.01 B
The cross section should extend farther on the right bank to show if any floodplain exists. Based on this cross section the stream looks entrenched. Most of the floodplain the stream accesses is on the right bank its just that by having the left valley wall in the cross section, the flood prone area is compressed so much it's hard to see it.

Bankfull width of 7 feet? Yes.

M17-S1.01

You mention a segment C in the notes, but I don't have a C? No C – I deleted the reference.

M17-S1.02 A

What is a blowdown? A tree that is blown over by the wind.

This looks like a reach that should be the D CEM since it has grade controls preventing incision and appears to have gone straight to widening and aggradation. I changed it to IIb.

M17-S1.03 B

Phase 1 has a sub-b class lope and Phase 2 does not. It looks like phase 1 should be updated. I calculated the slope using the points from my GPS altimeter and decided to change the P2 to sub-class slope b.

M17-S1-t1.01 A

The cross section does not extend far enough for me to determine what the RAF looks like. You only have 2 feet of it captured so I don't know if the stream has lost access to a large or tiny floodplain. This is a very broad valley. I did not estimate the valley walls, however, if I did, the cross section would be similar to B below.

Phase 1 has a sub-class slope and Phase 2 does not. Is the slope different in the field and Phase 1 should be updated? I updated the P2 to subclass slope b.

M17-S1-t1.01 B

I don't understand why on most cross sections you only capture the immediate channel area, and then on others you capture 1000' and it is impossible to see what the channel looks like? On this project, most of my cross sections go from valley wall to valley wall. I'm not sure what to do in very broad valleys – the cross section ends up like this one.

This reach goes from 17 feet wide, to 6 feet wide and you say it is over widened?
I cannot find where I said it was over widened. I noted that widening is the current dominant adjustment process.

A & C seems to be the same cross section only A has two extra points. Correct?
A & C are the same cross section and I do not see extra points on A.

T5.01 A

Data indicates 3' of erosion on left and 1' of erosion on right. Is this correct?
No. I changed it to 20' of RB erosion, which is what it is supposed to be.

Phase 1 has C cobble riffle pool, looks like it should be C gravel riffle pool.
Yes. I made that change.

You note that it was moved, rip-rap and channelized in the notes. Not indexed as channelized? Was it also dredged? Good catch. I have added straightening. I don't think it was dredged.

With widening should it be CEM stage 3? It isn't widening significantly and it is not migrating laterally, so I think I will stick to II.

T6.01

The Phase 1 has a sub-class slope of b and Phase 2 has none. Should the Phase 1 or 2 be changed? Phase 2 now has a sub-class slope of b.

Phase 1 channel bars not updated. Done.

T6.02 A

Like I said in my e-mail, I don't think this is Cow Brook. I think this is a trib. I have made the change in the DMS.

T6.02 B

Oh my god – Tim looks like he is having fun!!!!

Do you have any pictures from this cross section? Yes. Labeled T6.02s, T6.02t, T6.02u, and T6.02v in the Excel spread sheet.

According to your cross section the RAF should be 3 right? Correct(ed).

This reach looks like it may have been straightened more than you have indexed. What do you think? I agree. I have updated the FIT.

T6.02 C

Any pictures from cross section? Yes. T6.02o, p, q, and r.

Reach says no dredging, this should be updated. There is not an option for having dredging history in the Phase 1 DMS.

T6.02 D

Is this reach in stage 1 or 5? Do you think it went through all of the adjustments? 1. I made the change.