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PROJECT IDENTIFICATION AND PRIORITIZATION REPORT

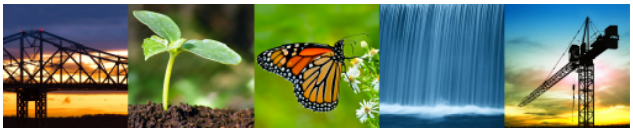
MOHAWK TRAIL WOODLANDS PARTNERSHIP
REGIONAL ADAPTATION & RESILIENCE PROJECT

PREPARED FOR:
Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, MA 01301-3313

PREPARED BY:

In partnership with: Field Geology Services
Fluvial Geomorphology

January 26, 2021
File No. 15.0166866.00



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Via email

January 26, 2021
File No. 15.0166866.00

Kimberly Noake MacPhee, P.G., CFM
Franklin Regional Council of Governments
12 Olive Street, Suite 2
Greenfield, MA 01301

Re: Mohawk Trail Woodlands Partnership Regional Adaptation & Resilience Project
Project Identification and Prioritization
Conway and Ashfield, MA

Dear Kimberly,

GZA GeoEnvironmental, Inc. (GZA) is pleased to provide the attached *Project Identification and Prioritization Report for the Mohawk Trail Woodlands Partnership Regional Adaptation & Resilience Project*. The attached report summarizes the process undertaken by GZA and Field Geology Services, Inc. (the GZA-Field Team) to support FRCOG and its project partners to prioritize climate resilient river and watershed projects in the South River Watershed for hydraulic modeling, permitting support, topographic surveys for project design, and preparation of final designs, cost estimates, and bid ready documents. The attached report and supporting documentation is intended to serve as the deliverable for Tasks 2.1, 2.2, and 2.3 of the FRCOG-GZA Contract for Consultant Services in Support of the MVP Action Grant for the Mohawk Trail Woodland Partnership Regional Adaptation & Resilience Project, dated September 28, 2020. The attached report is subject to the Limitations included in **Appendix B**.

Please do not hesitate to contact Rosalie Starvish at 860-550-2777 or Rosalie.starvish@gza.com, with any questions. We have been pleased to provide these services to date and are looking forward to advancing the project.

Very truly yours,
GZA GEOENVIRONMENTAL, INC.

Rosalie T. Starvish, P.E., CFM, CPMSM
Project Manager

Stephan L. Lecco, A.I.C.P., C.E.P.
Consultant/Reviewer

Thomas E. Jenkins, P.E.
Principal-in-Charge

Attachments: *Project Identification and Prioritization Report for the Mohawk Trail Woodlands Partnership Regional Adaptation & Resilience Project*

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APPENDICES

1.0 INTRODUCTION

Ashfield and Conway share the South River Watershed, a HUC-12 tributary of the Deerfield River Watershed. Since 2010, the towns have been working with the Franklin Regional Council of Governments (FRCOG) to assess river and watershed health and identify and implement projects that improve climate resiliency. There are a number of structures, facilities, roads and culverts that are in the South River's 100-year floodplain and mapped river corridor which are vulnerable to flooding and fluvial erosion. Over twenty (20) potential climate resilient river restoration projects were identified by prior assessment work as documented in the 2013 and 2016 Fluvial Geomorphic Assessments by Field Geology Services.

The goals of the Mohawk Trail Woodlands Partnership Regional Adaptation and Resilience Project (i.e., the Project) include the compilation of a comprehensive list of the river restoration projects that have been previously identified; identification of additional projects that could be implemented in the upland watershed to supplement the anticipated benefits of previously identified projects; prioritization of the projects using a prescribed climate resiliency scoring matrix; and selection of up to five (5) of the top priority projects for development of construction-ready plans and bid documents. Other components of the Project include advancement of the River Corridor Easement Restriction Tool and culvert assessments and designs.; FR

GZA is partnering with Field Geology Services (GZA-Field Team) to work with FRCOG and its partners to provide project prioritization, hydraulic modeling, permitting support, topographic surveys for project design, and preparation of final designs, cost estimates, and bid ready documents for prioritized climate resilient river and watershed projects in the South River Watershed.

This report presents a description of the process undertaken to develop a list of previously identified projects, identify additional project opportunities, and prioritize projects to select for full design. The outcomes of the project identification, prioritization, and selection process are also described herein.

2.0 LIST OF PREVIOUSLY IDENTIFIED PROJECTS

The GZA – Field Team reviewed existing project reports for the South River watershed and compiled a complete list of previously identified projects. The following reports were reviewed:

- 2013 Fluvial Geomorphic Assessment of the South River Watershed, MA; Field Geology Services, LLC.
- 2016 Fluvial Geomorphic Assessment and River Corridor Planning for the South River Watershed, MA; Field Geology Services, LLC.
- 2017 Sediment Management BMPs for the South River in Conway; FRCOG.
- 2017 A Watershed-Based Plan to Maintain the Health and Improve the Resiliency of the Deerfield River Watershed; FRCOG et. al.
- 2019 A Framework for Resilience: Responding to Climate Change in the Deerfield River Watershed; FRCOG.
- 2019 Using the Science of Fluvial Geomorphology to Develop River Corridor Management Tools to Protect the Health and Improve the Resiliency of the Deerfield River Watershed; FRCOG.
- River Corridor Management Toolkit; FRCOG.
- 2018 MVP Resiliency Plan for Towns of Ashfield & Conway; FRCOG.
- 2018 High Risk Stream Crossings in Ashfield, MA: A Resource for Assessing Risk and Improving Resiliency; FRCOG.

- 2018 High Risk Stream Crossings in Conway, MA: A Resource for Assessing Risk and Improving Resiliency; FRCOG.

The majority of the previously-identified projects (28 in total) were categorized within the *Fluvial Geomorphic Assessment and River Corridor Planning for the South River Watershed, MA* (March 2016, Field Geology Services). Two additional previously-identified projects were described in the 2019 *River Corridor Management Toolkit, Part 2, River Corridor Mapping Protocol & Maps* (FRCOG). The previously-identified projects are listed as "Site ID" 1 through 30 on the attached **Table 1. Prioritization Matrix**. **Table 1** includes a site description, project description, and location by town and latitude/longitude coordinates for each site.

2.1 GIS DATABASE

The GZA-Field Team developed an interactive, on-line web mapping platform to track geospatial information for each potential project site. The geodatabase for the previously identified project sites 1 through 28 developed by Field Geology Services as part of the 2016 fluvial geomorphic assessment served as the base data for the mapping platform. The base data was expanded by adding sites 29 and 30, as well as additional project sites as they were identified throughout the project identification, prioritization, and selection process, as described below. The mapping platform also includes geospatial data previously developed by FRCOG and its project partners, and from other sources including MassGIS. Click here to access the web-based mapping platform.

3.0 ADDITIONAL PROJECT OPPORTUNITIES

One of the goals of the Project is to identify opportunities for additional upland watershed climate resiliency projects that support the objectives of increasing the efficacy and sustainability of previously identified downstream projects and/or groups of projects in a drainage area. Additional project opportunities were identified by the GZA-Field Team by consultation with FRCOG, and the Project partners and stakeholders. Project stakeholders from the towns of Ashfield and Conway and Friends of the South River identified a potential project opportunity along the South River near Reeds Bridge Road in Conway, where erosion is threatening the embankment between the road and the river. This potential project was added to the attached **Table 1. Prioritization Matrix** as Site 31.

The Project includes the preparation of 30% design plans for the replacement of culverts in Ashfield and Conway to meet Massachusetts Stream Crossing Standards, by Trout Unlimited (TU) under contract with FRCOG. The GZA-Field Team coordinated with TU and FRCOG to identify culvert replacement sites that could be paired with "chop and drop" wood addition in the reaches upstream and/or downstream of the culvert. The benefits of wood addition are described in "A Watershed-Based Plan to Maintain the Health and Improve the Resiliency of the Deerfield River Watershed" (FRCOG, 2017), as follows:

> *"Another way to address the increased hazards caused by the uneven distribution of sediment throughout the streams in the watershed is to increase sediment storage in the upper portions (upland areas) of the watershed. Wood addition projects have been implemented in streams all over New England to trap sediment, depress flood peaks, increase base flow and enhance habitat. One treatment technique known as "chop and drop" involves strategic cutting of trees from the riparian zone and placing the trees into and across the stream channel. This technique has had a great deal of success in forested reaches in New England, including the Green Mountain National Forest and the Northeast Kingdom in Vermont and Maine. A chop-and-drop project on Griffith Brook in the Green Mountain National Forest trapped an estimated 31 to 46 cubic yards of sediment per year over the quarter mile length of the project."*

Six out of eight potential culvert replacement sites were identified that have opportunities for "chop and drop" wood addition either upstream or downstream, or in the vicinity, of the culvert on existing forested lands held in conservation or by private landowners. The identified culvert replacement projects are listed as "Site ID" 32 through 39 on the attached **Table 1. Prioritization Matrix**.

4.0 PROJECT PRIORITIZATION AND SELECTION

The GZA-Field Team developed criteria to guide the prioritization of projects with the goal of selecting the highest ranked projects to advance to final design and preparation of bid-ready documents. These criteria were categorized and compiled into a Prioritization Scoring Matrix so that each potential project could be scored for its ability to support climate resiliency, ecological, and geomorphic stability goals, while also being technically and financially feasible. The criteria and prioritization process were reviewed with the Project stakeholders for input prior to implementation.

4.1 PRIORITIZATION SCORING MATRIX

A total of 23 prioritization criteria were developed and distributed into the following categories:

- Design & Implementation,
- Financial,
- Climate Resiliency,
- Habitat, and
- Geomorphic Stability.

With the need to score over 30 projects using 23 criteria, a simple approach was taken to assign a score of either 0 or 1 to each project under each criterion, with a score of 0 indicating that the project does not promote or favor the criterion, and a score of 1 indicating that the project substantially promotes or favors the criterion. **Table 2. Criteria Descriptions** lists each criterion and the qualifiers describing how a project would score either 0 or 1.

For each project, the scores were summed under each category to provide an overall score for each category. The category scores were summed to determine a total score for each project. Each project could then be evaluated for its overall benefits and feasibility, and/or its benefits on a category by category basis.

It is important to note that the scoring process provides an initial ranking based on subjective interpretations of the criteria, and that the final prioritization and project selection includes consideration of the range of project types and compatibility between projects to enhance the overall beneficial impacts. For example, projects located upstream of the Village of Conway may be preferred if they provide flood attenuation benefiting the Village. Also considered is a subjective weighting of the criteria, often towards feasibility for implementation, including landowner participation and level of environmental permitting effort required.

The project scores assigned by the GZA-Field Team were reviewed with the project stakeholders for input based on local knowledge.

4.2 PROJECT SELECTION

Three meetings were held with project stakeholders throughout the project prioritization and selection process to solicit feedback on the prioritization criteria, approach, and scoring; obtain local knowledge about project sites and ownership;

and review other considerations (see meeting summaries, attached). The GZA-Field Team performed the initial prioritization scoring on Sites 1 through 31 (i.e., not including the culvert replacement projects) to select the top-ranked 10 projects for discussion with the project stakeholders. Some of those 10 projects were located in proximity to other highly scoring projects which exhibited the potential for being paired to enhance overall benefits within the reach; thus, a total of 14 potential projects were initially reviewed with the stakeholders. Based on the discussions, five sites were identified to advance for further field investigations, wetland delineation, and topographic survey. Three of the five sites were located within the same reach along the South River; thus, were selected to be combined into one project for final design (Sites 16, 17, and 18). The five selected sites are as follows:

- Site 14: Upstream of the Main Street Bridge in the Village of Conway; berm blocks access to floodplain and confines stream increasing hazards to adjacent infrastructure. The proposed project includes land acquisition, breaching and removal of portions of the berm to restore floodplain access, increase sediment storage, and reduce fluvial erosion risk to infrastructure.

- Site 16: Degraded channel function in straightened reach along South River in Conway, leading to increased risk to road and downstream properties, adjacent to potential projects at Sites 17 and 18. The proposed project is to re-activate an abandoned oxbow meander to increase stream sinuosity and decrease sediment transport downstream, and includes land conservation.

- Site 17: Active mass failure threatens Shelburne Falls Road at top of slope. The proposed project is to stabilize the mass failure with instream boulder and log deflector structures.

- Site 18: Wide shallow channel and lack of riparian buffer at the former Harris Farm property. The proposed project includes riparian planting and establishment of a no mow zone.

- Site 30: Old Conway Reservoir dam breached 50 years ago, 10' high vertical banks are sloughing. The proposed project includes floodplain reconnection and legacy sediment removal to create a wetland and floodplain.

Upon more detailed field review by wetland scientists, Site 30 was dropped from consideration for the development of final designs because the site conditions were impacted by a substantial beaver dam and determined to be too dynamic for interventions. Site 14 was also subsequently dropped from consideration for the development of final designs due to opposition by the private landowner. However, further study of flood risk and impacts in the center of Conway and near the location of Site 14 (confluence of South River and Pumpkin Hollow Brook and Main Street culvert) may still be pursued to inform potential future design should there be any changes in land ownership.

After selection of the top 5 prioritized projects out of 31 potential projects, the overall list of projects was expanded to include potential culvert replacement with chop and drop projects, as described in Section 3.0. These projects were added to the prioritization matrix, but considered separately from the previously identified 31 projects, as upland watershed projects intended to enhance the resiliency improvements within the South River watershed that would be realized by the selected projects listed above. The culvert replacement/chop and drop projects were scored and ranked to select two projects, one in Ashfield and one in Conway, for final design based on 30% designs developed by TU. The two culverts selected for final design include:

- Main Poland Road over Johnny Bean Brook: This is an 8 ft diameter corrugated steel culvert on a paved road close to the village of Conway. Backwater upstream and lots of scour downstream, without aquatic organism passage. Opening up this crossing for aquatic organisms will have increased benefits as it is a barrier for fish in the South River seeking thermal refuge in summer months. Identified as one of the highest priority culvert replacements in

former studies by Field Geology Services. The culvert project would be paired with chop and drop wood addition along Johnny Bean Brook.

- Baptist Corner Road over South River: This is a 10ft wide concrete box culvert under a highly-travelled paved road. Franklin Land Trust is working on potential conservation projects both upstream and downstream of this crossing. Both conservation projects have chop and drop potential.

5.0 SUMMARY

In summary, the GZA-Field Team intends to move forward with the preparation of full design, construction-ready bid documents for the following projects:

- Sites 16/17/18: The proposed project is to re-activate an abandoned oxbow meander along the South River to increase stream sinuosity and decrease sediment transport downstream, and includes land conservation. The proposed project will also stabilize the mass failure along Shelburne Falls Road with instream boulder and log deflector structures, and will include riparian planting and establishment of a no mow zone along the South River at the former Harris Farm property.

- Culvert replacement at Main Poland Road over Johnny Bean Brook in Conway, paired with chop and drop wood addition along Johnny Bean Brook.

- Culvert replacement at Baptist Corner Road over South River in Ashfield, paired with chop and drop wood addition along South River.

These projects were selected with input and information from FRCOG, the project stakeholders including the Town of Ashfield, Town of Conway, and Friends of South River, as well as project team members Trout Unlimited and Franklin Land Trust.

Tables

TABLE 1. PRIORITIZATION MATRIX

MVP Action Grant
Mohawk Trail Woodland Partnership Regional Adaptation and Resilience Project

Prioritization Criteria
0 = Does not promote or favor the Criterion
1 = Substantially promotes or favors the Criterion
Scores are subjective and are for discusison purposes only

Site ID	Town	Site Description	Project Description	Location	Land Ownership/Participation	Level of Permitting & Design Effort	Infrastructure Conflicts/ Impacts	Preservation of/Impacts to Historical Resources	Construction Feasibility	**Design & Implementation Feasibility Score**	Relative Project Costs	Future O&M Needs & Costs	Available Funding or Grant Opportunities	**Financial Score**	Stream Temperature Mitigation	Forest Conservation	Reduction in Downstream Sediment Loading	Reduction in Flooding Potential	Mitigation of Water Quality Impacts	**Climate Resiliency Score**	Benefits to Cold Water Fisheries	Benefits to Endangered Species Habitat	Wildlife Connectivity	Adjacency to Existing/Potential Protected Open Space	Riparian Health and Maturity	**Habitat Score**	Floodplain Connectivity (where floodplain exists)	River Structure (Meanders, Roughness Elements)	Severity and Degree of Bank Erosion	Capacity for Channel Adjustment	Potential for Improvements Beyond Project Site	**Geomorphic Stability Score**	**Total Score**	**Technical Score (Does not include Feasibility & Financial)**
					Design & Implementation Feasibility						**Financial**				**Climate Resiliency** (Reduction in Storm Damage)						**Habitat**						**Geomorphic Stability**							
1	Ashfield	210-foot long segment, largely on town-owned land, in residential village with berm and no riparian buffer, adjacent to town park	Remove berm and establish a riparian buffer through riparian planting of native species	42°31'40.62" N; 72°47'52.93" W	0	1	0	0	1	**2**	1	0	1	**2**	1	1	1	0	1	**4**	1	1	0	1	1	**4**	1	1	1	1	0	**4**	**16**	**12**
2	Ashfield	Dynamic reach upstream of Village of South Ashfield prone to planform channel change	Corridor Protection	42°30'55.57" N; 72°46'45.17" W	0	1	1	1	1	**4**	1	1	1	**3**	1	1	0	0	1	**3**	1	0	0	1	1	**3**	0	1	0	0	1	**2**	**15**	**8**
3 *completed*	Ashfield	Lack of riparian buffer downstream of Burton Hill Rd leading to degraded riparian and instream habitat, sediment loading to downstream	Establish / enhance riparian buffer with riparian plantings and no-mow zones along streambanks, fence livestock out of stream	42°30'35.40" N; 72°46'21.59" W	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**	**N/A**
4	Ashfield/ Conway	Steep channel is in places clogged with downed trees as it follows Rt 116 through narrow valley filled with mass failures	Strategic removal of a portion of the downed trees accumulated in the stream channel	42°30'25.85" N; 72°46'06.35" W	0	0	1	0	1	**2**	1	0	0	**1**	0	0	0	1	0	**1**	0	1	0	0	0	**1**	0	0	1	0	0	**1**	**6**	**3**
5 *completed*	Ashfield	Failing concrete retaining wall along Rt. 116 threatens road	Repair retaining wall, add boulder deflectors for scour protection, install rootwad habitat structures	42°30'25.85" N; 72°46'06.35" W	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**	**N/A**
6 *completed*	Ashfield	Failing concrete retaining wall along Rt. 116 threatens road, downstream of Bullitt Road	Repair retaining wall, add boulder deflectors for scour protection, install rootwad habitat structures	42°30'34.03" N; 72°45'48.63" W	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**	**N/A**
7	Conway	Highly impaired channel upstream of North Poland Road bridge, agricultural land use	Instream structures paired with riparian conservation efforts to improve instream and riparian habitat and reduce downstream sediment loading	42°30'49.08" N; 72°44'40.77" W	1	0	1	1	1	**4**	1	0	1	**2**	1	1	1	0	1	**4**	1	1	0	1	1	**4**	0	1	0	1	1	**3**	**17**	**11**
8 *completed*	Conway	Failing concrete retaining wall along Rt. 116 threatens road, downstream of North Poland Road bridge	Construct new retaining wall, widen channel, build flooplain bench, add boulder deflectors for scour protection, install rootwad habitat structures	42°30'46.39" N; 72°44'32.79" W	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**	**N/A**

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					Design & Implementation Feasibility						**Financial**				**Climate Resiliency**						**Habitat**						**Geomorphic Stability**							
9	Conway	Channel avulsion during 2005 flood activated large mass failures contributing excess sediment to stream	Restore river to historic channel course through bank cutting/flow diversion and engineered log jam	42°30'52.88" N; 72°44'10.03" W	0	0	1	1	0	**2**	0	1	1	**2**	0	0	1	1	1	**3**	1	1	0	1	1	**4**	1	1	1	1	1	**5**	**16**	**12**
10	Conway	Increased sediment transport capacity and flow velocity in straightened channel leading to degraded condition and high hazards (Hickory Hollow)	Restore geomorphic function and improve habitat value while lowering erosion hazards through combined instream and floodplain approach	42°31'12.94" N; 72°43'34.09" W	0	0	0	1	1	**2**	0	0	1	**1**	0	0	1	1	0	**2**	1	1	0	1	1	**4**	1	1	1	1	1	**5**	**14**	**11**
11	Conway	Increased sediment transport capacity and flow velocity in straightened channel leading to degraded condition	Use instream structures such as boulder deflectors and boulder-wood clusters to improve habitat and geomorphic function	42°30'35.23" N; 72°42'42.94" W	0	0	1	1	1	**3**	0	1	1	**2**	0	0	1	0	0	**1**	1	1	0	0	0	**2**	0	1	1	1	1	**4**	**12**	**7**
12	Conway	Town-owned land with degraded channel function in formerly impounded area leading to increased risk to road and ds infrastructure	Establish town park adjacent to historic covered bridge, bank cutting/flow diversion and instream structures to restore channel complexity and reduce hazards to road and downstream infrastructure	42°30'39.29" N; 72°42'53.74" W	1	0	1	1	1	**4**	1	0	1	**2**	0	1	1	1	0	**3**	1	1	0	0	1	**3**	1	1	1	1	1	**5**	**17**	**11**
13	Conway	Straight featureless channel behind the town garage, location upstream of center of village is an asset	Instream structures such as boulder-wood clusters and boulder-supported log jams to increase sediment storage, reduce velocities and improve instream habitat	42°30'23.36" N; 72°42'30.58" W	0	0	1	1	0	**2**	0	1	1	**2**	0	0	1	1	0	**2**	1	1	0	0	0	**2**	0	1	1	1	1	**4**	**12**	**8**
14	Conway	Upstream of the Main St Bridge in the Village of Conway; berm blocks access to floodplain and confines stream increasing hazards to adjacent infrastructure	Land acquistion, Breach and remove portions of berm to restore floodplain access, increase sediment storage, reduce fluvial erosion risk to infrastructure	42°30'30.53" N; 72°41'53.38" W	0	1	0	1	1	**3**	1	1	1	**3**	0	1	1	1	0	**3**	1	1	0	1	1	**4**	1	1	1	1	1	**5**	**18**	**12**
15	Conway	Downstream of the Main St Bridge in the Village of Conway; high sediment load and channel re-meandering represent severe fluvial erosion hazards	Floodplain lowering paired with instream weirs and deflectors to restore floodplain access, decrease velocity, bank erosion and downstream sediment transport, reduce flooding and erosion hazards	42°30'38.82" N; 72°41'42.74" W	0	1	0	1	1	**3**	1	1	1	**3**	0	0	1	1	0	**2**	1	1	0	0	1	**3**	1	1	1	1	1	**5**	**16**	**10**
16	Conway	Degraded channel function in straightened reach leading to increased risk to road and downstream properties, adjacent to potential projects	Re-activate abandoned oxbow meander to increase stream sinuosity and decrease sediment transport downstream, includes land conservation	42°31'03.77" N; 72°41'50.74" W	1	0	1	1	1	**4**	0	1	1	**2**	1	1	1	1	1	**5**	1	1	0	1	1	**4**	1	1	1	1	1	**5**	**20**	**14**

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					Design & Implementation Feasibility						**Financial**				**Climate Resiliency**						**Habitat**						**Geomorphic Stability**							
17	Conway	Active mass failure threatens Shelburne Falls Road at top of slope	Stabilize mass failure with instream boulder and log deflector structures	42°31'14.04" N; 72°41'55.96" W	1	1	1	1	1	**5**	0	0	1	**1**	0	0	1	0	0	**1**	1	1	0	1	1	**4**	0	1	1	0	1	**3**	**14**	**8**
18	Conway	Wide shallow channel and lack of riparian buffer at the former Harris Farm property	Riparian planting and establishment of a no mow zone	42°31'16.00" N; 72°41'54.57" W	0	1	1	1	1	**4**	1	1	1	**3**	1	0	0	0	1	**2**	1	1	0	1	1	**4**	0	0	1	0	1	**2**	**15**	**8**
19	Conway	Sediment loading and unstable banks threaten to limit land's agricultural utility, and disrupt access to farm and residence	Boulder or log deflectors to reduce bank erosion and protect pedestrian bridge and stream ford	42°31'52.96" N; 72°41'59.45" W	1	0	1	1	1	**4**	0	0	1	**1**	0	0	1	0	1	**2**	1	1	0	1	1	**4**	0	1	1	1	1	**4**	**15**	**10**
20	Conway	Extremely dynamic channel segments and tight meander breaking out of unstable straightened condition, very high erosion hazards	Bank cutting/flow diversion and instream structures to encourage re-alignment of channel to promote more stable geometry, limit erosion hazards	42°31'59.04" N; 72°41'58.72" W	1	0	1	1	1	**4**	1	0	1	**2**	0	0	1	1	1	**3**	1	1	0	1	0	**3**	1	1	1	1	1	**5**	**17**	**11**
21	Conway	Straightened channel incised into legacy sediments near lower Reeds Bridge, easy access and limited infrastructure	Alternating boulder-supported log jams to encourage meandering, increase flow complexity and provide sediment storage	42°32'30.95" N; 72°41'37.64" W	0	0	1	1	1	**3**	0	0	1	**1**	0	0	1	0	0	**1**	1	1	0	1	0	**3**	1	1	1	1	1	**5**	**13**	**9**
23	Conway	Severely undersized culvert and lack of riparian buffer along Old Cricket Hill Rd	Replace culvert with properly-sized bottomless arch culvert and possible floodplain culvert, add rootwads for cover, and hemlock steps, establish riparian buffer	42°30'03.51" N; 72°41'52.09" W	0	1	0	1	1	**3**	0	1	1	**2**	1	0	0	0	1	**2**	1	0	1	1	1	**4**	0	1	0	1	1	**3**	**14**	**9**
24	Conway	Impaired habitat and morphologic function in wide, shallow straightened channel through fully-forested protected land (Trustees of Reservations)	Boulder-supported log jams, wood-on-bar and boulder clusters to store sediment, narrow channel and increase complexity and cover	42°30'14.14" N; 72°44'48.91" W	1	1	1	1	1	**5**	1	0	1	**2**	0	0	1	0	0	**1**	1	1	0	1	0	**3**	1	1	1	1	1	**5**	**16**	**9**
25	Ashfield	Norton Hill Rd crossing in bad repair, needs to be replaced, straightened channel in degraded condition	Replace culvert with properly-sized bottomless arch culvert or bridge, boulder-supported log jams and establish riparian buffer	42°31'16.17" N; 72°48'11.44" W	0	0	1	1	1	**3**	0	0	1	**1**	1	0	1	0	1	**3**	1	0	1	1	1	**4**	0	1	0	1	1	**3**	**14**	**10**

TABLE 1. PRIORITIZATION MATRIX

MVP Action Grant
Mohawk Trail Woodland Partnership Regional Adaptation and Resilience Project

Prioritization Criteria
0 = Does not promote or favor the Criterion
1 = Substantially promotes or favors the Criterion
Scores are subjective and are for discusison purposes only

Site ID	Town	Site Description	Project Description	Location	Land Ownership/Participation	Level of Permitting & Design Effort	Infrastructure Conflicts/ Impacts	Preservation of/Impacts to Historical Resources	Construction Feasibility	**Design & Implementation Feasibility Score**	Relative Project Costs	Future O&M Needs & Costs	Available Funding or Grant Opportunities	**Financial Score**	Stream Temperature Mitigation	Forest Conservation	Reduction in Downstream Sediment Loading	Reduction in Flooding Potential	Mitigation of Water Quality Impacts	**Climate Resiliency Score**	Benefits to Cold Water Fisheries	Benefits to Endangered Species Habitat	Wildlife Connectivity	Adjacency to Existing/Potential Protected Open Space	Riparian Health and Maturity	**Habitat Score**	Floodplain Connectivity (where floodplain exists)	River Structure (Meanders, Roughness Elements)	Severity and Degree of Bank Erosion	Capacity for Channel Adjustment	Potential for Improvements Beyond Project Site	**Geomorphic Stability Score**	**Total Score**	**Technical Score (Does not include Feasibility & Financial)**
					Design & Implementation Feasibility						Financial				Climate Resiliency						Habitat						Geomorphic Stability							
26	Ashfield	Multiple headcuts in vertically and laterally unstable channel just us of road crossing, severely impacted by TS Irene, threat to Creamery Brook Rd and adjacent residence, sediment source for ds segments	Boulder weirs to stabilize headcuts	42°30'59.67" N; 72°47'39.14" W	0	0	1	1	1	**3**	1	0	1	**2**	0	0	1	0	0	**1**	0	0	0	1	0	**1**	0	1	1	1	1	**4**	**11**	**6**
27	Ashfield	Multiple headcuts in vertically and laterally unstable channel, severely impacted by TS Irene, threat to Creamery Brook Rd and adjacent residence, sediment source for ds segments	Log deflector, boulder weirs and constructed bankfull bench to stabilize headcuts and banks and limit sediment loading	42°30'40.13" N; 72°47'15.38" W	0	0	1	1	1	**3**	0	0	1	**1**	0	0	1	0	0	**1**	0	1	0	1	0	**2**	0	1	1	1	1	**4**	**11**	**7**
28	Ashfield	Multiple headcuts and severely eroding stream banks ds of Williamsburg Rd crossing	Boulder weirs to stabilize headcuts, boulder-supported jams to dviert flow away from eroding banks	42°30'30.20" N; 72°46'30.89" W	0	0	1	1	1	**3**	0	0	1	**1**	0	0	1	0	0	**1**	1	1	0	1	0	**3**	0	1	1	1	1	**4**	**12**	**8**
29	Ashfield	70± acre forested/farmland parcel off Main St.	Land Conservation	42°30'8.79" N; 72°48'27.21" W	1	1	1	1	1	**5**	1	0	1	**2**	0	1	0	0	0	**1**	0	0	0	1	1	**2**	0	0	0	0	1	**1**	**11**	**4**
30	Conway	Old Conway Reservoir dam breached 50 years ago, 10' high vertical banks are sloughing	Floodplain Reconnection; Legacy sediment removal to create a wetland and floodplain	42°31'5.59" N; 72°43'16.72" W	1	0	1	1	0	**3**	0	1	1	**2**	0	0	1	1	1	**3**	1	1	0	1	1	**4**	1	1	1	1	1	**5**	**17**	**12**
31	Conway	Reeds Bridge Road - embankment is sliding into river	Stabilize mass failure	42°32'29" N; 72°41'28" W	0	0	1	1	0	**2**	0	0	0	**0**	0	0	1	0	0	**1**	1	1	0	1	1	**4**	0	1	1	1	1	**4**	**11**	**9**
32	Ashfield	This is identified as a high risk crossing and a moderate barrier.	Culvert replacement - Ludwig Road over tributary to Chapel Brook	42°28'18.8" N; 72°46'26" W	1	1	1	1	1	**5**	1	1	1	**3**	0	0	1	1	0	**2**	1	0	1	0	0	**2**	0	1	1	0	0	**2**	**14**	**6**
33	Ashfield	This is identified as a high risk crossing and a moderate barrier. Beaver dams impacting the hydraulics upstream and downstream of the structure.	Culvert replacement - Ludwig Branch Road over Chapel Brook	42°28'17.5" N; 72°46'20.6" W	1	1	1	1	1	**5**	1	1	1	**3**	0	0	1	1	0	**2**	1	1	1	1	0	**4**	0	1	1	0	0	**2**	**16**	**8**

TABLE 1. PRIORITIZATION MATRIX

MVP Action Grant
Mohawk Trail Woodland Partnership Regional Adaptation and Resilience Project

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Scores are subjective and are for discusison purposes only

Site ID	Town	Site Description	Project Description	Location	Land Ownership/Participation	Level of Permitting & Design Effort	Infrastructure Conflicts/ Impacts	Preservation of/Impacts to Historical Resources	Construction Feasibility	**Design & Implementation Feasibility Score**	Relative Project Costs	Future O&M Needs & Costs	Available Funding or Grant Opportunities	**Financial Score**	Stream Temperature Mitigation	Forest Conservation	Reduction in Downstream Sediment Loading	Reduction in Flooding Potential	Mitigation of Water Quality Impacts	**Climate Resiliency Score**	Benefits to Cold Water Fisheries	Benefits to Endangered Species Habitat	Wildlife Connectivity	Adjacency to Existing/Potential Protected Open Space	Riparian Health and Maturity	**Habitat Score**	Floodplain Connectivity (where floodplain exists)	River Structure (Meanders, Roughness Elements)	Severity and Degree of Bank Erosion	Capacity for Channel Adjustment	Potential for Improvements Beyond Project Site	**Geomorphic Stability Score**	**Total Score**	**Technical Score (Does not include Feasibility & Financial)**
					Design & Implementation Feasibility						**Financial**				**Climate Resiliency**						**Habitat**						**Geomorphic Stability**							
34	Ashfield	This is a 9 ft wide concrete box culvert on a paved road that is severely undersized and geomorphically incompatible.	Culvert replacement - Creamery Rd over Creamery Brook with chop and drop on nearby Brier Hill Brook	42°30'33.7" N; 72°47'2.7" W	1	1	1	1	1	**5**	1	1	1	**3**	0	0	1	1	0	**2**	1	1	1	1	0	**4**	0	1	1	0	0	**2**	**16**	**8**
35	Ashfield	This is a 10 ft wide concrete box culvert under a highly-travelled paved road.	Culvert replacement - Baptist Corner Rd of South River with chop and drop upstream and/or downstream	42°31'59.6" N; 72°47'29.1" W	1	1	1	1	1	**5**	1	1	1	**3**	0	0	1	1	0	**2**	1	0	1	1	0	**3**	0	1	1	0	1	**3**	**16**	**8**
36	Ashfield	This is an 8 ft wide concrete box culvert with significant erosion and scour downstream.	Culvert replacement - Brier Hill Rd over Brier Hill Brook with chop and drop upstream and/or downstream	42°30'6.1" N; 72°47'20.9" W	1	1	1	1	1	**5**	1	1	1	**3**	0	0	1	1	0	**2**	1	0	1	1	0	**3**	0	1	1	0	1	**3**	**16**	**8**
37	Conway	3 ft diameter metal culvert that has part of the footing missing with water running behind the pipe. The SHEDS Stream Crossing Explorer gives this culvert a very high priority for replacement.	Culvert replacement - North Poland Rd over tributary to Poland Brook with chop and drop upstream and/or downstream	42°30'38.9" N; 72°44'35.4" W	1	1	1	1	1	**5**	1	1	1	**3**	0	0	1	1	0	**2**	1	1	1	1	0	**4**	0	1	1	0	0	**2**	**16**	**8**
38	Conway	This is a 7 ft diameter corrugated steel culvert on a small dirt road. Geomorphically incompatible with backwatering upstream and significant scour downstream.	Culvert replacement - Adams Rd over Johnny Bean Brook with chop and drop upstream and/or downstream	42°30'4" N; 72°43'2.8" W	1	1	1	1	1	**5**	1	1	1	**3**	0	0	1	1	0	**2**	1	0	1	1	0	**3**	0	1	1	0	0	**2**	**15**	**7**
39	Conway	An 8 ft diam. corrugated steel culvert on paved road with backwater upstream and scour downstream. Barrier for fish in the South River seeking thermal refuge in the summer months.	Culvert replacement - Main Poland Rd over Johnny Bean Brook with chop and drop upstream	42°30'28.9" N; 72°42'46.2" W	1	1	1	1	1	**5**	1	1	1	**3**	1	0	1	1	0	**3**	1	1	1	1	0	**4**	0	1	1	0	1	**3**	**18**	**10**

Notes:

[1]Final rankings should consider range of project types and compatibility between projects to enhance overall beneficial impacts.

[2]Projects 1 through 28 identified from Fluvial Geomorphic Assessment and River Corridor Planning for the South River Watershed (March 2016, Field Geology Services).

[3]Projects 29 and 30 identified from River Corridor Toolkit, Part 2, River Corridor Mapping Protocol & Maps.

[4]Projects 3, 5, 6, and 8 were indicated as "Completed" in prior documentation.

[5]Project 19 is being addressed by Connecticut River Conservancy. Project 22 is a watershed-wide effort to eradicate invasive japanese knotweek using volunteers; thus, it is not included here because it won't require advanced design.

TABLE 2. PRIORITIZATION CRITERIA DESCRIPTIONS

MVP Action Grant
Mohawk Trail Woodland Partnership Regional Adaptation and Resilience Project

	Score of 1	Score of 0
Design & Implementation		
Land Ownership/Participation	Land is public and readily available, Landowner is willing to sell land or easement	Land is private and currently landowner is unlikely to grant permission or sell, or is unwilling/unable to discuss
Level of Permitting & Design Effort	Expect design and permitting to be feasible.	There may be significant challenges to preparing the design and/or obtaining environmental permits
Infrastructure Conflicts/ Impacts	Little to no anticipated impacts to infrastructure (subsurface utilities, roads, buildings, etc.)	Conflicts or impacts to existing infrastructure are present and may post challenges to design and/or construction
Preservation of/Impacts to Historical Resources	Project would either enhance/protect/preserve existing historical resources, or would not have any adverse impacts to existing historical resources	Potential adverse impacts to existing historical resources
Construction Feasibility	Expect construction to be feasible (consider routes of access, equipment and material needs)	Difficult access (remote areas, crossing over private lands) or significant equipment/materials needs in challenging location may make construction infeasible or highly challenging
Financial		
Relative Project Costs	Expect costs to be low relative to other projects	Expect costs to be high relative to other projects
Future O&M Needs & Costs	Expect future O&M needs and associated costs to be low.	Expect future O&M needs and associated costs to be high.
Available Funding or Grant Opportunities	Project is likely to be a good fit for existing grant programs.	The potential for grant funding for this project is low.
Climate Resiliency		
Stream Temperature Mitigation	Project incorporates features that would enhance shade and cooling of stream, relative to the existing condition (such as forested buffers)	Project does not incorporate features that would enhance shade and cooling of stream, relative to the existing condition
Forest Conservation	Project includes the acquisition of land that would conserve existing forest or could incorporate forest expansion	Project does not lead to enhancement or preservation of existing forests
Reduction in Downstream Sediment Loading	Project will reduce the potential for erosion, and/or will add sediment capture capability, such as wetland creation and floodplain reconnection.	Project will not reduce erosion or enhance sediment capture, or project will add to downstream sediment loading
Reduction in Flooding Potential	Project will enhance flood storage, or will eliminate barriers that currently cause flooding without causing adverse downstream flooding impacts.	Project will not reduce flooding potential, or may add to downstream flooding
Mitigation of Water Quality Impacts	Project will improve water quality by capturing and treating pollutants (other than sediments), or by eliminating pollutant sources (such as agricultural fields adjacent to stream with no buffer).	Project will not result in improvements to water quality.
Habitat		
Benefits to Cold Water Fisheries	Project will enhance habitat by providing riffle/pool structure, cover and holding areas for fish	Project will not enhance in-stream habitat for fish
Benefits to Endangered Species Habitat	Project is within Estimated or Priority Habitats and is expected to generally enhance natural aquatic or terrestrial habitat	Project is not within Estimated or Priority Habitats
Wildlife Connectivity	Project will remove barriers to aquatic passage or wildlife connectivity (i.e., perched or undersized culverts)	Project will not improve aquatic passage or wildlife connectivity
Adjacency to Existing/Potential Protected Open Space	Project includes the acquisition of land that would be adjacent to existing or potential protected open space	Project is not located adjacent to existing or potential protected open space
Riparian Health and Maturity	Project will contribute to preserving/increasing the stability of the riparian corridor (vegetation, sediment/water balance)	Project will not improve riparian health and maturity
Geomorphic Stability		
Floodplain Connectivity (where floodplain exists)	Project includes the reconnection of the channel to its floodplain	Project does not involve floodplain reconnection.
River Structure (Meanders, Roughness Elements)	Project improves river structure, by enhancing or adding meanders and roughness elements	Project has no impact on existing river structure.
Severity and Degree of Bank Erosion	Project is addressing severe erosion onsite or has the potential to reduce erosion elsewhere	Project will not contribute substantially to the reduction of erosion onsite or elsewhere
Capacity for Channel Adjustment	Project provides for space and freedom for the river channel to adjust naturally	Project does not include improvements to the capacity for channel adjustment
Potential for Improvements Beyond Project Site	The benefits of the project will extend upstream or downstream from project site, especially when considered in the context of other nearby potential projects	Project is a localized improvement and will not provide significant benefits upstream or downstream from the project site.

Appendix A – Meeting Summaries

NOTES – STAKEHOLDER MEETING October 15, 2020

1. ATTENDANCE

- John Field, Field Geology Services (FGS) – Technical Lead
- Rosalie Starvish, GZA – Project Manager
- Nicolas Miller, Field Geology Services – Fluvial Geomorphologist
- Kimberly Noake MacPhee, FRCOG Project Manager
- Joe Strzegowski, Conway, Friends of South River
- Todd Olanyk, Ashfield Selectboard
- Michele Turre, Friends of South River
- Janet Chayes, Friends of South River

2. PRIORITIZATION METRICS AND SCORING SYSTEM

- JS: There are many metrics to consider, should there be a simplified version of the matrix?
    - JC: Also, should the metrics be weighted?
    - KNM: This project is on the leading edge of this type of work, the multiple metrics will maintain scientific integrity which will benefit future funding decisions. However, having a cooperative landowner and feasibility in permitting and design will be weighted more heavily, in reality.
    - JF: The matrix does take time but it is finite and we have previous studies to support. Once it's populated, we can use it to focus on different categories of importance.
- JC: financial and feasibility should be considered separately
- Flooding and bank erosion should be weighted more heavily
- JS: Pick 5-6 columns as being more important as it's filled out, flooding is important.
- KNM: There are overlaps because of co-benefits

3. WEB-BASED GIS VIEWER

- **KNM will follow up with Lee at Conway to get assessors/parcel data**
- Include HUC-12 drainage areas
- Include ownership as a field in the Restoration Sites
- Might get parcel data from Land Trust
- Include River Corridor Mapping from FGS
- Include culverts

4. PROJECTS

- JC: Project #14 should be a priority. Land is recently for sale. NM: technically, this project should be a priority. It could be a riverfront park.
- TO: Suggest to go through the matrix, see how they rank, pay attention to concerns regarding financing and landowners. Over time, use results of matrix to complete projects as we're able to given financing and landowners permissions.

- JC: Projects # 17 & 18 should be priorities. They are very visible to public. Lots of erosion, losing farmland at #18. #17 – caving in, trees falling, continues to be an issue.
- JS: Priorities should be projects that would reduce flooding downtown and at Main St. Bridge.
    - JF: Consider anything upstream as potentially beneficial to center of Conway.
    - NM: ID sediment sources upstream of village – look at Poland Brook
- New project to include: Reeds Bridge on South River
    - Embankment sliding into river
    - Near Project #21
    - May lose road some day
- KNM: Upland projects – look at areas of existing open space, ID chop & drop

5. NEXT STEPS

- Public forums – **KNM will discuss outreach with JC, JS, and TO.**
- **JF, RS, and NM will fill out prioritization matrix and ID top 10 projects for feedback from the group**

The above is assumed correct unless the writer is notified within 3 days after receipt.

Prepared by: Rosalie Starvish (GZA)

Distribution: All Attendees. The official means of transmittal will be via email:

- John Field – jfield@field-geology.com
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- Nicolas Miller – nicolas.miller1@gmail.com
- Kimberly Noake MacPhee – kmacphee@frcog.org
- Joe Strzegowski – strzeg@comcast.net
- Todd Olanyk – tmolanyk@gmail.com
- Michele Turre – mturre@gmail.com
- Janet Chayes – jchayes1@comcast.net

NOTES – STAKEHOLDER MEETING October 29, 2020

1. ATTENDANCE

- John Field, Field Geology Services (FGS) – Technical Lead
- Rosalie Starvish, GZA – Project Manager
- Nicolas Miller, Field Geology Services – Fluvial Geomorphologist
- Kimberly Noake MacPhee, FRCOG Project Manager
- Joe Strzegowski, Conway, Friends of South River
- Michele Turre, Friends of South River
- Janet Chayes, Friends of South River
- Alain Peteroy, Franklin Land Trust

2. PRIORITIZATION RESULTS

- GZA and FGS presented the results of the prioritization matrix, including the 10-14 projects which were ranked most highly based on the scoring developed by GZA and FGS. GZA and FGS led a discussion of the top-ranking projects with the project stakeholder team.
- Site 16 is the top scoring project and would involve the reconnection of South River to an old oxbow meander and the installation of large wood to encourage flow to the meander.
    - A similar type of project has been done previously in Whately, MA in 2015, related to protection of municipal water supply.
    - In this location, the South River is close to Shelburne Falls Road, which is a county road and main north-south artery through the Town of Conway.
    - This project could potentially be combined with sites 17 & 18.
    - Near this location, fire trucks ford into the South River and extract water for fire protection. The project could potentially include a more structured approach for fire trucks to extract water. The project should get input from the Fire Chief and landowners.
    - The road occasionally gets flooded near this location.
    - There are beaver dams in the vicinity of sites 17 & 18.
    - Near Site 18, there is more of a vegetated buffer now than is shown in the aerial photo.
    - Site 17 is a mass failure about 10-20 ft high and 50 ft wide, that is threatening the road.
- Site 14 is currently for sale as a building lot. The house shown in the aerial photo is no longer present.
    - There are potential 21E concerns due to the former tannery. The Town is working with Franklin Land Trust to perform a 21E assessment.
    - The Selectboard has voted to proceed with an appraisal for property acquisition.
- Site 30 is the location of former impoundment where legacy sediments are eroding.
    - This project could potentially be combined with Site 10.
    - Site 10 might include in-stream habitat improvements and floodplain lowering, buffer enhancement.
    - The bridge between sites 10 and 30 is new and not a constriction.
    - The stakeholder team would support a project at this location.
    - The property owner might be amenable to work on the property.

- Site 7 is at a farm (Bernett's sugar house).
  - The landowners are concerned about erosion.
  - The location in the watershed is upstream of center of Conway.
  - A potential project would include in-stream improvements, riparian buffer, and conservation easement.
- Site 24 on Chapel Brook, property owned by Trustees of Reservations.
  - Potential project would improve instream aquatic habitat and reduce downstream flooding with chop and drop or instream structure.
- Site 23 – Pumpkin Hollow Brook at Old Cricket Hill Road
  - Potential project would include culvert replacement and riparian planting
  - A lot of work has been done recently on this parcel and is now fully horse pasture
  - Would need to check with landowner to see if riparian planting would be acceptable
  - This location is downstream of Conway swimming pool, which is a manmade waterbody impounded by a dam with 30-inch vertical standpipe.
  - Would replacing the culvert at Old Cricket Hill Road have adverse impacts downstream?
  - The ballfields at Academy Hill Road, downstream of this location, flooded during Tropical Storm Irene.
  - Pumpkin Hollow Brook upstream of swimming pool might be prioritized for review of potential chop and drop projects.
- Site 20 at farm at 888 Shelburne Falls Road
  - The project would develop a new channel for the river to avoid unnatural 90-degree bends.
  - The project is located downstream of the center of Conway.
  - Benefits would include sediment reduction to downstream waterways, such as CT River.
  - There may be potential for landowner cost share or NRCS funding.
- Site 2 – Riparian easement/corridor along South River off Conway Road in Ashfield
  - Most favorable project in Ashfield for positive impact on Conway
  - Has potential for floodplain access and wood addition
  - Not candidate for chop and drop
- Site 12 – South River near confluence with Johnny Bean Brook
  - Partially Town-owned land on both sides of river
  - Good candidate for incorporating recreation/public access – proximity to covered bridge, there could be a trail network
  - Outside bend of river near Ashfield Road was stabilized with riprap by the State
  - Invasive species are present
  - There is potential to move the river to its old channel and away from the road
  - This project is one of the top 5
- General Comments
  - Focus on projects that could reduce flow into the center of Conway, such as natural upstream retention.
  - Identify conservation and chop and drop projects on tributaries, such as Pumpkin Hollow Brook and Johnny Bean Brook, Creamery Brook and its tributaries.

3. NEXT STEPS

- **GZA / FGS will define scope of work for top 3 projects (14, 16/17/18, 30) and pursue survey.**
- **Pursue landowner permissions.**

The above is assumed correct unless the writer is notified within 3 days after receipt.

Prepared by: Rosalie Starvish (GZA)

Distribution: All Attendees. The official means of transmittal will be via email:

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- Michele Turre – mturre@gmail.com
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- Alain Peteroy - apeteroy@franklinlandtrust.org

NOTES – STAKEHOLDER MEETING December 4, 2020

1. ATTENDANCE

- John Field, Field Geology Services (FGS) – Technical Lead
- Rosalie Starvish, GZA – Project Manager
- Nicolas Miller, Field Geology Services – Fluvial Geomorphologist
- Kimberly Noake MacPhee, FRCOG Project Manager
- Joe Strzegowski, Conway, Friends of South River
- Michele Turre, Friends of South River
- Todd Olanyk, Ashfield Selectboard

2. PROJECT STATUS UPDATE

- The purpose of the meeting was to discuss the status of selection of projects to advance to 100% design plans, and progress on the design process.
- Erin Rodgers from Trout Unlimited (TU) is working with DPW personnel from the Towns of Conway and Ashfield to identify and prioritize culverts for replacement. TU will identify five culverts in each Town for replacement and will prepare 30% designs.
- Up to two culverts out of the ten which will undergo 30% design may be selected to advance to 100% design under the GZA/FGS contract. The two culverts will be selected to be designed along with an upstream or downstream chop and drop project.
- In Ashfield, the five culverts being considered by TU (to be confirmed in consultation with DPW), include:
    - Ludwig Road – Tributary to Chapel Brook: This was requested by the Town DPW to be prioritized.
    - Ludwig Branch Road – Chapel Brook: This was requested by the Town DPW to be prioritized.
    - Creamery Road – Creamery Brook: This is a 9 ft wide concrete box culvert on a paved road that is severely undersized and geomorphically incompatible. The channel width just upstream is 20-feet and the next crossing downstream on Creamery Brook is a bridge that is 39-feet wide. Crossing is near Brier Hill Brook which has chop and drop potential. Identified as one of the highest priority culvert replacements by FGS.
    - Baptist Corner Road – South River: This is a 10ft wide concrete box culvert under a highly-travelled paved road. FLT is working on potential conservation projects both upstream and downstream of this crossing. Both conservation projects have chop and drop potential. Todd is not aware of any flooding problems at this culvert.
    - Brier Hill Road - Unnamed stream aka Brier Hill Brook: This is an 8ft wide concrete box culvert with significant erosion and scour downstream. This tributary has chop and drop potential.
- Todd expressed support for the concept of a project which includes a culvert replacement with a chop and drop component.
- In Conway, the five culverts being considered by TU (to be confirmed in consultation with DPW), include:
    - North Poland Road – Tributary to Poland Brook: SHEDS Stream Crossing Explorer gives this culvert a very high priority for replacement. Potential for chop and drop upstream on lands owned by Trustees of Reservations and Josephine Burnett.

- Adams Road – Johnny Bean Brook: This is a 7ft diameter corrugated steel culvert on a small dirt road. Geomorphically incompatible with backwatering upstream and significant scour downstream. FLT may hold an easement upstream. Parcel data shows large holding by Cowls Lumber company. This road leads to only one property and is not highly used. It is more immediate to forest lands.
- Main Poland Road – Johnny Bean Brook: This is an 8 ft diameter corrugated steel culvert on paved road close to the village of Conway. Backwater upstream and lots of scour downstream. Opening up this crossing for aquatic organisms has increased benefits as it is a barrier for fish in the South River seeking thermal refuge in summer months. Reportedly, fish kills have occurred in the South River in the summer months due to shallow and warm conditions. Identified as one of the highest priority culvert replacements by FGS.
- Two additional culverts to be identified in direct consultation with the Town. The Town DPW had identified culverts in the vicinity of Elmer Road; however, the actual locations were unknown.

- The benefits of chop and drop were discussed:
  - Wood added to stream helps to "slow the flow", hold back water and sediment.
  - Upstream of culverts, wood added to stream can trap other fallen wood before it reaches the culvert to cause blockages.
  - Straightforward permitting, lower cost, favorable for many grant programs.
- Joe expressed desired objective that projects should help to address flooding in the center of Conway. Johnny Bean Brook is upstream of the town center.
- Michele indicated that Main Poland Road or Poland Road would be more attractive from the perspective of residents using the roads, as these locations are more visible to more people.

3. UPDATE ON PREVIOUSLY IDENTIFIED PRIORITY PROJECTS

- Site 30:
  - A GZA wetland scientist visited the site and observed a large beaver dam which is changing the flow characteristics from riverine to impounded. There are also more numerous wetlands in the vicinity of the potential floodplain lowering areas than originally anticipated. Together, these may result in more impacts to wetlands than originally anticipated, which would result in permitting challenges.
  - GZA/FGS advised that this project should be dropped in priority and to not pursue 100% design at this time.
- Sites 16/17/18:
  - This project will continue to be pursued for 100% design.
  - Includes three individual sites to be designed as one larger project.
  - Site 16: The existing stream will be blocked using a log jam which would allow low flows to continue to trickle through and the existing stream to convert to a wetland, while the main channel would be directed into the oxbow. A scour pool will be constructed upstream of the log jam for the intake to a dry hydrant for use by the Fire Department.
  - Site 17: Repair of erosion along the embankment for Shelburne Falls Road.
  - Site 18: Restoration/enhancement of river corridor.
- Site 14:
  - Town has identified funding and is moving forward with steps to eventually buy this parcel.

- This project would provide additional flood storage but not necessarily flood conveyance, which is impacted by the Main Street bridge.
- Prior flooding observed in this area included flow down Academy Hill and down Elm Street, and back into the South River downstream of Main Street.
- Hydrologic and hydraulic modeling should include Pumpkin Hollow Brook and the Main Street bridge.
- The public may ask if just replacing the bridge would address the flooding problems. This should be reviewed with the modeling.

- Overall – Survey costs have come in over budget. GZA is pursuing a fee estimate from an alternate surveyor, as well as the potential to reduce the survey scope to reduce costs.

4. NEXT STEPS

- **GZA/FGS will consult with Franklin Land Trust to identify potential conservation lands and/or cooperative landowners upstream and/or downstream of identified culvert locations to aid in identifying locations for chop and drop projects.**
- **GZA/FGS perform field investigations to review culverts for selection.**
- **GZA to subcontract a surveyor to perform survey at Sites 14 and 16/17/18.**

The above is assumed correct unless the writer is notified within 3 days after receipt.

Prepared by: Rosalie Starvish (GZA)

Distribution: All Attendees. The official means of transmittal will be via email:

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Appendix B - Limitations

USE OF REPORT

1. GeoEnvironmental, Inc. (GZA) prepared this Report on behalf of, and for the exclusive use of the Client for the stated purpose(s) and location(s) identified in the Report. Use of this Report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. Our findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Report and/or proposal, and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered and reviewed during the course of our work. Conditions other than described in this Report may be found at the subject location(s).

3. The interpretations and conclusions presented in the Report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of the described services. The work described in this Report was carried out in accordance with the agreed upon Terms and Conditions of Engagement.

4. GZA's evaluation was performed in accordance with generally accepted practices of qualified professionals performing the same type of services at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. The findings are dependent on numerous assumptions and uncertainties inherent in the review process.

RELIANCE ON INFORMATION FROM OTHERS

5. In conducting our work, GZA has relied upon certain information made available by public agencies, Client, and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Any inconsistencies in this information which we have noted are discussed in the Report.

COMPLIANCE WITH CODES AND REGULATIONS

6. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations with codes and regulations by other parties are beyond our control.

ADDITIONAL INFORMATION

7. In the event that the Client or others authorized to use this Report obtain information on conditions at the site(s) not contained in this Report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the opinions stated in this Report.

ADDITIONAL SERVICES

8. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site(s). This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

GZA GeoEnvironmental, Inc.