

FINAL RESTORATION PLAN
for the
VERMONT ASBESTOS GROUP MINE SITE
NATURAL RESOURCE DAMAGES SETTLEMENT

Eden and Lowell, Vermont



Prepared by:

United States Fish and Wildlife Service

and

State of Vermont Agency of Natural Resources

June 2019

**State of Vermont Agency of Natural Resources Approval of the
Final Restoration Plan
for the
Vermont Asbestos Group Mine Site
Towns of Eden and Lowell, Vermont**

As the Secretary of the Vermont Agency of Natural Resources, I am the designated Trustee of natural resources in the State of Vermont. By my signature below, the Final Restoration Plan is hereby approved.

Approved:



Julie Moore, Secretary
Vermont Agency of Natural Resources

UNITED STATES FISH & WILDLIFE SERVICE

ENVIRONMENTAL ACTION STATEMENT

Within the spirit and intent of the Council of Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA) and other statutes, orders and policies that protect fish and wildlife resources, I have established the following administrative record and have determined that the action of the *Restoration Plan for the Vermont Asbestos Group Mine Site Natural Resource Damages Settlement*:

XX is a categorical exclusion as provided by 516 DM 6 Appendix 1 and 516 DM 6, Appendix 1. No further documentation will therefore be made. The proposed action falls under categorical exclusions:

B(3) The construction of new, or the addition of, small structure or improvements, including structures and improvements for the restoration of wetland, riparian, instream, or native habitats, which result in no or only minor changes in the use of the affected local area; and

B(11) Natural resource damage assessment restoration plans, prepared under sections 107, 111, and 122(i) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA); section 311(f)(4) of the Clean Water Act; and the Oil Pollution Act; when only minor or negligible change in the use of the affected areas is planned.

_____ is found not to have significant environmental effects as determined by the attached Environmental Assessment and Finding of No Significant Impact.

_____ is found to have significant effects, and therefore further consideration of this action will require a notice of intent to be published in the Federal Register announcing the decision to prepare an EIS.

_____ is not approved because of unacceptable environmental damage, or violation of Fish and Wildlife Service mandates, policy, regulations, or procedures.

_____ is an emergency action within the context of 40 CFR 1506.11. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other supporting documents (list):

Final Restoration Plan for the Vermont Asbestos Group Mine Site Natural Resource Damages Settlement, Eden and Lowell, Vermont



Regional Director/DOI Authorized Official

6/21/19

Date

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EXECUTIVE SUMMARY

The Vermont Asbestos Group mine site (VAG site) is comprised of approximately 1,550 acres on Belvidere Mountain within the towns of Eden and Lowell, Vermont. The State of Vermont Agency of Natural Resources (ANR) and the Department of the Interior (DOI) jointly received a monetary settlement totaling \$850,000 in natural resource damages. These settlement funds are to be expended for natural resource restoration to compensate the public for injuries to natural resources caused by the release of hazardous substances into the environment from the VAG site.

ANR, represented by the Vermont Department of Environmental Conservation (VT DEC) and DOI, represented by the U.S. Fish and Wildlife Service (Service), are responsible for using these settlement funds to implement restoration projects that will restore, replace, rehabilitate or acquire equivalent natural resources or services to those that were injured.

The two agencies considered three alternatives for using the joint settlement. All three alternatives are evaluated in this document:

<i>Alternative 1 (Selected)</i>	<u>Multiple Restoration Projects</u> Eden – Replacement of Knowles Flat Road Double Culvert (#13-1 and #13-2) Eden – Replacement of Knowles Flat Road Single Culvert (#13-8) Eden – Replacement of Square Road Culvert (#812-23) Eden – Lake Wise Best Management Practices Program Eden – Road Erosion Projects Lowell – Replacement of Irish Hill Road Upper Culvert Lowell – Kempton Hill Road Erosion Project Lowell – Other Road Erosion Projects Lowell – Replacement of Irish Hill Road Lower Culvert
<i>Alternative 2</i>	Wetland Protection Project on Hutchins Brook
<i>Alternative 3</i>	No Action – No restoration projects implemented

An electronic version of this plan can be downloaded at <http://dec.vermont.gov/waste-management/contaminated-sites> or <https://www.fws.gov/newengland/> or requested by mail at the address below.

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1. INTRODUCTION

The Vermont Asbestos Group mine site (VAG site) is comprised of approximately 1,550 acres on Belvidere Mountain within the towns of Eden and Lowell, Vermont. Currently, the VAG site consists of a network of 11 mine and mill buildings and structures and several tailing and waste rock piles containing asbestos. The two largest tailings piles are estimated at 30 million tons (Eden Pile and Lowell Pile). The aerial extent of quarry, tailings, and infrastructure of the mine is approximately 650 acres. The erosion of the tailing and waste rock piles has substantially impaired downstream wetlands and streams. This impairment is a violation of Vermont Water Quality Standards. A major contributor to this impairment is likely habitat destruction due to the quantity of sediment discharging from the mine tailings and waste rock into downstream wetlands and streams. This sediment contains substantial amounts of hazardous materials, including asbestos, chromium and nickel (Levy 2008, 2010).

In September 2009, DOI and the State of Vermont (State) jointly reached a settlement with G-I Holdings Inc., et al., successors to a former owner and operator of the mine, for \$850,000 to compensate the public for natural resource injuries caused by the VAG site. Payment was received over a 9-year period.

The State and DOI negotiated this settlement under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended (42 U.S.C. § 9601 *et seq.*). CERCLA authorizes Federal agencies, States and American Indian tribes to act on behalf of the public as Trustees of natural resources that are injured by the release of hazardous substances into the environment. The Natural Resource Trustees for the VAG site are the Secretary of the Interior, represented by the Service and the Secretary of ANR, represented by VT DEC (collectively, the Trustees).

Natural Resource Trustee	Representative Agency	Trustee Representatives
Secretary, Vermont Agency of Natural Resources	Department of Environmental Conservation (VT DEC)	John Schmeltzer (Primary) Linda Elliott (Alternate)
Secretary of the Interior	U.S. Fish and Wildlife Service, Region 5	Molly Sperduto (Primary) Lauren Bennett (Alternate)

CERCLA requires that any natural resource damages settlements received must be used “**to restore, replace, or acquire the equivalent of such natural resources,**” (42 U.S.C. § 9607 (f)(1)) in accordance with a restoration plan developed by the designated Natural Resource Trustees (42 U.S.C. § 9611(i)). The DOI CERCLA Natural Resource Damage Assessment (NRDA) regulations (43 C.F.R. Part 11) contain additional requirements regarding the contents of a restoration plan. Thus, the VAG site settlement must be used to fund development and implementation of a restoration plan (this document) that identifies projects that will specifically restore ecological resources (stream, floodplain, and wetland habitats along with the species that rely upon these habitats). The remaining balance of settlement funds not used to implement projects will be used by the Trustees to oversee implementation and monitoring of the restoration projects that are ultimately implemented. Due to Federal law and regulations described above in

this paragraph, these funds cannot be used to conduct or support remediation efforts at the VAG site or compensate other parties who may have been negatively impacted by the VAG site.

The Service and VT DEC, acting in their capacity as Natural Resource Trustees on behalf of the public, prepared this Final Restoration Plan that:

- ❖ *provides background on the VAG site and the NRDA settlement and explains what restoration alternatives were considered.*

Section 1 describes the history of the VAG site and the natural resource damage settlement, as well as the procedures for coordinating with the public and for evaluating restoration projects. It also identifies the wide range of restoration project ideas that the Trustees received and explored, and provides a detailed explanation of why the Trustees chose not to evaluate certain restoration projects.

- ❖ *evaluates natural resource restoration project alternatives and proposes a selected alternative to compensate the public for the natural resource injuries caused by releases of hazardous substances from the VAG site.*

Section 2 evaluates three natural resource restoration project alternatives. The Trustees' selected alternative is a suite of restoration projects in Lowell and Eden that the Trustees believe will best compensate the public for the injuries to natural resources caused by the VAG site.

- ❖ *ensures that implementation of selected restoration projects complies with Federal, State and local environmental laws and policies.*

Section 3 (Compliance with Federal, State and Local Laws) of this document addresses the selected restoration projects' compliance with a variety of state and federal environmental laws, policies and regulations. This document complies with CERCLA and the DOI CERCLA NRDA regulations. For some of the specific restoration projects, additional consultation, compliance and permitting under laws, such as the Endangered Species Act and the Clean Water Act, may be required once specific project engineering and design plans are developed. An explanation for how all laws will be complied with can be found in Table 2.

- ❖ *involves the public in the restoration planning process.*

Section 5 provides a detailed response to public comments that were received on the draft version of this Restoration Plan, which was available for public comment from July 5 through August 24, 2018. In some cases, the Trustees decided to make changes to the Restoration Plan based upon the comments that were received and the rationale for these changes is provided.

1.1 History of the VAG site

The VAG site has a long and complex history. It is an inactive asbestos mine located at the headwaters of the Lamoille and Missisquoi watersheds on the eastern side of Belvidere Mountain. The VAG site is comprised of approximately 1,550 acres on Belvidere Mountain

within the towns of Eden and Lowell, Vermont. Currently, the VAG site consists of a network of 11 mine and mill buildings and structures and several tailing and waste rock piles containing asbestos. The two largest tailings piles are estimated at 30 million tons (Eden Pile and Lowell Pile). The aerial extent of quarry, tailings, and infrastructure of the mine is approximately 650 acres (Figure 1).

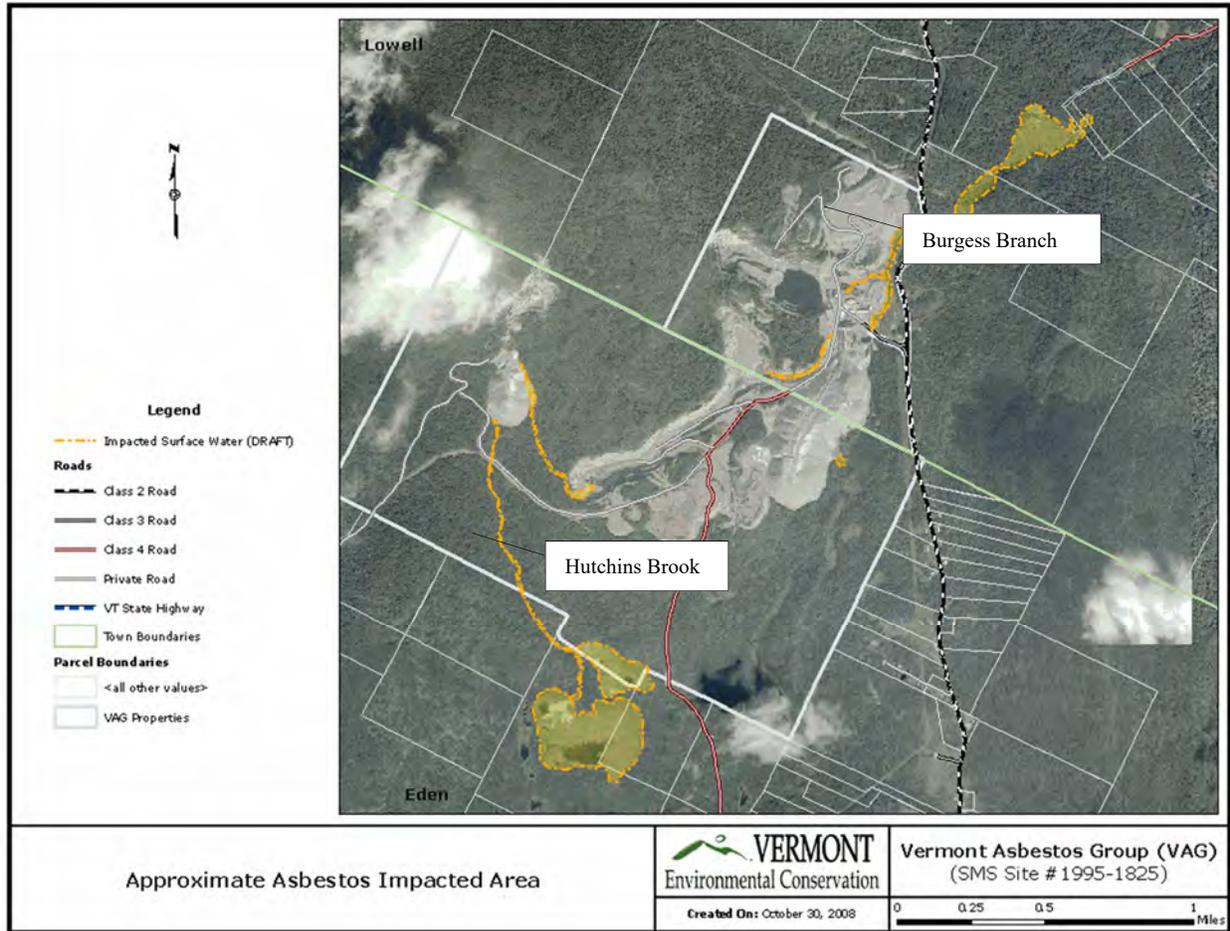


Figure 1. Stream and wetland habitat impacted by asbestos-laden tailings runoff.

The asbestos ore was mined from open quarries producing 3-4 percent chrysotile “white” asbestos. The blasted ore from the quarries went through multiple crushers. The crushed ore was then dried in rotary kilns. The dried ore was then processed through the multi-storied mill building where the fibers were separated from the ore and packaged for shipment. In the 1950s, this mine was the largest U.S. producer of chrysotile asbestos. Primary markets for the fiber included vehicle brake linings, shingles, siding, cement, pipe covering, and fireproof suits and doors. Ruberoid began mining at the VAG site at the Eden Mill in 1936 and later at the Lowell Mill (opened between 1948 and 1950). In 1967, Ruberoid merged with General Aniline & Film (GAF). In 1975, GAF sold the mine to the employees, which created the Vermont Asbestos Group (VAG), which is the current owner. VAG continued operating the mine until its closure in 1993.

Erosion of the tailings and waste rock on the VAG site led to runoff of metals- and asbestos-containing sediment - into streams and wetlands surrounding the VAG site. On the southwest side of the VAG site, tailings eroded into Hutchins Brook and its associated wetlands, located in Eden in the Lamoille River watershed. On the northeast side of the VAG site, tailings eroded into Burgess Branch and its associated wetlands, located in Lowell in the Missisquoi River watershed.



VAG site tailings piles, J. Schmeltzer (VT DEC), 2015

In 2006, ANR issued a notice of alleged violation to VAG and requested VAG mitigate the mine tailings and develop a human health assessment. From 2005 to 2007, ANR collected soil, tailings, waste rock, surface water, sediment, benthic and fish samples to assess the effects from tailings discharging in downstream waters and wetlands. During this period, the United States Geological Survey (USGS) provided support in collecting tailing, waste rock, and water samples. In the fall of 2007, the U.S. Environmental Protection Agency (EPA) initiated a Time-Critical Removal Action at the VAG site. Work activities included creating sediment basins, regrading roads, and constructing berms and diversion channels to reduce the discharge of asbestos tailings and waste rock into downstream waters. In 2008, EPA continued the erosion prevention and sediment control activities while also starting reconnaissance and sampling for the Combined Preliminary Assessment/Site Investigation.

Since 2008, VAG has been maintaining the erosion prevention and sediment controls features constructed by the EPA Removals Program. At this time, there are no current plans to implement a long-term remedy at the VAG site given the lack of financial resources.

1.2 Natural resource damage assessment and settlement

G-I Holdings Inc., et al., are successors in interest to GAF, which was a previous owner and operator of the mine. In 2001 G-I Holdings, Inc., et al., filed for relief under Chapter 11 in New Jersey's bankruptcy court, and began the bankruptcy process. The Trustees assessed injuries caused by the release of hazardous substances from the VAG site; these included impacts to streams, wetlands and forested uplands, as well as adverse effects to the fish and wildlife

inhabiting these areas. In December 2008, the Trustees submitted a single, joint Natural Resource Damage Assessment and Restoration claim in the G-I Holdings, Inc., et al., bankruptcy, which estimated the costs to restore the natural resources impacted from contamination associated with the VAG site. These estimates included costs to develop, implement, monitor and oversee a restoration effort, as well as the cost of assessing the damages.

The Trustees formally reached a settlement with G-I Holdings Inc., et al., in 2009 for \$850,000 to compensate for natural resource injuries at the VAG site and for past costs. Under the settlement, G-I Holdings Inc., et al., were required to pay out the \$850,000 incrementally over 9 years. The Trustees received the final settlement payment in early 2018.

1.3 Trustee Coordination and Public Participation

The two Trustees (represented by the Service and Vermont ANR) have formed a Trustee Council, which uses a consensus-based approach and operates under a Memorandum of Agreement (MOA). The MOA describes how the two Trustees will make decisions, resolve disagreements, conduct administrative and accounting activities, and ensure that the settlement funds are used for their intended purpose. The Trustee Council works by consensus and is the decision-making body with regard to the use of the restoration settlement funds. The Trustee Council has a responsibility and obligation to involve the members of the public and stakeholders in the restoration planning process.

Public participation and involvement are a critical element of the restoration planning process, as is coordinating with the communities of Lowell and Eden and the variety of State, local and Federal agencies and non-governmental organizations that steward and manage natural resources in the Lamoille and Upper Missisquoi River watersheds.

The Trustees initiated the restoration planning process by meeting with the selectboards in both Lowell and Eden in late March and early April 2017 to inform them about the restoration planning process and solicit restoration project ideas. The Trustees then held two public meetings – one in Eden and one in Lowell – at the end of June 2017 in order to discuss the natural resource damages settlement, explain what types of restoration projects are eligible for funding, and ask the public and stakeholders for ideas.

The public meetings were advertised in local papers, paper flyers were distributed in Lowell, and notice of the meetings was circulated via e-mail. Meeting attendees were asked for their ideas about potential restoration project types, as well as for information about specific projects and project locations, if available. Comments and ideas were recorded and a wide variety of potential restoration project ideas were shared, which greatly aided the Trustees in their restoration planning. Additionally, the Trustees reached out to potentially interested stakeholders – such as the Vermont Land Trust, Lamoille County Conservation District and Missisquoi Basin Watershed Association – by phone and e-mail to ask if they had ideas for restoration projects.

The public also had the opportunity to comment on a draft version of this plan from July 5, 2018 through August 24, 2018. During the public comment period the Trustees attended selectboard meetings – which were open to the public – in both towns in order to discuss the Draft

Restoration Plan and answer questions. The public comments received are provided verbatim in Appendix A and are discussed in greater detail in Section 5, Summary of and Response to Comments. Section 5 provides the Trustees' detailed responses to the comments received, including any changes that were made to the Restoration Plan based upon those comments. Prior to publishing the Final Restoration Plan, the Trustees met with both selectboards in November 2018 to discuss the public comments submitted by the selectboards and potential changes to the Restoration Plan.

1.4 Criteria for evaluating restoration projects

The DOI CERCLA NRDA regulations (43 C.F.R. §11.82(d)) identify the following factors to be considered in the evaluation and selection of restoration project alternatives:

Technical feasibility

The relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources

Cost-effectiveness

The results of any actual or planned response actions

Potential for additional injury resulting from the proposed actions, including long-term and indirect impacts, to the injured resources or other resources

The natural recovery period

Ability of the resources to recover with or without alternative actions

Potential effects of the action on human health and safety

Consistency with relevant federal, state, and tribal policies

Compliance with applicable federal, state, and tribal laws

Under the DOI CERCLA NRDA regulations, the Trustees are required to evaluate restoration project alternatives based upon *all relevant considerations*, including, but not limited to, the ten factors listed above. Based on these factors, the particular requirements of this case, and the Trustees goals for restoration, the Trustees have developed eight criteria to evaluate the restoration alternatives:

Location in either Lowell or Eden, VT

Nexus between resources being restored and those that were injured

Project feasibility

Cost effectiveness

Ability to leverage other funds

Complementarity to local community goals

Likelihood of being implemented and succeeding

Magnitude of benefits to ecological resources

The Trustees focused on exploring potential restoration projects within the two towns (Eden and Lowell) where the major natural resource injuries occurred from hazard material releases from the VAG site and gave preference to projects are located in tributaries that cannot be injured from any future sediment discharges from the mine site.

1.5 Restoration project ideas received

A wide range of restoration project ideas were considered during the scoping phase of the restoration planning process, which ran from approximately April 2017 through October 2017. Project ideas were received from stakeholder groups (including local communities), State and Federal biologists who are experts on the Missisquoi and Lamoille River watersheds, and from existing river corridor and basin management plans already completed by the State of Vermont. The list of projects received and considered included:

EDEN	LOWELL
<ul style="list-style-type: none"> ▪ Culvert replacements in Eden (Knowles Flat Rd. on White Branch, twin culverts on Knowles Flat Rd., Boy Scout Camp Rd. culverts, double culverts on Mary Deuso Farm Rd, culverts on Square Rd., culvert on Blakeville Rd, culvert on White Rd., culvert on East Hill Rd.) ▪ Initiate Lake Wise Best Management Practices project around Lake Eden ▪ Hutchins Brook wetland protection project ▪ Restore unnamed tributary that runs along Boy Scout Camp Rd. ▪ Riparian buffer plantings ▪ Large wood/instream habitat projects 	<ul style="list-style-type: none"> ▪ Culvert replacements in Lowell (two culverts on Irish Hill Rd., culvert on Buck Hill Rd., culverts on Hazen Notch Rd., Rte. 100 road crossings) ▪ Implement agricultural Best Management Practices ▪ Road erosion/stormwater runoff projects throughout town ▪ Streambank stabilization – Hazen Notch Rd. ▪ Corez Pond area - phragmites removal ▪ Delvin Water Hydro dam removal ▪ Riparian buffer plantings ▪ Land conservation (McCallister Pond, Hastings Brook wetlands) ▪ Logging road (post-cut) management ▪ Replace Kempton Hill Rd. bridge over Burgess Branch

During the scoping period, Trustee Council members worked actively with Federal, State, and local stakeholders to understand the ecological benefit, feasibility and potential likelihood of success of proposed projects. The Trustee Council reviewed existing plans and data related to those projects that seemed most feasible and likely to be implemented.

Several projects, including installation of agricultural best management practices, logging road management, dam removal, invasive plant species removal and land conservation were not explored in-depth because either there were not clear project locations, interested landowners, or project proponents ready to implement these projects. In most cases, the most feasible projects in each town were road crossing (culvert/bridge) replacement projects. The Trustees consulted outside experts, and met onsite and offsite with project proponents to explore and discuss the potential ecological benefits of the potential road crossing projects in each town.

Additional restoration projects were suggested during the public comment period for the Draft Restoration Plan, including a bridge erosion project on Blakeville Road in Eden, road erosion projects in Eden, land conservation projects in both Lowell and Eden aimed at protecting rare plant populations and wetland ecosystems, a logging road restoration project in Eden and road erosion on Kempton Hill Road in Lowell. In finalizing this restoration plan, the Trustees considered these new project ideas and the public comments received regarding the restoration projects proposed in the Draft Restoration Plan.

1.6 Restoration projects considered but not further evaluated

There were several road crossing (culvert/bridge) replacement projects that the Trustees explored in depth but chose not to pursue, including the

- Kempton Hill Road bridge replacement in Lowell

- Hazen Notch Road bridge replacement in Lowell
- Boy Scout Camp Road culvert replacement in Eden
- Double culvert on Mary Deuso Road replacement in Eden

In the case of the Kempton Hill Road bridge crossing over Burgess Branch in Lowell, the existing bridge was deemed hazardous in 2017 and the road was closed until the bridge could be replaced. The existing bridge, while a safety hazard, is not causing any negative ecological impacts to Burgess Branch. Thus, replacing the bridge would not provide any clear ecological improvement to stream habitat. However, there are considerable road erosion problems along a large portion of Kempton Hill Road that are negatively affecting water quality in Burgess Branch. Mitigation of road erosion along Kempton Hill Road will be addressed as part of the Kempton Hill Road Erosion Project in the Trustees' selected alternative.

With regard to the Hazen Notch Road bridge replacement in Lowell, the Trustees found that the project would be cost prohibitive and the bridge, in its current state, does allow for fish passage. Thus, the high cost of replacing the bridge would not have as great an ecological return as other projects being considered. However, similar to Kempton Hill Road, there are considerable road erosion concerns along Hazen Notch Road that are negatively affecting water quality in Burgess Branch. Mitigation of other road erosion issues, such as those along Hazen Notch Road, may be addressed as part of the Other Road Erosion Projects in the Trustees' selected alternative for Lowell.

With regard to the Boy Scout Camp Road culvert in Eden, the Trustees, along with State and Federal biologists, concluded that it would make the most sense for this culvert to be re-engineered and replaced in conjunction with the replacement of the nearby Route 100 state road crossing. Given that the State has no imminent plans to address the Route 100 road crossing in this location, the Trustees decided not to pursue the Boy Scout Road culvert replacement project. During the public comment period the Town of Eden submitted comments requesting that the Trustees fund the assessment and design of the Boy Scout Road culvert so that the Town can be prepared to move forward with the project if and when the State is ready to redo the nearby Route 100 crossing. The Trustee Council considered this request but did not select this project for funding because it is uncertain if and when the Route 100 project – and thus the Boy Scout Camp Road project – might be implemented.

Finally, the Trustees decided not to pursue the double culvert replacement on Mary Deuso Road in Eden, primarily because the project appeared to be cost prohibitive. This road crossing is undersized and washes out during storm events. The double culverts will likely need to be replaced by a bridge. Given that no other sources of funding for this bridge installation are currently identified, the Trustees concluded that this project is not as feasible as other projects being considered in Eden.

2. RESTORATION ALTERNATIVES

After taking into account key evaluation criteria (Section 1.4) such as technical feasibility, likelihood of success, benefits to the ecosystem, connection to the injured natural resources, cost

effectiveness, and ability to leverage additional funds, the Trustee Council determined that it would explore and analyze in detail three alternatives:

Table 1. List of proposed restoration alternatives

<p><i>Alternative 1 (Selected)</i></p>	<p><u>Multiple Restoration Projects</u></p> <p>Eden – Replacement of Knowles Flat Road Double Culvert (#13-1 and #13-2) Eden – Replacement of Knowles Flat Road Single Culvert (#13-8) Eden – Replacement of Square Road Culvert (#812-23) Eden – Lake Wise Best Management Practices Program Eden – Road Erosion Projects</p> <p>Lowell – Replacement of Irish Hill Road Upper Culvert Lowell – Kempton Hill Road Erosion Project Lowell – Other Road Erosion Projects Lowell – Replacement of Irish Hill Road Lower Culvert</p>
<p><i>Alternative 2</i></p>	<p>Wetland Protection Project on Hutchins Brook</p>
<p><i>Alternative 3</i></p>	<p>No Action – No restoration projects implemented</p>

2.1 Alternative 1 (Selected Alternative)

Under Alternative 1, the Trustees will partner with the towns of Lowell and Eden and focus on replacing culverts (in order to improve fish passage, flood resilience, sediment transport, and water quality) and addressing road erosion (to improve water quality). The culvert replacement projects are all located in stream reaches that are not currently affected by tailing runoff from the VAG site, and there is no risk that these projects could be negatively impacted by future runoff from the VAG site. Additional partners on these projects may include the Lamoille County Conservation District (LCCD), the Orleans Soil and Water Conservation District, the Lamoille County Planning Commission, the Service’s Lake Champlain Fish and Wildlife Conservation Office, VT DEC, the Vermont Fish and Wildlife Department, the Great Lakes Fisheries Commission, and the Vermont Agency of Transportation (VTrans).

In addition to the culvert replacement projects, the Trustees have identified additional projects in Eden and Lowell. In Eden, any funds remaining after the replacement of Knowles Flat Road Double Culvert (#13-1 and #13-2), the replacement of Knowles Flat Road Single Culvert (#13-8), and the possible replacement of Square Road Culvert (#812-23) will be split as evenly as possible between assisting the Lamoille County Conservation District with implementation of the Lake Wise BMP Plan and assisting the Town of Eden with high priority road erosion projects identified in the Town’s soon to be updated road erosion inventory. In Lowell, funds remaining after the replacement of Irish Hill Road Upper Culvert and the Kempton Hill Road Erosion project will be used to support the other high priority road erosion projects identified in the soon-to-be-published road erosion inventory for Lowell, as well as to support the design and implementation of a second culvert on Irish Hill Road.

The restoration projects for each town are described below in the priority order that the Trustees propose to implement them. The Trustees propose to split the natural resource damages

settlement funds evenly between the two towns: approximately \$375,000 for implementing selected restoration projects in Eden and approximately \$375,000 for implementing selected restoration projects in Lowell. Any unused administrative oversight funds along with any interest that has accrued on the settlement funds may be used to help complete projects in either town.

Cost Estimates for Selected Restoration Projects		
PROJECT	TOTAL ESTIMATED COST	TRUSTEE CONTRIBUTION
Eden – Replacement of Knowles Flat Road Double Culvert (#13-1 and #13-2)	\$1,400,000	~\$70,000
Eden – Replacement of Knowles Flat Road Single Culvert (#13-8)	\$415,000	\$80,000
Eden – Replacement of Square Road Culvert (#812-23)	~\$300,000	Up to \$225,000
Eden – Lake Wise Best Management Practices Program	~\$500,000	Remaining Funds
Eden – Road Erosion Projects	varies by project	Remaining Funds
Lowell – Replacement of Irish Hill Road Upper Culvert	\$250,000 to \$400,000	Up to \$305,000
Lowell – Kempton Hill Road Erosion	\$70,000	\$70,000
Lowell – Replacement of Irish Hill Road Lower Culvert	\$250,000 to \$400,000	Remaining Funds
Lowell – Road Erosion Projects	varies by project	Remaining funds

Cost estimates for culvert replacement projects frequently change as projects go through the design process and site conditions become better understood. Should cost estimates for these projects change, the Trustees will consider shifting funds between selected projects that are *in the same town*.

2.1.1 Eden – Replacement of Knowles Flat Road Double Culvert

The Trustees’ highest priority in the Town of Eden is to partner with the Town to replace the twin culverts on Knowles Flat Road (culverts #13-1 and #13-2). The culverts were both failing and impeding fish passage and sediment transport on White Branch, a tributary of the Gihon River. The culverts eventually collapsed in 2016 and had to be removed, thus closing the road. This is a State capital project and thus the town will receive partial funding from VTrans. The twin culverts need to be replaced with an appropriately sized bridge that will allow for fish passage and more natural movement of sediment and debris through the river system. The project is scheduled to be implemented in 2019 or 2020.

A public meeting has been held to discuss the project in Eden and design of the project is moving forward. The total cost of the project is estimated to be \$1,400,000 and the Trustees propose to provide \$70,000 to the Town to assist with this project. The Trustees’ contribution reflects the estimated funding shortfall for this project. The Trustees reserve the right to adjust the amount allocated for this project, depending upon the final cost estimates.



Collapsed culverts #13-1 and #13-2 on Knowles Flat Rd. in Eden

2.1.1 Eden – Replacement of Knowles Flat Road Single Culvert (#13-8)

The Trustees’ second priority is to partner with the Town of Eden to finalize replacement of a single culvert (#13-8) on Knowles Flat Road, located in close proximity to the double culvert described above. The culvert was undersized and misaligned and the Town received a \$175,000 grant from VTrans to assist with the project, the total cost of which was estimated to be \$415,000. Replacing this culvert benefits White Branch by replacing corrugated pipe with natural stream bottom habitat, reducing debris jams around the crossing, allowing woody material to move downstream and improving water quality by reducing the erosion currently occurring around the crossing.

The Trustees will provide \$80,000 to the Town of Eden to help partially fund the remaining cost of the project. By assisting with both Knowles Flat Road culvert replacement projects, there will be a compounded benefit to water quality in White Branch, a tributary of the Gihon River.

2.1.2 Eden – Replacement of Square Road Culvert (#812-23)

The Trustees will provide up to \$225,000 to the LCCD in partnership with the Town of Eden to complete a project to replace culvert #812-23 on Square Road in Eden. The culvert is owned by the Town of Eden and is located in the headwaters of the Wild Branch of the Lamoille River and is perched above the water surface on its downstream end and there is frequently not enough water inside the culvert to allow fish to swim through. Thus, it is a significant barrier to fish passage. Access into cold headwaters is essential for Eastern brook trout spawning and replacing this culvert will allow native Eastern brook trout to access approximately 9 miles of critical spawning habitat.



Perched culvert (#812-23) on Square Road in Eden, Vermont

In 2016, the LCCD, in partnership with the Service's Lake Champlain Fish and Wildlife Conservation Office (which provided \$10,000 in funding), assessed the stream channel and existing structure, and completed engineering design options and recommendations to improve fish passage and aquatic connectivity. Based on this analysis, the LCCD secured an engineer to provide a final design, permitting and regulatory requirements, and construction scope of work and cost estimate for a new 25' aluminum culvert. However, the Town of Eden has expressed some concerns that the cost for the proposed culvert replacement design may be underestimated and it speculates that a simpler bridge design or pre-cast concrete box culvert may be more affordable.

Based upon existing construction estimates from the engineer, the Trustees estimate the remaining cost of implementing this project to be \$200,000 to \$315,000. However, additional work by project partners may lead to a lower cost project. The Trustees propose to work with the VT DEC, the VT Department of Fish and Wildlife (VT DFW), the Lake Champlain Fish and Wildlife Conservation Office, the Town of Eden, the LCCD and the Lamoille County Planning Commission and potentially other partners to finish the design, engineering, and permitting for the project and implement it.

Additionally, the Service's Lake Champlain Fish and Wildlife Conservation Office has \$300,000 to \$400,000 in additional funding that it may use as match for natural resource damages settlement funds to help implement the Square Road culvert (#812-23) replacement project and the Irish Hill Road culvert replacement projects in Lowell. These projects are high priorities for state and federal biologists because of the benefits they provide to fish passage. These matching funds would be solely for the Square Road and Irish Hill Road culvert replacement projects and are contingent upon landowner support of the projects and the Trustees' commitment to fund the projects at the levels described in this plan.

2.1.3 Eden – Lake Wise Best Management Practices (BMPs) Plan

Should funds remain after the implementation of the selected culvert projects in Eden or should the culvert projects become infeasible, the Trustees will partner with the LCCD, VT DEC and the Town of Eden to help implement the stormwater management projects that are identified in the Lake Eden Lake Wise Best Management Practices Plan, which is currently being developed. The Lake Wise plan will essentially be a stormwater management plan for Lake Eden and will

identify specific projects on private and public land to manage stormwater runoff into Lake Eden and improve water quality in the lake. Potential stormwater management projects could include installing vegetation along the lake edge to reduce erosion, or installing stormwater bioretention systems (e.g., rain gardens) in order to reduce stormwater runoff into the lake.

The Trustees anticipate using approximately 50% of any remaining funds to support implementation of the projects identified in the Lake Wise plan for Lake Eden. These funds would be provided to the LCCD to use as a match to other stormwater runoff-related grants in order to maximize the benefits provided by this funding. Stormwater management projects help to improve and protect water quality by promoting more infiltration of stormwater runoff into the ground and reducing sediment and other water pollutants that flow as runoff into lakes and streams.

While the Trustees intention is to provide approximately 50% of any remaining funds – dedicated to Eden – to Lake Eden BMP projects, the Trustees reserve the flexibility to adjust the percentage of any leftover funds based upon the amount of remaining funds, and the cost and ecological benefits of the specific projects that are identified in the Lake Wise plan.

2.1.4 Eden – Road Erosion Projects

Should funds remain after the implementation of the culvert replacement projects, the Trustees will fund high priority road erosion projects in Eden. The Trustees anticipate using approximately 50% of any remaining funds to support road erosion projects in Eden.

During the public comment period for the Draft Restoration Plan, the Town of Eden requested that the Trustees consider expanding the road erosion project that the Trustees proposed for the Town of Lowell to include funding for miscellaneous road erosion projects in Eden. Road erosion projects involve the installation of stormwater best management practices (BMPs), such as gravel-lined drainage ditches, to maintain unpaved roads and keep roadway sediment and stormwater from running off into streams and degrading water quality.

In 2014, the Lamoille County Planning Commission published a road erosion inventory for Lamoille County (LCPC 2013) that included Eden. The Town of Eden has been successfully applying for Better Roads grants and implementing the highest priority projects in this plan. The Trustees anticipate that the Town would continue to be competitive for Better Roads grants, especially if they had natural resource damages settlement funds to serve as match.

There are currently seven locations/projects remaining on the 2014 road erosion inventory in Eden. Four of these locations are on Square Road, the site of one of the selected culvert replacement projects.

Road Name	Project Number
Blakeville Road	BL01
East Hill Road	EH12
Square Road	SQ01
Square Road	SQ06
Square Road	SQ08

Road Name	Project Number
Square Road	SQ09
White Road	WH02

Additionally, an updated road erosion inventory for the Town of Eden will be conducted in 2019 and 2020 that will result in a revised list of priorities. This priority list may be updated annually. When settlement funds are available, the Trustees will work with the Town to review the existing list of priority projects and identify which of the priority projects will receive funding.

While the Trustees intention is to provide approximately 50% of any remaining funds dedicated to Eden to high priority road erosion projects, the Trustees reserve the flexibility to adjust the percentage of any leftover funds based upon the amount of remaining funds, and the cost and ecological benefits of the specific projects that are identified in the town’s upcoming road erosion inventory.

2.1.5 Lowell – Replacement of Irish Hill Road Upper Culvert

VTrans has identified a culvert on upper Irish Hill Road (TH 29 Lowell) for replacement. The culvert is located on Trulland Brook and is perched, thus obstructing fish passage. Trulland Brook is a known Eastern brook trout stream. VTrans has completed a hydraulic study of this culvert and is recommending installation of a new box culvert. The Trustees will provide up to \$315,000 to support this culvert replacement project.



Perched culvert on Trulland Brook on Irish Hill Road in Lowell, Vermont

The Trustees propose to work with the Town of Lowell, the Service’s Lake Champlain Fish and Wildlife Conservation Office (Partners Program) and potentially the Orleans Soil and Water Conservation District, to replace this culvert. No engineering has been done for this project yet. The Trustees estimate that the cost of this project could be anywhere from \$180,000 to \$400,000. As stated in Section 2.1.2 Eden – Replacement of Square Road Culver (#812-23), the Service’s

Partners Program has upwards of \$300,000 to \$400,000 that can be used match natural resource damages settlement funds in order to help implement the Irish Hill Road (Lowell) and Square Road (Eden) culvert replacement projects.

2.1.6 Lowell – Kempton Hill Road Erosion

During the public comment period for the Draft Restoration Plan, the Town of Lowell brought to the Trustees attention a particularly severe road erosion project on Kempton Hill Road, on either side of a bridge crossing over Burgess Branch. A VT ANR River Scientist had conducted a site visit and noted the severity of the road erosion problems in this location. In the Draft Restoration Plan, the Trustees had identified road erosion projects, in general, as projects that could be funded with any remaining settlement dollars. After considering the Town of Lowell's comments on the Kempton Hill Road Erosion project and the need to address road erosion at this location in the near future (1-2 years), the Trustees have prioritized this project and will provide approximately \$70,000 to the Town of Lowell to assist with the significant erosion problems along Kempton Hill Road. Work could include installation of driveway culverts, gravel lined ditches, water bars, sediment basins and other techniques.



Rivulets formed by eroding material running down Kempton Hill Road toward Burgess Branch.

The erosion on Kempton Hill Road is negatively affecting Burgess Branch. The section of this stream that is located near the VAG site is heavily impacted by tailing runoff from the VAG site. However, at the Kempton Hill Road crossing the stream is not impaired by releases from the VAG site. Given the distance of this project from the VAG site and the fact that this project will be conducted along Kempton Hill Road, which runs perpendicular to Burgess Branch, the Trustees do not expect that any future runoff from the mine would negatively affect this project. Implementing erosion best management practices along Kempton Hill Road will reduce the amount of sediment running into Burgess Branch and improve water quality in this stream.

2.1.7 Lowell – Road Erosion Projects

The Trustees may use remaining funds to support additional high priority road erosion projects in the Town of Lowell. Priority road erosion projects are currently being identified and assessed as part of a road erosion inventory for the town (funded by the VTrans Better Roads Program).

This assessment will identify those stretches of road in the Town that are most in need of erosion control.

Erosion management systems are frequently needed on dirt roads, which can erode easily and introduce large volumes of sediment into waterways during storm events. Too much sediment entering waterways during storm events over time degrades water quality for fish and other aquatic organisms. The sediment can reduce light penetration into waterways, thus reducing the growth of phytoplankton, which rely upon photosynthesis and which support the aquatic food chain. Large suspended sediment loads, as they settle out, can smother rocky stream and river beds in which benthic macroinvertebrates live and in which many fish lay eggs. Sediment from roads is also a source of phosphorus, which is impairing water quality in the Lake Champlain Basin. Road erosion projects frequently involve the installation of more effective stormwater management systems, including adequately sized, sloped, and lined drainage channels (to slow water and capture sediment) that run parallel to roadways, culvert replacements, and other projects.

These projects vary in scale, scope, and cost, depending upon location. Projects vary in cost, depending upon their scope and size, but frequently are in the range of \$10,000 to \$30,000. Should funds remain after implementing the culvert replacement projects, the Trustees propose to work with the Town of Lowell and other potential partners to implement high priority road erosion projects that are identified in the road erosion study currently underway for Lowell. The Trustees expect that any settlement funds provided could be leveraged with funds from the VTrans Better Roads Grant Program.

2.1.8 Lowell – Replacement of Irish Hill Road Lower Culvert

VTrans has identified another culvert at the bottom of Irish Hill Road in Lowell, near its intersection with Route 100, which needs to be replaced. This culvert is located on an unnamed tributary of the East Branch Missisquoi River and is a partial barrier to fish passage. The culvert is at grade with the stream, but it is undersized and there is no substrate (stream bottom) within the culvert, which is a disincentive to fish and also increases water velocities within the culvert (making it more difficult for fish to swim through during high flows). This tributary supports a warm water fish community.

While the upper culvert on Irish Hill Road is the Trustees' highest priority for culvert replacement in Lowell, should there be sufficient funds remaining after replacing the culvert on upper Irish Hill Road the Trustees may use funds to move this second culvert replacement project forward, whether by assisting with the design and permitting process or helping with construction costs if other funds are also available.



Lower culvert on Irish Hill Road in Lowell, Vermont

2.2 Alternative 2: Wetland Protection Project on Hutchins Brook

Downstream of the VAG site in Eden, a Class II approximately 50-acre palustrine wetland complex associated with Hutchins Brook was heavily impacted by metal- and asbestos-laden tailings. More than 12 acres of this wetland complex has been entirely filled in with tailings. However, the western and southern portion of this wetland complex currently remains unimpacted.



Hutchins Brook wetland complex in Eden that was impacted by asbestos-laden mine tailings (tailings appear light gray); aerial photo taken in 2015.

A restoration project was proposed to hydrologically disconnect the unimpacted portion of this wetland (western and southern area) from the impacted portion. The goal of this project would be to prevent future injury to the unimpacted portion of the wetland should additional tailings run off of the VAG site, which is not actively being remediated. As part of this project, a berm would likely be constructed along the western side of the impacted area in order to bisect and hydrologically separate the western and eastern sides of the wetland.

Given that road access to the VAG site is from the eastern side of the wetland, construction equipment would likely need to move through the asbestos tailings, likely requiring additional safety measures to limit the spread of asbestos material offsite. The cost of this project is unclear, as it is uncertain how long a berm would need to be and whether the berm could be constructed using material on-site. The Trustees believe that, due to the unusual nature of this project and the difficulty in accessing the VAG site, this project would be expensive and likely require the bulk of the \$850,000 settlement. The feasibility and long-term effectiveness of this project are also uncertain.

2.3 Alternative 3: No Action

The CERCLA NRDA regulations require that a No Action alternative be considered in the restoration alternatives analysis. This alternative serves as a baseline against which the other (action) alternatives are compared. Under the No Action alternative, the settlement funds would

not be utilized to implement restoration of the natural resources that were injured by the release of hazardous materials at the VAG site.

2.4 Evaluation of restoration alternatives

The Trustees considered and evaluated the three restoration alternatives within the context of each of the eight evaluation criteria (Section 1.4) developed by the Trustee Council.

Alternative 1 (Selected) – Culvert Replacements, Lake Wise and Road Erosion Projects

Location in either Lowell or Eden, VT: Under this alternative, restoration projects are located in both Lowell and Eden, with an equal amount of settlement funding being spent in each town.

Connection between resources being restored and those that were injured: There is a strong connection between those resources being restored and those injured. The restoration projects would improve water quality in streams and also improve habitat for fish, benthic macroinvertebrates, and invertebrates by replacing improperly sized/placed culverts and reducing erosion of sediment into streams and lakes. These benefits would cascade up the food chain to migratory birds, herpetofauna (e.g., salamanders and turtles), and mammals. Additionally, the restoration projects would greatly increase the ability of migratory fish such as Eastern brook trout to reach previously inaccessible high-quality spawning habitat, thus bolstering populations of this ecologically and recreationally important species. Tailing runoff from the VAG site filled in sections of streams and wetlands, thus there is strong justification for the Trustees to implement projects that would improve stream habitat for fish and wildlife.

Project feasibility: The projects under Alternative 1 are feasible and likely to be implemented. Planning for the culvert projects is already underway and being supported by other interested partners. VT DEC is currently funding the road erosion study in Lowell that will allow projects identified therein to be competitive for state funds, in addition to VAG site funds. Additionally, the projects under Alternative 1 all rely upon standard, proven restoration practices routinely used by State and Federal agencies.

Cost effectiveness: The projects under Alternative 1 are all cost effective and estimated costs reflect standard costs routinely associated with these types of projects.

Ability to leverage other funds: The projects under Alternative 1 leverage VTrans funding. Given the strong interest of State and Federal agencies in funding projects that address road infrastructure concerns, flood resiliency of communities, and fish passage, additional sources of funding for these projects could emerge.

Complementary to local community goals: All of the projects under this alternative complement local community goals by helping both communities improve their flood resiliency and address road infrastructure concerns. These culvert replacement projects represent a win-win both for stream habitat and water quality, which was significantly injured by runoff of metal- and asbestos-laden -tailings from the VAG site, and for the local communities in Lowell and Eden.

Likelihood of being implemented and succeeding: The projects under Alternative 1 have support from local stakeholders, as well as VTrans, the Service, VT DEC, and other partners, indicating a

strong likelihood that these projects will be implemented. Because the projects utilize common and accepted techniques for replacing culverts and reducing erosion, and because the towns and other stakeholders have significant experience implementing these types of projects, the likelihood that these projects will succeed is high.

Magnitude of benefits to ecological resources: The Trustees expect the projects under Alternative 1 to have significant benefits to stream habitat and to multiple aquatic species. The culvert replacement projects would open up miles of fish passage, allow for improved sediment transport (which is crucial to providing the instream habitat that aquatic organisms need), reduce erosion problems and the excessive turbidity they cause (improving water quality), and also provide a public safety benefit to the local communities by assisting them with important flood resiliency infrastructure projects. For this and other reasons described above, the Trustees have selected Alternative 1 for implementation.

Alternative 2 – Wetland Protection Project on Hutchins Brook

Location in either Lowell or Eden, VT: This project is located in Eden. There is no direct benefit to Lowell.

Connection between resources being restored and those that were injured: There is a strong and clear connection between this wetland protection project and the injured resources. The wetland protection project under Alternative 2 would protect an unimpacted portion of the larger Hutchins Brook wetland complex that was directly affected by tailing runoff from the VAG site.

Project feasibility: The technical feasibility of the project is uncertain, given that no conceptual designs for the project have been completed as of yet and the hydrology of the site has not been fully evaluated.

Cost effectiveness: The costs associated with this project are unclear at this time, but they are likely to exceed the amount of funding available. It is also likely that all workers implementing this project would be required to receive 40-hour Hazard Waste Operations and Emergency Response (HAZWOPER) training as well as some asbestos training, which would increase costs for any restoration project within this wetland complex.

Ability to leverage other funds: No other potential sources of funding for this project have been identified as of yet.

Complementary to local community goals: As far as the Trustees know, the Town of Eden has not identified this project as a high priority in any town planning documents. Thus far, the Town of Eden has expressed a strong interest in seeing VAG site natural resource damage settlement funds go toward flood resiliency and road infrastructure projects in the Town that would also benefit stream and wetland habitats. Alternative 2, because it occurs in Eden, does not have a clear connection to Lowell community goals. Thus, Alternative 2 is not as complementary to community goals as is Alternative 1 (selected).

Likelihood of being implemented and succeeding: Without a conceptual design, it is difficult to know what permits would be required and how likely the project is to be implemented.

Magnitude of benefits to ecological resources: The Hutchins Brook upper wetland ecosystem was a highly ecologically valuable wetland, and protecting the functional, unimpacted portion of this wetland from further injury is a worthwhile effort. However, altering the wetland ecosystem hydrologically by constructing a berm could have potential adverse ecological effects that are difficult to assess.

The uncertainty regarding the cost and feasibility of this project, along with the Trustees' interest in funding restoration projects in both towns where natural resource injury occurred from hazardous material releases from the VAG site, led the Trustees to not select the Hutching Brook upper wetland protection project for implementation.

Alternative 3 – No Action

Location in either Lowell or Eden, VT: The no action alternative would mean that no active restoration efforts would be made in either town.

Connection between resources being restored and those that were injured: This criterion is not applicable as no resources would be actively restored.

Project feasibility: This criterion is not applicable because no restoration projects would be undertaken under this alternative.

Cost effectiveness: This criterion is not applicable because no restoration projects would be undertaken under this alternative.

Ability to leverage other funds: This criterion is not applicable because no restoration projects would be undertaken under this alternative.

Complementary to local community goals: This alternative is not complementary to community goals because both the towns of Lowell and Eden have expressed an interest in seeing the VAG site natural resource damages settlement funds utilized to fund restoration projects in their communities.

Likelihood of being implemented and succeeding: This criterion is not applicable because no restoration projects would be undertaken under this alternative.

Magnitude of benefits to ecological resources: The magnitude of ecological benefits under the no action alternative would be limited because no restoration projects would be implemented.

In evaluating the three restoration alternatives under the CERCLA NRDA regulations, the Trustees decided not to select the no action alternative for implementation primarily because the Trustees signed a Consent Decree agreeing to conduct natural resource restoration activities with the \$850,000 settlement. Furthermore, the injuries to natural resources caused by the VAG site were substantial enough that these resources cannot recover on their own. Additional restoration actions are needed to provide partial compensation for the natural resource injuries caused by the

release of hazardous materials from the VAG site into nearby downstream waters and wetland habitats.

In evaluating and considering Alternative 1 (selected) and Alternative 2, the Trustees concluded that the settlement funds should be used to implement projects in both communities, rather than in only one community. Given that this was a bankruptcy settlement, the Trustees received only a small fraction of the amount necessary to fully compensate for the natural resource injuries at the VAG site. Thus, the Trustees have a proportionally small amount of funding with which to compensate the public for the substantial injuries to natural resources in both Lowell and Eden. The Trustees believe that the most equitable way to address the injuries that occurred in both towns is to implement meaningful restoration projects in both towns.

Additionally, Alternative 1, the Trustees selected restoration alternative, meets all of the criteria identified in the CERCLA NRDA regulations, along with the eight key criteria developed by the Trustees. Based upon this evaluation, the Trustees will use the VAG site natural resource damages settlement to implement the selected restoration alternative (multiple projects) as listed in Table 1.

3. COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS AND POLICIES

The selected restoration projects have been evaluated for consistency with applicable Federal, state, and local laws, regulations, and programs. A brief description of the project's compliance with these rules and regulations is provided in Table 2. All necessary compliance will be completed before project implementation.

Table 2. Consistency and compliance with state and federal laws, regulations, and programs.

Law, Regulation or Program	Compliance Description
State of Vermont Statutes Title 10, Chapter 41 Regulation of Stream Flow	Culvert replacement projects may require State permits under Title 10, Chapter 41. Any necessary application for stream alteration permits will be filed in compliance with State statutes and applicable State rules.
State of Vermont Statutes Title 10, Chapter 37: Wetland Protection and Water Resources Management	Culvert replacement projects may require State permits under Title 10, Chapter 37. Any necessary application for a wetlands permit will be filed in compliance with state statutes and applicable state rules.
National Environmental Policy Act (NEPA)	This document has been developed in compliance with NEPA. As the Trustees' actions are not anticipated to have any significant effects on the environment, and as existing Service Categorical Exclusions under NEPA cover these actions, no additional analysis under NEPA is required at this time. Formal NEPA compliance documentation will be published along with the Final Restoration Plan, in which the Trustees will make their official selection of restoration projects.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	This Draft Restoration Plan has been developed in compliance with CERCLA
Watershed Protection and Flood Prevention Act	The selected projects here are expected to assist in the reduction of erosion, floodwater and sediment damages.
Clean Water Act of 1977 (Federal Water Pollution Control Act Amendments of 1972)	Any necessary applications for 404 General Permits to the U.S. Army Corps of Engineers will be filed in compliance with this Act.
Endangered Species Act of 1973, as Amended (16 USC 1531 et seq.)	Impacts to identified State- and federally protected species will be minimized during the construction phase of the selected projects; projects will enhance fish and wildlife habitat value. Consultation with the Service for proposed projects will be conducted in accordance with this Act.
Rivers and Harbors Act of 1899	Any necessary applications for General Permits to the U.S. Army Corps of Engineers will be filed in compliance with this Act.
Presidential Executive Order 12898 – Environmental Justice	The selected projects will enhance safety and recreational opportunities for all residents and visitors, regardless of ethnic background. Public meetings and comments are open to the public.
Fish and Wildlife Coordination Act	The Service is the Lead Federal Agency for the selected projects and has played an integral role in the development of the restoration projects and alternatives analysis.
Presidential Executive Order 11990 – Protection of Wetlands	The selected restoration projects avoid, to the extent possible, the long- and short-term adverse impacts associated with the alteration of wetlands.
Presidential Executive Order 11988 – Floodplain Management	The selected projects will not encourage any human development or building within the existing mapped floodplain.
National Historic Preservation Act of 1966 as amended (16 USC 470 et seq.)	The Service will consult with the State Historic Preservation Office and the Advisory Council for Historic Preservation on any projects that could involve historic and/or cultural resources. Project designs may be modified based upon these consultations, if necessary.
Federal Noxious Weed Control Act and Executive Order 13112	The projects are not expected to introduce or spread noxious weeds or non-native invasive species.

4. MONITORING

The primary projects – those that will utilize the majority of the funds – selected by the Trustees in both Lowell and Eden are culvert replacement projects. Thus, the focus of the monitoring effort for the Final Restoration Plan will be to ensure the culvert replacement are installed correctly. If not replaced correctly, newly installed culverts can cause additional stream channel incision and continued blockage of aquatic organism passage. Based upon existing Service recommendations (Castro 2003), the Trustees, working with their partners, will evaluate the success and/or failure of culvert replacement and removal by documenting the design process (with cross-sections and/or longitudinal profiles if appropriate), any changes to the design during construction, and by photo-documenting the site conditions before implementation and for three years post-implementation. Photo points are useful for documenting significant changes to the stream, and should be taken from the road surface looking both upstream and downstream (Castro 2003).

Road erosion projects, once completed, will be inspected by the Trustees to ensure that they were installed correctly and according to specifications. Construction and photo monitoring will be conducted by partner organizations or Trustees responsible for project implementation. In cases where monitoring is conducted by partner organizations, a monitoring/inspection report shall be provided to the Trustees and the Trustees will verify this report, which will likely require a site visit. The cost of this monitoring effort is minimal and has been incorporated into the project cost estimates provided in Section 2.1.

5. SUMMARY OF AND RESPONSE TO COMMENTS

5.1 Overview

The Draft Restoration Plan for the Vermont Asbestos Group Natural Resource Damage Settlement was released for public comment on July 5, 2018. Public comments were accepted through August 24, 2018. During the public comment period, Trustee representatives attended Selectboard meetings in both Eden and Lowell to go over the plan and answer questions. The Town of Eden requested that the Trustees accept verbal comments at their Selectboard meeting and shared a recording and summary of the meeting with the Trustees. The summary of the comments made during that meeting is included in Appendix A.

A total of 15 written comments were received; they have been included in the Administrative Record for this case and are provided verbatim in Appendix A. The Trustees analyzed, reviewed and gathered additional information on the comments received from September to November 2018. On November 26 and 27, the Trustee representatives attended Selectboard meetings in Eden and Lowell to share with both communities their preliminary responses to the comments, share potential changes to the Restoration Plan under consideration, and hear feedback from both communities.

The Trustees reviewed and analyzed all comments received, in some cases following up with requests for additional information from commenters. In some cases multiple comments were submitted related to the same topic or expressing similar opinions. The Trustees summarized

and grouped comments with similar themes. The summarized comments and the Trustees' responses to those comments are provided below.

5.2 Summarized Comments and Responses

1. **Comment:** The VAG natural resource damages settlement money should be used for remediation and maintenance of the VAG site to help protect any future off-site migration of materials and to remediate the buildings and equipment onsite.

Response: The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 107(f)(1) requires that a natural resource damages settlement be used “to restore, replace, or acquire the equivalent of such natural resources,” (42 U.S.C. § 9607 (f)(1)). In accordance with this provision, the bankruptcy settlement for the VAG site specified that the natural resource damages settlement funds must be used “for restoration and/or assessment activities at or in connection with the VAG site.” Therefore, these settlement funds may not be used to remediate the buildings and equipment at the VAG site. The Trustee’s considered using the settlement funds for natural resource restoration on the VAG site. However, the Trustees were unable to identify any on-site natural resource restoration projects that could be completed successfully and cost effectively given the limited funds available through the bankruptcy settlement.

2. **Comment:** The Trustees should select the “No Action” alternative because the preferred restoration alternative will not restore the injured resource and the settlement funds would be better used to resolve, “any future natural resource losses due to a catastrophic events leading to further contamination and damage to the natural resources of Eden and Lowell.”

Response: The Trustees acknowledge the possibility that a manmade or natural event could lead to additional releases from the VAG site and additional natural resource injuries. The release of hazardous substances from the VAG site has already impacted streams, wetlands, and forested uplands, as well as having adverse effects on the fish and wildlife inhabiting these areas. Due to the nature of the bankruptcy settlement, there are only limited funds available to address the existing natural resource injuries. For this reason, the Trustees are committed to using the natural resource damages settlement funds to restore natural resources in as cost effective and timely a manner as possible. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 107(f)(1) requires that a natural resource damages settlement be used “to restore, replace, or acquire the equivalent of such natural resources,” (42 U.S.C. § 9607 (f)(1)).

Because of the ongoing risk of releases from the VAG site, any natural resource restoration activities conducted at the Site, in the areas impacted by the Site, or in areas that may be impacted by future releases, would be unlikely to succeed. Therefore, the Trustees selected restoration projects that are feasible and cost efficient and will restore natural resources equivalent to those injured by releases from the VAG Site.

3. **Comment:** The Town of Lowell requested that a higher priority be placed on road erosion projects, which were proposed in the Draft Restoration Plan to be implemented if funds

remained after implementing the two culvert replacement projects on Irish Hill Road. The Town of Lowell has specifically requested funding (~\$70,000) for a particularly severe road erosion project on Kempton Hill Road, which is degrading water quality in Burgess Branch.

Response: The Trustees conducted a site visit to the Kempton Hill Road proposed project site, as did a VT ANR River Scientist. Both agree that erosion problems on this road are severe and are impacting water quality in Burgess Branch. The Trustees have revised the Restoration Plan to specifically include ~\$70,000 to assist the Town of Lowell with this project. The Trustees have also indicated that any remaining funds dedicated to the Town of Lowell could go toward assisting the Town with additional high priority road erosion projects that are identified in the Town's road erosion inventory.

- 4. Comment:** Trustees proposed funding projects in Eden that are in a different watershed than the mine.

Response: The Trustees stated in the Draft Restoration Plan their intention to focus restoration efforts in the Upper Missisquoi and Lamoille River watersheds, which are the two watersheds affected by the mine. The Trustees are not required to work or limited to working in the sub-watersheds of the Lamoille and Missisquoi Rivers that specifically were inundated with tailings from the VAG mine site.

While not limited to working in the towns of Lowell and Eden, the Trustees chose to identify projects in those two communities because the natural resource injuries primarily occurred in Lowell and Eden. All restoration projects being funded are located in either the Missisquoi or Lamoille River watersheds, and are in the towns of Lowell and Eden, thus meeting the Trustees' criteria.

The VAG Site, on the Eden side, is located in the Gihon River sub-watershed of the Lamoille River watershed, but the Trustees were not looking for projects solely in the Gihon River watershed. Because the VAG Site has not been remediated and it is possible that additional erosion of the tailing piles on the VAG Site could occur in the future, the Trustees wanted to find projects in the Missisquoi and Lamoille River watersheds that would not be adversely affected by any future occurrences at the VAG Site.

CERCLA requires that the Trustees consider whether restoration projects could be adversely affected by future remediation activities. Because the Trustees don't know what activities may occur on the VAG Site in the future, it was necessary to identify projects that would not be adversely affected by any additional runoff from the VAG Site. The streams on which projects are being implemented in Eden, Wild Branch along Square Road and White Branch along Knowles Flat Road, are both in the Lamoille River watershed but in locations that could not be affected by the direct discharge of asbestos-containing sediment from the mine.

- 5. Comment:** The Town of Eden requests that the Trustees put an additional \$10,000 toward the Knowles Flat Road double culvert replacement project (identified as a preferred project in the Draft Restoration Plan) because the cost of the project has increased. In the Draft

Restoration Plan, the Trustees proposed to put \$60,000 into this project, representing 5% of the total cost.

Response: In the Final Restoration Plan, the Trustees are putting an additional \$10,000 into this project, bringing the total contribution to \$70,000. The Trustees understand that the cost estimate may continue to change and will consider adjusting their contribution (approximately 5% of the project cost) accordingly.

- 6. Comment:** The Trustees should provide funding to the Town of Eden to support its highest priority road project, the Knowles Flat Rd. single culvert (#13-8) because that will make the town better able, down the road, to dedicate time and funding to the projects on Square Road.

Response: The Trustees must use natural resource settlement funds on projects that have ecological benefit and demonstrate a connection between resources being restored and those that were injured. As stated in the response to Comment 8, the Trustees do acknowledge that the Knowles Flat Road single culvert (#13-8) replacement project will have ecological value and are providing partial funding (\$80,000) for that project in the Final Restoration Plan.

- 7. Comment:** The settlement funds being used in Eden should not go toward a Class 4 road (Square Road) that is only used by a few people, but should instead be put toward replacing the single culvert on Knowles Flat Road because that road is used year-round by the entire community.

Response: The Trustees recognize the value and importance of both road crossing projects on Knowles Flat Road to the community of Eden. However, the Trustees must use the natural resource damages settlement funds to restore, replace, or acquire the equivalent of such natural resources injured at the VAG Site. The Trustees evaluated potential restoration activities under the DOI CERCLA NRDA regulations, and the eight criteria identified in Section 1.4. In their evaluation, The Trustees determined that the replacement of the upper Square Road culvert (#812-23) would have a significant ecological benefit by opening up waters above the culvert for fish passage. Based on their evaluation, the Trustees identified Square Road culvert (#812-23) as part of the selected alternative. (See comment 9 for a more detailed discussion of the Square Road culvert (#812-23)).

Although the Trustee's must select projects that have an ecological benefit, where possible the Trustees included projects that overlap with the priorities of the community and Town, such as the double culvert on Knowles Flat Road. With respect to the single culvert (#13-8) on Knowles Flat Road, the Trustees concur with public comments that the replacement of this culvert will provide some benefits to water quality, sediment transportation and movement of woody material downstream. Thus, the Trustees have included the single culvert on Knowles Flat Road as part of the selected alternative and they will provide \$80,000 (see Comment 6) to support the replacement of this culvert.

- 8. Comment:** The value of the Knowles Flat Road single culvert (#13-8) has been underestimated (and should at least be considered as ecologically valuable as the downstream culvert on Square Road). The Town of Eden has leveraged additional grant funds to support

this project, which would improve water quality in the Lake Champlain basin (which has a TMDL), restore sediment transport processes and stream bottom habitat, and complement the replacement of the double culvert on Knowles Flat Road, which the Trustees have are partially funding.

Response: While the Trustees do not believe that the Knowles Flat Road single culvert (#13-8) replacement project will provide the same magnitude of ecological benefits as the Square Road (#812-23) culvert replacement project, the Trustees acknowledge that replacing the single culvert on Knowles Flat Road will provide benefits to water quality, sediment transportation and movement of woody material downstream. Thus, as indicated in the response to Comment 6, the Trustees are proposing to provide the Town of Eden with \$80,000 to support replacement of this culvert.

9. **Comment:** The value of the Square Road culvert projects has been overrated by the Trustees. There is unlikely to be nine miles of suitable habitat for Eastern brook trout upstream of the culvert as there are low flows, beaver dams, and large wood blocking the stream and its tributaries. There is no clarity on what additional funds might be available to support the project. The boiler tube in the Square Road culvert #812-23 is still sound and does not need to be replaced. The Trustees have not explored fish ladders, baffles or other lower-cost methods for improving fish passage at the #812-23 culvert.

Response: The Trustees have determined that the ecological benefit (improving fish passage) of the Square Road culvert replacement projects is significant. The nine-mile estimate of spawning habitat (which includes the mainstem of Wild Branch and its tributaries) was developed by fisheries biologists based upon a field site visit and a desktop analysis using aerial photography and blue line stream data collected by the U.S. Geological Survey. State fisheries biologists know from fish sampling data collected in nearby streams similar to and even smaller than Wild Branch and its upstream tributaries that Eastern brook trout utilize stream habitat similar to that which is found upstream of the Square Road culvert #812-23.

While beaver dams, the presence of large wood and small channel width can create obstacles to trout at some flows they are not considered by fish biologists to be permanent passage barriers. Trout may reside in isolated pools during low flows; they can frequently pass through beaver dams, depending upon site conditions, and they use large wood as cover and refuge from warm water temperatures. Moreover the composition of wood, beaver dams and even stream channels themselves change over time, particularly as the result of storm events and ice melt. These dynamic stream systems, when not constrained by impervious surfaces and other infrastructure, change with some frequency, providing a patchwork of different habitat microcosms upon which species like Eastern brook trout rely on during various times of the year and throughout their life cycle.

On October 22, 2018, state fisheries biologists conducted a fish sampling upstream of the Square Road culvert (#812-23), which included exploring the upstream habitat. The biologists found 12 Eastern brook trout and 1 brown trout in 265 feet of surveying. This leads them to estimate a trout density in this area of 259 trout per mile. Given the presence of brown trout, the biologists conclude that it is possible that some fish can get through the

culvert during certain high flow events, though it is unclear what depth of water in the culvert is required for fish to be able and willing to pass and how often those flows occur. The fact that the culvert is perched means that there is a restricted window of opportunity that fish have to move up and downstream through the pipe. The presence of Eastern brook trout above the culvert indicates that this habitat is suitable for them and suggests that, were the culvert to be replaced, this fish population would have greater potential to grow and greater ability to access the variety of habitats (in the headwaters and downstream) upon which its life cycle depends.

The biologists walked 2,800 feet downstream to the culvert (#812-22) below and observed one step and three ledge outcroppings but no fish passage barriers. They also walked upstream of culvert #812-23 for 1,800 feet and observed two steps and two wood debris jams but no passage barriers. The biologists' qualitative assessment is that the habitat upstream of culvert #812-23 has the desirable land use, habitat quality and the protections on land use necessary to support an Eastern brook trout population. The watershed looks to be largely forested, there are very few landowners, and some of the larger properties appear to be conserved.

This additional analysis served as further confirmation that there is great potential to improve and enhance the habitat for Eastern brook trout in Wild Branch by replacing the perched, undersized culvert #812-23 on Square Road.

- 10. Comment:** Both the single Knowles Flat Road single culvert project (#13-8) and the Square Road culvert project (#812-23) are “underway”, but the Trustees have stated verbally in meetings that the Knowles Flat Road culvert cannot be funded because the project is currently being implemented. This has created confusion among the Eden Selectboard and town residents as to what being “underway” means and why some projects underway can be funded and others cannot.

Response: The Trustees priority is to implement restoration projects that would not otherwise occur without the investment of natural resource damage funds. The underlying principle is to use natural resource damage settlement funds to create restoration benefits that would not otherwise occur.

When preparing the Draft Restoration Plan, the Trustees understood that the Knowles Flat Road single culvert project would be implemented by the Town of Eden even if the natural resource damage funds had not become available. Since releasing the Draft Restoration Plan and hearing more from the Town of Eden, the Trustees understand the challenges surrounding funding the Knowles Flat Road single culvert (#13-8) replacement project. As stated in the responses to Comments 6 and 8, the Trustees acknowledge that the Knowles Flat Road single culvert does have ecological value and will provide \$80,000 to support its replacement.

The assessment and preliminary design for the Square Road project (#812-23) was completed with funds from the U.S. Fish and Wildlife Service. However, because most grant funds for these types of projects require matching funds from municipalities and the Town of Eden had

not been able to commit funds toward this project for several years, the Lamoille County Conservation District has been unable to find a way for this project to move forward. The Trustees conclude that, in the absence of natural resource damage settlement funds, the Square Road culvert replacement project is unlikely to be implemented in the foreseeable future. With the addition of natural resource damage settlement funds, this project can be implemented.

- 11. Comment:** In the Lamoille River Watershed Plan, the Square Road culvert #812-22 is listed as the higher priority for replacement than the Trustees' priority on Square Road, culvert #812-23.

Response: The Lamoille River Watershed Water Quality Management Plan and the Gihon River Management Plan were both published in 2009 and have not been officially updated since. However, since the time of their publication, state biologists working in partnership with municipalities and non-governmental organizations have continued to grow their understanding of these watersheds and collect additional data on road crossings. This new information is used to help natural resource managers make better, more informed decisions and lists of priority projects. From the Trustees' perspective, the Square Road culvert #812-23 (upper culvert) is a higher priority to replace than culvert #812-22 (lower culvert) because culvert #812-23 (upper culvert) is perched and more of a barrier to fish passage compared to culvert #812-22 (lower culvert).

- 12. Comment:** Town of Eden requests that the Square Road project, if selected, be implemented in a way similar to the town's Tree Farm Rd. project, which relied upon the Town's Road Commissioner serving as a general contractor, resulting in a \$200K cost savings. The Town of Eden requests that the Square Road project be handled in a similar way and that the savings attained from that approach be put toward the single culvert (#13-8) on Knowles Flat Road.

Response To implement the Square Road culvert replacement project, the Trustees will likely partner with and provide funding to the Lamoille County Conservation District. If that is the case, they will subsequently handle the contracting and project management according to its rules and policies. That said, the Trustees will make all efforts to ensure all the stakeholders, including the Town, are on the same page on the best approach to construct this project, if implemented.

- 13. Comment:** The aspect of the Lake Eden Lake Wise Program proposed for funding in the Draft Management Plan (which involved developing a Lake Wise program and stormwater management plan for the lake) was recently funded by the State of Vermont. The Lamoille County Conservation District and the State of Vermont's Lamoille River Watershed Planner have requested that the Trustees instead direct settlement funds toward the implementation of this plan once it is completed.

Response: The Trustees are pleased that the Monitoring, Assessment, and Planning Program (MAPP) within VT ANR is supporting the development of a Lake Wise plan for Lake Eden through its grant programs and will direct the Trustee contribution for this project toward the

implementation phase. In the Final Restoration Plan, the Trustees propose that funds that remain after the implementation of the Knowles Flat and Square Road culvert replacements go toward the implementation of the Lake Wise plan.

- 14. Comment:** The Town of Eden proposed another project on Blakeville Road (TH 17, bridge #15) the abutments of which are being compromised by erosion. They would like to stabilize and shore up the footings around this bridge (estimated cost \$50,510).

Response: The Trustees have revised the Restoration Plan to indicate that settlement funds that remain after the implementation of the selected culvert replacement projects in Eden may be used to support high priority road erosion projects in Eden. The Trustees would consider supporting high priority road erosion projects that are identified in current and future official road erosion inventories conducted for the town. Should this project be identified as a high priority in Eden's current or future road erosion inventories, the Trustees would consider it. The Trustees would expect that the Town would also pursue a Better Roads grant in order to match any settlement dollars provided.

- 15. Comment:** The Town of Eden requests that the Trustees consider funding the replacement of bridge #24 on Boy Scout Road, which is an old boiler tube culvert that is undersized. The Trustees had felt that this project would be best addressed in conjunction with the replacement of the state bridge on Rte. 100. The Town requests that the Trustees consider funding the engineering and permitting for the replacement structure (\$24,000) so that the town can replace the culvert whenever the state is ready to replace the Rte. 100 bridge.

Response: Given that there are no plans to address the Route 100 bridge in the near future and the Trustees are focused on implementing on-the-ground restoration projects in the next 2-5 years, the Trustees have decided to support the Knowles Flat Road and Square Road culvert replacement projects in Eden and not the design of the Boy Scout Road culvert replacement project.

- 16. Comment:** The Town of Eden requests that the Trustees consider funding miscellaneous road erosion projects (typically between \$2K and \$15K), which they would use to leverage state Better Roads grant funding.

Response: The Trustees have revised the Restoration Plan to include road erosion projects in Eden in the selected restoration alternative. The implementation of these projects is subject to funds being available after the implementation of the culvert replacement projects.

- 17. Comment:** How will interest accruing on the natural resource damage settlement funds be used?

Response: The settlement funds are invested in low-interest; low-risk federal treasury bonds. As of November 2018, the funds have accrued approximately \$15,700 in interest. The rate at which interest accrues will vary through time and will be reduced as the funds are removed from the account to support project implementation. Though the Trustees cannot predict how much interest will be available, they have revised the Restoration Plan to state, on page 17,

that any unused administrative oversight funds, including any interest accrued will be used to support selected restoration projects. The Trustees will make a determination about which projects receive any remaining funds based upon project need and with the goal of benefiting both towns if realistic and feasible.

- 18. Comment:** The culvert replacement projects proposed will not sufficiently compensate for the natural resource injuries that occurred as a result of runoff of mine tailings from the VAG Site. The Trustees should explore restoration projects that would protect similar types of high value wetland ecosystems and rare plant communities to those that were injured. If the Trustees are to focus on aquatic connectivity, they should look at projects identified in TNC's aquatic connectivity prioritization database.

Response: The Trustees contacted the submitter, The Nature Conservancy (TNC), to inquire whether the organization had any specific restoration projects in mind. TNC mentioned an ongoing effort to acquire land in Eden and Lowell adjacent to its Burnt Mountain Natural Area that contains high quality wetland habitats and a number of rare plants. TNC also mentioned another site in Lowell that it is hoping to acquire that has high quality wetland and plant communities. Both land acquisition projects are in the range of \$200,000. Additionally, TNC is working to restore a former logging road in the Burnt Mountain Natural Area that runs adjacent to a coldwater stream (estimated cost \$16,000).

The Trustees agree that wetland and rare plant protection is an important endeavor and would provide ecological benefits. Protecting in perpetuity a high quality wetland ecosystem could in some ways help to offset the injuries that occurred to the Hutchins Brook wetland complex in Eden. Unfortunately, given that the natural resource damage settlement was part of a bankruptcy, there are insufficient NRD funds to fully compensate for the natural resource injuries that occurred as a result of releases from the VAG site. For this reason, the Trustees focused on projects that involve active restoration of stream and wetland habitats, which are the same type of resources that were injured due to releases from the VAG site. Additionally, land acquisition projects are not as complementary to community goals as are aquatic connectivity and stormwater management projects.

In regards to using TNC's aquatic connectivity prioritization tool to identify potential fish passage and aquatic connectivity projects, the Trustees did explore this tool, along with VT ANR's Natural Resources Atlas. The TNC prioritization tool seems primarily focused on dams and identified almost no high priority aquatic connectivity projects in Eden and Lowell. While this tool does not highlight the fish passage issues in Lowell and Eden identified in the Draft Restoration Plan, fishery biologists with the Service and the State have visited and explored these culvert replacement projects and assert that they will result in ecological benefits to Eastern brook trout and other aquatic organisms, as well as benefits to water quality and in-stream habitat.

6. CONCLUSION

After consultations with the public, local communities and other interested stakeholders, State and Federal stream and wetland restoration experts, and restoration project proponents, and after evaluating and considering the restoration alternatives under the CERCLA NRDA regulations and all other relevant State and Federal laws and policies, the Trustees propose to implement their selected restoration alternative using the VAG site natural resource damage settlement funds. The selected alternative involves expending up to \$375,000 in the Town of Lowell and up to \$375,000 in the Town of Eden in order to implement the following projects in priority order for each town:

- Eden – Replacement of Knowles Flat Road Double Culvert
- Eden – Replacement of Knowles Flat Road Single Culvert
- Eden – Replacement of Square Road Culvert (#812-23)
- Eden – Lake Wise Best Management Practices Program
- Eden – Road Erosion Projects
- Lowell – Kempton Hill Road Erosion Project
- Lowell – Replacement of Irish Hill Road Upper Culvert
- Lowell – Road Erosion Projects
- Lowell – Replacement of Irish Hill Road Lower Culvert

REFERENCES

- Castro, J. 2003. Geomorphologic Impacts of Culvert Replacement and Removal: Avoiding Channel Incision. U.S. Fish and Wildlife Service, version 2.0, <https://nctc.fws.gov/Pubs1/culvert-guidelines03.pdf>.
- Lamoille County Planning Commission (LCPC), 2013. Lamoille County Road Erosion Assessment, 100 pp. Accessed on-line, Feb. 1, 2019 at https://www.lcpcvt.org/vertical/Sites/%7B3C01460C-7F49-40F5-B243-0CA7924F23AF%7D/uploads/Lamoille_County_Erosion_Study_Final_Report.pdf
- Levy, R., October 5, 2008. Summary of Biological and Chemical assessments conducted in 2005 & 2007 within the Lamoille River and Missisquoi River watersheds in Lowell and Eden Vermont. Vermont Department of Environmental Quality, Water Quality Division, 45 pp.
- Levy, R., April 14, 2010. Summary of 2009 Biological and Chemical assessments within Burgess Branch, Hutchins Brook, Dark Branch and Gihon watersheds in Lowell and Eden Vermont. Vermont Department of Environmental Quality, Water Quality Division, 12 pp.

LIST OF PREPARERS (in alphabetical order)

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APPENDIX A: PUBLIC COMMENTS RECEIVED

**The Town of Eden
71 Old School House Road
Eden Mills, VT 05653**

August 13, 2018

To the trustees:

The members of the Eden selectboard would like to thank Molly Sperduto of the U.S. Fish and Wildlife Service and John Schmeltzer of the Vermont Agency of Natural Resources for attending the Eden, Vermont selectboard meeting on July 30, 2018. Acting as trustees for the settlement between the VT agency of Natural Resources and the U.S. Department of the Interior associated with the Vermont Asbestos Group mine site in Eden and Lowell, a detailed review of the damage settlement draft restoration plan was presented for the selectboard, the VT State Senator for Lowell, Robert Starr, Eden's state Representative to the House, Mark Higley, the Regional Transportation Planner from the Lamoille County Planning Commission, Rob Moore and members of the community.

The Eden selectboard would like to voice some comments regarding the proposed distribution of Eden's share of the \$850,000.00 settlement. The selectboard greatly appreciates that the Knowles Flat Road Double Culvert (#13-1) and (#13-2) was chosen for \$60,000 of Eden's share of the settlement. The choice of the single culvert on Square Road for the remaining funds has brought forth some additional thoughts on maximizing the limited settlement money.

In the case that additional discussion concerning these comments might take place, we have numbered our talking points for ease of reference moving forward.

1. On March 27, 2017, Lauren Bennett from the US Fish and Wildlife Service, both Linda Elliot and John Schmeltzer from Vermont Agency of Natural Resources and Kim Jensen from the Lamoille County Conservation District attended a selectboard meeting in Eden to provide information on the settlement and the funds that were going to become

available. Acting as Trustees for the settlement and the future distribution of funds, Lauren, Linda and John asked the selectboard and the community members attending to start thinking of projects in town that could benefit from financial assistance and could meet the requirements of the settlement.

2. On June 28, 2017, the 3 forementioned Trustees again made a trip to Eden to solicit specific ideas for projects in town. Members of the community, a selectboard member/road commissioner, town clerk, town administrative assistant and LCPC staff were there to contribute ideas. The highest priority projects identified at that meeting were the:
 - a. Knowles Flat Road Double Culvert (#13-1) and (#13-2)
 - b. Knowles Flat Road Single Culvert (#13-8)
 - c. Double culvert on Mary Deuso Road
 - d. Single culvert on the Boy Scout Camp Road
3. On October 18th, trustees for the settlement, LCPC staff, VT Fish and Wildlife, the Eden selectboard/road commissioner and town administrative assistant did site visits to the projects listed in #2 as well as areas on Blakeville Road and Square Road locations. Both the double culvert on Mary Deuso Road and the single culvert on the Boy Scout Camp Road were recognized as projects larger than the settlement funds available and were identified as questionable possibilities.
4. Absolutely no promises were made on the allocation of funds. However, when questioned on July 30, 2018 why the Knowles Flat Road Single Culvert (#13-8) was not chosen, some criteria were named that had not been previously identified or were seemingly in conflict with other decisions.
 - a. *'The project replacement has already begun.'* At no time did the trustees inform Eden that potential projects could not already be in the replacement process. We would like further clarification. When is a project 'started'? When the hydraulic study is completed? When core sampling is done? When the ground is disturbed? When a failed structure is removed from the streambed? This limitation is not identified in the CERCLA law or the trustees' final list of 8 criteria.
 - b. There was also mention that #13-8 was excluded from consideration as all the design and engineering had already been completed. Again, no mention of this element disqualifying a project had been heard before and is not articulated in CERCLA or the trustees' 8 criteria.
 - c. Another factor that seemed to work against any funds being allocated to #13-8 from the trustees perspective was the fact that it is in the same watershed as the mine and could possibly be 'contaminated in the future'.

#13-8 is on the White Branch flowing into the Gihon River watershed, the Lamoille and to Lake Champlain. Improving water quality for Lake Champlain has

been and will continue to be emphasized state wide, very, very strongly. It is unclear why #13-8 was disqualified when it is just upstream from the Knowles Flat Road Double Culvert (#13-1) and (#13-2), a project that was approved for funds. In the Memorandum of Agreement signed in 2009 by ANR and the plaintiff, "...the following hierarchy will be considered when the trustees evaluate restoration or compensation project alternatives:

1. *on-site and in-kind restoration....*
2. *off-site and in-kind restoration...preferably in the same watershed or ecosystem*
3. *on-site and out of kind restoration...*
The document goes on to say that circumstances may arise that may require the revision of the above hierarchy adding (in no order of priority):
4. *off-site and out of kind restoration... preferably in the same watershed or ecosystem*
5. *acquisition of equivalent natural resources and/or services...*
p. 3-4 under **VI RESTORATION GOAL** in the **MEMORANDUM**

The trustees emphasized that these funds could not be used at the mine and chose a project that is slated to use 84% of the funds available to Eden in another watershed. This choice seems to contradict the specified stipulations in the original memorandum being both off-site and in another watershed. #13-8 does meet criteria #2 in the hierarchal stipulation as it drains into the Gihon River.

- d. The trustees did emphasize that money allotted to the #13-8 culvert would not maximize habitat restoration for aquatic life. The new box culvert is to be constructed following the strictest guidelines mandated by the state. An extensive survey and assessment was made of the wetlands both upstream and downstream. The replacement structure has 3 times the capacity of the previous culvert slowing the velocity of the moving water and has been designed specifically with a natural bottom to benefit the health of all aquatic life. A diversion channel 120 ' long was constructed exactly to state specifications ensuring that the water quality and disturbance of any habitat was absolutely minimal and construction has been monitored every step of the way.
- e. Another of the criteria specified by the trustees was the '*ability to leverage other funds*'. The estimated total cost of the #13-8 box culvert project is in the \$400,000 range. The Town of Eden has secured \$175,000 in grant funds. Allocating some of the settlement money towards the remaining balance would allow the town to pay for the project in full sooner enabling Eden to receive the

grant funds and continue to work on additional projects including erosion control, streambank stabilization and other culvert upgrades.

- f. When the trustees were asked about the time frame in actually spending the settlement money, we were assured that the total amount of the \$850,000 had been received and \$750,000 was available to be split between Eden and Lowell. Approximately 11.76% or \$100,000 was reserved for the decision making process overseen by the trustees. When asked about the interest generated as the funds accrued over the 9 year period, the answer was “not much”. When asked for an estimate on the actual dollar amount, \$25,000 was the answer. Even \$12,500 for a small town of just under 1400 residents could do a lot. There has been no mention as to how this additional \$25,000 might be allocated. The trustees expressed interest in funding projects just as soon as a final restoration plan has been agreed upon. The #13-8 box culvert project meets this goal. The #13-1 & #13-2 culverts that are to be replaced by a bridge are at a minimum 3-4 years in the future. The Square Road culvert replacement option chosen by the trustees is also out into the future as no time frame has been mentioned.
 - g. There was some question if the settlement money could legally be used towards the Town’s matching share in a grant awarded by the State of Vermont or through federal funding sources. Molly and Rob Moore from LCPC both confirmed that there was no problem in using the G-1 Holdings Settlement money in this manner.
5. The replacement of the Square Road single culvert (#812-23) as identified in the Draft Restoration Plan as Alternative #1 or the preferred option was not a site identified by the selectboard or the road commissioner. The selectboard questions this choice in funding for a number of reasons:
- a. The boiler tube presently in place is still sound.
 - b. The structure is on a 4th class road and is used only seasonally. Allocating 84% or \$315,000 of the \$375,000 total amount available to Eden does not fully maximize the potential benefits from the settlement monies. This sentiment was expressed at the July 2018 meeting by the selectboard, LCPC staff, Lowell’s senator, Eden’s house representative and the community.
 - c. One of the 8 criteria identified by the trustees is the ‘ability to leverage other funds’. When this aspect was discussed at the July 2018 meeting, Molly did say that the trustees had spoken to other agencies about this possibility. No definite source, specific dollar amount or time frame in securing these potential funds was positively identified. The selectboard questions how the Square Road single culvert (#812-23) supersedes the Knowles Flat Road Single Culvert (#13-8) which has definite funds already promised and waiting to be awarded when the project is completed and paid for in full.

- d. In the informational pages that were reviewed in the July 2018 meeting in Eden, The Square Road culvert page has 4 bullet points that articulate this choice for the majority of the settlement funds. The first statement identifies the smooth bottom of the existing culvert that has perched, creating a pool of water downstream of the structure which is a barrier to migrating fish. It also states that the "...culvert is located at the base of 9 miles of prime trout habitat". The selectboard would like further clarification on this statement in terms of what are the attributes of prime trout habitat and how was the 9 mile figure accrued?
- i. Looking at a map of the area and the streams that all lead into the waters of the Wild Branch, one could possibly accumulate the stated 9 miles of tributaries. However, in that assessment, one would need to tabulate each rivulet all the way up to near the top of the Lowell range where water drops start out of a ledge or spring and head down the mountain. The area does have the needed undisturbed banks with mature tree cover, a suitable stream bed and no further manmade obstructions but the one aspect that is missing is a volume of water that could support any fish.
 - ii. Low water volume would restrict the upstream movement of any spawning trout in the fall and then there are the winter temperatures in this neck of the world that freeze these size streams with minimal flow solid and that could kill any eggs. With climate change here in Eden, the swings in temperature seem to fluctuate greatly and it is not uncommon to have 20 degrees below zero for multiple days in a row with some nights during the winter of 2017-2018 reaching 35 degrees below zero.
 - iii. Looking at a map of the Wild Branch Basin on the Vermont Agency of Natural Resources website, 15 small tributaries feed into the main brook. Walking up the mountain from the Square Road single culvert (#812-23) on August 1, 2018 for an unofficial observation of the drainage basin, it is quickly apparent that water levels could not support the movement of any fish. It is noted that this is a dry year however water levels during spawning time for trout could be similarly low during the fall. The first tributary entering from the west had a large obstruction of debris about 20' above the junction. The second stream entering from the west with a snowmobile bridge visible also had minimal flow. The next freshet entering from the west was about 6" wide and ¼ " deep. Multiple log/stone and debris jams were observed along the main branch and were acting as barriers for any potential migration upstream. A freshet entering from the north had a debris blockage about 100' upstream. It was beyond this point that the first pool of any size, about 10' x 15' by

about 3' deep was created by a yellow birch that had fallen and broken in the brook. This pool was a long ways upstream from #812-23. The 9 miles of prime trout spawning habitat does not seem to be an accurate statement and is questionable validation for the funds appropriated to the Square Road single culvert (#812-23) project.

- iv. On March 28, 2016, Kimberly Jensen Komer, acting at the time as the director of the Lamoille County Conservation District, came to the selectboard to discuss the replacement of Square Road single culvert (#812-23). Kim asked if the selectboard was interested and committed to the project. If so, she would seek grants from Fish and Wildlife, Tributary and Restoration and other sources with the town providing the match. Although not high on the town's list, the selectboard was interested and asked for an estimate of the project costs and what the town's matching share would be. Kim did attend the selectboard meeting on March 17, 2018 to provide an update on the Square Road project and then the idea to use the settlement funds was suggested. If other funds could possibly be available for (#812-23), but not available for the other projects or matching funds that are the responsibility of the town, the selectboard would ask the trustees to reconsider their position on this matter.
 - e. If this remains the trustees priority the Town of Eden would request a design and construction method similar to our Tree Farm Rd. project. This will result in significant cost savings and we'd request the remaining balance of the allocated funds be redirected to the town priorities listed in #9.
6. The Town of Eden is extremely fortunate to have a very capable and creative highway crew. When the Whitney Lane Bridge off Route 100 just south of Eden Mills needed to be replaced, multiple bids were solicited but even the lowest at more than \$600,000 seemed out of the town's financial reach. The road commissioner then proposed to act as general contractor for the project and was able to complete the bridge saving more than \$200,000. Some of the beams needed to build a temporary access were then used to rebuild another bridge on Tree Farm Road. The Town also has some of the components that were needed during the Whitney Lane Bridge construction project and can be used again many times over reducing the cost of any future infrastructure projects. The ability to use in kind labor and equipment reduced the cost of this project by more than 30%.
7. It was noted many times during the July 30, 2018 meeting that the \$850,000 settlement was not very much, 8.6% of the actual estimated total for resource damages from the bankruptcy of the former owner of the mine. Reviewing and repositioning the allocation of funds could actually increase the amount of work that could be accomplished with in kind services.

8. As long-time residents of Eden, the community is not oblivious to the importance of the natural world. That is exactly why many of us live here. In Eden's Town Plan it shows that the State of Vermont owns 9 properties in Eden, from .2 acres, a spring managed by the Agency of Transportation, to 2524 acres around Belvidere or Long Pond totaling 6,255 acres. Taxed at 1% of fair market value through the P.I.L.O.T program, Eden residents are grateful for the natural beauty but strapped by the financial shortfall. There are also, as of 2017, 15,423.63 acres that have some kind of conservation easement with reduced taxes. The mine site is 1181 acres and the Boy Scout Camp at the north end of Lake Eden, in one of the most pristine locations, its 900+ acres are completely tax exempt. Just recently, additional land in Eden is part of the Burnt Mountain project totaling more than 5,400 acres. This land will be conserved as a wild area with no development, no logging but open to public access. Owned by the Nature Conservancy, property taxes will be reduced while income is received from the California cap and trade program. All this is to say that for a small town of 1400 residents, the vast amount of land that others can come and enjoy is made possible in part by the Eden taxpayer. This is yet another reason to fully maximize what the settlement funds can accomplish. This is not fish versus Homo sapiens. It is absolutely critical to balance economic and practical needs with the need to maintain conservation efforts.

The selectboard is asking the trustees to reconsider their allocation of funds. Aware that there might be additional administrative costs that could reduce the amount of Eden's share, the selectboard would still encourage a broader perspective when evaluating projects. The selectboard is asking the trustees to reconsider some of the following options.

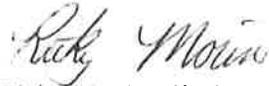
9. The Knowles Flat Road Double Culvert (#13-1) and (#13-2) project has increased in total estimated cost from \$1.2M to \$1.4M and Eden is responsible for a 5% match. As the estimated costs have increased \$200,000 since the project was submitted for a federal grant and is out a minimum of 3 years, an increase of \$10,000 to \$70,000 of the settlement funds as a place holder, contingent upon the actual project cost would help fulfill Eden's 5% share.
10. The Knowles Flat Road Single Culvert (#13-8) remains our second highest priority. This project is estimated at \$350,000 to \$400,000. With a \$175,000 grant already secured, \$161,790.25 spent to date, an additional \$200,000 is estimated to complete this project. This includes additional concrete costs, the remaining cost of the box culvert, crane, additional labor, equipment rental and materials. Although the old structure did not have an AOP concern it is none the less similar to location #2 on Square Rd and it has a comparable value in terms of this project was designed to comply fully with the hydraulic study, increases stream width with a natural bottom and decreases flow velocity. The cost of the 6-20' 117" x 79" 12 gauge galvanized culverts for the diversion

channel, to ensure minimal disturbance to the stream bed, cost \$25,824. Please reconsider funding at least a part of this project.

11. The Blakeville Road bridge, TH 17, bridge #13's southern abutment has been undermined with settlement cracking and piping issues. Footings are exposed and there is erosion downstream. The plan is to reface and shore up the footings which will realign the water flow, prevent further scouring, and reduce erosion and turbidity. Estimated cost for bridge #13 rehabilitation is \$31, 030. Settlement funds allocated towards this project would enhance the water quality of the Gihon River. This is a small enough project that could be completed in a more expedient time frame.
12. On Blakeville Road, TH 17, bridge #15 also needs attention. The northern abutment is undermined and there is heavy erosion that could cause it to settle. The structure is susceptible to high water damage, poor alignment and is undersized due to the old stone foundation material that is no longer structural but does limit the width of the water flow. Sediment transport, debris jams and erosion result from the river hitting one side of the upstream bridge and deflecting to the opposite side. There is erosion ahead of the short wing wall. The proposal is to stabilize and shore up the footings and clean out the old, prior existing bridge where new concrete was poured over an old structure. Estimated remediation is \$50,510.
13. The Boy Scout Road TH 32, bridge #24 is an old boiler tube culvert that has some deformation and is rusting. Heavy rain events result in debris blockage, restricted flow and over topping of the roadway due to restricted channel width. This results in erosion of the road way and settlement deposits into Lake Eden which flows into the Gihon River. The goal here is to fund the engineering and permitting for the replacement structure, estimated at \$24,000. As the trustees felt this project was best addressed in conjunction with the state bridge on RT100 and is not in the States foreseeable capital budget due to the state bridges poor condition, it could be advanced without much notice. If our project is ready to go we could synchronize our efforts at that time.
14. Miscellaneous projects that specifically improve erosion and water quality, improving steams and aquatic habitat are possible. A typical project could range between \$2,000 to \$15,000. Given state priority for funds for erosion, these settlement funds could be used to leverage and match known grant programs and maximize the effectiveness of the settlement funds.

The selectboard asks the trustees to please reconsider the allocation of funds.

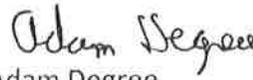
Eden Selectboard:



Ricky Morin, Chair



George Sheldrick



Adam Degree



Bennett, Lauren <lauren_bennett@fws.gov>

[EXTERNAL] Town of Eden's 375K\$

1 message

Jon Creighton <joncreighton4@gmail.com>

Tue, Aug 14, 2018 at 2:11 AM

To: lauren_bennett@fws.gov

Cc: lesliewhitevt@gmail.com, Dee VT <dfromvt@gmail.com>

To whom it may concern,

I have been a resident in Eden since 1998 and land owner since 1995.

This seems like a no brainer to me, to spend the funds as the select board wishes which gives more benefit to the town rather than a class four road culvert that I would venture a guess benefits a small number of people.

Dare I say specific land owners on that class four road?!? Or possibly F&W officers that travel the road on patrol.

Lets use our common sense on this one and do what does the most good for the residents of Eden.

Thank you,

Jon T. Creighton
129 Della-Corte Drive
Eden, VT. 05652



Bennett, Lauren <lauren_bennett@fws.gov>

[EXTERNAL] 2009 Bankruptcy settlement money

1 message

Kathleen Daige <kellydaige@icloud.com>

Fri, Aug 10, 2018 at 5:00 PM

To: lauren_bennett@fws.gov

Hello Lauren

I am a resident of Eden and would like the money we will be receiving from this settlement to be used as the select board recommends on projects on Knowles Flat Rd and the Blakeville Rd. I believe that the select board knows where the money will do the most good for the most residents of the town.

Kathleen Daige

Sent from my iPad



Bennett, Lauren <lauren_bennett@fws.gov>

[EXTERNAL] Municipal budget

1 message

Jennifer Johnson <jennymouse2004@hotmail.com>
To: "lauren_bennett@fws.gov" <lauren_bennett@fws.gov>

Mon, Aug 13, 2018 at 7:51 PM

Please

Use the funds the way the select board intends it to be used in multiple projects benefits not the way the trustees intend to fix a class 4 road.

Get [Outlook for iOS](#)



Bennett, Lauren <lauren_bennett@fws.gov>

[EXTERNAL] Eden culvert projects

1 message

Darlene Nunn <dmnunn2000@yahoo.com>

Sun, Aug 12, 2018 at 5:29 AM

To: lauren_bennett@fws.gov

I write to respectfully ask you to support our town select board and put the culvert funds towards the Knowles Flat project.

It would be ridiculous to put these funds into a class 4 road when a major culvert project on a highly used road, close to the school, has been put off for so long due to funding. Please help the town of Eden reopen Knowles Flat Road.

Thank you,

Darlene Creighton

Della-Corte Dr (adjoining rd to Knowles Flat)

Eden VT

[Sent from Yahoo Mail for iPad](#)



Bennett, Lauren <lauren_bennett@fws.gov>

[EXTERNAL] Eden Road Fix

1 message

Lex Rex Radio <naturalnomadics@gmail.com>
To: "lauren_bennett@fws.gov" <lauren_bennett@fws.gov>

Wed, Aug 15, 2018 at 9:09 AM

Hello Lauren! I just wanted to send this email to encourage you to support the select board's purposal to fix the culvert on Knowles Flat as well as some projects on Blackville Rd. Thank you for you consideration.



Bennett, Lauren <lauren_bennett@fws.gov>

[EXTERNAL] Settlement Monies

1 message

jan scipione <janscipione@hotmail.com>

Fri, Aug 10, 2018 at 9:07 PM

To: "lauren_bennett@fws.gov" <lauren_bennett@fws.gov>

Lauren,

We are Eden Lake Summer Residents - we pay abundant taxes (above what we pay in our home town of York Maine - our primary residence)...we support the selectboard decision about how to use the settlement monies...we hope this note helps!

Grateful for this opportunity,

Henry and Jan Scipione

Jan Scipione janscipione@hotmail.com

LAW OFFICES
OF
OTTERMAN AND ALLEN, P.C.

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FACSIMILE: (802) 479-4641
www.OttermanandAllen.com

DAVID A. OTTERMAN
ADRIAN A. OTTERMAN

HARVEY B. OTTERMAN, JR. (1926-2012)
O. FAY ALLEN, JR. (1912-2009)

August 22, 2018

Comment to Restoration Plan

Dear Secretary Julie Moore:

I represent Howard Manosh, President of Vermont Asbestos Group, Inc. On August 2nd, 2018, Mr. Manosh submitted a comment regarding the Draft Restoration Plan prepared by the United States Fish and Wildlife Service and the State of Vermont Agency of Natural Resources. Please accept this letter as a follow-up comment by Vermont Asbestos Group, Inc.

The directors of the Vermont Asbestos Group have reviewed the proposed restoration plan and find flaws in the Trustee's reasoning. Using the trust funds to repair culverts that the Trustees acknowledge will not be affected by any future contamination from the mine seems short-sighted. As the draft restoration plan states, the settlement money must be used to restore, replace, or acquire the equivalent of such natural resources damaged by the asbestos mine. Replacing culverts in Eden and Lowell will accomplish none of that. *See Draft Restoration Plan Page 1.*

Furthermore, the Memorandum of Agreement for Settlement Funds Management dated May 19, 2015 stated that, "The restoration of lost services shall be achieved, whenever possible through the proper restoration of the injured natural resource which originally provided the service." *See Memorandum of Agreement Page 3.* These culverts would not restore the injured resource as they have not been impacted by the contamination, nor will they be in the future. The Trustees were also directed by the Consent Decree and Settlement Agreement between G-1 Holdings Inc., the United States of America, and the State of Vermont to, "use the funds in the VAG Restoration Account, including all interest earned on such funds, for the restoration and/or assessment activities at or in connection with the VAG Site." *See United States and State of Vermont v. G-1 Holdings Inc. Adversary Proceeding No. 08-2531 Consent Decree and Settlement Agreement Page 38.* These culverts are not at the VAG Site and they are not connected as they have not been impacted nor will they be impacted by contamination.

I am commenting today to make clear that it is the Vermont Asbestos Group's opinion that the best approach to be taken by the Trustees is option number 3, "No Action." This alternative would provide the flexibility and funds necessary to resolve any future natural resource losses due to a catastrophic event leading to further contamination and damage to the natural resources of Eden and Lowell.

Pursuant to the Vermont Asbestos Group's own Consent Decree, it is continuing to administer the agreed-upon maintenance plan. In particular, VAG constructs and rebuilds needed berms to retain the tailings and inspects the property regularly after major storm events. However, despite all of their best efforts, a multi-day torrential downpour as a result of a hurricane or tropical storm could cause a slide from the pile and erosion into the brook, which no berm or water bar could prevent.

The VAG maintenance plan also requires that VAG take reasonable steps to prohibit public access to the site. VAG has installed 'No Trespassing' signs, fencing, and gates to prevent access by the public. However, ATV riders have breached the perimeter in the past and caused erosion. VAG has no funds available to post 24-hour security guards on the property.

The possibility of a catastrophic event, either manmade or natural, causing additional contamination of the surrounding property cannot be ruled out and, in fact, should be considered proactively by the Trustees. VAG is fulfilling its obligation under the agreed-upon maintenance plan. However, should the company, for any reason, lose its off-site rental income, the ongoing maintenance may suffer. If the restoration funds held by the Trustees are spent on repairing culverts that were never affected by the mine contamination, then nothing will be left to restore rivers, streams, and property genuinely affected by a future event.

By this comment, VAG, Inc. strongly encourages the Trustees to use the restoration fund for actual restoration of property affected by the mine contamination. The Memorandum of Agreement established a hierarchy of potential restoration projects where "on-site and in-kind restoration" was the first priority. *See Memorandum Agreement Page 3.* This draft plan does not constitute an on-site and in-kind restoration as these culverts are not on-site and have not actually been injured. As immediate on-site and in-kind restoration is not required, the funds should be held in trust to restore resources damaged by any future contamination.

Spending this money today on projects unrelated to contamination from the mine robs our grandchildren of the ability to restore damaged resources in the future.

Respectfully submitted,

A large, stylized handwritten signature in black ink, appearing to read 'Adrian A. Otterman', is written over the signature line.

Adrian A. Otterman, for
Howard Manosh, President
VERMONT ASBESTOS GROUP, INC.



STATE OF VERMONT
SENATE CHAMBER

Lauren Bennett
US Fundy Road
Falmouth, ME 04105

Mr. Bennett,

I am writing to comment on the draft restoration plan and the proposed distribution of funds from the Vermont Asbestos Group settlement. While the communities of Eden and Lowell appreciate Molly Sperduto of the U.S. Fish and Wildlife Service and John Schmeltzer of the Vermont Natural Resources Agency's attempts to listen to the communities at different Select Board meetings, it is clear the proposed plan for the distribution of the settlement funds from the Vermont Asbestos Group and the existing town road construction plan in at least the town of Eden are far apart in project priority.

Eden has, in their road construction plan, looked at travel patterns in the town, costs, and environmental factors on a town wide basis to come up with a priority list for projects in the town. It has been done over a long period of time involving community members, while working with the state, considering all factors with a special eye toward stream flows and the overall effects on water quality. All across Vermont people are working on flow issues and the effort to reduce the TMDLs in the Lake Champlain watershed. Eden has taken this very seriously.

While then town appreciates the funding of \$60,000 for the Knowles Flat Double Culvert in the settlement plan, Eden disagrees on the largest share of the money being dedicated in the plan to the culvert on Square Road. The highest priority for Eden after the Knowles Flat Double Culvert is the Single Culvert on the Knowles Flat Road.

The Square Road culvert named in the settlement plan is on a less traveled Class 4 Road and is not in the community's priority projects. It is on a stream that is not in the same watershed as the Asbestos mines. It is in a place where the stream flows are dramatically less than the community's priorities and from the Town's point of view it isn't understood why the priorities on Knowles Flats Road aren't of greater environmental significance than the Square Road Culvert. It should be noted that the Knowles Flat projects are all on watersheds that flow eventually to Lake Champlain, which is the stated priority of the State and Federal Government. The State is under mandate from the Federal government and the EPA to reduce TMDLs into Lake Champlain.

I would hope that the settlement Committee would continue to work with the communities to come up with a solution that better fits the overall goals of everyone concerned.

Sincerely,
Richard Westman
Vermont State Senator Lamoille District



Bennett, Lauren <lauren_bennett@fws.gov>

[EXTERNAL] VAG Mine Site Restoration Plan

2 messages

Mark Higley <MHigley@leg.state.vt.us>

Fri, Aug 24, 2018 at 2:08 PM

To: "lauren_bennett@fws.gov" <lauren_bennett@fws.gov>

Cc: "julie.moore@vermont.gov" <julie.moore@vermont.gov>, Tracey Morin <sbadmin@edenvt.org>, "sladeau@lowelltown.org" <sladeau@lowelltown.org>, "lesliewhitevt@gmail.com" <lesliewhitevt@gmail.com>, "rob@lpcvt.org" <rob@lpcvt.org>, "rawestman@gmail.com" <rawestman@gmail.com>, Robert Starr <RStarr@leg.state.vt.us>, Mark Higley <MHigley@leg.state.vt.us>

> Dear Trustees,

>

> Senator Starr and I have attended meetings in Eden and Lowell regarding the Draft Restoration Plan for the VAG natural resources damage settlement. We want to thank Molly Sperduto representing US Fish & Wildlife (USFW) and John Schmeltzer from the Agency of Natural Resources (ANR) for attending the Eden meeting and listening to their recommendations. Also, Lauren Bennett representing USFW and Linda Elliott ANR who did the same in Lowell.

>

> We would like to inform the trustees of our support for the town of Eden, specifically regarding their letter to you dated August 13, 2018. They have 6 recommendations they would like you to consider regarding where the funds could be allocated for projects in Eden. We hope their recommendation will be seriously considered in light of the work and effort they have put into their consideration of each project.

>

> Our understanding is Lowell is still waiting on word from the Agency of Transportation regarding issues around the Kempton Hill Rd Bridge project which has become a priority for the town. Specifically we heard at the Lowell meeting that they would like to use some of the funds for erosion control measures and engineering for this project. Both Molly Sperduto and Lauren Bennett seemed receptive to this being a possibility. This project has a direct nexus to the effected site, because it is on the Burgess Branch coming directly from the mines site.

>

> In closing we feel these projects being considered by the towns meet most if not all of the 8 criteria developed by the Trustees regarding goals for restoration. Thank you for your consideration and hope you can work with the towns to achieve the best possible outcomes for all.

>

> Sincerely,

>

> Senator Robert Starr Essex-Orleans

>

> Representative Mark Higley Orleans-Lamoille

Lauren Bennett <lauren_bennett@fws.gov>

Fri, Aug 24, 2018 at 2:37 PM

To: MHigley@leg.state.vt.us

Cc: julie.moore@vermont.gov, Tracey Morin <sbadmin@edenvt.org>, Sandy Ladeau <sladeau@lowelltown.org>, Leslie White <lesliewhitevt@gmail.com>, Robert Moore <rob@lpcvt.org>, rawestman@gmail.com, RStarr@leg.state.vt.us, MHigley@leg.state.vt.us, "molly_sperduto@fws.gov" <molly_sperduto@fws.gov>, "Schmeltzer, John" <John.Schmeltzer@vermont.gov>, Linda Elliott <Linda.Elliott@vermont.gov>

Dear Representative Higley and Senator Starr,

Thank you for your comments. The Natural Resource Trustees will consider all comments received and will include them in the public record.

Best,

Lauren Bennett

~~~~~  
Lauren Bennett  
Restoration Biologist  
US Fish and Wildlife Service  
4R Fundy Road

Falmouth, ME 04105  
(P) 603.227.6426

USFWS Natural Resource Damage Assessment and Restoration Program - Northeast  
Department of the Interior Office of Restoration and Damage Assessment

[Quoted text hidden]

Leslie White  
491 Baker Road  
Eden, Vermont 05652

August 24, 2018

To the trustees:

As a community member and a former selectboard member, I have been involved with the Vermont Asbestos Group mine and the challenges and impact that the mine has had on our town. I would like to take this opportunity to voice my comments on the damage settlement draft restoration plan and the allocation of funds that has been proposed.

I was able to read the original agreement that stipulates the amount of \$850,000.00 that has now accrued in full and is the topic of discussion for distribution between the towns of Eden and Lowell. ANR and Fish and Wildlife have stressed multiple times that the funds cannot be used on site, yet that does not concur with the priorities specifically stipulated in the agreement. ANR signed the agreement so not following through with the mandates' hierarchy would not be a legal option.

Having read the selectboard's comments, I fully support their request in asking for reconsideration in the allocation of the settlement funds.

In an effort to better understand a bigger picture in this discussion, I read through the *Wild Branch Corridor Plan* prepared by Bear Creek Environmental, LLC and the Lamoille County Planning Commission completed in 2010. Between the Lamoille River in Wolcott and the headwaters in Eden, the corridor plan identifies 19 separate locations that were of concern. The only location in Eden was the double culvert on Square Road, the single, boiler plate culvert was not mentioned at all even though the study did encompass the entire watershed up to the Lowell range. Replacing the single Square Road culvert (that might have been identified as location #20) in a long list of concerns stated in the plan before addressing some of the downstream areas does not seem like a logical decision, especially as the replacement structure proposed is a very expensive option on a 4<sup>th</sup> class road. The possibility of removing the structure entirely was discussed as the road beyond the single culvert is accessible from the other end of Square Road in Craftsbury. Does it make sense to use 84% of the settlement funds on the last location in question along the Wild Branch corridor that needs attention especially when it is not in the same watershed as the mine? What about baffles added to the boiler plate, a fish ladder or other creative solutions that could improve the trout habitat at a much, much lower cost?

At the Eden selectboard meeting in late July when the allocation proposal was presented, one of the reasons given for not choosing to fund any of the Knowles Flat Road single culvert project was that the engineering was already done. With that in mind, I was quite surprised to subsequently find out that the engineering and plans for

the Square Road single culvert had also been completed as the town office has the drawings for the replacement structure. When stating criteria that are to affect a decision, the same criteria needs to apply equally to all projects considered. This same reasoning, that criteria stipulated must be applied equally to all projects also comes into question regarding the allocation of additional funding for a project. The Town of Eden has the grant funding for the single culvert on Knowles Flat already in place, secured, guaranteed, a done deal. When asked about the complimentary funding that the trustees had acquired for the Square Road replacement project to comply with the criteria they set in place themselves, the response was that there had been conversations with other agencies on possible funding but nothing had yet been confirmed. This is a double standard that is unfair and unjust. Eden has the funding promised already. Would you take our word for it if we said we had just applied for some grants and were hopeful we might get them sometime soon?

It is extremely important that justification for a decision be defined by accurate, factual data. The nine miles of trout habitat that would benefit from the replacement of the Square Road culvert is a misleading statement and a questionable number.

One of the most important pieces of this request to have the trustees reconsider their proposed allocation of the settlement funds relates to our Road Commissioner, Ricky Morin and the crew of people he has working with him. Ricky's expertise in caring for our roads is unparalleled. He has proven many times with his skill level and dedication to our community the ability to do WAY more with less money. He makes it possible for this tiny community with very limited resources to have some of the best roads anywhere. Acting with the town as general contractor, he saved the town \$200,000 on the Whitney Lane Bridge and will certainly save the town a similar amount on the single Knowles Flat box culvert project. The trustees want the settlement money to do as much as possible to improve the natural resources in Eden. Bypassing the most valuable resource you might have (Ricky, the crew and the creative problem solving expertise they have) to get the most bang for the buck to reach your long term goal would be an incredible oversight. Ask VTrans or the Better Back Roads programs for validation. Both organizations have used Eden as an example of excellence.

Please reconsider how the funds from the G-1 Holdings Memorandum Settlement are allocated in Eden.

Leslie White  
Eden, VT 05652

Lowell Select Board  
2190 Vt. Rte. 100  
Lowell, Vt. 05847

To: The Trustees for The Draft Restoration Plan for the VAG Natural Resources Damage Settlement

Date: 8/31/2018

Dear Trustees:

The Lowell Town Officers wish to thank ANR for the opportunity to comment and to be considered for some financial relief of a major undertaking that involves a transportation need, as well as human and wildlife safety issues. The town is reviewing costs of constructing a bridge and prevention of the ongoing and continual erosion factors at that site. Lauren Bennett, from USFW and Linda Elliott, from ANR provided information and answered many questions for us at a recent Board meeting. We were told that while the bridge costs cannot be considered a viable consideration by your team, the erosion factor would fit into the 8 established criteria goals for restoration. The following pictures demonstrate the extent of ongoing surface dirt run-off into the river and the need for an engineer plan and construction for correction.









Our concern is that the engineering for correcting the erosion problem and engineering for the bridge project should be one engineering task to ensure continuity in the ongoing erosion corrective issues without duplicating effort and costs.

We are including below, for your review, the recently received report we have been waiting for from Douglas Morton, Senior Transportation Planner of The Northeastern Vermont Development Association: (Please note that some of the pictures above were from him as well)

Greetings,

I have attached 4 Municipal Roads General Permit (MRGP) compliant Road Erosion Inventory (REI) Sheets (I'll send pictures separately) for Kempton Hill Rd in the Town of Lowell. I visited the site and conducted the inventory with the Lowell Road Foreman, Calvin Allen, on August 20th. All 4 segments do not meet the MRGP standard and this project will bring these segments into compliance. The top three segments were not seen as connected in the initial screening but I have added them based on my field visit. We also left out the Segment at the bottom of the hill (SegID 119550) that includes the bridge as much of what is done there will depend on the actual bridge project (ie. what kind of structure, abbutments, etc. and ideally would be engineered along with the bridge. NVDA will be conducting the REI for the entire town later this fall and we will make sure these segments are added as hydraulically connected in the completed inventory. Please let me know if you have questions or if I can be of further assistance.

Doug

Note: Segment #1 = Page 6 of 10

Segment #2 = Page 7 of 10

Segment #3 = Page 8 of 10

Segment #4 = Page 9 of 10

Road Erosion Inventory Form A  
 PAVED ROADS WITH OPEN DITCHES  
 GRAVEL/OPEN (DITCHED) NON-CLASS 4 ROADS

1 road segment = 100 meters = 328 feet  
 Both sides of road = 200 meters = 656 feet  
 Sheet Flow <1" erosion depth  
 Rill 1"-11" erosion depth  
 Gully 12"+ erosion depth

Name: Kompton Hill Rd Date: 8/20

|                                                             |                  |                         |                                                                   |
|-------------------------------------------------------------|------------------|-------------------------|-------------------------------------------------------------------|
| Road Segment Name, Town Highway Number & Segment ID Number: | ANR Atlas Slope: | Field Determined Slope: | Road Type:                                                        |
| <u>119554</u>                                               | <u>14.41</u>     | <u>15.0</u>             | <input type="checkbox"/> Paved<br><input type="checkbox"/> Gravel |

**1. ROADWAY CROWN/TRAVEL LANE:** (N/A for Paved) What percentage of the segment is properly crowned (1/4" to 1/2" per foot), in-sloped, or out-sloped? Note if erosion is present due to poor road surface material.

|                                                                         |                                                                   |                                                                |                                                                                         |
|-------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> 0%-49% (0' - 163')<br>Does Not Meet | <input type="checkbox"/> 50%-89% (164' - 294')<br>Partially Meets | <input type="checkbox"/> 90%-100% (295' - 328')<br>Fully Meets | Erosion Type Present<br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
|-------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|

**2. GRADER BERM/WINDROW:** What percentage of the segment (both sides of road, 200m, 656') is the grader berm/windrow removed? (N/A for paved roads)

|                                                                         |                                                                   |                                                                |                                                                                         |
|-------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> 0%-49% (0' - 327')<br>Does Not Meet | <input type="checkbox"/> 50%-89% (328' - 589')<br>Partially Meets | <input type="checkbox"/> 90%-100% (590' - 656')<br>Fully Meets | Erosion Type Present<br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
|-------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|

**3. ROAD DRAINAGE:** What percentage of the segment (both sides of road, 200m, 656') is the allowed to shed in a distributed manner to a vegetated or forested filter area (shoulder lower than travel lane) or drainage ditch stabilized appropriately for the slope range below?

- <5% slope: stabilized with vegetation, stone-lined, or check dams
- >=5% to <8% slope: stabilized with stone-lined ditch or combination of grass lined ditch with check dams or grass-lined ditch if installed with disconnection practices such as turnouts and cross culverts
- >=8% slope: stone-lined ditch required

|                                                                         |                                                                   |                                                                |                                                                                         |
|-------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> 0%-49% (0' - 327')<br>Does Not Meet | <input type="checkbox"/> 50%-89% (328' - 589')<br>Partially Meets | <input type="checkbox"/> 90%-100% (590' - 656')<br>Fully Meets | Erosion Type Present<br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
|-------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|

**4. CONVEYANCE AREA/TURNOUT:** Do drainage outlets/conveyance areas meet the standard of being turned out, shed in a distributed manner down the bank (shedding water), and/or stabilized with vegetation (<5% slope) or stone (>=5% slope)?

|                                                                    |                                                   |                                                                                         |
|--------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------|
| <input type="checkbox"/> One or more areas does not meet standard. | <input type="checkbox"/> All areas meet standard. | Erosion Type Present<br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
|--------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------|

**5. & 6. DRIVEWAY & DRAINAGE CULVERTS**

| A. Type of culvert?                                                               | B. Is erosion present?                                                                            | C. Where in the culvert cross section is erosion present and is it rill or gully erosion?<br>SEE CULVERT CROSS SECTION DIAGRAM |                                                                                                   |                                                                                                   |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
|                                                                                   |                                                                                                   | C1. Failing header/end treatment?                                                                                              | C2. Outlet scour or perched culvert?                                                              | C3. Undersized/missing structure/poor condition?                                                  |
| <input checked="" type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage | <input type="checkbox"/> No (Fully Meets)<br><input checked="" type="checkbox"/> Yes (complete C) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C)            | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C)            | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C)            | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |

**(Optional) IS OTHER RILL OR GULLY EROSION PRESENT?**

|                                                                                                                     |                                                                 |                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> River-road embankment erosion                                                              | <input type="checkbox"/> Rill<br><input type="checkbox"/> Gully | <input type="checkbox"/> Historic stone walls, LF: _____                                            |
| <input type="checkbox"/> Outside the Right of Way: i.e. agriculture, logging erosion, or private road/drive erosion |                                                                 | <input type="checkbox"/> Historic large trees, LF: _____                                            |
| <input type="checkbox"/> Other:                                                                                     |                                                                 | <input type="checkbox"/> Buried utilities, LF: _____<br><input type="checkbox"/> Wetland, LF: _____ |

Notes: clean & stone Ditch Both sides and install new 24" cross culvert

Overall Segment Score  Fully Meets  Partially Meets  Does Not Meet



Road Erosion Inventory Form A  
 PAVED ROADS WITH OPEN DITCHES  
 GRAVEL/OPEN (DITCHED) NON-CLASS 4 ROADS

# 2

1 road segment = 100 meters = 328 feet  
 Both sides of road = 200 meters = 656 feet  
 Sheet Flow <1" erosion depth  
 Rill 1"-11" erosion depth  
 Gully 12"+ erosion depth

Name: Doug Moxon

Date: 8/20

|                                                              |                  |                         |                                                                   |
|--------------------------------------------------------------|------------------|-------------------------|-------------------------------------------------------------------|
| Road Segment Name, Town, Highway Number & Segment ID Number: | ANR Atlas Slope: | Field Determined Slope: | Road Type:                                                        |
| <u>Kompta Hill Rd 119 553</u>                                | <u>PB-2</u>      | <u>13.7</u>             | <input type="checkbox"/> Paved<br><input type="checkbox"/> Gravel |

**1. ROADWAY CROWN/TRAVEL LANE:** (N/A for Paved) What percentage of the segment is properly crowned (1/4" to 1/2" per foot), in-sloped, or out-sloped? Note if erosion is present due to poor road surface material.

|                                                              |                                                                              |                                                                |                                                                                         |
|--------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <input type="checkbox"/> 0%-49% (0' - 163')<br>Does Not Meet | <input checked="" type="checkbox"/> 50%-89% (164' - 294')<br>Partially Meets | <input type="checkbox"/> 90%-100% (295' - 328')<br>Fully Meets | Erosion Type Present<br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
|--------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|

**2. GRADER BERM/WINDROW:** What percentage of the segment (both sides of road, 200m, 656') is the grader berm/windrow removed? (N/A for paved roads)

|                                                                         |                                                                   |                                                                |                                                                                         |
|-------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> 0%-49% (0' - 327')<br>Does Not Meet | <input type="checkbox"/> 50%-89% (328' - 589')<br>Partially Meets | <input type="checkbox"/> 90%-100% (590' - 656')<br>Fully Meets | Erosion Type Present<br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
|-------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|

**3. ROAD DRAINAGE:** What percentage of the segment (both sides of road, 200m, 656') is the allowed to shed in a distributed manner to a vegetated or forested filter area (shoulder lower than travel lane) or drainage ditch stabilized appropriately for the slope range below?

- <5% slope: stabilized with vegetation, stone-lined, or check dams
- ≥5% to <8% slope: stabilized with stone-lined ditch or combination of grass lined ditch with check dams or grass-lined ditch if installed with disconnection practices such as turnouts and cross culverts
- ≥8% slope: stone-lined ditch required

|                                                                         |                                                                   |                                                                |                                                                                         |
|-------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> 0%-49% (0' - 327')<br>Does Not Meet | <input type="checkbox"/> 50%-89% (328' - 589')<br>Partially Meets | <input type="checkbox"/> 90%-100% (590' - 656')<br>Fully Meets | Erosion Type Present<br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
|-------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------|

**4. CONVEYANCE AREA/TURNOUT:** Do drainage outlets/conveyance areas meet the standard of being turned out, shed in a distributed manner down the bank (shedding water), and/or stabilized with vegetation (<5% slope) or stone (≥5% slope)?

|                                                                    |            |                                                   |                                                                                         |
|--------------------------------------------------------------------|------------|---------------------------------------------------|-----------------------------------------------------------------------------------------|
| <input type="checkbox"/> One or more areas does not meet standard. | <u>N/A</u> | <input type="checkbox"/> All areas meet standard. | Erosion Type Present<br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
|--------------------------------------------------------------------|------------|---------------------------------------------------|-----------------------------------------------------------------------------------------|

**5. & 6. DRIVEWAY & DRAINAGE CULVERTS**

| A. Type of culvert?                                                               | B. Is erosion present?                                                                            | C. Where in the culvert cross section is erosion present and is it rill or gully erosion?<br>SEE CULVERT CROSS SECTION DIAGRAM |                                                                                                   |                                                                                                   |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
|                                                                                   |                                                                                                   | C1. Failing header/end treatment?                                                                                              | C2. Outlet scour or perched culvert?                                                              | C3. Undersized/missing structure/poor condition?                                                  |
| <input checked="" type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage | <input checked="" type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input checked="" type="checkbox"/> Drainage | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C)            | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C)            | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C)            | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |

**(Optional) IS OTHER RILL OR GULLY EROSION PRESENT?**

|                                                                                                                     |                                                                 |                                                                                                                                                                 |  |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <input type="checkbox"/> River-road embankment erosion                                                              | <input type="checkbox"/> Rill<br><input type="checkbox"/> Gully | <b>Check If Present In Segment and Note Linear Feet (LF)</b>                                                                                                    |  |
| <input type="checkbox"/> Outside the Right of Way: i.e. agriculture, logging erosion, or private road/drive erosion |                                                                 | <input type="checkbox"/> Historic stone walls, LF: _____                                                                                                        |  |
| <input type="checkbox"/> Other:                                                                                     |                                                                 | <input type="checkbox"/> Historic large trees, LF: _____<br><input type="checkbox"/> Buried utilities, LF: _____<br><input type="checkbox"/> Wetland, LF: _____ |  |

Notes: clean; stone ditch both sides; replace cross culvert

|                              |                                      |                                          |                                                   |
|------------------------------|--------------------------------------|------------------------------------------|---------------------------------------------------|
| <b>Overall Segment Score</b> | <input type="checkbox"/> Fully Meets | <input type="checkbox"/> Partially Meets | <input checked="" type="checkbox"/> Does Not Meet |
|------------------------------|--------------------------------------|------------------------------------------|---------------------------------------------------|



Road Erosion Inventory Form A  
 PAVED ROADS WITH OPEN DITCHES  
 GRAVEL/OPEN (DITCHED) NON-CLASS 4 ROADS

Sg 3

1 road segment = 100 meters = 328 feet  
 Both sides of road = 200 meters = 656 feet  
 Sheet Flow <1" erosion depth  
 Rill 1"-11" erosion depth  
 Gully 12"+ erosion depth

Name: Doug Martin Date: 8/20

|                                                             |                  |                         |                                                                   |
|-------------------------------------------------------------|------------------|-------------------------|-------------------------------------------------------------------|
| Road Segment Name, Town Highway Number & Segment ID Number: | ANR Atlas Slope: | Field Determined Slope: | Road Type:                                                        |
| <u>Kompton Hill Rd 119 552</u>                              | <u>15.3</u>      | <u>15</u>               | <input type="checkbox"/> Paved<br><input type="checkbox"/> Gravel |

|                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                              |                                                                |                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>1. ROADWAY CROWN/TRAVEL LANE:</b> (N/A for Paved) What percentage of the segment is properly crowned (¼" to ½" per foot), in-sloped, or out-sloped? Note if erosion is present due to poor road surface material.                                                                                                                                                                               |                                                                              |                                                                | <b>Erosion Type Present</b><br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
| <input type="checkbox"/> 0%-49% (0' - 163')<br>Does Not Meet                                                                                                                                                                                                                                                                                                                                       | <input checked="" type="checkbox"/> 50%-89% (164' - 294')<br>Partially Meets | <input type="checkbox"/> 90%-100% (295' - 328')<br>Fully Meets |                                                                                                |
| <b>2. GRADER BERM/WINDROW:</b> What percentage of the segment (both sides of road, 200m, 656') is the grader berm/windrow removed? (N/A for paved roads)                                                                                                                                                                                                                                           |                                                                              |                                                                | <b>Erosion Type Present</b><br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
| <input checked="" type="checkbox"/> 0%-49% (0' - 327')<br>Does Not Meet                                                                                                                                                                                                                                                                                                                            | <input type="checkbox"/> 50%-89% (328' - 589')<br>Partially Meets            | <input type="checkbox"/> 90%-100% (590' - 656')<br>Fully Meets |                                                                                                |
| <b>3. ROAD DRAINAGE:</b> What percentage of the segment (both sides of road, 200m, 656') is the allowed to shed in a distributed manner to a vegetated or forested filter area (shoulder lower than travel lane) or drainage ditch stabilized appropriately for the slope range below?                                                                                                             |                                                                              |                                                                | <b>Erosion Type Present</b><br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
| <ul style="list-style-type: none"> <li>&lt;5% slope: stabilized with vegetation, stone-lined, or check dams</li> <li>&gt;5% to &lt;8% slope: stabilized with stone-lined ditch or combination of grass lined ditch with check dams or grass-lined ditch if installed with disconnection practices such as turnouts and cross culverts</li> <li>&gt;8% slope: stone-lined ditch required</li> </ul> |                                                                              |                                                                |                                                                                                |
| <input checked="" type="checkbox"/> 0%-49% (0' - 327')<br>Does Not Meet                                                                                                                                                                                                                                                                                                                            | <input type="checkbox"/> 50%-89% (328' - 589')<br>Partially Meets            | <input type="checkbox"/> 90%-100% (590' - 656')<br>Fully Meets | <input type="checkbox"/> Rill<br><input type="checkbox"/> Gully                                |
| <b>4. CONVEYANCE AREA/TURNOUT:</b> Do drainage outlets/conveyance areas meet the standard of being turned out, shed in a distributed manner down the bank (shedding water), and/or stabilized with vegetation (<5% slope) or stone (>5% slope)?                                                                                                                                                    |                                                                              |                                                                | <b>Erosion Type Present</b><br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
| <input type="checkbox"/> One or more areas does not meet standard. <u>N/A</u> <input type="checkbox"/> All areas meet standard.                                                                                                                                                                                                                                                                    |                                                                              |                                                                |                                                                                                |

| 5. & 6. DRIVEWAY & DRAINAGE CULVERTS                                              |                                                                                                   |                                                                                                                                |                                                                                                   |                                                                                                   |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| A. Type of culvert?                                                               | B. Is erosion present?                                                                            | C. Where in the culvert cross section is erosion present and is it rill or gully erosion?<br>SEE CULVERT CROSS SECTION DIAGRAM |                                                                                                   |                                                                                                   |
|                                                                                   |                                                                                                   | C1. Failing header/end treatment?                                                                                              | C2. Outlet scour or perched culvert?                                                              | C3. Undersized/missing structure/poor condition?                                                  |
| <input type="checkbox"/> Driveway<br><input checked="" type="checkbox"/> Drainage | <input type="checkbox"/> No (Fully Meets)<br><input checked="" type="checkbox"/> Yes (complete C) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C)            | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C)            | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C)            | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |

|                                                                                                                                                                                                                  |                                                                 |                                                                                                                                                                                                                             |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>(Optional) IS OTHER RILL OR GULLY EROSION PRESENT?</b>                                                                                                                                                        |                                                                 | <b>Check If Present In Segment and Note Linear Feet (LF)</b>                                                                                                                                                                |  |
| <input type="checkbox"/> River-road embankment erosion<br><input type="checkbox"/> Outside the Right of Way: i.e. agriculture, logging erosion, or private road/drive erosion<br><input type="checkbox"/> Other: | <input type="checkbox"/> Rill<br><input type="checkbox"/> Gully | <input type="checkbox"/> Historic stone walls, LF: _____<br><input type="checkbox"/> Historic large trees, LF: _____<br><input type="checkbox"/> Buried utilities, LF: _____<br><input type="checkbox"/> Wetland, LF: _____ |  |

Notes: clean & stone ditch clean; seal sheet flow

|                              |                                                                                                                                       |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>Overall Segment Score</b> | <input type="checkbox"/> Fully Meets<br><input type="checkbox"/> Partially Meets<br><input checked="" type="checkbox"/> Does Not Meet |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|

Updated December 2017



Road Erosion Inventory Form A  
 PAVED ROADS WITH OPEN DITCHES  
 GRAVEL/OPEN (DITCHED) NON-CLASS 4 ROADS

#4

1 road segment = 100 meters = 328 feet  
 Both sides of road = 200 meters = 656 feet  
 Sheet Flow <1" erosion depth  
 Rill 1"-11" erosion depth  
 Gully 12"+ erosion depth

Name: Doug Martin

Date: 3/20

|                                                             |                  |                         |                                                                   |
|-------------------------------------------------------------|------------------|-------------------------|-------------------------------------------------------------------|
| Road Segment Name, Town Highway Number & Segment ID Number: | ANR Atlas Slope: | Field Determined Slope: | Road Type:                                                        |
| <u>Kompton Hill Rd 119 551</u>                              | <u>8.75</u>      | <u>16.9</u>             | <input type="checkbox"/> Paved<br><input type="checkbox"/> Gravel |

|                                                                                                                                                                                                                                                                                                                                |                                                                              |                                                                           |                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>1. ROADWAY CROWN/TRAVEL LANE:</b> (N/A for Paved) What percentage of the segment is properly crowned (1/4" to 1/2" per foot), in-sloped, or out-sloped? Note if erosion is present due to poor road surface material.                                                                                                       |                                                                              |                                                                           | <b>Erosion Type Present</b><br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
| <input type="checkbox"/> 0%-49% (0' - 163')<br>Does Not Meet                                                                                                                                                                                                                                                                   | <input type="checkbox"/> 50%-89% (164' - 294')<br>Partially Meets            | <input checked="" type="checkbox"/> 90%-100% (295' - 328')<br>Fully Meets |                                                                                                |
| <b>2. GRADER BERM/WINDROW:</b> What percentage of the segment (both sides of road, 200m, 656') is the grader berm/windrow removed? (N/A for paved roads)                                                                                                                                                                       |                                                                              |                                                                           | <b>Erosion Type Present</b><br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
| <input type="checkbox"/> 0%-49% (0' - 327')<br>Does Not Meet                                                                                                                                                                                                                                                                   | <input checked="" type="checkbox"/> 50%-89% (328' - 589')<br>Partially Meets | <input type="checkbox"/> 90%-100% (590' - 656')<br>Fully Meets            |                                                                                                |
| <b>3. ROAD DRAINAGE:</b> What percentage of the segment (both sides of road, 200m, 656') is the allowed to shed in a distributed manner to a vegetated or forested filter area (shoulder lower than travel lane) or drainage ditch stabilized appropriately for the slope range below?                                         |                                                                              |                                                                           | <b>Erosion Type Present</b><br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
| • <5% slope: stabilized with vegetation, stone-lined, or check dams<br>• ≥5% to <8% slope: stabilized with stone-lined ditch or combination of grass lined ditch with check dams or grass-lined ditch if installed with disconnection practices such as turnouts and cross culverts<br>• ≥8% slope: stone-lined ditch required |                                                                              |                                                                           |                                                                                                |
| <input checked="" type="checkbox"/> 0%-49% (0' - 327')<br>Does Not Meet                                                                                                                                                                                                                                                        | <input type="checkbox"/> 50%-89% (328' - 589')<br>Partially Meets            | <input type="checkbox"/> 90%-100% (590' - 656')<br>Fully Meets            | <input type="checkbox"/> Rill<br><input type="checkbox"/> Gully                                |
| <b>4. CONVEYANCE AREA/TURNOUT:</b> Do drainage outlets/conveyance areas meet the standard of being turned out, shed in a distributed manner down the bank (shedding water), and/or stabilized with vegetation (<5% slope) or stone (>5% slope)?                                                                                |                                                                              |                                                                           | <b>Erosion Type Present</b><br><input type="checkbox"/> Rill<br><input type="checkbox"/> Gully |
| <input type="checkbox"/> One or more areas does not meet standard. <u>NA</u> <input type="checkbox"/> All areas meet standard.                                                                                                                                                                                                 |                                                                              |                                                                           |                                                                                                |

| 5. & 6. DRIVEWAY & DRAINAGE CULVERTS                                              |                                                                                        |                                                                                                                                |                                                                                                   |                                                                                                   |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| A. Type of culvert?                                                               | B. Is erosion present?                                                                 | C. Where in the culvert cross section is erosion present and is it rill or gully erosion?<br>SEE CULVERT CROSS SECTION DIAGRAM |                                                                                                   |                                                                                                   |
|                                                                                   |                                                                                        | C1. Failing header/end treatment?                                                                                              | C2. Outlet scour or perched culvert?                                                              | C3. Undersized/missing structure/poor condition?                                                  |
| <input type="checkbox"/> Driveway<br><input checked="" type="checkbox"/> Drainage | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |
| <input type="checkbox"/> Driveway<br><input type="checkbox"/> Drainage            | <input type="checkbox"/> No (Fully Meets)<br><input type="checkbox"/> Yes (complete C) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet)                              | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) | <input type="checkbox"/> Rill (Partially Meets)<br><input type="checkbox"/> Gully (Does Not Meet) |

|                                                                                                                                                                                                                                                                               |                                                                 |                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>(Optional) IS OTHER RILL OR GULLY EROSION PRESENT?</b><br><input type="checkbox"/> River-road embankment erosion<br><input type="checkbox"/> Outside the Right of Way: i.e. agriculture, logging erosion, or private road/drive erosion<br><input type="checkbox"/> Other: | <input type="checkbox"/> Rill<br><input type="checkbox"/> Gully | <b>Check if Present In Segment and Note Linear Feet (LF)</b><br><input type="checkbox"/> Historic stone walls, LF: _____<br><input type="checkbox"/> Historic large trees, LF: _____<br><input type="checkbox"/> Buried utilities, LF: _____<br><input type="checkbox"/> Wetland, LF: _____ |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Notes: Open & stone ditches; clear & good sheet flow

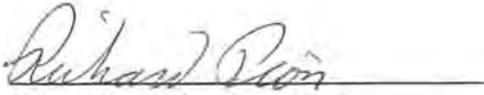
|                       |                                      |                                          |                                                   |
|-----------------------|--------------------------------------|------------------------------------------|---------------------------------------------------|
| Overall Segment Score | <input type="checkbox"/> Fully Meets | <input type="checkbox"/> Partially Meets | <input checked="" type="checkbox"/> Does Not Meet |
|-----------------------|--------------------------------------|------------------------------------------|---------------------------------------------------|



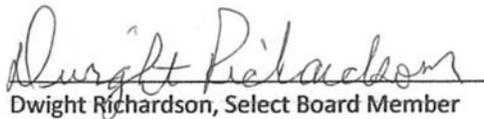
We are aware of the financial burden this project will be for the town and would certainly appreciate any assistance you could deem appropriate to provide for this. If more information is needed, please feel free to call 802-744-6559 to speak with Priscilla Matten or email your questions to [pmatten@lowelltown.org](mailto:pmatten@lowelltown.org).

Thank you for your consideration and we anxiously await your decision.

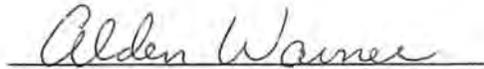
Sincerely,



Richard Pion, Select Board Chair



Dwight Richardson, Select Board Member



Alden Warner, Select Board Member

Lauren –

Please see recommendations from Peter Danforth (LCCD District Manager) and I that reflect recent developments with funding in reference to the Lake Eden Watershed Action Plan. The plan has been funded and is underway and will include recommendations for BMPs to address water quality problems in Lake Eden. The plan should be completed by December 2019. The identified BMPs will be ranked in order of priority based on water quality benefit, feasibility, landowner support and cost. The VAG funding will be the most helpful on private lands and roads that do not meet eligibility requirements of state grants. Thank you for your consideration.

| Page Number, Location | Suggested Change                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Reason                                                                                |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ii, in table          | Eden – Phase II of the Lake Eden Watershed Action Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | To better reflect needs and direct funding since Phase I of the plan has been funded. |
| 8, in highlighted box | Implement Phase II Priority BMPs identified in the Lake Eden Watershed Action Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | To better reflect needs and direct funding since Phase I of the plan has been funded. |
| 13, Section 2.1.4     | Should funds remain after the implementation of the preferred culvert projects in Eden, the Trustees propose to partner with the LCCD to Implement Phase II Priority BMPs identified in the Lake Eden Watershed Action Plan that is currently funded and being developed in partnership with LCCD, the Lake Eden Association, VDEC, and the town of Eden. The Trustees would provide any remaining funds to the LCCD to implement priority projects identified in the plan . Implementation would involve installing BMPs such as vegetation along the lake edge to reduce erosion, water bars, stone-lined ditches and rain gardens along private roads to control stormwater runoff, and additional Lake Wise BMPs ) in order to reduce stormwater runoff into the lake. As part of the initial effort, the LCCD plans to implement a BMP on a private property to model the Lake Wise Initiative. This model property could serve as a demonstration site for a Lake Wise Workshop and act as a catalyst for LCCD to provide education and outreach to additional lakeshore property owners. Should there be additional excess funds, the Trustees could support additional installation of BMPs around Lake Eden. | To better reflect needs and direct funding since Phase I of the plan has been funded. |



## Lamoille County Planning Commission

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To: Lauren Bennet ([lauren\\_bennett@fws.gov](mailto:lauren_bennett@fws.gov))  
U.S. Fish and Wildlife Service  
4R Fundy Road  
Falmouth, ME 04105

From: Tasha Wallis, Executive Director, Lamoille County Planning Commission

Date: August 23, 2018

Dear Ms. Bennet,

The Lamoille County Planning Commission appreciates the work of the Trustees and the US Fish & Wildlife staff on aiming to achieve the most beneficial outcome for the VT Asbestos Group settlement funds. The purpose of this memo is to express support for the Town of Eden requests for allocation of the funds for various specific projects. LCPC would like to emphasize the alternative proposal presented by the Town of Eden will maximize the effectiveness of the settlement funds by greatly enhancing the opportunity to leverage these funds to the benefit of water quality in Eden and the entire Lamoille Watershed.

First, we commend the allocation of approximately \$60,000 (with an allowance for this amount to increase or decrease to supply 5% of the actual project costs) to leverage approximately \$1.2-\$1.4 million total project cost for the Knowles Flat Double Culvert (#13-1 and #13-2). We encourage a similar approach to the remaining funds and allocating them in a way that maximizes the Town's ability to leverage additional resources and ultimately implement a greater number of projects than currently described in the Draft Restoration Plan.

We would like to further explain why the Town proposals to change the priority level and funding allocation to both of the Square Road culverts identified in the Draft Restoration Plan should be considered. We believe this would allow the Town to accomplish a greater number of projects by leveraging other available funding over time.

--- There are many public and private funding sources available which could be used in conjunction with settlement funds for both projects on Square Road, but are not available for some Town priorities including Knowles Flat culvert 13-8. For example, the VT DEC Ecosystem Restoration Program, DEC Grant in Aid program, US F&W AOP improvement program, DEC block grant, High Meadows Fund, and numerous others would consider the Square Road projects as eligible for funding, while culvert 13-8 is not eligible for those funding programs. The current proposal in the Draft Plan should be adjusted to increase the leveraging power of the settlement funds.

--- The cost estimated for the Square Road Culverts identified in the Plan are based on expensive designs which were not developed in partnership with the Town. LCPC and the Town of Eden are confident a very low-cost design could be produced for both locations on Square Road. By leveraging known funding programs and designing a very low-cost structure, a significant portion of the allocation for Square Road (perhaps \$200,000 or more) as described in the draft plan could be

re-allocated to other Town priorities such as Knowles Flat Road culvert 13-8, Boy Scout Camp Road, Blakesville Road, and general erosion improvement projects.

We encourage the prioritization of projects as identified in the Letter from the Town of Eden. Please consider the following additional information:

--- **Knowles Flat culvert 13-8:** The known high project costs are mostly driven by design standards for minimizing environmental impacts and improving existing conditions for wildlife habitat and connectivity in the vicinity of the structure. By reducing the financial burden on the Town for culvert 13-8, the settlement funds will create additional capacity for the Town to engage in a greater number of projects in a collaborative effort with US F&W and the Trustees of the settlement funds. The Trustees should also consider that the Culvert 13-8 is located upstream of Culvert 13-1 and 13-2, and clearly there are compounded benefits to improving the hydrology of the entire stream segment in conformance with the settlement goals and objectives for proximity to the mine's watershed area. Square Road is in a different tributary watershed to the Lamoille River than that of the mine.

--- **Road Erosion Projects:** This activity was identified in the Lowell portion of the Draft Plan, but had not previously been considered by the Town as an eligible activity to propose during the early coordination meetings with US F&W staff. Please consider allowing use of funds for this purpose in Eden as well. This activity represents the greatest opportunity to begin using the funds immediately to improve water quality and to leverage large amounts of State resources. Action on the ground and progress to improve water quality using the settlement funds could be reported within several months of authorization to proceed. Eden has shown proven success in implementing VTrans Better Roads Grants and DEC Grant-In-Aid Funds. These sources generally require a 20% match, meaning that a modest investment of \$30,000 in Settlement funds would actually provide \$150,000 from other funding programs to reduce erosion entering the watershed.

We respectfully request the Trustees adjust the proposed allocation structure described in the draft plan to better align with the local Town goals, objectives, and needs for funds to accomplish the goals common to both the Town of Eden and the Trustees such as improving wildlife habitat, water quality, and generally improved environmental conditions in this community.

Sincerely,



R. Tasha Wallis  
Executive Director  
Lamoille County Planning Commission

From: Rose Paul <rpaul@TNC.ORG>  
Subject: RE: Vermont Asbestos Group Mine settlement funds restoration plan comment  
Date: August 17, 2018 at 9:36:54 AM GMT-4  
To: "Paul J. Marangelo" <pmarangelo@TNC.ORG>

Thank you Paul!

**From:** Paul J. Marangelo [SEP] **Sent:** Friday, August 17, 2018 9:29 AM [SEP] **To:** lauren\_benett@fws.gov [SEP] **Cc:** Jim Shallow <jim.shallow@TNC.ORG>; Rose Paul <rpaul@TNC.ORG> [SEP] **Subject:** Vermont Asbestos Group Mine settlement funds restoration plan comment

We (The Nature Conservancy in Vermont) are writing to express a preference for allocating settlement funds to the proposed wetland restoration work. Individual culvert replacement projects, while certainly beneficial, can be very expensive relative to their conservation gains, and there are alternate sources of transportation-oriented funding for these projects that cannot be applied to other conservation needs, unlike the funding source in question. Moreover, in many cases, conservation gains from individual culvert replacement projects to improve aquatic organism passage are often small. Rather than justifying culvert replacement by stating the general benefits of this work (as the draft restoration plan does), conservation gains from specific culvert replacement proposals should be carefully evaluated by using assessment tools such as one that TNC has developed for the Missisquoi River watershed and ground-truthed in terms of potential aquatic connectivity gain by evaluating the location of impassable natural falls. Accordingly, we think it is likely that mitigation funds can probably achieve greater conservation benefit by being used for proposed wetland conservation/restoration work.

Also, very rare plant species that are usually associated with serpentine geological formations and its relatives may well have been lost due to mining activities. Consideration should be given to spending mitigation funds to protect serpentine-influenced plant communities that exist elsewhere in VT. As there are rare serpentine species around the fringes of this site, there may be such opportunities near the mine site.

Thank you.

Follow the Vermont Chapter on [Facebook](#), [Twitter](#), and [Instagram](#)

Please consider the environment before printing this email.

**Paul Marangelo**

*Senior Conservation  
Ecologist*

 (802) 229-4425 Ext.

119

(802) 229-1347 (Fax)

**The Nature**

**Conservancy**  in

**Vermont**

575 Stone Cutters Way

Montpelier, VT 05602

[nature.org/vermont](http://nature.org/vermont)



**Comments from Eden Selectboard meeting of July 30, 2018 discussion on  
G1 Settlement Holdings draft restoration plan:**

**Juli Morin:** Small community, money tight for everyone. Understand Square Rd culvert is perched – a fish ladder would work at that location. Greater impact to citizens – Knowles Flat, both projects. People cannot get around.

**Leslie White:** Both Knowles Flat Rd culverts identified as bad. Ask you to reconsider. On the same stream, .3 miles apart. Talk about same vs. Class 4 culvert rarely used. Put in fish ladder. Eden fortunate it has a Road Commissioner that is very creative, in a good way, in how to utilize funds. If you want these funds to go farther, follow this concept, allow town to use in a more economical way.

**George Sheldrick:** How far up the 9 miles is the first beaver dam? Beaver dam will block fish passage.

**Molly Spurduto:** Law designed to restore natural habitat; it is not about the people, it is about fish & wildlife.

**John Schmeltzer:** Have to comply with what the law says. When we did the field visits in October, were clear about “not” saying we would definitely fund, needed to go through process. Understood what the town wanted. Will look at comments and respond to them. Could be reconsidered.

**Leslie White:** If changes made to other settlements?

**Molly Spurduto:** Yes (examples were provided). Larger settlement would equal more projects. Decisions not made on how many comments – they will need to look at the final analysis.

**John Schmeltzer:** Knowles Flat single culvert cost and state share?

**Ricky Morin:** AOT Structures Grant for \$175,000; Town pays 100% beyond that; project estimated at \$350,000 to \$400,000; Town will have to provide \$175,000 to \$225,000. Correct statement that replacement is equal to original structure. Due to hydraulic study, replacement structure is larger; 28’ natural bottom culvert replaces the 12’ culvert; three times larger than old structure. Improves fish habitat and natural stream bed, increases channel flow.

**Leslie White:** Comparable to Whitney Lane project?

**Ricky Morin:** Whitney Lane 26'; Knowles Flat Single 28'

**Leslie White:** Whitney Lane, town saved \$200,000 with town acting as contractor; amazing opportunity for funds to go further.

**Ricky Morin:** Would like to see funds go to where they would best benefit the community. Square Rd could last another 20 years as structure is still strong. Impact to the people – they want their bridges back open. Anticipated timeline on Knowles Flat Single – hope to open on September 15<sup>th</sup>, setting the box on August 27<sup>th</sup>.

**Rob Moore:** Good comments and observations. For our Senators and Representative - \$175,000 for structures through the district program is great for the towns; may be helpful if amount went up; not many can be fixed for \$175,000. To summarize: 1) Hear a request for a 2<sup>nd</sup> and closer evaluation of the 9 mile reach due to existing beaver dams and proximity to head waters. 2) In comparison to single culvert, look at benefits in terms of size and passage in explanation and relation to Square Rd culvert. Required by hydraulic study to replace with larger structure at upstream location – look at reasons why required. Twin Culvert being replaced with 36' bridge; Single Culvert being replaced with 28' natural bottom box culvert with longer span. Construction impact to do the work and permitting process implies ecological impact and benefits to project in relationship to stream and wetland injury requirements of the settlement.

**Juli Morin:** Diversion channel does not impact the wetland?

**Ricky Morin:** Diversion channel designed by wetland folks - \$28,000 cost to town for culverts for temporary diversion.

**Rob Moore:** Square Road culvert: watershed flows to Craftsbury & Wolcott to the Lamoille River – not affected by mine activity; Knowles Flat culverts: White Branch watershed flows directly off Belvidere Mountain.

**Leslie White:** Obtained copy of original settlement: 1) onsite/in kind: Not able to use these monies for; 2) offsite/in kind: restoration preferred in the same watershed and eco system; 3) onsite/out of kind: not physically or biologically different from those injured. Number 2 – Same watershed – single culvert is in the same watershed.

**John Schmeltzer:** We will take the comments and relook at; team will reevaluate trying to find a balance of what the community wants vs. what law says they are required to do.

**Ricky Morin:** I would rather see the money go toward the Boy Scout culvert; would have greater impact; no work planned on this due to the two current projects having priority.

**Molly Spurduto:** Time frame is to use the monies as quickly as possible.

**Rob Moore:** Comment on money leveraging: Town priorities are based on where residents want them to focus their efforts and resources. Town does not have deep pockets or a lot of other resources. Town has suggested in past, enable them to clear their plate of its current projects would free up resources in a faster pace. Monies to Square Rd competes with the towns' capacity to pay its bills. Town has no additional funds for Square Rd at this time. If monies are put to both projects on Knowles Flat would equal monies for Square Rd and other projects in a timetable and sequence that conforms to towns plan. Additional information to consider: If Square Rd is made a higher priority, town will have no money to assist and community will not support. Another alternative: General road erosion throughout the town. \$10,000 to \$30,000 projects. These efforts go a long way to fix smaller/medium size culverts. Could this money start going to these now? Public would see money moving, projects getting done. Town participates in Better Back Roads program and is held up by the State as an example of how work should be done. In October, we did not think about the smaller/road erosion projects.

**Senator Robert Starr:** Structures Grant Funds – if receive funds will not receive monies again for several years; cannot count twice for another year as would not be available for match of G1 Settlement. Government works best when public can see some good come from it. Putting this money on a Class 4 Rd which the town has to do minimal maintenance to, will not get public excited about how the government used money on a Class 4 road? Will not be supported by the public. There should be a happy medium where we do what the public wants and meets the criteria of what environmentalists want done with this settlement. It is important to work together, have a wider view of the rules and regulations to get the work done.

**Representative Mark Higley:** Meeting in Lowell last week. You will run into the same situation there.

**John Schmeltzer:** Meeting planned for August 7<sup>th</sup> in Lowell. Comment period goes to August 17<sup>th</sup>. Challenge is to find the balance.

**Ellen Friedrich:** I am a new tax payer to Eden. My opinion - my only use for Square Rd is for ATV/snowmobile use; monies would benefit more people elsewhere.

**Adam Degree:** You say it is not to benefit the people, one of the ten criteria factors were: Potential effects of the action on human health and safety.

**Tracey Morin:** And doesn't this tie back to Senator Starr's comment, "take a wider view of looking at the requirements"?

**John Schmeltzer:** Request to extend comment period will be considered.

**Rob Moore:** Language in draft: 1) Adjust project amount, given circumstances, clarify that it can go up or down – specifically, Knowles Flat, if required to contribute more than \$60,000? 2) Continue to put ideas, propose potential additional or alternative projects? Is it helpful to provide alternatives to your specific identified projects, i.e. fish ladder? Looking further, as a Class 4 road, there are MRGP requirements that will apply to this road. Some towns are considering reclassifying to a legal trail (townspeople, most likely, would not want to do this). If it becomes a legal trail, town no longer needs to maintain and structure could be removed.

**John Schmeltzer:** I do not think this was considered. Do not think it was brought up.

**Rob Moore:** If town does, it gives them more flexibility in what replacement structure could be.

**John Schmeltzer:** In regard to comments, any comments will be considered.

**Rob Moore:** Could alternatives be explored to lower cost of projects being proposed?

**John Schmeltzer:** We have flexibility in that regard.

**Ricky Morin:** Proposed design – aluminum arch at Square Rd – similar to \$255,000 structure on Crooks Rd., although will work, durability and life span are unknown. Concrete sides with aluminum arch.

**Molly Sperduto:** This was the original design. We are going back to them for a better design as this was brought up when in the field.

**Representative Mark Higley:** Senator Westman wanted to attend but could not due to a family commitment.

**Ricky Morin:** So many structures are in bad shape, all were put in at the same time and now are failing at the same time – all towns and state facing the same situation. Regulations from EPA or wetland people make it very hard and expensive for small communities to deal with.

**Senator Robert Starr:** Along with this and Lowell's concerns, we will work on raising the Structures Grant amount.

**Ricky Morin:** Appreciate AOT Structures and Better Back Roads programs. They have been very helpful for Eden.