

Vermont Agency of Natural Resources
Department of Environmental Conservation

A Guide to River Corridor Easements



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River Corridor Easements:

A Vermont River Management Alternative

The Vermont Agency of Natural Resources (ANR) promotes river corridor and floodplain protection as a principal method for reducing flood hazards, improving water quality, and restoring riparian habitats. Protecting river corridors is part of an Agency avoidance strategy for minimizing conflicts between human investments and the dynamics of rivers.

The ANR Department of Environmental Conservation (DEC) has developed a River Management Program (RMP) to carry out this avoidance strategy and restore the ecological health of Vermont rivers. The Program regulates stream alterations, promotes local riparian land use and floodplain regulation, and creates river management alternatives for protecting and restoring river and riparian areas. This Guide introduces one of the Program's new avoidance strategies, the *river corridor easement*, which includes deeded land use and channel management restrictions for protecting certain reaches of river. The transfer of channel management rights is a notable aspect of this easement, offering a unique tool for restoring watersheds and reducing hazards by protecting natural river processes at key locations. The DEC River Corridor Easement Template (Appendix A) contains specific language for achieving this objective and represents a starting place for new easement projects.

The DEC has provided grants to qualified conservation organizations to purchase or receive donated river corridor easements. The rationale for this program, from a hazard avoidance standpoint, is similar to the post-flood, residential buyouts that have occurred at locations where repetitive losses compel government agencies to avoid further flood damage and hazards. From an ecological standpoint, the RMP rationale is based on the importance of both river form and function. It is important, in the long term, to protect both fluvial processes (e.g., those that scour deep pools, sort spawning gravels, and retain cover materials) and the intact habitat features they create.

Easements as a River Management Alternative

For decades, channel works designed to keep rivers static and contained in the landscape were used to resolve any and all conflicts between rivers and people. ANR recognizes that these traditional management practices, while still necessary in certain areas, are increasingly expensive and often prone to failure when rivers move. Millions of dollars are spent annually in Vermont to re-armor and channelize after floods, while erosion continues and our hold on unstable rivers becomes ever more tenuous—it has become a lose-lose situation.

The need to stop erosion, wherever it occurs, has been a notion deeply ingrained in our society, especially for those invested in riparian lands. Obtaining an easement to protect rather than stop the erosion process and restore key floodplains, as the “pressure relief valves” of a watershed, is being nurtured in the public mindset as a new type of community asset. Landowners, including farmers, concerned taxpayers, and advocates for environmental protection should appreciate the merits of this new river management tool. Landowners may divest from areas where repetitive losses are anticipated, while soils, property, and infrastructure in the watershed are protected at lower, long-term costs. Road embankments, bridges, and culverts are less threatened when flood energy is dissipated within streams and floodplains.

Landowners and taxpayers get relief from an unending riverbank armoring regime that has often shunted erosion back and forth between neighbors. Over just a 50 year time period, an easement may

save over 70% of the cost of channel management on an unstable (disequilibrium) river reach in Vermont (see cost comparison box on left).

Climate change and increased stormwater are among the factors accelerating the incidence of flood damage and soil loss. State and local watershed plans are now acknowledging that remaining areas where floods still access the land to store water and sediment (so called “attenuation assets”) are being squandered by new encroachments into river corridors which greatly diminish floodplain function. Development and floodplain fills are made possible, even encouraged by the public funding of flood works, flood insurance programs, and channel armoring that often contributes to stream instability and erosion hazards.

Easement vs. Bank Armoring Costs

Easements on unstable reaches as of 2010*

12.5 miles / 450 acres of protected corridor
Average \$1,800 / acre, \$50,000/mile

Cost over 50yr planning period - **\$50,000/mile**

Bank armoring on unstable rivers (VT DMS data)

On 700 miles of very sensitive, disequilibrium stream
17% of banks armored, 900 ft. rip-rap / mile
at \$50 / linear foot = \$45,000/mile (2010 dollars)

Cost over 50yr planning period** **\$135,000/mile**

* 17 completed easement projects

** 25 yr lifespan estimate for rip-rap on unstable river reach,
assuming tax-payer financed work where the inflation
rate = the discount rate.

Giving rivers space, protecting floodplains, and using limited public resources to preserve selected corridors where the river may erode and deposit, is becoming part of a shared local, state, and federal commitment to enhancing watershed storage. Wherever feasible, the capture and storage of water, sediment, nutrient, and debris in natural floodplain features will reduce flood hazards and promote the ecological health of our lakes and rivers.

River Corridor Easement and Floodplain Restoration to Reduce Sediment and Phosphorus Contributions From an Incised Brook on a Dairy Farm in Fairfield, Vermont

Sediments and associated phosphorus derived from river channels are thought to represent a significant portion of the overall load delivered to Lake Champlain. As a result of hundreds of years of destabilizing in-stream and upland management activities, the extent and rate of river bank and bed erosion exceeds natural levels throughout Vermont. Many of Vermont’s rivers and brooks have been straightened and dredged and as a result have become deeply incised. Vertically separated from adjacent floodplains and contained within incised channels, flood flows achieve much greater depths and shearing stresses than they would in non-incised channels. The result is tremendous vertical and lateral erosion of the channel.

The Wanzer brook as it runs through the Boomhower Farm in Fairfield, Vermont has a long history of being straightened and dredged as part of a management regime intended to minimize the amount of acreage consumed by an otherwise meandering and regularly flooding river. This management history had resulted in a very unstable channel that was actively incising and widening. As a result of these channel adjustments, water quality and in-stream habitat had been significantly degraded. From the farmers perspective the unstable brook represented a constant threat to adjacent fence lines and valuable hay fields.

In 2007 the VT DEC, USFWS and USDA NRCS partnered to implement a restoration of the Wanzer Brook on the Boomhower Farm. A river corridor easement was purchased from the landowner that would prevent any future channel management activities, a floodplain was actively restored and vegetated with willows. Soils were excavated to create a belt width sized floodplain along 2,000 feet of Wanzer Brook within the easement area. The quantity of deposited soils that would have, over time, been eroded to the lake contained **6 metric tons of total phosphorus**.

Prioritizing Corridor Easement Opportunities

The River Management Program has developed methods for defining river corridors (Kline and Dolan, 2009), which provide a minimal area within which a river may adjust and remain in a stable channel slope and meander pattern (Figure 1). These corridors accommodate the dynamic watershed processes (i.e., the flow of water, sediment, and debris) associated with equilibrium channel and floodplain conditions. They also provide space for vegetated buffers that increase river bank stability, provide shade and habitat, and help protect water quality.

Vermont ANR is conducting fluvial geomorphic assessments, or studies of the physical condition of river systems. The assessments evaluate how, to what extent, and why river channels have become unstable. Causes ranging from major flood events to human activity are assessed. Data show that given the time and space, rivers eventually “evolve” to a channel form that is in equilibrium, or at balance, with the water and sediment inputs of their watersheds. The science of channel evolution and how it is used to develop river corridors is provided in greater detail in the RMP’s River Corridor Protection Guide (Kline and Dolan, 2009) at www.vtwaterquality.org/rivers/htm.

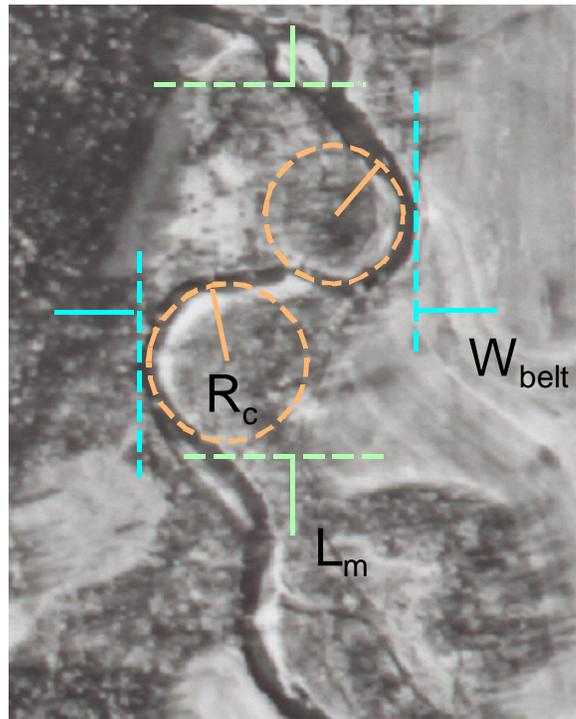


Figure 1. Measuring the meander geometry of stable channels in equilibrium helps establish mathematical relations for defining corridor widths.

The Agency sponsors the development of river corridor plans, which utilize geomorphic assessments to explain how rivers depart from equilibrium and describe management alternatives that will support its attainment. The river-specific plans lay out avoidance strategies for minimizing future encroachment within corridors. They also identify high priority actions for removing or retrofitting structures that contribute or detract from the restoration of naturally stable conditions in the river system.

One of the primary objectives of river corridor planning is to identify the key flood and sediment attenuation areas, where human land uses may be in constant conflict with the channel evolution of particularly dynamic and sensitive stream reaches. The Vermont ANR River Corridor Planning Guide (Kline, 2010), promotes the development of a reach-scale river corridor protection strategy for prioritizing the acquisition of easements within the corridor planning area. Key attenuation reaches are prime candidates for the acquisition of river corridor easements.

Attenuation reaches are high priorities for protection within watersheds, because they are critical to the capture and storage of water, sediment, nutrients, and organic material. Functioning attenuation reaches serve to reduce excess erosion, reduce the fine sediment and nutrient loading that otherwise impairs water quality, and retain the coarser sediment and organic debris important as cover habitats to aquatic organisms. Appendix B lists a set of criteria used by river corridor and easement project planners to identify and prioritize attenuation assets. This process focuses on the stream equilibrium and erosion hazard reduction at the watershed scale.

Securing a river corridor easement may be the most viable river management alternative where: 1) the sediment deposition process is dominating and/or is critical to the development and maintenance of equilibrium channel forms (i.e., stable meanders, river beds and banks); 2) channel and corridor constraints do not currently limit meander and channel slope adjustments; 3) existing and future proposed activities have been identified that would constrain or otherwise threaten the attainment of equilibrium conditions; and 4) protecting the erosion/deposition process in the easement area may help minimize the erosion hazards to downstream areas (see Figure 2).

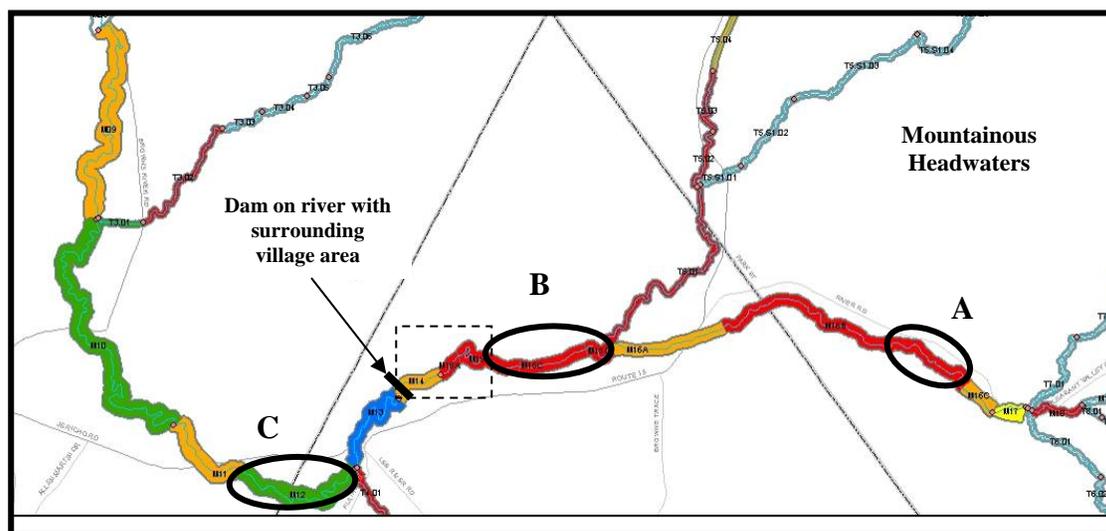


Figure 2 Three priority sediment attenuation areas that are good candidates for river corridor easements. Reach A is a naturally sensitive reach, where headwater sediments are deposited; Reach B is at the tail end of a string of unstable reaches (red) where allowing deposition and flood storage provide some flood mitigation for the downstream village; and Reach C has aggradation occurring (green) in a delta area below a confluence.

The River Management Program works with its partners to identify and proactively develop priority river corridor easement projects as an outcome of the river corridor planning process. There are occasions, however, where easement opportunities are identified in the field during the Program’s technical assistance and regulatory work, as the preferable way to resolve an intractable conflict between a landowner’s current interests and the dynamics of the river. The criteria in Appendix B are also used in these more reactive situations to ensure an effective and efficient use of easements as a management alternative.

Developing a River Corridor Easement Project

An avoidance strategy involving river corridor easements will, in the long term, be far more cost effective than the periodic ongoing flood recovery work involved in a channel maintenance strategy. Nonetheless, the easement proponents must invest in both time and resources to ensure a successful outcome. Appendix C outlines the steps involved in securing a corridor easement.

The primary parties of an easement are the landowner, who is the Grantor, and one or more parties who legally hold the easement, or the Grantees. Typically, a land trust or qualified conservation organization is the sole grantee of the easement. Some multiple objective and/or agricultural conservation projects may have multiple grantees, including state and federal agencies.

The RMP, upon completion of a river corridor plan, may provide grants to towns, watershed organizations, and land trusts to initiate and carry out the easement scoping process, which involves making contact with the landowner and evaluating the feasibility of establishing an easement. Depending on uses of the land, the easement proponents will want to include other agencies and organizations in these initial conversations. The ANR strongly recommends that the Agency of Agriculture, Food, and Markets (AAFMM) be involved at the earliest stages of easement discussions with the owners of agricultural land. It is also important to discover, early on, whether the corridor lands are encumbered by other easements. The Grantee(s) of these easements must also be involved in the scoping process.

As with river restoration work, the project “designer” of an easement must give careful consideration to river dynamics and the constraints, both natural and human-made, that influence river adjustments over time. Surveys and baseline documentation are made so that current and, more importantly, future parties may understand and agree on the definitions of land and water features necessary to carry-out the purposes of the grant. The goals and objectives of the easement must be clear and acceptable to all parties, and a commitment to stewarding roles and responsibilities must be established.

River corridors are initially mapped based on the meander belt and buffer parameters of the equilibrium river. Easement proponents initially engage the landowner with these maps, as well as knowledge of the erosion and management history of the site, and the corridor plan which articulates a larger context for the project. The Agency and its partners will work with the landowner to configure the corridor and easement language to best meet the objectives of the Program, its partnering organizations, and the landowner. For instance the landowner may request assistance to move an access road, protect a stream crossing, or conduct other water quality and land conservation practices in advance of a corridor protection project in order to make the easement proposal more feasible for them.

DEC supported projects will require a survey to establish the metes and bounds of the corridor and any permanent structures as part of the easement. Less formal maps of all natural water and floodplain features, and less permanent structures and land uses, will be included in a baseline documentation report. Appendix C lists the more common land and water features which may need further documentation before completing the final design of the physical corridor and easement.

After a *Purchase and Sales Agreement* is made between the landowner and land trust organization, and contingent on Agency priorities and budget, the RMP will work with its project Partners to secure funding for the purchase of an easement and the necessary land surveys and title work. Grants sought for the purchase of river corridor easements may come from public or private conservation funding sources, and should always include funds for the stewardship endowment of the protected property. DEC Program Grants used to secure an easement will spell out the frequency and content of stewardship reporting.

Both the ANR and land trust organizations look for the contributions made by local groups such as watershed organizations, town conservation commissions, agricultural conservation districts, and other partners in planning and stewarding river corridor easements. Agencies and organizations with statewide program responsibilities benefit greatly from having local project liaisons to complete corridor activities such as buffer planting and maintenance.

Basics of the River Corridor Easement

Based on the recommendations of a river corridor plan, certain landowners may be approached about selling or donating a river corridor easement. Offers to purchase an easement may be priced at fair market values or calculated based on factors that consider agricultural production and rate of return on the public investment (i.e., will the attenuation of flood flows and sediment increase in 5 years or 50 years). Such factors include soil type, land use history, and the erosion sensitivity of the specific river reach. The program is completely voluntary to the landowner, and great care is taken to tailor the easement project to the individual needs of the landowner.

The Agency of Natural Resources is not a grantee of river corridor easements. The DEC is identified in the easement as an “intended third party beneficiary” of the grant, giving the Department the right to enforce its provisions, and the obligation to provide technical support to the grantee(s) in their evaluation of proposed uses and activities within the corridor. Technical staff at the RMP can assess whether certain activities may positively or negatively affect the attainment of stream equilibrium and thereby be consistent with the purpose of the grant.

Completed easements are grants made in perpetuity by the landowner to the grantee(s), typically a land trust or conservation organization. The Easement “runs with the land.” It is a legal deed and is binding on current and all future owners.

Within the corridor, the grantee(s), or easement holder, generally controls channel management activities which manipulate – or refrain from manipulating – the watercourse. These activities include excavation, placement of earthen fill, and repairing or removing bank revetments and levees. The easement provides for a buffer zone along the river itself where vegetation may be propagated, maintained or controlled. Elsewhere in the corridor, the landowner retains the right to use the land for agricultural and forestry purposes - subject to channel re-adjustment processes of the river. The landowner can also use the land for non-commercial recreational purposes in a manner that does not interfere with the basic intent to allow the river to meander and access its floodplain.

The template language in Appendix A identifies other Vermont state agencies that may play advisory roles in stewarding the easement. River corridor easements are primarily intended as a “passive management tool,” with no “a priori” management plan beyond the stated purpose of letting the river adjust within the corridor to reach and maintain equilibrium conditions. However, many allowed and restricted land uses established in the easement, anticipate that the river may adjust and have an affect on those uses. In response, the landowner may want to change or recover an allowed land use within the corridor. In this situation, the easement establishes a process for the grantee(s) to permit or deny the proposed change or modification. In most cases, the DEC is an obligatory party in the decision process as to whether the proposed activities are consistent with the purposes of the grant.

The grantee may also turn to other resource agencies for assistance in evaluating proposed activities within the protected corridor. For instance, if the landowner wishes to work on a road access and ford the stream within the protected corridor for the continued use of a livestock pasture across the river, the grantee and DEC would want to invite the AAFM to weigh in on the proposal. The cooperation of different agencies and organizations involved in stewarding a river corridor easement is set forth in formal Memorandums of Understanding (MOUs). The MOUs serve as the guide for how agreements may be reached and disputes resolved between the grantee, the DEC, and other advisory agencies.

Conclusion

Landowners near dynamic river reaches may avail themselves of this easement program and find it gives them sufficient financial ability to move current or future investments away from the river. The DEC will work with these landowners whenever possible. Conservation partners may also come to see the river corridor easement as a new and useful tool. It will be a natural fit for the land trusts or conservation organizations which are already focused on rivers and protecting their ecological and societal values.

River corridor easements are also compatible with land-based conservation objectives. In some cases this will require a perspective that looks beyond the eroding river bank and strives for river stability, soil conservation, and land protection at larger spatial and temporal scales. In Vermont, these partnerships are forming. For instance, the ANR is working closely with AAFM, the US Department of Agriculture, and land conservancies to help farmers near highly sensitive river reaches; by first establishing a CREP (State Enhanced Conservation Reserve Program) contract to take certain riparian buffer lands out of production; and then purchasing a river corridor easement. Combining programs in this way meets multiple public and private objectives and makes participation for many landowners more possible (Figure 3). Land trusts and resource agencies, concerned about the ever growing demands on their stewardship programs, will find reassurance in the detailed language of the easement template, the added funding, and the technical assistance and enforcement role of the DEC.

A river corridor easement is not only a unique tool for river managers, but now provides conservation organizations with a means to more truly achieve riparian protection and restoration goals by layering channel management restrictions with those more traditionally placed on land development. By purchasing channel management rights, the river corridor easement compensates the landowner for the value of the corridor lands, which eventually become the domain of the river.

Vermont ANR is offering this river management tool with the intent to create a win-win situation. By identifying and conserving key flood attenuation areas along its most dynamic and erosive rivers, Vermont may reduce the power and hazards of flooding. Targeted river corridor conservation, for the purpose of letting the river move and adjust, will help the State preserve agricultural soils, protect vulnerable community assets, and promote a multitude of ecosystem services that floodplains and stable rivers provide *for a fraction of the cost to keep Vermont's rivers channelized.*

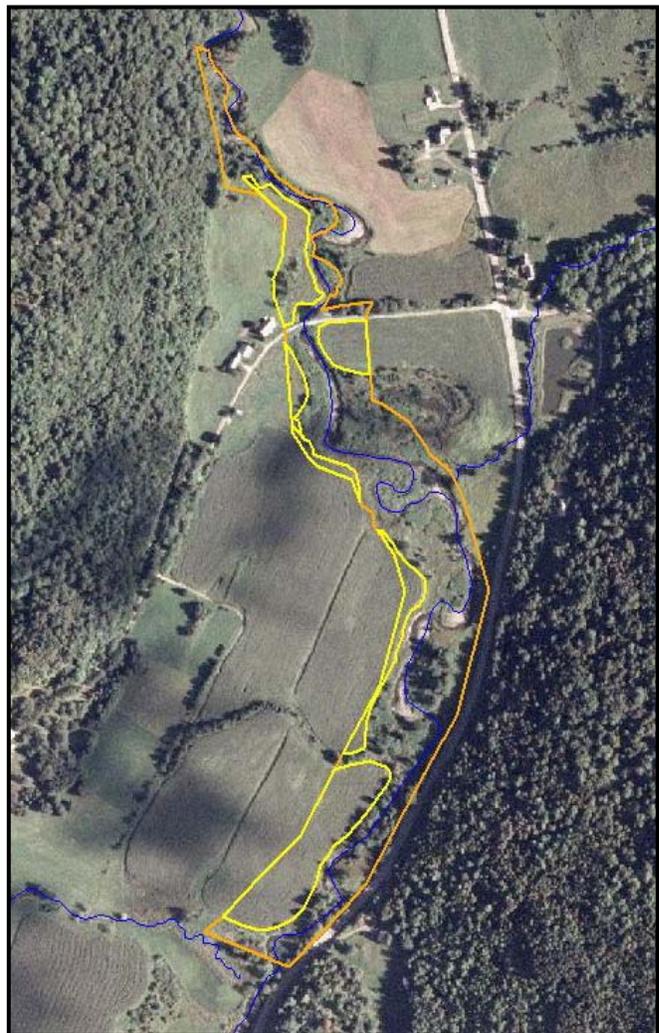


Figure 3. River Corridor Easements on the Ayers Brook in Randolph, VT. Protected meander belt (orange outlines) within which acres were enrolled in CREP (yellow outlines).

A river corridor easement has been developed, not as a new regime to be applied on all corridors, but rather as an additional tool in the river management tool bag. The erosion we have historically fought up and down the river, may be seen in a new light—as part of a restorative process, that if allowed to proceed in places, would not only lead to more floodplain function and healthier rivers but to a more sustainable relationship between landowner, community, and river.

References

- Kline, M. and K. Dolan. 2008. Vermont ANR Guide to River Corridor Protection and Technical Appendix. At: www.vtwaterquality.org/rivers/htm. Vermont Agency of Natural Resources, Waterbury, VT.
- Kline, M., C. Alexander, S. Pytlik, S. Jaquith and S. Pomeroy. 2009. Vermont Stream Geomorphic Assessment Protocol Handbooks. Vermont Agency of Natural Resources, Waterbury, VT.
- Kline, M. 2010. Vermont ANR River Corridor Planning Guide: to Identify and Develop River Corridor Protection and Restoration Projects, 2nd edition. Vermont Agency of Natural Resources. Waterbury, Vermont.

Appendix A

Vermont River Corridor Easements

Template Language



**Vermont Department of Environmental Conservation
River Management Program**

April 2, 2010

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Review Committee:

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Marc Mihaly, Director of the Environmental Law Center, Vermont Law School
Denis Shaffer, Vice President of Stewardship, Vermont Land Trust
Kari Dolan, Fluvial Erosion Hazards Program Coordinator, River Management Program

Cover Photo: Trout River in Montgomery, Vermont. This river corridor easement program is dedicated to the Trout River. Like other rivers in Vermont, the Trout River teaches humility to the river manager. The reach shown in the photo is the site of a failed “restoration project.” Most efforts to control it, to keep it static and contained, have failed. Of all the management alternatives pursued on the Trout, river corridor protection is the only thing that has worked.

**GRANT OF DEVELOPMENT RIGHTS
AND RIVER CORRIDOR CONSERVATION RESTRICTIONS**

KNOW ALL PERSONS BY THESE PRESENTS that, _____ and _____ of _____, _____ County, Vermont on behalf of themselves, their heirs, successors, and assigns (hereinafter "Grantors"), pursuant to the authority granted in Title 10 V.S.A. Chapter 155 and in consideration of the payment of Ten Dollars and other valuable consideration paid to their full satisfaction do freely give, grant, sell, convey and confirm unto the _____, a Vermont non-profit corporation with its principal office in _____, Vermont and its successors and assigns (hereinafter "Grantee") forever, the development rights and perpetual and assignable river corridor conservation easement and restrictions, all as more particularly set forth below, said rights and easement pertaining to a portion only of a certain parcel of land located in the Town of _____, _____ County, Vermont, and being more particularly described in Schedule A attached hereto and incorporated herein (hereinafter "the Protected Property").

The development rights hereby conveyed to Grantee shall include all development rights except those specifically reserved by Grantors herein, if any, and those reasonably required to carry out the permitted uses of the Protected Property as herein described. The development rights and restrictions hereby conveyed are rights and interests in real property pursuant to 10 V.S.A. §§823 and 6303. The river corridor conservation easement and restrictions hereby conveyed to the Grantee consist of covenants on the part of the Grantors to do or refrain from doing, severally and collectively, the various acts set forth below. It is hereby acknowledged that these covenants shall constitute a servitude upon the land and run with the land.

I. Purposes of this Grant

Grantors and Grantee acknowledge and agree that, consistent with the objectives of the river corridor management program administered by the Vermont Agency of Natural Resources, Department of Environmental Conservation, the purposes of this grant are to allow the _____ River to re-establish its natural slope and meander pattern, have banks stabilized by a buffer of native, predominantly woody vegetation, and access to natural floodplains in order to reduce flood and erosion hazards, improve water quality through capture and storage of flows, sediment and nutrients, and to conserve and enhance aquatic and wildlife habitats and the natural processes associated with the Protected Property now and in the future.

Grantors and Grantee acknowledge and agree that this Grant of Development Rights and River Corridor Conservation Restrictions will accomplish the above-recited purposes, and that, more specifically, it is their intent that those purposes be achieved by:

1. Accommodating the equilibrium conditions and associated physical adjustment processes of _____ River.
2. Minimizing, to the extent consistent with (1) above, future conflicts between the physical adjustment processes of the river and incompatible land use and other channel management activities on the Protected Property.

These purposes will be advanced by conserving the Protected Property because it possesses the following attributes: *[Numbers may change, based on more detailed mapping prior to signing of this easement.]*

- a) it contains _____ feet of frontage on natural watercourse(s) including the _____ River ***[add if applicable: and _____[name(s)]_____ its tributary(ies)];***
- b) it consists of ____ acres of land, in which the river ***[add if applicable: and its above-named tributary(ies) are]*** is unconstrained by permanent structural modifications and improvements; and
- c) it provides a meander belt width corridor to accommodate the equilibrium dimension, pattern, and profile of the _____ River ***[add if applicable: and _____[name(s)]_____ its tributary(ies) (said river and tributaries being herein-after collectively referred to as "the River")].***

Grantors and Grantee recognize the Purposes of this Grant and share the common goal of conserving these values by the conveyance of this Grant of Development Rights and River Corridor Conservation Restrictions and to avoid the future public and private expenditures and public safety hazards that will arise from the conversion of the Protected Property and other riparian corridor lands to uses incompatible with the anticipated physical adjustments of the _____ River and its (named) tributaries and to prevent the use or development of the Protected Property for any purpose or in any manner which would conflict with the intent and Purposes of this Grant. Grantee accepts the development rights and restrictions contained in this conservation easement in order to achieve these objectives for the benefit of present and future generations. The purposes set forth above in this Section I are herein collectively referred to as "the Purposes of this Grant."

II. Roles and Responsibilities of State Agencies

Grantors acknowledge that the Vermont Agency of Natural Resources, Department of Environmental Conservation and any successor agencies (VTDEC), is a third party beneficiary to this Grant, and covenants not to contest the ability of the VTDEC to enforce any provision or restriction contained in this Grant. As a condition of its status as third party beneficiary, that section of the VTDEC dealing with river management shall provide technical assistance to the Grantee for any channel management or maintenance activities and shall perform the responsibilities hereinafter set forth in this Grant.

Upon request, State Resource Agencies (as hereinafter defined) shall provide technical assistance within their areas of expertise to the Grantee in exercising its discretion on restrictions and uses of the Protected Property consistent with the provisions of Sections III, IV, and V, and with the Purposes of this Grant. In addition to the VTDEC, State Resource Agencies shall include the Vermont Agency of Natural Resources, Department of Forest, Parks, and Recreation (VTDFPR) and Department of Fish and Wildlife (VTDFW), and the Vermont Agency of Agriculture, Foods, and Markets (VTAAF), or any successor agencies.

III. Restricted Uses of Protected Property

The restrictions hereby imposed upon the Protected Property, and the acts which Grantors shall do or refrain from doing, are as follows:

1. Except as otherwise permitted under this Grant, Grantors shall not construct, place, repair, remove or modify structures or structural elements such as revetments, levees, or earthen fills. Grantors shall not remove or deposit sand, gravel or rock, or otherwise manipulate the River, wetlands or other water bodies in a manner that will alter natural water levels of the _____River during ordinary high water flows, or intervene in the natural physical adjustment of the River.

2. Except as hereinafter otherwise permitted in this Grant, an undisturbed buffer of a minimum of fifty feet (50') in width measured landward from the top of the bank(s) of the River, as it may move from time-to-time, and also any land located between the top of said bank(s) and the low water mark of the River (together hereinafter referred to as "the Buffer") shall be established and maintained. No agricultural activities that disturb the Buffer land surface and vegetation other than crossings and the maintenance of existing man-made drainage improvements (as per Section IV(5) shall occur within the Buffer. Grantee may grant written permission for a non-commercial, non-motorized recreational trail and/or a new drainage structure through the Buffer to provide for drainage of lands outside the Buffer, if it and VTDEC determine, in their sole discretion, that any new trail or drainage structure will have minimal impact through or across the Buffer (consistent with Section IV(5)), and is consistent with the Purposes of this Grant.

3. No timber harvesting shall be allowed within the Buffer, except when the Protected Property is included in a Forest Management Plan approved by the Grantee or enrolled as managed forest land in the State of Vermont's Use Value program or similar successor program. Harvesting must be conducted consistent with a forest management prescription, which has the primary purpose of maintaining a forested riparian buffer, and as provided for in Section III(2), consistent with the Purposes of this Grant. The Grantee may grant written permission for a temporary opening and crossing of the Buffer for the purpose of timber harvesting on lands across the River that have no other reasonable access. Cutting and removing invasive species from the Buffer shall be permitted with the prior written approval of the Grantee if deemed to be consistent with the Purposes of this Grant by Grantee in its sole discretion.

4. No clearing of existing forests to establish fields, orchards or pastures, shall occur elsewhere within the Protected Property except with prior written permission from the Grantee, if it and the VTDEC determine, in their sole discretion, after consultation with the VTAAFM, that the clearing of existing woody vegetation outside the Buffer to enable agricultural use will be consistent with the Purposes of this Grant. Notwithstanding the foregoing, Grantors may clear orchards or other tree-based agricultural areas outside of the Buffer when switching from one agricultural use to another.

5. Except for routine seasonal preparation of agricultural fields for planting that does not require filling or excavation, or disturbances that may be approved as hereinafter provided, there shall be no disturbance of the surface, including, but not limited to, filling, excavation, removal of topsoil, sand, gravel, rocks or minerals, or change of the topography of the land in any manner. With the prior written approval of the Grantee and DEC, other disturbances of the surface within the Protected Property may be undertaken as may be reasonably necessary to carry out agricultural and forestry uses, including the installation and

maintenance of man-made drainage improvements (as per Section IV(5)).

6. No residential, commercial, industrial, or mining activities shall be permitted, and no building, structure or appurtenant facility or improvement (other than fences and at-grade fords of streams) shall be constructed, created, installed, erected, or moved onto the Protected Property, except as specifically permitted under this Grant or as may be permitted in writing by Grantee if deemed by Grantee and VTDEC in their sole discretion to be consistent with the Purposes of this Grant following consultation with the VTAAF. The Protected Property shall be used for agricultural, forestry, educational, non-commercial recreation, and open space purposes only.

7. No rights-of-way, or easements for ingress or egress, driveways, roads, utilities, or other easements or rights shall be constructed, developed, granted, or maintained into, on, over, under, or across the Protected Property, without the prior written permission of Grantee, except as otherwise specifically permitted under this Grant, and as appear of record prior to the date of this Grant. Grantee may grant permission for any rights-of-way, or easements for ingress or egress, driveways, roads, utilities, other easements or rights, if Grantee and VTDEC determine in their sole discretion, that any such rights-of-way, easements for ingress or egress, driveways, roads, utilities, other easements or rights are consistent with the Purposes of this Grant.

8. The Protected Property shall not be subdivided or conveyed in separate parcels without the prior written approval of Grantee, which approval may be granted, conditioned or denied in Grantee's and VTDEC's sole discretion.

9. No use shall be made of the Protected Property, and no activity thereon shall be permitted which is or is likely to become inconsistent with the Purposes of this Grant. Grantors and Grantee acknowledge that, in view of the perpetual nature of this Grant, they are unable to foresee all potential future land uses, future technologies, and future evolution of the land and other natural resources, and other future occurrences affecting the Purposes of this Grant. Grantee and VTDEC, therefore, in their sole discretion, may determine whether (a) proposed uses or proposed improvements not contemplated by or addressed in this Grant, or (b) alterations in existing uses or structures, are consistent with the Purposes of this Grant. All such approved uses, structures or improvements shall not be protected from river flooding or movement, and any loss of the capital investment is solely born by the Grantor.

IV. Permitted Uses of the Protected Property by Grantors

Grantors shall have the right to make the following uses of the Protected Property:

1. The right to maintain and use cultivated fields, orchards, and pastures together with and subject to the restrictions in Section III, above, the right to construct, maintain, and repair fences and gravel or other permeable surfaced access roads for these purposes. Consistent with Section III(4), Grantors may clear orchards or other tree-based agricultural areas, outside the Buffer, when switching from one agricultural use to another.

2. The right to conduct maple sugaring operations, and the right to harvest timber and other wood products, together with the right to construct and maintain roads necessary for both such activities, subject to the restrictions in Section III(2) and in accordance with sound forestry practices and in accordance with a forest management plan for which Grantors have received the prior written approval of Grantee. Grantors may conduct maple

sugaring operations, and may harvest firewood outside of the Buffer for heating the Grantors' residences and structures, both on existing woods roads only, without submission and approval of a plan. Grantee's approval of forest management plans that may be submitted from time to time shall not be unreasonably withheld or conditioned, if such plans have been approved by a professional forester and if such plans are consistent with the Purposes of this Grant.

3. The right to clear, construct, and maintain trails for non-commercial walking, horseback riding, skiing, and other non-commercial, non-motorized recreational activities within and across the Protected Property, all subject to the restrictions in Section III(2) and in a manner consistent with the Purposes of this Grant. Non-commercial snowmobiling may be permitted at the discretion of Grantors.

4. Following a flood event, Grantors may remove wood and other non-earthen debris from the Protected Property on surfaces outside of the River and the Buffer, but only if necessary to prevent injury or damage to persons or property outside of the Protected Property or to enable the resumption of agricultural, silvicultural or non-commercial recreational activity, being conducted within the Protected Property immediately prior to the flood event.

5. The right to maintain existing drainage improvements on the Protected Property in compliance with all applicable laws and regulations, including drainage improvements to those watercourses that have not been specifically identified for protection within the Protected Property (Section I(c), above), but only to the extent necessary to enable continued use of agricultural soils on property outside the Buffer. Subject to receiving the prior written approval of the Grantees and DEC, Grantors may create and maintain new man-made drainage improvements across the Protected Property, but only to the extent necessary to maintain productive agricultural soils outside the Protected Property for agricultural purposes, constructed in a manner to have minimum impact on natural water flow on the Protected Property, are otherwise consistent with the Purposes of this Grant, and comply with all applicable laws and regulations.

6. The right to manage beaver dams in accordance with best management practices established by the Agency of Natural Resources but only to the extent necessary to prevent or mitigate flooding outside of the Buffer.

7. Subject to written approval by the Grantee, not to be unreasonably withheld, the right to place on the Protected Property temporary, portable agricultural structures (such as irrigation intakes, pump platforms, above ground piping), temporary recreational structures (such as hunting blinds), and one small seasonal dock or boat landing as long as these structures do not require excavation or tree removal other than may be necessary for the ingress and egress of the temporary structure. Machinery associated with such uses shall be removed if not in use. All such structures or improvements shall not be protected from river flooding or movement, and any loss of the capital investment is solely born by the Grantor.

V. Permitted Uses of the Protected Property by Grantee

Grantors and Grantee acknowledge and agree that achieving the Purposes of this Grant generally means no intervention in the physical changes that may occur in the course, current, or cross-section of the River. Achieving the Purposes of this Grant, however, may require limited management of the Protected Property. Therefore, the following rights and uses hereby conveyed to the Grantee, and to the Grantee's designees including VTDEC, licensees and successors in interest:

1. A right of access over, across and within the Protected Property, upon reasonable notice, to conduct any and all activities provided hereunder or related to the Purposes of this Grant.
2. With the approval and participation of the Grantors, the right to mark the general boundaries of the Protected Property.
3. The right within the Protected Property, with approval from the VTDEC and consistent with the Purposes of this Grant, to conduct stream and channel management activities including, but not limited to: installing, maintaining, repairing, or removing structural elements or improvements including, but not limited to, bank revetments, levees, or earthen fills; adjusting bank height or otherwise manipulating the water courses. No such management activity shall be undertaken without adequate notice to the Grantors and due regard to the impact of such management activity on the Grantors' use of the Protected Property otherwise permitted under this Grant, particularly agricultural use; so that Grantors' capital investments in the Protected Property approved by the Grantee subsequent to this Grant, if any, and which will be lost due to management activity are reasonably considered but without the obligation to pay compensation for such loss.
4. The right to establish and maintain native woody vegetation within the Buffer along the River described in Section III(2), above and the right to manage for exotic invasive species.

VI. Access to the Protected Property *(If necessary due to no frontage on a public road.)*

Grantors do freely give, grant, sell, convey and confirm unto Grantee and its designees, licensees and its successors and assigns, and to the third party beneficiary, VTDEC, forever, a perpetual and separately assignable easement for a right-of-way, said easement being on, over, under and across all of a certain parcel of land located in the Town of _____, Vermont, and being more particularly described as follows:

Example: *An easement 30 feet in width for pedestrian and vehicular access on, over and across the existing driveway running from the intersection of said driveway and the _____ boundary of the Protected Property, on, over and across other land of the Grantors to the _____ sideline of the _____ Road (T.H. No. ____). Said access is depicted as "ROW" and more particularly described in Schedule A hereto.*

Such access shall be for pedestrian and vehicular use only for access to the Protected Property for all rights and purposes conferred upon Grantee pursuant to this Grant including, but not limited to, management of the Protected Property and monitoring and enforcement by Grantee. No public use or access is permitted by this right-of-way. The rights conveyed herein are in addition to, not in lieu of, the covenants and restrictions otherwise conveyed by this Grant.

VII. Enforcement of the Restrictions.

Grantee shall make reasonable efforts from time to time to assure compliance by Grantors with all of the covenants and restrictions herein. In connection with such efforts, Grantee may make periodic inspection of all or any portion of the Protected Property, and for such inspection and enforcement purposes, Grantee shall have the right of reasonable access to the Protected Property. In the event that Grantee becomes aware of an event or circumstance of non-compliance with this Grant, Grantee shall give notice to Grantors of such event or circumstance of non-compliance via certified mail, return receipt requested, and demand corrective action by Grantors sufficient to abate such event or circumstance of non-compliance and restore the Protected Property to its previous condition. In the event there has been an event or circumstance of non-compliance which is corrected through negotiation and voluntary compliance, but which has caused Grantee to incur extraordinary costs, including staff time, in investigating the non-compliance and securing its correction, Grantors shall, at Grantee's request, reimburse Grantee for all such costs incurred in investigating the non-compliance and in securing its correction.

Failure by Grantors to cause discontinuance, abatement, or such other corrective action as may be demanded by Grantee within a reasonable time after receipt of notice and reasonable opportunity to take corrective action shall entitle Grantee to bring an action in a court of competent jurisdiction to enforce the terms of this Grant and to recover any damages arising from such non-compliance. Such damages, when recovered, may be applied by Grantee to corrective action on the Protected Property, if necessary. If the court determines that Grantors have failed to comply with this Grant, Grantors shall reimburse Grantee for any reasonable costs of enforcement, including court costs and reasonable attorneys' fees, in addition to any other payments ordered by such court. In the event that Grantee initiates litigation and the court determines that Grantors have not failed to comply with this Grant and that Grantee has initiated litigation without reasonable cause or in bad faith, then the Grantee shall reimburse Grantors for any reasonable costs of defending such action, including court costs and reasonable attorneys' fees. The parties to this Grant specifically acknowledge that events and circumstances of non-compliance constitute immediate and irreparable injury, loss, and damage to the Protected Property and accordingly entitle Grantee to such equitable relief, including but not limited to injunctive relief, as the court deems just. The remedies described herein are in addition to, and not in limitation of, any other remedies available to Grantees at law, in equity, or through administrative proceedings.

No delay or omission by Grantee in the exercise of any right or remedy upon any breach by Grantors shall impair Grantee's rights or remedies or be construed as a waiver. Nothing in this enforcement section shall be construed as imposing a liability upon a prior owner of the Protected Property, when the event or circumstance of non-compliance occurred after said prior owner's ownership or control of the Protected Property terminated.

In addition, pursuant to the provisions of Section II, the VTDEC, as third party beneficiary, has the right to enforce in the circumstance of Grantors' non-compliance with this Grant.

VIII. Miscellaneous Provisions

1. Where Grantors are required, as a result of this Grant, to obtain the prior written approval of Grantee before commencing an activity or act, and where Grantees have designated in writing another organization or entity which shall have the authority to grant such approval, the approval of said designee shall be deemed to be the approval of Grantee. Grantors shall reimburse Grantee or Grantee's designee for all extraordinary costs, including staff time, incurred in reviewing the proposed action requiring Grantees' approval; but not to include those costs which are expected and routine in scope. Upon the request of Grantors, Grantee shall deliver to Grantors, in written recordable form, any approval, disapproval, election, or waiver given by Grantee pursuant to this Grant.

2. Grantors agree that the construction of any buildings, structures, or improvements, or any use of the land otherwise permitted under this Grant, or the subdivision and separate conveyance of any land which may be approved by Grantee under Section III(8), above, shall be in accordance with all applicable ordinances, statutes, and regulations and at Grantors' sole expense.

3. It is further agreed that the Protected Property is accurately depicted and described in both Schedule A and a Baseline Documentation Report ("BDR") signed by the original Grantors on or about the date of this Grant and held by Grantees. Grantee may use the BDR in enforcing this Grant, and is not limited in the use of the BDR to show a change of conditions.

4. Grantee shall transfer the development rights, and conservation easement and restrictions conveyed by Grantors herein only to a State agency, municipality, or qualified organization, as defined in Chapter 34 or Chapter 155 Title 10 V.S.A., in accordance with the laws of the State of Vermont and the regulations established by the Internal Revenue Service governing such transfers.

5. In the event the development rights or conservation restrictions conveyed to the Grantee herein are extinguished by eminent domain or other legal proceedings, Grantee shall be entitled to any proceeds which pertain to the extinguishment of Grantee's rights and interests. Any proceeds from extinguishment shall be allocated between Grantors and Grantee in accordance with the value of their respective interests as determined by an appraisal commissioned by Grantee at the time of extinguishment. Grantee shall use any such proceeds to preserve undeveloped and open space land in order to protect the aesthetic, agricultural, educational, scientific, forestry, and natural resources of the state through non-regulatory means.

6. In any deed or lease conveying an interest in all or part of the Protected Property, Grantors shall make reference to the conservation easement, restrictions, and obligations described herein and shall indicate that said easement and restrictions are binding upon all successors in interest in the Protected Property in perpetuity. Grantors shall also notify Grantee and the VTDEC of the name(s) and address(es) of Grantors' successor(s) in interest.

7. Grantee shall be entitled to re-record this Grant, or to record a notice making reference to the existence of this Grant, in the Town of _____ Land Records as may be necessary to satisfy the requirements of the Record Marketable Title Act, 27 V.S.A., Chapter 5, Subchapter 7, including 27 V.S.A. §§603 and 605.

8. The term "Grantors" includes the heirs, executors, administrators, successors, and assigns of the original Grantors, _____. The term "Grantee" includes the respective successors and assigns of the original Grantee, _____.

9. Grantors shall pay all real estate taxes and assessments on the Protected Property and shall pay all other taxes, if any, assessed in lieu of or in substitution for real estate taxes on the Protected Property.

10. Grantors warrant at the time of execution of this Grant that there are no notices by any governmental authority of any violation or alleged violation of, non-compliance or alleged non-compliance with or any liability under any environmental law relating to the operations or conditions of the Protected Property. Grantors further warrant that Grantors have no actual knowledge of a release or threatened release of hazardous materials, as such substances and wastes are defined by applicable federal and state law.

11. Grantors hereby promise to hold harmless and indemnify Grantee against all litigation, claims, demands, penalties and damages, including reasonable attorneys' fees, arising from or connected with the Protected Property, including but not limited to, ones arising from or connected to release or threatened release of any hazardous materials on, at, beneath or from the Protected Property, or arising from or connected with a violation of any environmental laws by Grantors or the actions or inactions of Grantors as owner or operator of the premises, or those of Grantors' agents. Grantors' indemnification obligation shall not be affected by any authorizations provided by Grantee to Grantors with respect to the Protected Property or any restoration activities carried out by Grantee.

12. This Grant is created pursuant to Chapter 34 of Title 10, Conservation and Preservation Rights and Interests (10 V.S.A. 821-823) and Chapter 155 of Title 10, Acquisition of Interests in Land by Public Agencies (10 V.S.A. 6301 – 6309), and this Grant shall be governed by and construed in accordance with the laws of the State of Vermont to effectuate the Purposes of the Grant. In the event that any provision or clause in this Grant conflicts with applicable law, such conflict shall not affect other provisions hereof which can be given effect without the conflicting provision. To this end the provisions of this Grant are declared to be severable.

INVALIDATION of any provision hereof shall not affect any other provision of this Grant.

TO HAVE AND TO HOLD said granted development rights, and perpetual conservation easement and restrictions, with all the privileges and appurtenances thereof, to the said Grantee, _____, and its successors and assigns, to their own use and behoof forever, and the said Grantors, _____, for themselves and their heirs, executors, administrators, successors, and assigns, do covenant with the said Grantee, its successors and assigns, that until the ensembling of these presents, they are the sole owners of the premises, and have good right and title to convey the same in the manner aforesaid, that the premises are free from every encumbrance, except those of record, not intending hereby to reinstate any interest or right terminated or superseded by this Grant, operation of law, abandonment or 27 V.S.A. Ch. 5, Subch. 7; and they hereby engage to warrant and defend the same against all lawful claims whatever, except as aforesaid.

IN WITNESS WHEREOF, we set our hands and seals this ____ day of _____, 200_.

Signed, sealed, and delivered
In The Presence Of:

GRANTORS

Witness to __

Witness to __

STATE OF _____
_____ COUNTY, ss.

At _____, this ____ day of _____, 200_, _____ personally appeared and they acknowledged this instrument, by them sealed and subscribed, to be their free act and deed, before me.

Notary Public
My commission expires: 02/10/2011

=====

**SCHEDULE A
PROTECTED PROPERTY**

Being a portion of the lands and premises conveyed to Grantors by Warranty Deed of _____, dated _____, and recorded in Book _____, Page _____ of the _____ Land Records.

The Protected Property consists of ___ acres, more or less, and is more particularly described as follows:

[Metes and Bounds]

Note: *In order to describe the Protected Property as a recorded survey, the protected property should be configured in a "linear" fashion that is amenable to a "metes and bounds" description.*

Note: *If the Protected Property has no frontage on a public road and Section VI, above, is needed to secure access, may need to expand this description to include land over which that ROW passes.*

Note: *A full legal survey of the Protected Property will be prepared and recorded. The survey will show any permanent structures, roads and bridges that will be maintained. The BDR will have an orthophoto-based map with the survey lines superimposed and show the location of natural waterbodies at the time of the signing of the grant. The BDR will also contain a VTDEC river corridor map showing the elevation of land features in relation to ordinary high water levels.*

Reference may be made to the above described deed and record, and to the deeds and records referred to therein, in further aid of this description.

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Appendix B

Vermont RMP Easement Ranking Process

A ranking process may be used by river corridor planners and easement strategists to identify and prioritize easement projects. This process focuses on the stream equilibrium and erosion hazard reduction at the watershed scale, and breaks down the ranking process to coincide with three different stages in the development of a corridor protection strategy:

Stage I provides a technical ranking of priority easement projects on river segments identified in the corridor planning process, and occurs prior to easement project scoping, considering:

- The degree of departure (between reference and existing conditions) in the size, quantity, sorting and distribution of sediments within the reach (described as “sediment regime departure analysis” in Section 5.1.3 of the Vermont ANR River Corridor Planning Guide);
- Active channel adjustment processes;
- Opportunities to increase sediment storage by mitigating or reducing human-imposed sediment transport conditions (e.g., channel straightening and berming); and
- Land use factors, i.e., existing and potential encroachments that constrain river processes and the attainment of equilibrium conditions.

Stage II provides for the continued ranking of easement projects based on size and estimated cost per acre using the River Management Program’s easement calculator. This Stage assumes that there has been limited contact with the landowner, and would be used to support priorities for easement scoping. The RMP easement calculator is used by Regional Scientists to estimate a per-acre price for the easement based on soils and agricultural soil rental rates, current land use, and river sensitivity rating (determined during the Phase 2 stream geomorphic assessments). RMP Scientists work with regional partners (http://www.anr.state.vt.us/dec/waterq/rivers/htm/rv_geoassess-contact.htm) to develop easement costs.

Stage III is a final ranking used to order easement projects based on a range of project benefits that are determined through the project scoping phase and landowner negotiations. After this Stage, easement projects may be prioritized for implementation. Stage III considers:

- Project type, including public or private ownership and whether an easement will be donated or purchased;
- Other partner contributions to the project (financial, cost-share, or in-kind);
- Potential for active restoration components (e.g., berm removal);
- Proximity to other permanently protected/restored features or relevant public assets; and
- Level of structural maintenance required within the easement area.

As the stages are intended to be additive, it is important to represent scores as pertaining to a certain stage of the ranking process. For instance, a reach scoring 60 pts out of 80 pts at the end of Stage I may be a high priority project as compared to a reach scoring 60 pts out of a possible 175 pts at the end of Stage III.

Stage I Ranking – To provide a technical ranking of river segments for easement priority in the corridor planning process, prior to the project scoping

1) **Reference** sediment regime types (from table below): _____

2) **Current** sediment regime types (from table below): _____

| Sediment Regime ¹ | Delimiting criteria related to sediment supply, transport, and storage | Stage of Channel Evolution Geomorphic Condition | Common Existing Stream Type | Easement Ranking Pts | |
|---|--|--|---|---------------------------|-------------------------|
| | | | | Reference Sediment Regime | Current Sediment Regime |
| Transport | Bedrock gorge = yes | Stage I or V Good-Ref | A1, A2, B1, B2 G1,G2, G3 F1, F2, F3 | 0-3 | 0-3 |
| | Incision ratio < 1.3 | Stage I or V Good-Ref | A3, B3, B4 | 3-5 | 3-5 |
| Confined Source and Transport | Incision ratio > 1.3 | Stage II-IV Fair-Good | A3, B3* | | 3-5 |
| | Incision ratio > 1.3 | Stage II-IV Fair-Good | A4, A5 B4*, B5* | | 3-5 |
| Unconfined Source & Transport | Bank armor > 50% Straightening > 50% W/d < 30 Incision ratio > 1.3 | Stage II - III Poor-Fair | G3, G4, G5 F3, F4, F5 | | 5-10 |
| | | Stage II - III Poor-Fair | E3, E4, E5 C3, C4, C5 B3c, B4c, B5c | | 5-10 |
| Fine Source & Transport and Coarse Deposition | Bank armor < 50% W/d > 30** Incision ratio > 1.3 | Stage II-IV Poor-Fair | E3, E4, E5 C3, C4, C5 B3c, B4c, B5c F3, F4, F5 | | 10-15 |
| | | Stage II-IV Poor-Fair | D3, D4, D5 | | 10-15 |
| Coarse Equilibrium (in = out) & Fine Deposition | Incision ratio < 1.3 | Stage I -V Fair-Good-Ref | D3, D4, D5 | 5-10 | 15-20 |
| | W/d < 30 Incision ratio < 1.3 | Stage I -V Fair-Good-Ref | C2, C3, E3 | | 15-20 |
| | W/d < 30 Incision ratio < 1.3 | Stage I -V Fair-Good-Ref | C4, C5 E4, E5 | | 20-25 |
| Deposition | Incision ratio = 1.0 Delta or backwater from downstream constriction (bedrock gorge, weir, dam) | Stage IId | C4, C5, C6 | 5-10 | 20-25 |
| | Incision ratio = 1.0 Active alluvial fan | Stage IId | D3, D4, D5 | | 20-25 |

¹ Scientific terms and stream geomorphic data used in this technical ranking process are described in detail in the Vermont ANR River Corridor Planning Guide (Kline, 2010) and the Vermont ANR Stream Geomorphic Assessment Protocol Handbooks (Kline et al, 2009)

3) Active Adjustment Processes:

| | |
|---|--------|
| Actively adjusting planform and aggrading, including deltas | 10 pts |
| Actively incising and widening | 5 pts |
| No dominant active adjustment process | 2 pts |

4) Opportunity to gain attenuation by converting or mitigating a human-imposed sediment transport process (SRD reach = sediment regime departure reach):

| | |
|---|--------|
| Within a SRD reach within or downstream of a natural deposition zone | 15 pts |
| Downstream of a SDR reach within or downstream of a natural deposition zone | 10 pts |
| Reach below channelized reaches accommodating urban development / stormwater | 10 pts |
| Upstream of human imposed grade control or significant hydraulic constriction | 5 pts |

5) Land-use factors, i.e., existing and potential constraints to the attainment of equilibrium conditions

| | |
|--|------------|
| Reach threatened by settlement pattern, i.e., existing nearby encroachment | 20 pts |
| Reach threatened by settlement potential, i.e., zoned for development | 15 pts |
| Development pressures in upstream/downstream reach affect geomorphic condition | 10 pts |
| Cropland or pasture, ranging from productive to marginal | 5 – 10 pts |
| No current or future constraints likely | 5 pts |

Total Stage I Ranking Score (maximum 80 pts) _____

Stage II Ranking – To provide a ranking of easement projects based on size and estimated cost, based on minimal contact with landowner, and to support setting priorities for the funding of project scoping:

6) Corridor easement size

Low end of range $\geq 10 \times$ channel width $\leq 20 \times$ channel width
High end of range $> 40 \times$ channel width

| | |
|-----------------------|------------|
| Greater than 50 acres | 8 – 10 pts |
| 25 to 49 acres | 6 – 8 pts |
| 10 to 24 acres | 3 – 6 pts |
| 1 to 19 acres | 1 – 3 pts |
| Less than 1 acre | 1 pt |

7) Estimated Easement Cost per Acre (total project costs, RMP and partner share):

| | |
|---------------------|--------|
| Less than \$500 | 10 pts |
| \$500 to \$1,000 | 7 pts |
| \$1,001 to \$2000 | 4 pts |
| Greater than \$2000 | 1 pt |

Total Stage II Ranking Score (maximum 100 pts) _____

Stage III Ranking – To provide a ranking of easement projects based on a range of project benefits determined through the project scoping phase and landowner negotiations, and to support setting priorities for the funding of project implementation:

8) Project Type (**add up to 5 pts** if project includes both sides of the river):

| | |
|--|--------|
| Purchase for public ownership with permanent corridor easement | 10 pts |
| Donated corridor easement | 8 pts |
| Purchased corridor easement | 5 pts |
| Long-term corridor protection agreement (minimum 15 years) | 2 pts |

9) Other partner contribution to the project:

| | |
|--|--------|
| Financial contribution toward easement costs or purchase price | 10 pts |
| Cost share toward restoration practices | 8 pts |
| In-kind technical assistance toward protection/restoration practices | 4 pts |

10) Restoration potential (**add up to 5 pts** for percentage landowner cost-share):

| | |
|--|--------|
| Reconnect or reestablish floodplain features | 15 pts |
| Removal of berms, levees, fill, or structures along all or some portion of the reach | 10 pts |
| Removal or plugging of ditches, drainage structures, or revetments | 5 pts |

11) Proximity to other permanently protected/restored features, corridors, parcels, or relevant public assets (wetlands, floodplains, important habitat features/corridors, public access, etc.):

| | |
|------------------------|-------------|
| Adjacent or concurrent | 10 – 20 pts |
| Within ¼ mile | 7 – 10 pts |
| Within ½ mile | 4 – 7 pts |
| Within 1 mile | 2 – 4 pts |

12) Level of structural maintenance (i.e.: ditch maintenance, tile drains, crossings, fencing, etc.) required within the easement area:

| | |
|---|------------|
| Minimal or no management within the easement corridor | 6 – 10 pts |
| Infrequent/low cost maintenance required (fence relocation) | 3 – 5 pts |
| Long-term maintenance needs (such as crossings, drainage needs) | 0 – 2 pts |

Total Stage III Ranking Score (maximum 175 pts) _____

Appendix C

Project Development Steps for Vermont River Corridor Easements

The following outline is presented as a working draft of the process the River Management Program will use in developing river corridor easement projects. This outline will be further annotated as projects are completed, further experience is gained, and examples are provided.

- 1) Identify high priority river corridor easement projects in the corridor planning process utilizing the ranking criteria laid out in Appendix B, and create a dossier for each reach to include:
 - a) The initial SGAT generated river corridor to include accommodations for the meander belt and buffer requirements of the river and including land parcel shapefiles.
 - b) Landowner contact information and any available land use / land cover data for lands within the corridor. Visiting the regional offices of the USDA and County Foresters may be the best way to document agricultural and forestry land uses.
 - c) Readily available information on public ownership and other easements that may already be in place on corridor lands. Consulting the Vermont Conserved Lands Atlas maintained by the Vermont Land Trust (at: <http://www.vlt.org/VLTitems.html>) is advisable and contacting local or state-wide land trusts, other conservation organizations, and agencies such as the USDA Natural Resource Conservation Service, and Vermont Agency Natural Resources and Agency of Agriculture, Food, and Markets.
- 2) Form a project planning committee, confirm the interest of each party in moving forward with an easement proposal, determine which parties will carry out the project development and how that work will be funded, and find agreement for project goals and objectives. The planning committee should initially consist of:
 - a) Vermont DEC River Management Program (RMP);
 - b) The local sponsor of the river corridor planning process (e.g., town or watershed group);
 - c) Other agencies with an interest in the land, i.e., other easement holders, and agricultural and/or silvicultural agencies; and
 - d) A land trust or conservancy, which may be interested in holding and stewarding the river corridor easement.
- 3) Scoping the prospective easement project with the landowners (easement grantors) to include:
 - a) An initial meeting with the landowner to introduce the corridor plan and the easement proposal, representatives of the RMP, the local sponsor, and land trust (from the project planning committee) should be present. Materials presented to the landowner would include:
 - i) A copy of the corridor plan explaining why the reach is identified as a high priority attenuation asset;
 - ii) Any information pertaining to the erosion history, flood damage, and channel management of the reach;
 - iii) Any other known management options available, either as identified in the corridor plan or as may be presented by other project partners, e.g., berm removal or enrolling the lands in a CREP contract;
 - iv) A preliminary map of the corridor showing any features used in calculating an estimate of the value of the easement;
 - v) An initial estimate of the value of the easement, using the RMP easement calculator, and based on land use history, soil types, and river sensitivity. It will need to be explained that this dollar value may change as more detailed information is gained through the scoping process; and
 - vi) A copy and explanation of the river corridor easement template.

- b) Based on the receptivity of the landowner to the idea of selling or donating a river corridor easement. The project planning committee should conduct a field assessment of the proposed corridor. For part or all of the field assessment, the landowner should be present, and the following information should be gathered:
 - i) The corridor should be rectified with the lay of the land, adjusted to meet the needs of the landowner, ease of stewardship, and meet the meander belt and buffer objectives of the project. The new corridor and any adjustments should be documented using GPS coordinates. Adjustments may include things like moving the corridor to better align with the toe of a terrace or valley wall that can easily be identified in the future; and adjusting the corridor to exclude permanent structures that would be incompatible with the purposes of the grant;
 - ii) The location of different land uses and land covers (i.e., cropland, pastures, orchards, forest land); natural watercourses, wetlands, and other water-created features; terraces and annual floodplains; tile or irrigation systems within the corridor, including open ditches; berms or bank revetments; improved and unimproved agricultural or forest roads; permanent or temporary stream crossings including the location of fords; utilities; recreational trails; and any other uses, observed or identified by the landowner, that would be addressed in the easement or considered relevant to the purposes of the grant;
 - c) The project planning committee should reconvene to reaffirm their commitment to the easement proposal and determine the full scope of the project, including
 - i) the natural waterbodies that would be named in the easement;
 - ii) the location of the corridor and how any permanent structures, such as stream crossings, that would need to be managed consistent with the purposes of the grant;
 - iii) the compatibility of the river corridor easement with prior existing easements or contracts and any necessary and acceptable deviations from the easement template;
 - iv) whether other practices and contracts will be offered to the landowner based on the corridor plan, field observations, and the expressed needs of the landowner(s); and
 - v) the need to revise the a current use plan and/or devise a new forest management plan for lands within the corridor.
 - d) Follow-up meeting(s) with the landowner to present a new corridor map and a draft of a baseline documentation report that includes supporting information for the corridor map and any additional maps, forest plans, and descriptions of the land uses and structures listed above. A draft of an easement document should be provided at this point to establish the proposed grantor(s) and grantee(s); the river reach and tributaries for which the channel management rights are being transferred; and the acreage of the corridor. If an easement is to be purchased, rather than donated, the project committee will also disclose the proposed purchase price at this time. Other project components and contract proposals (i.e., conservation practices discussed as a part of the overall project) would also be negotiated at this time.
 - e) Should the landowner(s) and other prior easement holders, after legal counsel, decide to accept the easement proposal, the scoping process would end with the execution of a purchase and sales agreement.
- 4) Finalizing the river corridor easement involves formal documentation and the legal and financial transactions associated with closing the deal, including:
- a) Securing the funds to cover all costs of the easement, including the:
 - i) Purchase price of the easement to be paid to the landowner;
 - ii) Hiring a surveyor and any professional services necessary to conduct baseline documentation and/or forest planning;
 - iii) Legal costs associated with title searches and finalizing the easement for closing; and
 - iv) Funding for the stewardship endowment of the grantee.

- b) Completing a legal survey to provide metes and bounds for Schedule A descriptions of the river corridor, roads, stream crossings, or utilities.
- c) Completing a Baseline Documentation Report that will guide current and future representatives to the parties of the easement. The report will include maps and descriptions of all waterbodies named in the easement (i.e., those for which channel management rights are being transferred), other water features including wetlands and floodplains which are part of the natural flowage during ordinary high water, existing land uses and land covers, tile or irrigation systems within the corridor, including open ditches; recreational trails; and any other uses considered relevant to the purposes of the grant.
- d) Conducting a title search to determine any liens on the property and whether other legal rights to the property or portions of the property have been recorded. Settling with any claimants as necessary before executing the easement. This may involve agreements to draft amendments to other easements.
- e) Completing any contracts (e.g., under CREP or other agricultural programs) necessary to have in place prior to the execution of the river corridor easement.
- f) Revising current use plans (if necessary) or developing a management plan for forested lands within the corridor; and
- g) Executing the river corridor easement.