

## Riparian Corridor Management

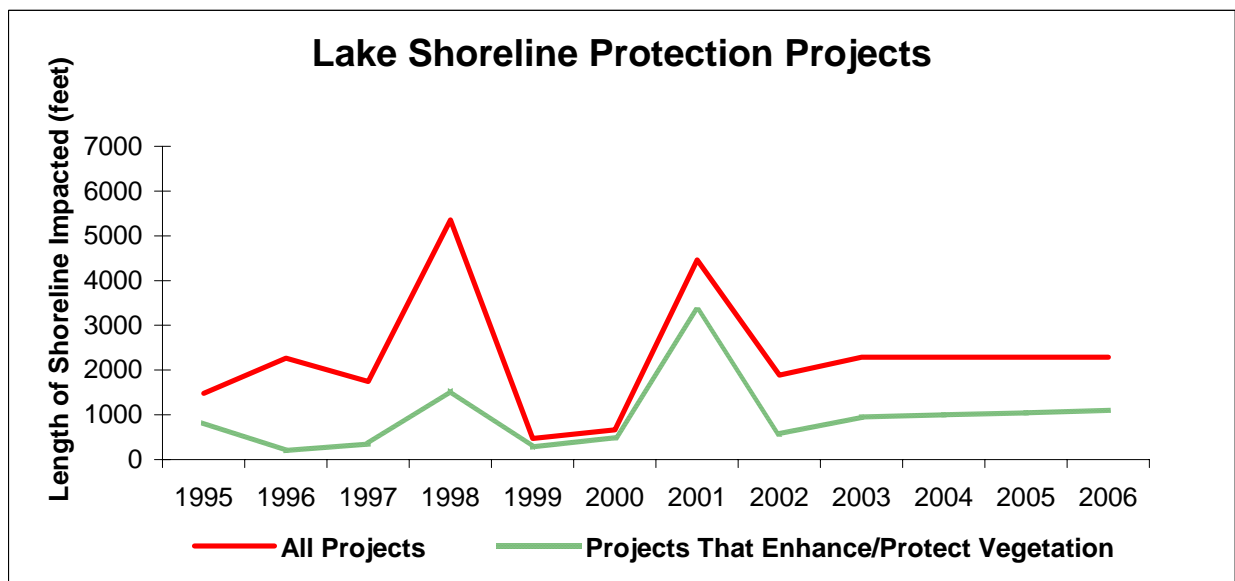
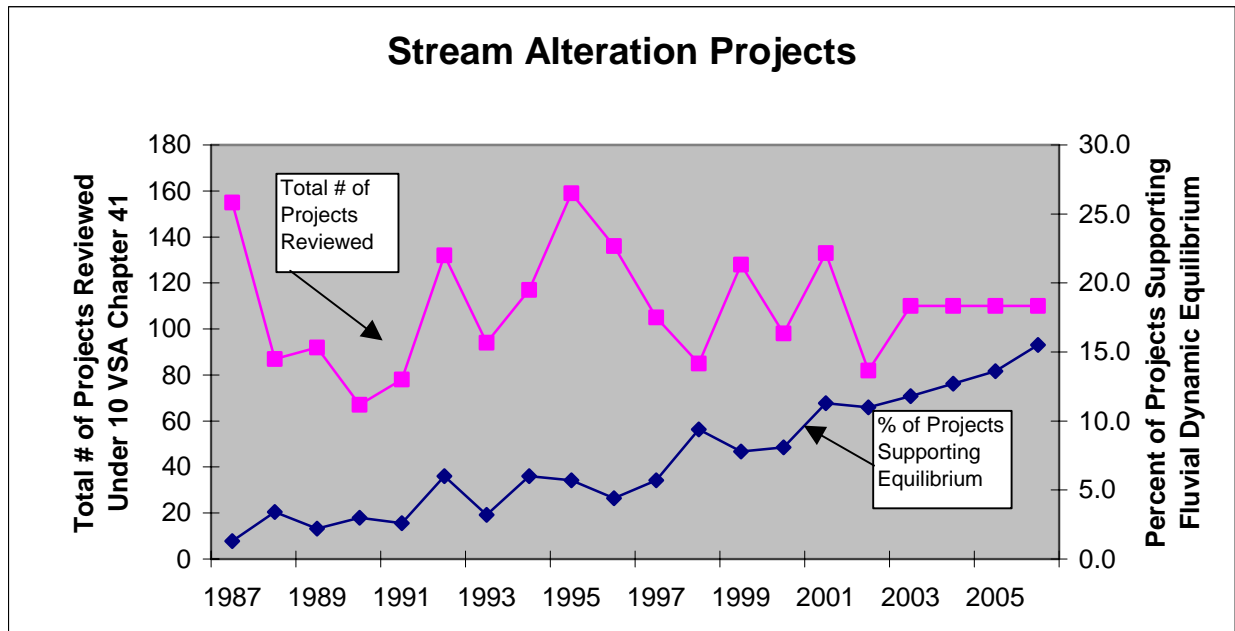
Water Quality Division

September 23, 2003

### Program Results:

Protect, manage and restore riparian shorelands and corridors to minimize conflicts with human land use and infrastructure investments, and to maximize sustainability of ecological functions. Virtually all Vermonters and those who visit here are either directly or indirectly affected by the physical condition of river corridors and lake shorelands.

### Key Indicators:



### **Story Behind Baseline Performance:**

Historically, riparian corridor management policies and practices have not been supported by a comprehensive technical understanding of the complex interaction of numerous fluvial geomorphic parameters, their relationship with ecological functions, nor the time scales over which the physical and ecological response mechanisms are expressed. This has been a particularly acute problem with regard to river systems in comparison with lake shorelines as fluvial system conflicts have cost many tens of millions of dollars in flood and erosion damages in the late 1990's alone.

The generations-old pattern of riparian corridor land use and flood plain, stream channel, and shoreline management practices remains a difficult paradigm to substantively change. But a combination and collaboration of federal-state-local partnerships, demonstration projects, technical assessments, hazard mitigation project implementation and planning opportunities, professional training, financial incentives, regulatory practices, alternatives analyses, and public education have begun to raise awareness and, step-by-step, to turn the tide.

The key indicators shown above, considered as a representative sub-set of all riparian corridor management practices, show baseline data, trends, and performance expectations for fluvial systems and lake shorelands relative to the extent to which the permitted activities maintain or restore sustainable geomorphic and ecological functions.

### **Strategies and Proposed Accomplishments:** *(measurable proposed accomplishments in italics)*

- **Strategy 1: Regulatory**
  - a) Protect and restore stream channel, flood plain and shoreland ecological and physical functions through existing regulatory mechanisms. *Incrementally increase, by 1% annually, the percentage of permitted projects that include design parameters that protect or restore sustainable geomorphic and ecological functions.*
  - b) Technically support and provide financial incentives to local government to enable primary oversight of riparian corridor land use at the local level. *Increase by 5 annually, the number of towns actively administering a riparian corridor protection ordinance or initiative.*
  - c) *Technically support full implementation of the VT ANR Procedure for Floodway Determinations in Act 250 Proceedings through the District Environmental Commissions.*
  
- **Strategy 2: Financial Incentives**
  - a) Link state and federal economic development, planning, infrastructure upgrade and expansion, and hazard mitigation funding opportunities to the level of riparian corridor protection provided by local mechanisms and initiatives.
  - b) state agency grants relating to surface water quality should be targeted for towns which are actively implementing riparian corridor protection and restoration programs. *Monitor number or percentage of state administered funding programs for which eligibility is at least partially linked to riparian corridor protection activities.*
  
- **Strategy 3: Increase Magnitude and Quality of Technical Assistance**
  - a) Utilizing a growing geomorphic assessment database, provide technically informed support to other state agencies, federal agencies, municipalities, and individuals such that a sustainable relationship with fluvial systems can be achieved throughout Vermont's watersheds. *Increase technical assistance to represent 50% of all River Management Program effort by 2006.*

b) Support and expand fluvial geomorphic assessment activities thereby building an enhanced understanding of fluvial dynamics and processes at the local and watershed level. *Facilitate Phase I geomorphic assessment activities in every major planning basin in the state by 2006. Support Phase II assessment activities in at least one-half of all major planning basins by 2006.*

➤ Strategy 4: Professional Training & Public Education

a) Continue and expand into Phase II and Phase III, the existing Phase I geomorphic assessment training course. Provide training opportunities to academia, consultants, public infrastructure managers, and public agency resource managers. *Build professional expertise in Phase I fluvial assessments for at least 100 people, Phase II for at least 50 people, and Phase III for at least 25 people, by 2006.*

b) Continue outreach to local watershed organizations, Regional Planning Commission boards, municipal officials and landowner groups. *Provide at least 10 educational presentations per year.*

➤ Strategy 5: State Policy

a) Utilizing the state Hazard Mitigation Plan as a vehicle, integrate state funding prioritization formulas such that communities are rewarded for moving in the direction of greater sustainability of their surface water resources. *Adopt such a plan no later than 11/1/04.*

b) Work toward formal adoption, by the administration, of the draft Executive Order on Riparian Buffers. Alternatively, work with other state and federal agency partners to implement the spirit and intent of the provisions of the Executive Order with emphasis on Transportation and Agriculture. *Support adoption, by the VT Agency of Transportation, of bridge and roadway design standards, and by the VT Department of Agriculture, standards for agricultural practices, that recognize the need to maintain and restore sustainability of dynamic equilibrium in fluvial systems by 2006.*

➤ Strategy 6: Monitoring

a) Seek funding to support a more comprehensive monitoring program, both of physical parameters and of other program indicators. *Minimum funding level to be achieved should support at least 0.5 FTE.*

**Performance Measures Table:**

Performance Measure	"P"=Projected and "A"=Actual Values	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>Strategy 1: Regulatory</b>												
# Stream alt. projects subject to 10 VSA Chap 41	P								110	110	110	110
	A		129	119	108	95	133	113				
# Stream alt. projects meeting PEP standard	P								90	90	90	90
	A		98	98	94	86	83	90				
Avg. # days stream alteration regulatory review	P								25	25	25	25
	A		14	48	18	27	32	13				
% River projects geomorphically sustainable*	P								12%	13%	14%	15%
	A	4%	6%	9%	8%	8%	11%	11%				
# Towns with corridor protection ordinance	P								76	81	86	91
	A	77	76	76	71	71	72	71				
% Support of Act 250 review of floodway det's*	P								100%	100%	100%	100%
	A											

Performance Measure	“P”=Projected and A”=Actual Values	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
# Lake encroachment projects reviewed	P								30	30	30	30
	A		32	37	21	30	30	31				
% Lake encroachment projects meeting PEP std.	P								90	90	90	90
	A		97	95	100	93	83	81				
Avg. # lake encroachment project review days	P								63	63	63	63
	A		66		49	60	70	68				
% Lake projects enhancing shoreline veg.*	P								51%	52%	53%	54%
	A	4%	14%	36%	36%	70%	50%	50%				
<b>Strategy 2: Financial Incentives</b>												
% State funding programs linked to riparian work	P								0%	5%	10%	20%
	A											
<b>Strategy 3: Technical Assistance</b>												
% technical assistance relative to all RCMP work*	P								40%	44%	48%	50%
	A							35%				
Planning basins with Phase I assessments*	P								10	12	14	16
	A							8				
Planning basins with Phase II assessments*	P								4	6	7	8
	A							2				
<b>Strategy 4: Training and Public Education</b>												
Individuals with Phase I Training (cumulative)*	P								50	75	95	100
	A							20				
Individuals with Phase II Training (cumulative)*	P								25	35	45	50
	A							10				
Individuals with Phase III training (cumulative)*	P								10	15	20	25
	A							5				
Public education presentations	P								10	10	10	10
	A							12				
<b>Strategy 5: State Policy</b>												
Adopt state Hazard Mitigation Plan	P							No	Yes			
	A											
Adopt highway infrastructure standards	P							No	No	No	No	Yes
	A											
Adopt agriculture standards	P							No	No	No	No	Yes
	A											
<b>Strategy 6: Monitoring</b>												
RCMP Staffing levels dedicated to monitoring*	P											
	A							0 FTE	0 FTE	0 FTE	0 FTE	0.5 FTE

\* PPA funded