

Charting the Course to Action!



These next three steps in project planning have to deal with turning thoughts into actions. At this point in the planning process, your *stream team* has finalized your project goal, objectives and targets. We are now moving forward into the aspects of conceptual design, more consultation, developing partnerships, writing funding proposals, detailing design considerations, government approvals and how best to work with volunteers.

Each of the following steps is described in a manner that is intended to make you aware of the details involved, encourage you to consult OMNR and CA staff frequently and research the detailed publications that are referenced. Suggested reading materials follow each step.

STEP 5 PLAN, CONSULT and PREPARE

In this step, we're going to focus on developing the *adopt-a-stream* plan, created from your earlier map products. You are now working with the opportunities identified through the planning process to refine them into a "long-list" of rehabilitation alternatives for your adopted stream. These alternatives and their respective techniques may represent both long term and short term management actions.

PLAN

The *adopt-a-stream* plan should be fairly large in size and displayed on a board about one metre square or larger. The geographic area should represent the target reach and surrounding tablelands. Large blow-up aerial photographs or Ontario Base Maps (OBM's) are useful as a starting point for building the concept plan. The foundation of the plan should represent the information collected on road and drainage networks, location of streams, wetlands, woodlands and development areas. Using clear acetate, create layers representing existing landuse and natural areas. This is really helpful when you're trying to explain your intentions to the public and stakeholders. You can start where you last left off with existing information and overlay the new design information in subsequent layers. Each new design layer represents the scale of either watershed, reach or site rehabilitation.

The Overlay Process

- 1) Your first layer identifies proposed landuses. It also illustrates your alternative techniques that improve the health of the watershed and will typically highlight areas on the tablelands that can be targeted for habitat protection, stormwater facility retrofits, new development design criteria or soil conservation practices.
- 2) The second layer is the next level of alternatives that focus on the reach level. This layer identifies alternative techniques that improve the health of the stream corridor and protect the

surrounding natural heritage areas. The second layer may also outline public access areas and trails.

- 3) The third layer represents alternative techniques specific to the site level assessment and may include rehabilitation techniques centred on soil bioengineering, barrier mitigation or habitat improvement.

By using overlays on your base map, you can illustrate complex ideas simply and capture the interest and understanding of your audience. Table 4.1 represents a general outline of watershed, reach and site level rehabilitation techniques typically considered in a concept plan.

When developing your "long-list" you should:

- a) Consider and identify the cause of the problems
- b) Address the realistic changes to eliminate or mitigate the impact of the problems
- c) Ensure that the proposed rehabilitation techniques are appropriate for the channel type you are working on
- d) Ensure alternatives are intended to manage the cause or mitigate the impact of the problem
- e) Identify the time frame for implementation of the various management techniques

"The best advice is to take steps to change the landuse to allow the stream to heal"

Christopher J. Hunter, 1991

Your stream team should evaluate each alternative technique presented on the *adopt-a-stream* plan. Evaluation should be based on benefits, feasibility, cost effectiveness in achieving your objectives, social acceptance and potential impact on the environment. Basically, you want to narrow the "long-list" of possibilities into a "short-list" of preferred techniques. For example, consider the risk for private landowners of loss of economic return when grazing pasture in the stream corridor is eliminated or reduced. Consider how the stream will respond to the implementation of the proposed technique. Your documented evaluation and assessment of alternative techniques should contain:

- A brief site description including location
- A description of the existing conditions of the stream, floodplain or tableland area
- A short description of the problems, causes and opportunities
- A description of the alternative techniques and design characteristics
- A description of the technique's design flexibility or constraints
- A reflection on how the technique achieves project objectives, including a description as to whether the technique eliminates the cause of a problem or mitigates the impact of a problem
- Approval requirements for each technique
- Cost and maintenance needs for each technique
- Monitoring needs for each technique
- The concluding rationale for choosing one technique over another.
- Priority for implementation

Once your team completes the selection of preferred techniques, the *adopt-a-stream* plan is ready for stakeholder review and, if necessary, further public consultation.

WATERSHED	REACH	SITE	REHABILITATION TECHNIQUES
			<p>CHANNEL REHABILITATION</p> <ul style="list-style-type: none"> ☆ DEVELOPMENT SETBACKS ☆ RIPARIAN CORRIDOR REHABILITATION ☆ NATURAL CHANNEL RECONSTRUCTION ☆ WOODY DEBRIS MANAGEMENT ☆ LOW STAGE WEIRS <ul style="list-style-type: none"> ⇒ ROCK VORTEX WEIRS ⇒ DIGGER LOGS ⇒ K DAMS ☆ WING DEFLECTORS
			<p>WATER QUALITY IMPROVEMENT</p> <ul style="list-style-type: none"> ☆ STORMWATER MANAGEMENT <ul style="list-style-type: none"> ⇒ QUALITY CONTROL CRITERIA ⇒ QUANTITY CONTROL CRITERIA ☆ BEST MANAGEMENT PRACTICES <ul style="list-style-type: none"> ⇒ SOURCE CONTROLS ⇒ END OF PIPE CONTROLS ⇒ SEDIMENT AND EROSION CONTROL ⇒ LIVESTOCK FENCING ⇒ LIVESTOCK WATER CROSSINGS ⇒ ALTERNATE WATER SOURCES
			<p>BARRIER MANAGEMENT</p> <ul style="list-style-type: none"> ☆ BARRIER MODIFICATION <ul style="list-style-type: none"> ⇒ BARRIER REMOVAL ⇒ BYPASS CHANNEL ☆ FISHWAYS
			<p>SOIL BIOENGINEERING</p> <ul style="list-style-type: none"> ☆ LIVE STAKING ☆ FASCINES ☆ BRUSHLAYERS ☆ LIVE CRIBWALL ☆ NATIVE MATERIAL REVETMENT ☆ LIVE ROCK REVETMENT
			<p>HABITAT IMPROVEMENT</p> <ul style="list-style-type: none"> ☆ L.U.N.K.E.R.S. ☆ BOULDER PLACEMENT ☆ HALF LOG COVER ☆ INSTREAM LOG COVER ☆ SWEEPERS ☆ PALLET COVER ☆ CABLED LOG JAM

Table 4.1: Watershed, reach and site level rehabilitation techniques for the concept plan.



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CONSULT

Why the need for public consultation? If your project involves multiple landowners and public lands, the consultation is very important in that it maintains open communication between the project proponent and the public. Although it may add delays in terms of timing the implementation of your project, the benefits are great. Each public meeting is an opportunity for the public to learn more about the local stream, the watershed and the needs for protection and rehabilitation. It is also an occasion for your *stream team* to learn about local issues relating to the stream, social interests and historic land uses. Through these meetings, you are informing, facilitating involvement in decision making and inviting the public to assist with the implementation of your *adopt-a-stream* plan.

Gearing up for further consultation, your stream team will want to refine the *adopt-a-stream* plan so that it is organized and presentable. Prepare reduced-size copies of your plan for pamphlets, letters and flyers. Organize your consultation meeting(s) and provide your information in a clear and concise fashion. Public meetings at this stage are designed to present:

- background research
- a finalized goal, objectives and targets
- the stream problems and their causes
- a range of protection and rehabilitation opportunities
- an analysis of techniques
- preferred techniques
- implementation priorities
- a monitoring program
- the estimated project cost

The total presentation time should not exceed one hour. Following the presentations, you should allow thirty to forty five minutes for questions and answers. Once you create lines on a piece of paper, you are bound to stir interest from the community so make sure you label everything as a DRAFT FOR DISCUSSION. Keep a written record of opinions, real and potential issues and recommendations voiced during your consultation efforts.

Following the consultation, document any recommended changes, issues and need for follow-up discussion. With regulatory agencies, you are required to pay close attention to the approval process for each piece of legislation that applies to your project. With landowners, you will need to be sympathetic to their needs and make every effort to satisfy their interests. Make changes to the plans that are necessary from the point of view of the landowner, approval agencies and public. Once the changes are made, your team can refer to it as the final concept plan and circulate it to the parties that expressed interest. This *adopt-a-stream* concept plan now represents a product that can be used for:

- Refining your targets from STEP FOUR
- Proposal writing, fund raising and partnership building
- Community awareness and education
- Media and marketing products
- Public workdays
- Landowner contacts and agency approvals

PREPARE

Having a community supported concept plan in hand, your next task is to develop the project work plan and budget with a bit of foresight in mind. For simplicity, the work plan is based on a calendar year and highlights the major tasks associated with the project targets, implementation priorities and planning needs. From the work plan, you can guide your equipment, labour and supply requirements over the course of the year and translate these needs into your project budget.

PROJECT	TASK	ESTIMATED LABOUR	MATERIALS Needed	Source of Materials
1.5 KM Livestock Fencing <i>Fall 2000</i>	Site design • Landowner meetings • Field measurements • Detailed design	10 hrs (1P) Project leader	Vehicle Office supplies	Personal
	Site Preparation • Field staking • Clearing • Acquire materials	40 hrs (2P) Site leaders	Stakes Sl edge hammers Shovels Axes and chainsaw	Equipment donated by Local hardware store
	Construction • Install 300 posts • Install wire • Install 3 stiles • 3 volunteer days	360 hrs (3P) Site leaders and 10 volunteers	250 T bar posts 50 cedar posts 1500 m of 9-42 fencing Portable Toilet Food and Drinks	Local farm coop (at cost) Food donated from grocery store Rent toilet Farmer providing tractor and auger
	Subtotal	410 hrs		
TREE PLANTING <i>Spring 2001</i>	Site Design • Landowner meetings • Field measurements • Detailed design	15 hrs (1P) Project leader	Vehicle Office supplies 50m tape measure	Personal
	Site Preparation • Clearing • Acquire plants and mulch	25 hrs (2P) Site leaders	Stakes Sl edge hammers 45 Shovels 500 trees and shrubs	Trees and shrubs from CA for 1/2 price Borrow shovels
	Planting • 2 volunteer days • potted trees and shrubs	700 hrs (60P) Site leaders and 55 Volunteers	Portable toilet Food and drinks	Food donated from grocery store Rent toilet
(P - people)		740 hrs		
	TOTAL	1,150 hrs		

Table 4.2: Sample work plan.

Traditionally, project planning, fund raising and reporting were commonly carried out during the late fall and winter months. Many successful non-profit groups make fundraising their number one task year round. As you complete tasks and meet your targets, record the improvements you need to make for planning projects for the following year. We'll touch on fundraising in a bit more detail later in this chapter.

From the work plan perspective, implementation and monitoring takes place during the spring, summer and fall. Spring and fall are the seasons for coordinating workdays, planting trees, livestock fencing projects and soil bioengineering. Your monitoring activities may include collecting

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information regarding fisheries, wildlife, aquatic insects, water quality and channel characteristics. Instream work is best in the summer months so you can avoid disrupting any fish spawning. There are several software programs, like Microsoft Project, that are available to help you with managing your project schedule.

The *stream team* should document each of the preferred techniques in the work plan for the year.

- Indicate the proposed time frame from start to finish.
- Describe the tasks necessary to complete the implementation of the technique.
- Estimate the amount of labour needed and whether the tasks require skilled labour or volunteer labour.
- Do you need to have food, drinks and washrooms made available?
- Calculate the materials and supplies needed and the associated costs.
- Consider the potential sources for the supplies and materials.
- Document the manner in which you expect to acquire these resources.
- Determine how best to transport the equipment and supplies to the work site.

A sample work plan is illustrated in Table 4.2.

In a separate budget table:

- Outline each of the task related items and associated costs.
- Include whether your estimated cost is considered an in-kind donation from a known supplier or not.
- Identify the volunteer and salary hours needed for each entry.
- Summarize the total equipment, supplies, volunteer hours and labour costs for the entire year.

The grand total represents your proposed project budget for the year. Next, we'll show you how to build your fund raising proposals based on the work plan and budget table you have just created.

PROJECT	TASK	LABOUR	MATERIALS	ESTIMATED COST
1.5 KM Livestock Fencing <i>Fall 2000</i>	Site design	10 hrs (1P)	\$50.00	\$225.00
	Site Preparation	40 hrs (2P)	\$150.00	\$630.00
	Construction	360 hrs (3P)	\$6,930	\$11,250.00
	Subtotal	410 hrs	\$7,130.00	\$12,105.00
TREE PLANTING <i>Spring 2001</i>	Site Design	15 hrs (1P)	\$50.00	\$310.00
	Site Preparation	25 hrs (2P)	\$350.00	\$650.00
	Planting	700 hrs (60P)	\$2,600.00	\$11,000.00
	Subtotal	740 hrs	\$3,000.00	\$11,960.00
SLOPE BIOENGINEERING <i>Spring 2001</i>	Site design	40 hrs (1P)	\$120.00	\$820.00
	Material s Preparation	150 hrs (3P)	\$180.00	\$1,980.00
	Construction	210 hrs (9P)	\$460.00	\$2,980.00
	Subtotal	400 hrs	\$760.00	\$5,780.00
PROJECTS MONITORING <i>Spring/Fall 2000</i>	Site Inventories	120 hrs (2P)	\$1,600.00	\$3,700.00
	Data Anal ysis	80 hrs (1P)	\$120.00	\$1,520.00
	Report Preparation	80 hrs (1P)	\$85.00	\$1,485.00
	Subtotal	280 hrs	\$1,805.00	\$6,705.00
(P – peopl e)	Subtotal	280 hrs	\$1,805.00	\$6,705.00
GRAND	TOTAL	1,830 hrs	\$12,695.00	\$36,550.00

Table 4.3: Sample budget table.

Raising Project Funds

The majority of the fundraising preparations take place after you've refined your *adopt-a-stream* concept plan, work plan and project budget. Throughout the planning process, your *stream team* should always be on the lookout for potential sources of funds and "in-kind" support for your project. "In-kind" refers to donated materials, equipment or labour without the transfer of money. Keep track of these potential sources and their respective personal contacts in an organized fashion so that you can refer to them at a later date. Normally, your project funding will come from a variety of sources.

Most sponsors and government grant programs like to provide seed money to projects rather than 100% funding. Consider and respect the approach. You may also need to consider linking specific project tasks to a potential sponsor because, in some cases, their program rules restrict the types of activities they support and the manner in which their money is spent. For example, some foundations only provide funding for the purchase of materials and will not cover support staff or contractor costs. This highlights the importance of researching the background of potential sponsors, before you approach them.

As with most volunteer-based stream rehabilitation projects, experience is usually lacking in the area of fundraising. Starting from scratch without anyone to rely on for help is a difficult path to follow. There are some important considerations to keep in mind when it comes to fundraising and you will find many of the principles apply to building partnerships as well.

Your aim is to build long-term cooperative relationships with your potential sponsors and partners. Use the network of project contacts listed in Appendix A as a source of information for project planning, fundraising and partnership development.

You will hear it said that only two things are needed for successful fund raising: a truly worthwhile mission and leadership that is enthusiastic and willing to participate.

Fisher Howe, 1991.

When it comes to fundraising in the private sector, whether it is for a hospital or a conservation campaign, almost 90% of the funds come from individual donations. These are people with lots of money looking to give it away to a good cause, possibly in exchange for an income tax receipt. About 7% comes from foundations and another 5% comes from corporate donations. Don't be shy to ask wealthy people for money - make it fun. As long as you are honest and sincere about your project and its goal, your request will be respected and considered. Remember that fundraising is successful when you have the right attitude and honest effort.

What's the best way to tackle fundraising? Brainstorm together as a team in a special meeting. Consider all your contacts, friends of contacts, neighbours, bosses, bank managers and local businesses such as lumberyards. Build a list of potential sponsors, partners or in-kind supporters.

Create an annual fundraising plan based on a realistic goal, strategies, targets and timelines. Share the responsibility equally within your *stream team* and monitor your progress. Attend fundraising

seminars offered through local support organizations like the Sustainability Network. Your approach to project funding should be based on building diversity and integrating fundraising with all of the day-to-day activities of your organization.

Consider the local community as a potential source of funds. Target the businesses and individuals that may benefit from your activities. Ask them if they are supportive of the project and whether they would be interested in making an in-kind or cash donation.

Beforehand, consider what business marketing or publicity opportunities exist for potential sponsors in project signs, brochures or other related products. Always think of what aspect of your project benefits the sponsor! Think about approaching the civic associations and service clubs in your area like the local chamber of commerce and see if they are interested in contributing money, supplies or volunteer labour. There are all kinds of activities and events you can hold in your local community to raise money and reach out for volunteers. These community-based events could be things like raffles, dinners, pub-nights or silent auctions.

With most foundations and government grants, you will have to apply for project money using their specific application based on their unique funding criteria. Are they all that different that you need to worry immensely about applying? Not really. Researching the foundation or program is vital to being successful in applying. You need to know what they have sponsored in the past and for how much. You want to know if they are interested, in which case you need to call and ask for their advice on how your project fits with their criteria. Don't be shy when it comes to asking questions. It's a far better use of your time to consult and request help rather than tackle the application blindly.

POTENTIAL SPONSOR	GRANT PROGRAMS
Ontario Ministry of Natural Resources	Community Fisheries and Wildlife Involvement Program Fish and Wildlife Protection and Enhancement Fund
TDCanada Trust	Friends of the Environment Foundation
Environment Canada	Eco Action 2000 Great Lakes Sustainability Fund
Tip of the Mitt Watershed Council	Great Lakes Aquatic Habitat Fund
Shell Canada	Shell Environmental Fund
Ontario Trillium Foundation	Community Program
The Evergreen Foundation	Evergreen Canada Initiative
Molson's Brewery	Local Heroes Program

Table 4.4: Potential sources of grants for stream rehabilitation projects.

Be careful and concise when it comes to filling out the application forms. There are many helpful hints to keep in mind when applying for grants:

- ⇒ Successful grants are based on building cooperative relationships with the grant providers.
- ⇒ Find out who is on the application review board and get to know one or two of them.
- ⇒ Keep to a word limit and be concise in your wording - avoid too much detail
- ⇒ Avoid the use of technical jargon or acronyms. Use plain language that anyone

- can read.
- ⇒ Give your application a structure based on a table of contents so that it is organized and easy to read.
 - ⇒ Consider what the sponsor wants to fund and how your project meets their interests.
 - ⇒ Describe the uniqueness of your project, the facts, its merits to the local community and the environment. Identify what questions you hope to answer by implementing the project.
 - ⇒ Avoid using run-on sentences. More than 14 words in the sentence means you've gone overboard.
 - ⇒ Paragraphs should be five sentences or less and include opening and closing statements.
 - ⇒ Use fonts that are easy to read like Garamond or Times Roman set at 12 or 14 point size.
 - ⇒ At least one third of the time you spend on the funding proposal should be editing.
 - ⇒ The body of your project description should include your project goal, objectives and targets.
 - ⇒ Illustrate key features like location or problems with maps and "action" photographs.
 - ⇒ Briefly describe the rationale, tasks involved, benefits and the proposed timeline.
 - ⇒ Your project budget table should be simple, easy to follow and identify where sponsor monies will be spent.
 - ⇒ Concluding remarks should be logical and reflect your project goal, objectives and targets.

Much like the process with project planning, you will find fundraising requires research, evaluation and goal, strategy and target setting. The most important part of this process is building cooperative relationships with your potential sponsor.

Here are a few helpful publications for grant seeking:

- Starting Up - A Handbook for New River and Watershed Organizations (River Network, 1996)
- Secrets of Successful Grantsmanship: A Guerrilla Guide to Raising Money (Susan L. Golden, 1997)
- The Board Members Guide to Fund Raising: What Every Trustee Needs to Know About Raising Money (Fisher Howe, 1991)

Developing Partnerships

The concept of partnerships in environmental conservation between Ontario's private and public sectors dates back to the late 1800's. Prompted by the deplorable condition of fish and wildlife resources in the province and the lack of enforceable laws, Dr. G.A. MacCallum of Dunnville and an organized group of local sportsmen convinced the Ontario Government to appoint the Royal Commission on Game and Fish. Their charge was to investigate the treatment of wildlife in the province. As the chairman of the Commission, Dr. MacCallum reported the findings of the

investigation in 1892 and made a series of recommendations for the conservation of fish and wildlife.

These recommendations prompted the re-writing of the fish and game laws to include enforceable harvest limits, seasons and gear restrictions. Shortly afterwards, the first four full-time game wardens were hired at ten dollars a month. The notion of a partnership was never realized back then, but the Dunnville sportsmen's group, a local doctor and the Government of Ontario worked together cooperatively to protect our fish and wildlife.

Although you may not realize it, you formed your first partnership the day you decided as a *stream team* to adopt your local stream. The partnership is between you and the natural environment you live in. You share the benefits your stream has to offer in exchange for the care that you are willing to give. That's what partnerships are all about: sharing, cooperating and building beneficial relationships.

There is no cookbook on how to form partnerships. They evolve from opportunities that present themselves and the people that recognize these opportunities have the ability to cooperate effectively in order to make them happen. There are a number of common characteristics associated with successful partnerships though. From the observer's point of view, flourishing partnerships are flexible, based on commitment and a shared interest, fortified with mutual respect and effective communication.

In some of the more involved stream rehabilitation projects, these partnerships start at the local level with "grassroots" organizations and branch out to include private landowners, regional and provincial governments, local environmental organizations, recreation clubs and municipalities. Why does this happen? Partnerships develop in response to mutual conservation interests and the desire to work together effectively and economically.

How are partnerships developed? Lots of patience, hard work and the ability to nurture healthy relationships are the building blocks of partnerships. With experience, you will learn to identify potential players, recognize the opportunities and confirm the core aspects of the partnership. As you develop the shared goal and objectives, the partners establish commitment through agreement. In some cases this agreement may become formal through an actual co-authored partnership document. The tangible outcomes of the partnership confirm the on-going interest in the growing relationship. These outcomes are based on the hard work of the individuals involved and the sharing of workload, assets and responsibility.

Partnerships take on many forms. In the past and present, we see partnerships between levels of government and sometimes these reach out to private business. For example, conservation authorities in Ontario have had a long-term partnership arrangement with local municipalities and the Ministry of Natural Resources to deal with watershed management. The local *stream team*, at the other end of the scale, may have a partnership project with a local trail association where each organization benefits from the other's involvement in the project - whether it be sharing volunteers or equipment. The key to maintaining these partnerships, whether large or small, is to continuously nurture the arrangements so that they are always mutually rewarding.

For more information on building partnerships, consult the following reference:

- Watershed Restoration: Principles and Practices (American Fisheries Society, 1997)

Obtaining Approvals

There are two types of approvals you need before embarking on any stream rehabilitation project. The first is landowner permission. Landowner permission is needed very early in the project planning process - before you start any site visits, inventory or assessment work. The second is regulatory approval by the agencies responsible for administering water-related legislation. Regulatory agency approval, if required, is usually addressed prior to implementation and just following the development of the *adopt-a-stream* concept plan. Regularly consulting the approval agencies during the project planning process will help you with obtaining your permits.

Getting landowner permission is fairly straightforward. Knock on the door, visit with the owner and explain the nature of your proposal and the details around the work you intend to do. As long as you are not intruding on their privacy and the project has benefits for them, most landowners are willing to allow you onto their property. Leave them your name, phone number and expected dates of entry so that they can contact you should they have any questions. As a common courtesy, if you open a gate - always close it behind you. This will help avoid any embarrassing moments having to chase cows back into the pasture! A simple form has been included in Appendix F to help you with maintaining your records when it comes to access permission.

There are several different pieces of legislation that deal with water-related activities:

- the Fisheries Act of Canada (federal Department of Fisheries and Oceans)
- the Navigable Waters Protection Act (Canadian Coast Guard)
- Public Lands Act (Ontario Ministry of Natural Resources)
- Lakes and Rivers Improvement Act (Ontario Ministry of Natural Resources)
- Ontario Water Resources Act (Ontario Ministry of Environment)
- Environmental Assessment Act (Ontario Ministry of Environment)
- Conservation Authorities Act (Conservation Authorities)

Federal, provincial and regional agencies are responsible for the administration of their respective laws. Most staff that implement these pieces of legislation know whom you need to contact within the other agencies. These people have lots of practical experience and this is what you need to help you move your project in the right direction.

The Federal Fisheries Act is administered by the Department of Fisheries and Oceans in Ontario and applies to public and private projects. The primary sections of the Act that relate to stream rehabilitation include Section 35 - Fish Habitat and Section 36 - Water Quality. Section 35 states that no one may carry out work that harmfully alters, destroys or disrupts fish habitat, unless authorized by the Minister of the Department of Fisheries and Oceans. Section 36 states that no one may deposit a harmful substance in water frequented by fish. Through consultation with your local Conservation Authority or Ministry of Natural Resources office, you will find out whether your project is consistent with the regulatory needs of the Department of Fisheries and Oceans.

The Navigable Waters Protection Act is administered by the Canadian Coast Guard in Ontario and

applies to public and private projects. Stream rehabilitation projects on larger rivers, where water navigation is possible, may require approval under this legislation. Relevant projects requiring approval may include rocky ramps, boulder placement and rock vortex weirs. Consult through your local contact of the Department of Fisheries and Oceans to determine if this Act applies.

The Public Lands Act and Lakes and Rivers Improvement Act are both administered by the Ministry of Natural Resources. These Acts apply to both public and private projects. The Public Lands Act applies to public lands and regulates dredging and filling of shorelands through work permits. The Lakes and River Improvement Act follows a similar work permit process and regulates any project that forwards, holds back or diverts water. Depending on the nature of the project, permits can take from 4 to 12 weeks for processing.

The Ministry of the Environment administers the Ontario Water Resources Act and the Environmental Assessment Act. The Ontario Water Resources Act regulates the taking of groundwater and surface water and it also regulates the discharge of substances into surface water. Common regulated activities include drilling water wells and running sewage treatment plants. The Environmental Assessment Act applies to public rather than private projects. It sets in motion the planning process whereby alternatives to water related undertakings are considered through a public consultation process. The public consultation process is graduated in relation to the scale and cost of the project. The Ministry of Natural Resources, Conservation Authorities and Municipalities each has their own Class Environmental Assessment process to follow for projects that are covered by their mandate.

Thirty-six watershed-based Conservation Authorities throughout Ontario administer the Conservation Authorities Act. These agencies work in partnership with local municipalities and the Ministry of Natural Resources in regulating activities related to filling, construction of and alterations to watercourses and floodplains. The Act applies to municipal and private projects. Ontario ministries and agencies are exempt from this Act. Conservation Authorities are also responsible for managing Conservation Areas and large tracts of public land purchased through floodplain acquisition programs.

Our relationship with regulatory agencies is gradually changing as the ideals of partnerships, flexibility and cooperation become more common amongst the traditional technocrats. Ten years ago you may have needed several permits from several different government agencies for a stream rehabilitation project - it all depended on what you were proposing to do. These days, the staff of the agencies are more likely to help steer your project in the direction where permits are not required, provided you start consultation early in the process.

Where a permit is required, in some cases the agency contact assumes the responsibility for getting the permit in place for you. Otherwise, the approval permit process can be very difficult and frustrating. In order to avoid this, contact the agencies well in advance of any work and bring them into the planning process. Depending on the nature of the work involved, you may need to finalize in-water project details before permits are issued.

Keep in mind that if your project is sponsored under the Ministry of Natural Resources' Community Fisheries and Wildlife Involvement Program (CFWIP), the ministry staff look after many of the approval requirements up-front. Most CFWIP projects involving stream rehabilitation are funded

and include volunteer insurance for personal injury. Through the application and approval process, your project is screened under the habitat provisions of the federal Fisheries Act, and several other pieces of legislation including the Environmental Assessment Act. CFWIP volunteers are considered agents of the Ministry of Natural Resources because they are implementing approved fish and wildlife projects that benefit the public. Accordingly, these CFWIP projects are generally exempt from the permit requirements of the Public Lands Act, Lakes and Rivers Improvement Act and Conservation Authorities Act, but it's best to check with your local district office of MNR to confirm that this is the case for your project.

Depending on the nature of the proposed work in the floodplain, you may be asked to obtain a permit from the local Conservation Authority. If you are proposing large-scale alteration of any existing stream, you may also be asked to obtain a Fisheries Act authorization from the federal Department of Fisheries and Oceans.

STEP 6 IMPLEMENTATION

At this stage of the planning process, we assume that the regulatory agencies have been satisfied in terms of the *adopt-a-stream* concept plan. They may have directed you to either finalize the in-water details before proceeding further or informed you that a permit is forthcoming or a permit is not required. In any case, you will need to finalize the details for implementing the concept plan. This is accomplished by providing phasing information, detailed diagrams and descriptions of the proposed work.

Implementation of the concept plan will, most likely, occur in a phased approach. You should identify the proposed activities for each phase of the project, as outlined in the development of your work plan. Your permits may be issued to correspond with the phases. Commonly, project phasing will occur in a logical sequence that minimizes disruption of prior works and fits with the confirmed financial resources. Valley cleanup, baseline monitoring and instream works should be completed prior to livestock fencing and tree planting.

Remember:

- Detailed diagrams of instream and stream corridor works should reference the location on the concept plan and the page number in your implementation package.
- Each activity should be described in terms of:
 - 1) proposed phase
 - 2) specific timing
 - 3) location
 - 4) construction details (including measurements)
 - 5) potential safety hazards
 - 6) a detailed layout diagram

If required, include your sediment and erosion control measures on the layout diagram.

Once you wrap up the implementation details, confirm with your *stream team* that they are comfortable with every aspect of it and that they are committed to helping coordinate workdays and

leading volunteer work crews. It really helps to check commitment before proceeding further as this helps avoid discontent amongst the *stream team*. You will also want to consult with your local MNR and CA office to ensure that they are comfortable with your implementation package and that they are in the position to provide in-kind support and/or a grant. If volunteer insurance coverage is not provided by MNR, contact a local insurance broker and obtain coverage for your event.

Now we are ready to tackle the intricate details of planning a volunteer day.

- 1) Make sure you have adequate site supervision and expertise. Look to your *stream team* and partners for expertise in implementing the works and volunteer supervision. Assign one person to be in charge of communicating essential safety information to the leaders and volunteers. New projects really benefit from agency staff involvement at this stage, because it gives the *stream team* a chance to learn how to implement the various techniques, personal safety requirements and leadership that is necessary.
- 2) Create a schedule of volunteer workdays with your leaders and have them commit to specific dates, activities and preparation needs. Generally, volunteer workdays are 4 to 5 hours in length.
- 3) From the workplan, develop your materials and equipment list with the volunteer leaders. Each person should share the workload involved with acquiring the materials.
- 4) Estimate the number of volunteers needed for each task. This will help you calculate the total number of volunteers you need when it comes time to recruit.
- 5) It's a good idea to have everything you need purchased, available and stored close to the site within a couple of days of the event.
- 6) A project specific checklist will help you stay organized.

Now all you need is volunteers.

Recruiting Volunteers

The perfect volunteer day is rewarding and fun for all of the people involved. Every volunteer wants to walk away knowing they accomplished something for the benefit of their community and the stream. A rewarding experience builds the volunteer's motivation for the next event and helps spread the word about your organization and its *adopt-a-stream* project.

To nurture this sense of accomplishment in your volunteers, it is important that you take the time to organize the event properly. Being organized, having washrooms, proper equipment, enough materials, food and drinks and good site supervision are essential to making this happen.

Recruiting is something you definitely don't want to leave to the last minute. Here are some helpful suggestions on soliciting volunteers:

- ⇒ start recruiting at least three weeks in advance of the workday
- ⇒ use diverse methods to recruit
- ⇒ personal contact is better than advertising, so don't be afraid to ask in person

- ⇒ be task specific when you advertise your needs (e.g. looking for volunteer tree planters)
- ⇒ provide a location map, a *stream team* contact person and suggested personal effects (like rubber boots or sunscreen)
- ⇒ for weekends, you should target clubs, adults, families and university or college students
- ⇒ weekday events are best suited for school groups
- ⇒ use such media as
 - press releases
 - television interviews
 - newspapers
 - newsletters
 - flyers
- ⇒ solicit your organization's membership and your project partners
- ⇒ phone the people that expressed interest through the project's consultation process
- ⇒ keep track of the volunteers who commit to the day and add 20% to cover those that don't show up
- ⇒ send out a personal reminder one week in advance of the event

You will want to inform the media about your volunteer event and invite them to attend. One person from your *stream team* should be assigned the responsibility of being the media contact -- preferably someone who is comfortable talking to the press.

You will need to divide the planned tasks into manageable activities that are based on teams. Consider a contingency plan for your volunteers should you have bad weather or too many workers. Common team activities include rock rollers, post hole diggers, mulchers and clean up.

Once your volunteers arrive, make the effort to speak to the group about the background of the project, work safety, location of washrooms, break time and a brief outline of the planned activities for the day. Good orientation is essential.

One person on your *stream team* should be trained in first aid and act as the safety supervisor. Introduce the team leaders for the work crews and introduce any dignitaries that are present.

Give the politicians a chance to say a few words to the volunteers and media. Fifteen to twenty minutes should be allocated to introductions and orientation.

Divide the volunteers into teams and record the volunteers' names, addresses, phone numbers and hours worked. Appendix F has a form for tracking volunteer effort.

Have each of the team leaders provide an activity explanation and basic training before getting started. While everyone is working away, make sure you have someone taking pictures of the various activities.

A break for refreshments at about the halfway point is good to include in your event.

Once the day comes to a close, you should congratulate your volunteers on a job well done and inform everyone of the next scheduled workday. A friendly "thank-you" goes a long way to motivate your volunteers for the next time. Recognize the volunteers that showed good skills and motivation and invite them to become leaders for the next volunteer event.

After your volunteers leave, have members of your stream team visit each of the work areas and pickup any tools or materials left behind. Determine which areas need more work and inform the *stream team* leader of the tasks that require further work to complete.

Thank your team leaders for helping make the event successful.

For more information on working with volunteers, refer to the following publications:

- Starting Up - A Handbook for New River and Watershed Organizations (River Network, 1996)
- Working with Volunteers (Ontario Ministry of Agriculture, Food and Rural Affairs, 1995)

STEP 7

MONITORING and REPORTING

Monitoring measures the accomplishment of any stream rehabilitation project. The *stream team* must monitor the various rehabilitation activities to ensure they follow the original design plans, they are implemented properly, to detect change in the health of the stream, and determine if the project objectives are being met. A degree of uncertainty is acknowledged in every project and monitoring helps adjust planning accordingly.

In addition, the monitoring will identify maintenance needs, unforeseen problems and recommend adjustments or refinements.

Too often in the past, project monitoring has been overlooked because of the fear of analyzing data, the long-term commitment required or the lack of financial support from project sponsors. Unfortunately, it is the lack of long-term project monitoring and evaluation that slows down our ability to refine rehabilitation techniques. The lack of monitoring also hinders the advancement of knowledge in stream rehabilitation. Accordingly, monitoring must become a high priority for each stream rehabilitation project, and each sponsor must respect the need to allocate sufficient resources to it.

It is very important to document and describe what is happening in and around the stream. Record everything from initial baseline assessments, to the implementation of rehabilitation techniques and the biological and the resulting physical changes. In order to build a combined knowledge base, these findings need to be shared with the project stakeholders. It is important to be equally proud of successes and failures, as these drive the changes in the way streams are managed.

There are three types of monitoring involved with stream rehabilitation projects.

- 1) Implementation monitoring occurs during and immediately following construction. It inspects whether the techniques were constructed according to the designs to ensure that the correct orientation, materials and dimensions were applied. If mistakes or inadequacies are identified,

additional effort is assigned to rectify the problems.

- 2) Effectiveness monitoring is more complex and involves the measurement of the success or failure of the project following construction. Monitoring must take place after a period of weeks, months and years have passed. Effectiveness monitoring involves the use of performance indicators and an evaluation of results in relation to the project objectives and targets.
- 3) Validation monitoring examines the basic scientific understanding of stream ecology.

The notion of building a monitoring program should be first considered in STEPS 2 and 3 of the project planning process. Your baseline data collection of physical and biological information and the comparisons between target and reference reaches are really the beginnings of your monitoring effort.

This pre-implementation monitoring should be carefully thought out so that the data collection can be repeated in a consistent manner in the years that follow the execution of your rehabilitation project. This is best accomplished by documenting the procedures and protocols of data collection in your *monitoring plan*.

Describe each of the sampling locations and clearly identify them in the field, using permanent visual markers. Keep track of your equipment needs and the effort required to complete each survey. Also, document the expected duration of the monitoring program and the expected schedule of field surveys and reports.

Sound performance targets reflecting the goal and objectives of the project should guide stream rehabilitation monitoring. There are many physical and biological variables that can be used as performance targets in your monitoring program. Your *stream team*, in consultation with your project stakeholders and your local MNR and CA biologist, should determine these variables and their procedures for data collection. The data collected in baseline studies can be used as a pre-construction condition for which you can compare post-construction findings. Comparisons between a target and reference reach both pre and post-construction, allow you to evaluate which variables have changed in relation to natural variation and which variables have changed in relation to the techniques applied. All data analysis and interpretation should be completed or peer-reviewed by a trained professional prior to publishing in a monitoring report. Depending on the nature of the project, you could be monitoring:

- Stream flow
- Water temperature
- Channel and bank conditions
- Bedload measurements
- Overhead canopy
- Corridor vegetation communities
- Fisheries biomass
- Aquatic insect diversity

You should focus on the minimum number of monitoring parameters that are most effective in illustrating the quality of life in the stream and the stream corridor.

It is suggested that a minimum of three parameters be represented in your monitoring plan and that they focus on hydrological, physical and biological attributes. Use parameters that have well established sampling protocols. The data collection involved with monitoring should be relevant, efficient and cost effective. In some cases, you may need to prioritize the components of your monitoring plan to ensure that the most important aspects are undertaken first, should there be funding cutbacks. A periodic review of adjacent land use practices is recommended, as this may shed some light on unexplained changes that are occurring.

It has been observed and well-documented, that aquatic organisms clearly demonstrate a change in stream health as compared to solely relying on the monitoring of chemical parameters of water quality. Fish and aquatic insects are our canaries of the coal mine and can be excellent indicators of the success or failure of a stream rehabilitation project. Noticeable changes in the diversity and biomass in aquatic insects can be observed over a period of a few years. Similar changes in fish communities can take from as little as a few years to a decade. To assist your monitoring efforts of fish and aquatic insects, several monitoring protocols have been developed for specific use in Ontario's streams and rivers. Refer to the Stream Monitoring Framework produced by the Nottawasaga Valley Conservation Authority for details on the recommended monitoring protocols.

Following each monitoring cycle, a brief report should be written. The report should have a structured format including:

- title page
- table of contents
- introduction
- project map and site description
- monitoring methods and schedule
- results and analysis
- photographs
- discussion, conclusions and recommendations
- acknowledgments
- references

Copies of the report should be circulated to the project stakeholders and regulatory agencies. If substantial monitoring information is available, perhaps at year three or five, you may want to display your findings in a formal presentation to your stakeholders and any other interested parties.

Your monitoring program will be unique to your project and incorporate sampling protocols that have been developed for Ontario. For more information on monitoring stream rehabilitation projects, consult the following documents:

- Stream Corridor Restoration: Principles, Processes, and Practices (U.S. Department of Agriculture, 1998)
- Stream Restoration Monitoring Framework (Nottawasaga Valley Conservation Authority, 1999)
- Watershed Restoration: Principles and Practices (American Fisheries Society, 1997)