Doing Less with Less:

How shortfalls in budget, staffing and in-house expertise are hampering the effectiveness of MOE and MNR

A Special Report to the Legislative Assembly of Ontario

April 24, 2007

Office of the Environmental Commissioner of Ontario

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Commissioner
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Commissaire à
l'environnement
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Commissaire

April 24, 2007

The Honourable Michael Brown
Speaker of the Legislative Assembly
Room 180, Legislative Building
Legislative Assembly
Province of Ontario
Queen's Park

Dear Mr. Speaker:

In accordance with section 58(4) of the *Environmental Bill of Rights, 1993,* I present the attached Special Report of the Environmental Commissioner of Ontario for your submission to the Legislative Assembly of Ontario.

This Special Report concerns the lack of capacity at Ontario's environment ministries. In the past six months, I have become convinced that the need to rebuild the expertise and resources available to the Ministry of the Environment and the Ministry of Natural Resources has become a matter of urgency for Ontario legislators and the Ontario public. I am releasing this report to provide members of the Legislature and the public with my assessment of the problems that have developed during the past 15 years. I hope that the report that I am releasing today will help to provide some clarity, and help Ontario policymakers move to the next stage of the debate.

Sincerely,

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Table of Contents

1.0
Introduction

Sound management of Ontario's environmental resources is critical to safeguarding their ecological sustainability and ensuring our social, economic and environmental well-being. Although other ministries play important roles in this regard, the Ministry of the Environment (MOE) is the primary agent protecting Ontario's air and water quality and its ecosystems, and the Ministry of Natural Resources (MNR) is the primary steward of Ontario's wildlife, forests, wetlands, aquatic life, plants and aggregate resources.

As environmental stewards, these ministries must, on an on-going and regular basis:

* track the health of Ontario's natural environment;
* identify instances where environmental degradation has occurred or is imminent;
* take action to prevent, mitigate or manage existing or imminent degradation or impairment;
* develop and implement rules and procedures governing human activities that are sufficient to protect the environment;
* conduct investigations to determine whether there is compliance; and
* undertake education, enforcement and other activities to promote compliance.

Responsibilities of MNR and MOE have expanded over the long-term

Since the creation of MOE and MNR in the early 1970s, the core responsibilities of both ministries, the volume of work they must perform, and complexities of their mandates have greatly increased. The regulated communities also have grown in number; for example, there are more manufacturing facilities requiring approvals for air and water emissions, more pits and quarries, and so on. Over the same period, many environmental issues have become more complex and technically demanding, and the regulatory framework to manage these issues has grown in sophistication. Finally, a number of new program demands have emerged – some as a consequence of local crises, such as Walkerton; others, like invasive species, which present new ecological challenges as they appear on the landscape; and still others, like ozone depletion, arising from new scientific understanding about our impact on the environment.

The expanding responsibilities of MOE and MNR have resulted in a need for additional staff to carry out the necessary monitoring, inspection, enforcement, research and reporting duties. The growing technical sophistication of the science underlying much of the work has also generated an increased need for specialized expertise. Operational funding needs have also grown.

As will be shown in the following chapter, the budgets of MOE and MNR have not kept pace, in real terms, with the increased responsibilities of the two departments. Instead, there have been episodes of significant cut-backs, intermittent periods of partial recovery, and long periods of constraint. In real terms (2006 constant dollars), the budgets of both MNR and MOE are significantly (18 to 34 per cent) lower in 2006/2007 than 14 years earlier.

The following chapter will also show that in terms of per capita expenditures on the environment, MOE's operating budget in real terms declined from $39 per capita to $22 per capita in the 15-year period from 1992/1993 through 2006/2007. MNR's per capita operating budget also declined

over the same period. The declines have occurred under governments formed by all three major political parties of Ontario.

ECO reviews impact of capacity problems within MOE and MNR

In this report, the Environmental Commissioner of Ontario (ECO) reviewed the mandates, budgets and staff levels of MOE and MNR, to determine whether these ministries have sufficient capacity to carry out their duties. For the purposes of this report, 'capacity' is defined as having the ability to effectively carry out a function, task or mandate.

A lack of capacity could stem from a shortfall of one or more of three specific types of resources: financial resources, human resources, and/or expertise. Financial resources are the dollars dedicated to a task so that staff members are able to travel, inspect sites, complete plans, purchase necessary equipment, etc. Human resources are the number of staff members dedicated to a function. Expertise represents the need for staff with certain skills, knowledge or experience (e.g., enforcement experience, scientific or legal training, etc.).

To assess these ministries' capacities to carry out their mandates, the ECO reviewed:

- the process by which provincial budgets are set;
- changes in the MOE and MNR budgets between 1992/1993 and 2006/2007;
- changes in MOE and MNR staffing levels during the same period;
- funding levels for ministries with similar mandates in other provinces;
- the consequences of long-term capacity constraints on program delivery;
- the expanding mandates and evolution of priorities of these ministries;
- alternative delivery mechanisms used to partially offset capacity shortfalls; and
- eight core programs at MOE and MNR, including parks management, wildlife monitoring, environmental approvals, and the inspection of water wells, to gauge how well these programs have evolved in a climate of fiscal restraint (see Appendix 1).

The report concludes with a series of recommendations designed to restore the operational funding, staffing levels and in-house expertise of MOE and MNR to a level that reflects the value that Ontarians place on the natural resources of this province.

In addition to the eight case studies noted above, the appendixes contain an overview of the budget setting process in Ontario, reviews of the evolving mandates of MOE and MNR, and explanatory notes that supplement the budgetary analyses.

2.0
Analysis of the Operating Budgets of MOE and MNR

The ECO's review of the operating budgets of the MOE and MNR covers a period of 15 years and four governments. Operating budgets cover expenditures dedicated to, primarily, personnel and programs, and reflect how many people a ministry has available to carry out its mandate. Capital spending, while still very important, relates mostly to buildings, large equipment and infrastructure needs. This report deliberately focuses on the personnel side of ministry spending; the ECO has observed for a number of years that these ministries do not have the personnel necessary to effectively carry out all elements of their mandates. If a function or task, like inspection or enforcement, does not have sufficient personnel allocated, the function or task can not be carried out effectively.

Operating budgets have declined, in real terms, over study period

The trend of MOE's operating budget over the first half of the study period is one of decrease throughout most of the 1990s, finally hitting its lowest level in the fiscal years 1997/1998 and 1998/1999 (see Figure 1 and Notes). This period marked a critical juncture, in terms of MOE's budget and the reductions the ministry was facing, according to Justice O'Connor:

> *"With one exception, there was no negotiation between the central agencies and the MOE about the amount of the targeted budget reductions in view of the ministry's statutory responsibilities. The sole exception occurred in 1998, when the central agencies were proposing further reductions. The Minister of the Environment at the time … was advised by his staff that the MOE had reached the point where further budget reductions would affect the delivery of core programs."*

From that point forward, MOE's operating budget began to recover, but much of the increase was dedicated to meeting drinking water protection obligations flowing from the Walkerton tragedy and the recommendations arising from the subsequent Inquiry. For example, MOE's Clean Water Program had planned expenditures of about $7 million in 1999/2000. This number grew to approximately $43 million in the 2003/2004 estimates, and to approximately $120 million in the 2005/2006 estimates. This program alone accounted for almost all of the budget increase that MOE has experienced in the past decade.

Although MOE's budget has been on the incline in recent years, it is only just beginning to approach the budget levels seen in the early 1990s. However, this apparent rebound is deceptive because it does not account for the impact of inflation over the study period, 1992/1993 to 2006/2007. For instance, services purchased for approximately seventy-seven cents in 1992 would cost one dollar in 2006 – a 30 per cent decrease in value. After adjusting MOE's operating budget for the effects of inflation, the actual decrease in MOE's operating budget between 1992/1993 and 1998/1999 was approximately 56 per cent. Despite subsequent increases, the buying power of MOE's 2006/2007 operating budget is approximately 34 per cent lower than it was in 1992/1993 level (see Figure 3).

MOE and MNR must fulfill basic operational responsibilities

Ontario has a tremendous wealth of natural resources, including more than 250,000 lakes, innumerable streams and a large share of the Great Lakes drainage basin – the largest freshwater system in the world. From the tulip trees and opossums in the Carolinian zone in the south to the muskeg and polar bears of the Hudson Bay Lowlands in the north, Ontario is home to thousands of species of plants and animals. Eighty-seven per cent of the land is owned by the people of Ontario, and protected and managed by the Ontario government. The people of Ontario have a right to expect that this natural heritage will be protected.

Clean water, air and land are critical to Ontario's economy, the quality of life its residents enjoy, and the health of the province's ecosystems. Ontario's water resources are not inexhaustible and its water, air and biotic systems have a finite capacity to assimilate pollutants. The public expects that water should be safe to drink whether it comes from communal water works or private drinking water wells. Discharges of contaminants into the air, into waterways and onto land should be prevented and controlled.

To meet public expectations, MOE and MNR have a broad range of operational responsibilities that can be grouped into four major categories: rule-making; monitoring; and reporting, inspection and enforcement; and planning.

Setting rules	The protection of Ontario's environment and natural heritage requires an up-to-date framework of laws, regulations, policies, plans, standards, guidelines and approvals, which are based on science and the best-available technology. To develop, refine and apply this framework, the provincial government must have access to a diverse range of expertise – ecologists, biologists, chemists, engineers, hydrogeologists, computer modelers, statisticians, planners, etc.
Monitoring and reporting	Monitoring and reporting are basic prerequisites of any management system. To maintain biodiversity and to set sustainable harvest levels, the provincial government must monitor plant and animal populations, wildlife habitat requirements, and the roles of key species in ecosystems. Similarly, sustainable harvest levels for forest resources and rules for forest operations must be based on accurate information of the available resource base. Air and water quality must be monitored by networks of strategically placed monitoring stations. The accumulation of contaminants in plants and animals also requires monitoring.
Inspection and enforcement	Inspectors must verify that regulatory requirements are being implemented; that water, sewage and waste treatment facilities and air pollution controls have been constructed to approved standards; that water wells have been drilled by qualified personnel; and that pits and quarries are audited. Enforcement specialists must lay charges where warranted, to ensure that laws have teeth, and to maintain a level playing field for law-abiding individuals and corporations.
Planning	Ministries need to have staff who are leaders and strategists and who can anticipate and respond to on-going and emerging environmental challenges, such as climate change, urban sprawl and invasive alien species. At times, these leaders will need to make difficult decisions to balance today's environmental, social and economic needs against those of the future.

MNR's operating budgets exhibit greater variability than those of MOE over the study period. MNR's budget declined and then stabilized, to some degree, in the late 1990s and into this decade (see Figure 2). When MNR's budget is assessed on a 2006 constant dollar basis or its budget is charted year-by-year on a per capita spending basis, then this ministry has not fared so well. Expressing MNR's operating budget in real terms (see Figure 4), the actual decrease in MNR's operating budget between 1992/1993 and 2004/2005 was approximately 35 per cent. Despite a subsequent increase, MNR's 2006/2007 operating budget is approximately 18 per cent lower than

its 1992/1993 level (see Figure 4). In addition, the recent increase in MNR's operating budget is somewhat misleading, because it includes money that just 'flows through' the ministry to industry and other private sector partners. For example, 97 per cent of the increase in MNR's operating budget in 2006/2007 was new funding to respond to a crisis in the forest industry, and consisted, primarily of direct transfers to forest companies. If all transfers to industry and other organizations are netted out, MNR's budget in 2006/2007 is actually 22 per cent lower, in real dollars, than it was in 1992/1993.

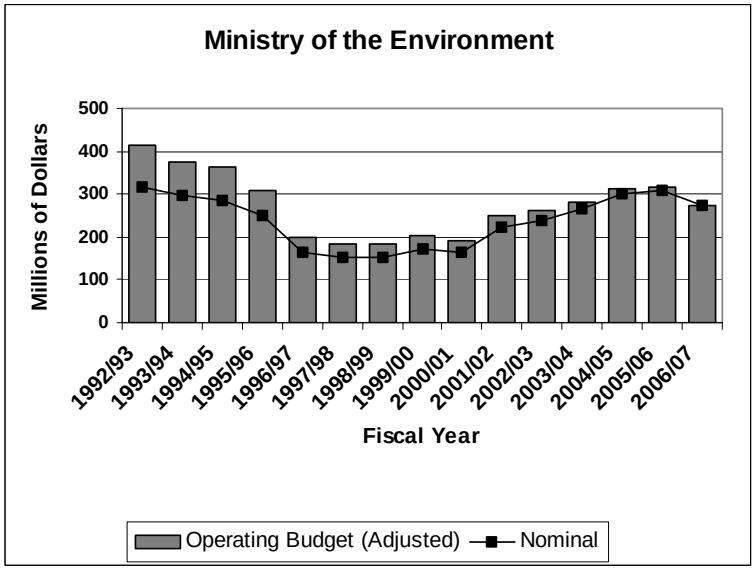


Figure 1: Trend in MOE's operating budget, nominal and adjusted to 2006 constant dollars. See Notes in Appendix 5 for this graph. Source: MOE.

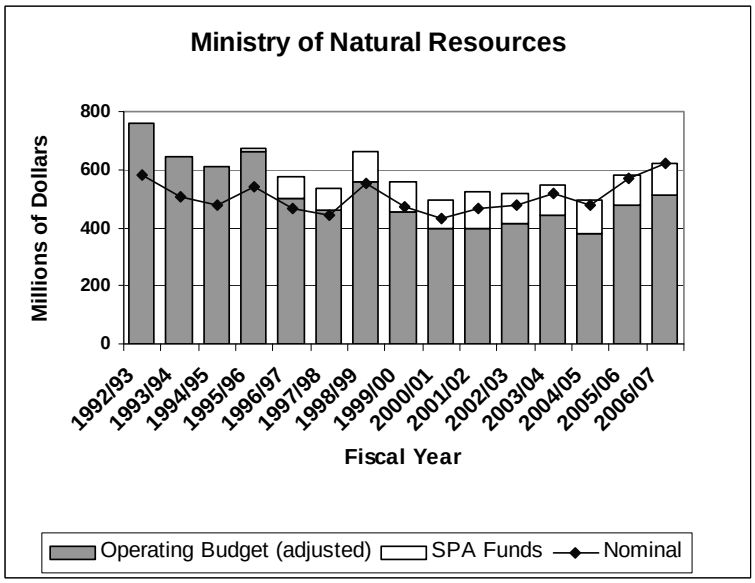


Figure 2: Trend in MNR's operating budget, nominal and adjusted to 2006 constant dollars. Source: MNR's Estimates Briefing Book. Note, SPA refers to Special Purpose Accounts (see MNR Case Study #2, Parks Program, for more detail).

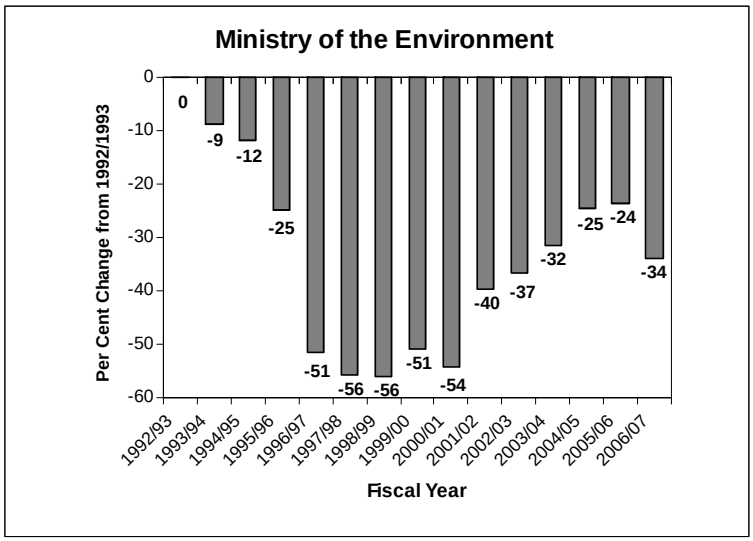


Figure 3: Per cent change since 1992/1993 in MOE's operating budget, after inflation (2006 constant dollars).

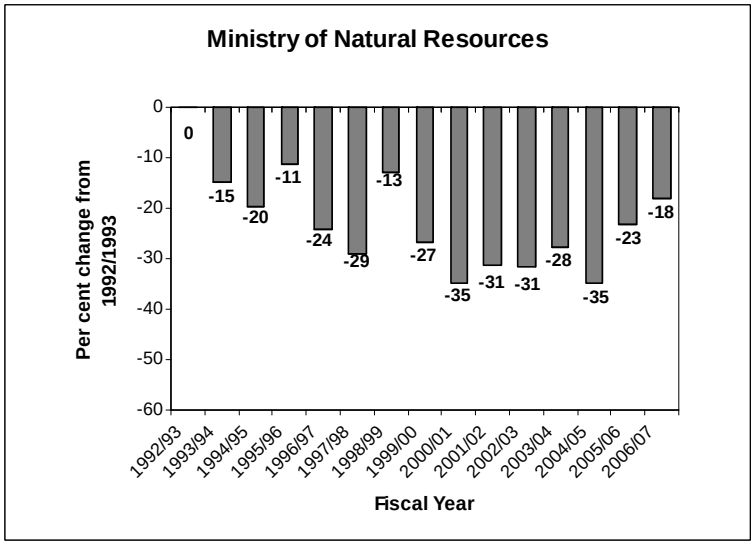


Figure 4: Per cent change since 1992/1993 in MNR's operating budget, after inflation (2006 constant dollars).

Budgets have not kept pace with growing population

Another way of reviewing MOE's operating budget is to track how it has fluctuated in relation to Ontario's growing population base. During the period 1992/1993 to 2006/2007, Ontario's population grew approximately 20 per cent, from 10.6 to 12.7 million people. During that same period, MOE's operating budget in real terms declined from $39 per capita in 1992/1993 to a low of $16 per capita in 1997/1998 and 1998/1999, before partially recovering to $22 per capita in 2006/2007 (see Figure 5). During that same period, MNR's operating budget in real terms declined from $72 per capita in 1992/1993 to a low of $40 per capita in 2004/2005, before partially recovering to $49 per capita in 2006/2007 (see Figure 6).

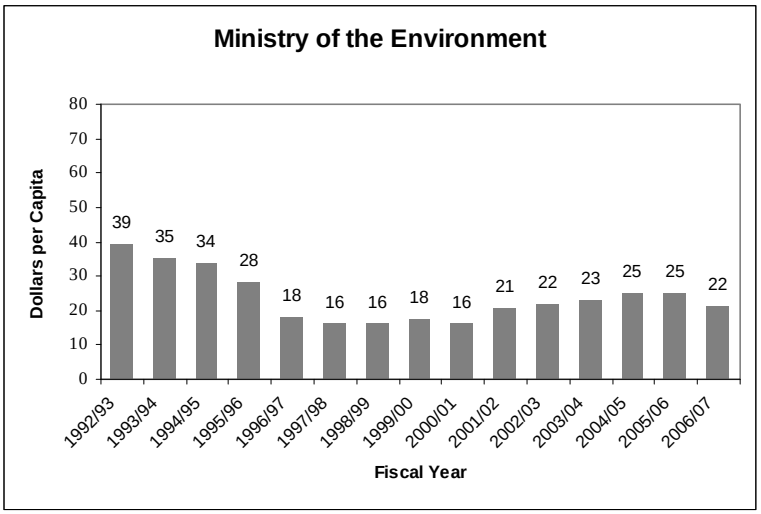


Figure 5: MOE's operating budget on a dollars spent per person basis, for the population of Ontario.

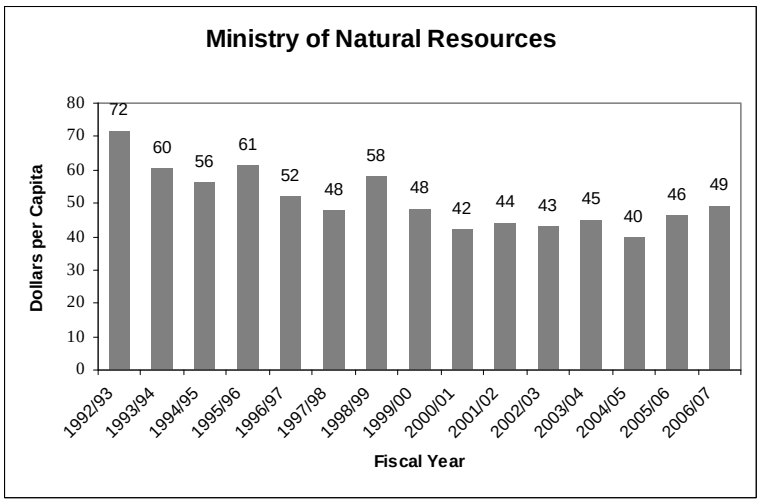


Figure 6: MNR's operating budget on a dollars spent per person basis, for the population of Ontario.

Ministry staffing levels mirror changes in operating budgets

Operating budget reductions have a relatively direct correlation with staffing levels. As can be seen in Figure 7 (and the Notes to the figures in Appendix 5), MOE's staffing levels have generally mirrored changes in annual operating budgets, falling with reductions and rising with increases. MNR's staffing level has fallen since 1992/1993, but has remained almost constant since 1997/1998, at about 3,500 full-time equivalent (FTE) positions (see Figure 8).

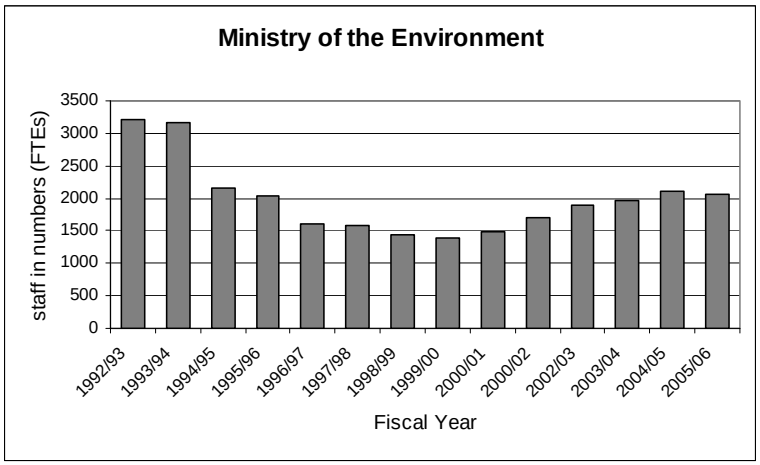


Figure 7: MOE staff levels 1992/1993 to 2005/2006. Totals are measured in full-time equivalent positions, as reported at fiscal year-end. See Notes in Appendix 5. Source: MOE

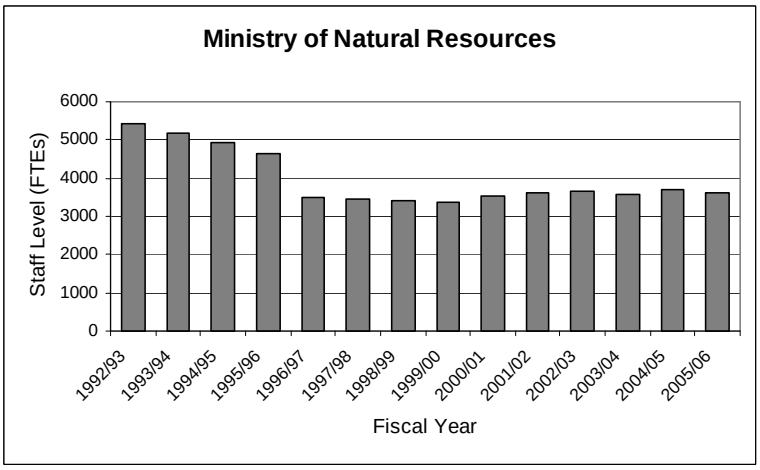


Figure 8: MNR staff levels 1992/1993 to 2005/2006. Totals are measured in full-time equivalent positions, as reported at fiscal year-end. Source: MNR

MOE and MNR receive declining share of overall provincial budget

Another means of analyzing the spending allocation and capacity of MOE and MNR is to compare these ministries' operating budgets to the overall operating budget of the Ontario Government. This comparison clearly illustrates that both ministries (but especially MOE) have been allocated less and less of the overall Ontario Government operating budget over the study period (see Figure 9).

On a percentage basis, MOE's planned operating budget for 2006/2007 is about a third of one per cent of the entire operating budget of the Ontario Government. In the early 1990s, MOE's and MNR's operating budgets had been as high as 0.63 and 1.15 per cent, respectively, of the operating budget of Ontario (see Table 1). Today, both MNR's and MOE's operating budgets, combined, account for only about one per cent of the overall provincial operating budget. This

decline has occurred despite the significant growth in the overall operating budget of Ontario (see Table 1).

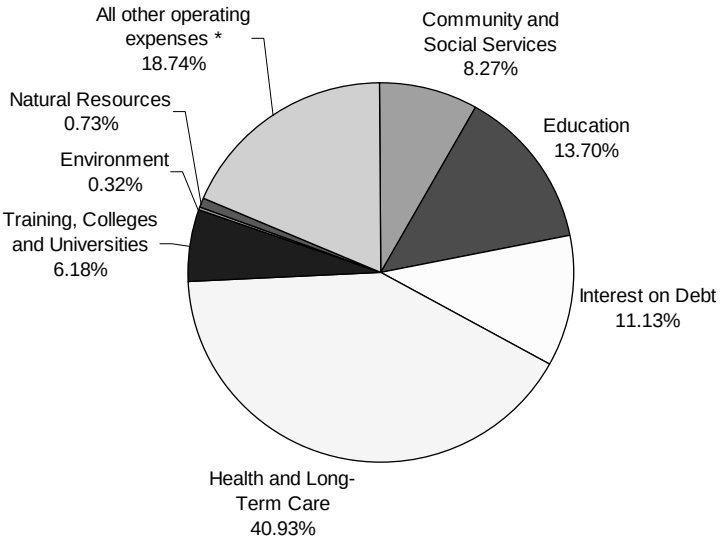


Figure 9: The planned 2006/2007 Ontario Government's operating budget ($84.7 billion)
* See Notes in Appendix 5.

Fiscal Year	Ont. Government Operating Budget	MOE Allocation		MNR Allocation	
1992/1993	$50,643 M	$318 M	0.63%	$584 M	1.15%
1993/1994	$51,324 M	$296 M	0.58%	$505 M	0.98%
1998/1999	$55,573 M	$152 M	0.27%	$552 M	0.99%
1999/2000	$57,022 M	$174 M	0.30%	$473 M	0.83%
2006/2007	$84,716 M	$273 M	0.32%	$622 M	0.73%

Table 1: Ontario budget percentage allocations to MOE and MNR, selected years. MNR allocation includes funds from Special Purpose Accounts.

MOE budget lags behind share accorded in other provinces

Another method of assessing the magnitude of a ministry's budget is to compare the percentage its budget represents of the overall Ontario budget to the allocation comparable ministries receive in other jurisdictions. For example, the Government of British Columbia will allocate to its Ministry of Environment between 0.54 and 0.65 per cent of the overall provincial budget (operating and capital) over the period 2005/2006 to 2007/2008. Similarly Alberta's Environment Ministry will be allocated 0.48 to 0.52 per cent of the provincial budget over the same period.

In Ontario, MOE's planned share of the provincial budget ranges from 0.32 to 0.35 per cent over the period 2005/2006 to 2007/2008 (see Figure 10).

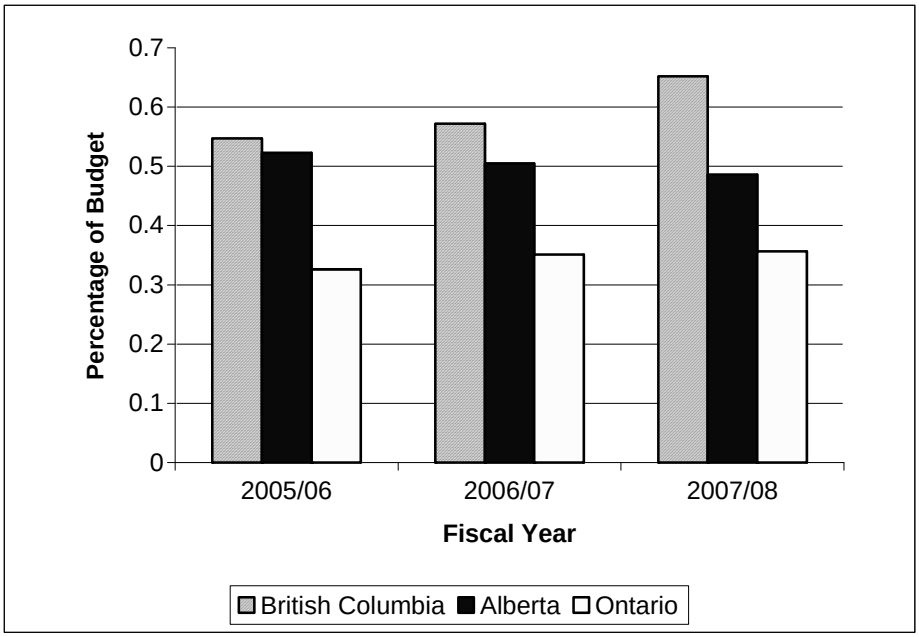


Figure 10: Budgets of three provincial environment ministries presented as a percentage of the overall budgets of their respective provinces. (It should be noted that comparisons with other provinces are not easily drawn because of differences in the mandate or structure of ministries with environmental responsibilities.)

Ontario's October 2006 Fiscal Outlook Report reported that the Ontario Government is seeking to identify $750 million in program review savings by 2007/2008. Cost-cutting measures could have a further detrimental effect on the capacity of MNR and MOE to carry out their mandates, as these two ministries have been the target of repeated expenditure reductions in the past.

3.0
The Impact of Capacity on Program Delivery

Anecdotal evidence indicates significant loss of expertise

In this report, the term "expertise" means the scientific and technical knowledge, skill and understanding needed to develop and carry out programs. It typically requires not only academic training in a relevant field of study, but also significant hands-on training and years of experience on the job, to acquire such expertise.

It is challenging to describe and quantify how levels of expertise within a ministry have changed over time. The ECO has no documented evidence that expertise within the ministries has declined to unsatisfactory levels. Further, there is no indication that the ministries are tracking or evaluating whether levels of expertise within their programs are sufficient to permit them to fulfill their mandates.

In the course of reviewing various ministry programs, the ECO has concluded (based on circumstantial observation) there has been a gradual decline of expertise within MOE and MNR. The ECO has observed a number of factors that are likely contributing to the decline. These factors include:

- the trend in shifting program delivery to partners outside the ministry, while retaining the policy development work in-house;
- cuts in staffing, with associated loss of expertise;
- the increasing use of contracted specialists and consultants for the completion of reports (often, the consultant relies on former ministry staff for expertise);
- reduced funding for the development and delivery of monitoring programs;
- the consolidation of many specialist positions to fewer generalist positions;
- a reduction in the number of positions that focus on science; and
- the transfer of people with technical expertise to policy and management positions where that technical expertise is only indirectly applied, if at all.

A number of examples of lost expertise were documented in the case studies conducted to support this report. These include the loss of:

- field expertise within MOE with respect to the inspection and oversight of private water wells;
- engineering and operational expertise within MOE in relation to the approval and compliance inspection of operating sewage and water infrastructure;
- expertise within MNR with regard to certain wildlife surveying and inventory work; and
- hydrogeological expertise within MNR related to sand and gravel operations.

Other observers have commented on the gradual loss of expertise at MOE. For example, senior MOE officials testified at the Walkerton Inquiry that early retirement programs (implemented as cost-cutting measures prior to 1996-97) resulted in a significant and premature loss of experience and 'collective memory.' Within MOE, at least, high staff turn-over in some divisions and branches may also be playing a role in declining expertise.

Trends at MNR have been somewhat different; that ministry is experiencing an aging workforce, and is beginning to examine the need for succession planning.

ECO has documented a history of program problems

Strategic priority-setting, reforms in delivery mechanisms and the reallocation of resources to better achieve objectives are all, in and of themselves, desirable attributes of an effective organization. Over the past 15 years, both MOE and MNR have made serious efforts to address an expanding mandate with decreasing resources by changing the way they have run their programs. Such changes are laudable, so far as they permit the ministries to efficiently and cost-effectively protect natural resources, air, water and land.

However, the ECO in its annual reports has consistently provided numerous examples of policy development and implementation, baseline monitoring, and enforcement programs that have been negatively impacted by capacity limitations.

* MOE relies on a 15-year-old, rudimentary inventory of waste disposal sites that inhibits its ability to monitor and properly regulate Ontario's landfill sites. The Ministry has indicated that it lacks the staff and financial resources to update and enhance the database.

* To control industrial air emissions, MOE relies on a number of outdated air standards for contaminants that the ministry has classified as "Group 1, high priority candidates". While, the ministry had originally planned to finish updating standards for these substances by 1996/1997, this has not been completed by 2006/2007.

* MNR's already small budget for acquiring properties of high ecological significance has remained virtually frozen for the past decade, while land values in Southern Ontario have increased dramatically and inflation has eroded the purchasing power of the fund.

* In 2001, MOE proposed a five-year phase-out of the land application of untreated sewage from septic tanks due to increasing concerns about the potential impact on surface and groundwater quality. Even though other jurisdictions have banned the practice, the policy remains at the proposal stage.

* For 75 years, the province was active in re-establishing forested areas, in concert with municipalities and conservation authorities. Since 1994, MNR has withdrawn from this activity, losing one of the few levers available for encouraging reforestation in Southern Ontario.

* After running Ontario's tree seedling nurseries for 90 years, MNR closed or privatized those nurseries during the 1990s. Seedling sales decreased from an estimated peak of nearly 30 million trees in 1992 to less than three million seedlings by 1998. There is currently no ministry program to track plantings on private land.

* MNR has very limited capacity to monitor fish populations, including valuable sport fish species, such as lake trout, which are vulnerable to over-fishing. In 2003/2004, the ECO reported that the ministry has long-term

population data for less than two per cent of the lakes inhabited by this species.

* Mercury contamination is the cause of over 95 per cent of all the fish consumption restrictions in Ontario's smaller inland lakes. However, neither MOE nor MNR have been monitoring mercury concentrations or impacts in vulnerable top predators, such as loons or otters, while budget constraints have limited mercury monitoring in fish populations.

* MOE has downloaded control of noise, dust and odour problems to municipalities which may lack the resources, expertise or legal authority to take effective action. In a number of cases, frustrated complainants have managed to convince MOE to take action by resorting to applications under the *EBR*.

The ECO believes that these examples are not simply a long list of unrelated, isolated failings or oversights but, rather, represent a pervasive syndrome, caused by chronically over-stretched resources, and resulting in poor delivery of important programs.

Case studies illustrate capacity problems

The ECO has also undertaken a series of eight case studies to illustrate the practical impact that chronic under-funding and other systemic capacity constraints have had on program delivery in MOE and MNR. The case studies, presented in this report, provide additional clear and compelling evidence that both ministries are struggling to meet their core responsibilities.

MOE Case Study #1: Inspection Programs

MOE is responsible for inspecting the numerous facilities in Ontario to ensure that they are complying with all of the provincial environmental laws and regulations. The case study notes that MOE has the capacity to inspect only about 2-4% of all regulated facilities each year, and that many facilities may go decades without inspection. When inspection sweeps are conducted, extremely high levels of non-compliance are often found. Despite MOE's concerted efforts to refocus its inspection resources, MOE's inspection program continues to face significant challenges.

MOE Case Study #2: Oversight of Sewage Treatment Plants

MOE is responsible for regulating the discharge of sewage into Ontario's waters. This includes responsibility for approving the construction and operation of sewage treatment plants (STPs), enforcing compliance by STPs with ministry laws, policies and other environmental requirements, and monitoring and reporting on STP performance trends and impacts on the environment. Although the public would expect that MOE is ensuring that this most basic public service does not pose a threat to the environment or human health, large discharges of raw or inadequately treated sewage are continuing to pollute bodies of water throughout the province.

MOE Case Study #3: Water Well Inspections

MOE is responsible for enforcing Regulation 903 (Wells, R.R.O. 1990) made under the *Ontario Water Resources Act*, which specifies standards for water well

construction, disinfection and abandonment among other things. Given the importance of groundwater to millions of Ontarians, the public would expect MOE to have a program to guard against improper well construction and inadvertent water contamination. As of early 2007, MOE does not have staff dedicated to investigating private drinking water well construction, repair or abandonment operations on an on-going basis.

MOE Case Study #4: Certificates of Approval

One of MOE's core responsibilities is regulating activities that may have an impact on the environment. MOE regulates these activities by issuing permits known as "Certificates of Approval" (Cs of A), and by attaching legally-binding compliance conditions to these Cs of A to minimize impacts on human health and the environment. Thousands of applications for Cs of A are submitted to MOE each year at a rate faster than the ministry can process. In addition, a large number of facilities in Ontario are operating with Cs of A that contain conditions both outdated and inconsistent with those imposed on similar, but newer operations.

MNR Case Study #1: Aggregate Planning and Compliance

MNR is responsible for managing Ontario's aggregate resources – the sand, gravel and rock which are essential materials for all types of construction. The aggregate industry operates roughly 6,000 pits and quarries across the province. The case study notes that the number of aggregate inspectors has been cut significantly, and that inspectors are not able to meet the ministry's own targets for site audits. Compliance problems are evident. The ministry also has inadequate capacity to carry out long-term planning for aggregates or to oversee rehabilitation of worked-out sites. Although the ministry has been taking some early steps to shore up its aggregates program, more resources and support will be needed to rebuild the ministry's capacity in this area.

MNR Case Study #2: Parks Program

MNR is responsible for Ontario's system of 631 parks and conservation reserves. The parks system has grown rapidly, and new legislation requires more complex management, as well as mandatory management planning, monitoring and reporting. The parks system is managed under a business model, relying mainly on user fees, with steadily diminishing government funding. The ECO found that, even with increased revenues, the parks operating budget has not kept up with the rapid growth in the parks system. The ministry has not been able to meet its full responsibilities for management planning, monitoring, or enforcement, due to insufficient resources.

MNR Case Study #3: Fish and Wildlife Monitoring

The case study summarizes capacity issues related to the inventory and monitoring of populations and harvests of mammals, birds, sport fish, reptiles and amphibians, in particular, and of Ontario's native plants and animals, in general. The case study notes the lack of published state of the resource reports and MNR's reliance on the revenue from hunters and anglers, and on partnerships to support existing inventory, monitoring, assessment and reporting activities.

MNR Case Study #4: Enforcement of Conservation Laws

MNR employs Conservation Officers (COs) to enforce fish and game laws and other statutes. The case study notes that the responsibilities of COs have expanded significantly over time to include public education, control of invasive species, protection of endangered species, and enforcement of a wide range of legislation. However, the numbers of COs in the field have declined significantly since 1992. Operating funding is also limited, and key enforcement statistics have been in decline for a number of years.

Capacity problems at MOE and MNR have wider economic impacts

A lack of capacity at MNR and MOE affects more than Ontario's environment. The under-funding of these ministries also has a negative impact on Ontario's economy. The ECO has been informed of numerous instances where regulatory uncertainty or delay has hampered business activities, including the following:

* The permits, licences, certificates of approval and other legal instruments issued by MOE and MNR are required for a wide range of industrial, commercial and resource extraction projects. These projects can be delayed if they are not assessed in a timely manner and, pending a project's approval, if the related instrument is not issued expeditiously. Staff or expertise shortfalls can contribute to these delays.

* Companies in one sector were unwilling to proceed with environmentally-beneficial facility upgrades, unless MOE passed a regulation establishing a level playing field and requiring their competitors to take similar action. In another instance, contractors complained that MOE regulatory amendments had created confusion with one of MOE's licencing systems, hampering their ability to carry out projects and execute contracts.

While the primary purpose of this report is to detail the environmental impacts of MOE's and MNR's capacity shortfall, it is worth noting that approvals delays, regulatory uncertainty and extended processes, all of which could stem from a lack of capacity, can result in negative impacts to businesses in Ontario.

4.0
How the Capacity Problem Arose

Ministry budgets and spending directions set by the government

Once a year, usually in late winter or spring, the Minister of Finance tables a budget in the Provincial Legislature. This document sets out the revenue projections and spending priorities for the Ontario Government for the forthcoming fiscal year (April 1st to March 31st). Typically, the Minister of Finance holds a number of pre-budget consultations at which stakeholders can provide input into the process. However, the contents of the budget are kept confidential until it is tabled in the Legislature. Only certain members of the Ontario government, certain staff of the offices of the Premier and Minister of Finance (MOF), and cabinet committees (such as Treasury Board and Management Board of Cabinet) would have knowledge of some or all of its contents.

In effect, most of the large-scale financial numbers and spending directions are established by the Finance Minister through the budget process. The implications of this centralized, top-down approach were noted by Justice O'Connor in his *Report of the Walkerton Inquiry*:

> *"Beginning in 1992-93 and continuing until 1997-98, the budget of the Ministry of Environment (MOE) underwent very substantial reductions…The budget reduction targets for the MOE were not set by that ministry. They also did not involve a review of the question of whether the reductions could be achieved without sacrificing the MOE's capacity to fulfill its statutory mandate. Rather, the reduction targets were initiated by the central agencies, and the MOE's responsibility was to develop strategies for achieving those targets."*
>
> -- Report of the Walkerton Inquiry, Part One, (2002), Chapter 11

Establishing government spending priorities and meeting program delivery and fiscal objectives entails a number of steps and procedures involving Ontario ministries, Cabinet Office and other agencies. During this process, significant spending directions are established, and the relative magnitude of each ministry's budget (compared to the others) is set. After the major financial decisions and spending directions are established by the Finance Minister through the budget process, an all-party committee of the Legislature called the Standing Committee on Estimates reviews specific spending plans of certain ministries. Ministries also rely on a process called "Results-based Planning" to guide the organization of spending activities and program development. (see Appendix 2 for further detail).

How the ministries have responded to the challenges

Both ministries have tried hard to adapt to on-going budget constraints, with repeated efforts to reprioritize (more detail on these efforts is provided in Appendices 3 and 4). At any given time, the ministries have focused their limited resources on one or more "flagship" programs, reflecting the priorities of the government of the day, such as MOE's Municipal Industrial Strategy for Abatement (MISA), or MNR's Lands for Life program . But on-going "day-to-day" core activities (such as inspections or baseline monitoring) not directly related to the flagship programs have suffered as a consequence, and have often been at risk of being phased out or absorbed into some other function. The periodic emergence of new "flagship" initiatives has in turn drawn expertise,

staff and funding away from previous high priorities, resulting in an expanding arena of regulatory and policy obligations, but without growing resources to follow through.

MOE and MNR have also both worked diligently since the early 1990s to find creative alternative strategies to deliver programs and activities. Sometimes these approaches have been relatively effective, but the ECO has observed many instances where important activities have been handed off to entities ill-equipped (or reluctant) to take them on. Depending on the situation, the ministries have downloaded programs to local levels of government, off-loaded activities to the private sector, or partnered with volunteer groups. For example in 1997, MOE downloaded noise, dust and odour issues to municipalities, and MNR gave the aggregate industry the task of reporting on their own sites. In other instances, programs have been scaled back, or simply discontinued; MOE discontinued unannounced inspections of water well installations and MNR discontinued the Southern Ontario Forestry Program.

In a number of situations, legislation and policies have been amended to allow for the alternative delivery approaches – to allow third parties to carry out activities formerly done by ministry staff. But despite such legislative amendments, MNR remains the ultimate steward of Ontario's natural resources, and MOE remains responsible for protecting the province's air, water and land from pollution. While activities may be devolved or downloaded, the stewardship responsibility continues to rest with the provincial ministries. This is the expectation of the Ontario public, and the ministries acknowledge this expectation in their self-described mandates.

5.0
Conclusions and Recommendations

The ECO's review of the operating budgets of both MNR and MOE indicates that these key environmental Ministries have not been allocated financial resources in accordance with the growth in the overall operating budget of the Ontario Government.

During the study period MOE's budget declined dramatically, leveled off and appears to be making a slow recovery. However, most of the growth in MOE's operating budget can be linked to its Clean Water Program. Other core programs have not enjoyed a similar infusion of financial and staff resources, and continue to have difficulty in fully realizing their program objectives. MNR's budget history is more variable, but with an underlying downward trend in the mid-to-late 1990s. Most of the recent increase in MNR's operating budget represents funding that will flow through to the forest industry, and not funding for enhancing MNR's core programs.

The net effect of Government policies and budget priorities over the last 15 years has been to limit the capacity of MOE and MNR to undertake their basic functions in a timely, effective and comprehensive manner. As a result, Ontario is losing ground on meeting the most basic obligations for protecting the environment.

In consultation with the ministries and the public, the Ontario government should:

1. Undertake a step-wise, strategic rebuilding of capacity at MOE and MNR, to ensure that the ministries can fulfill their mandates.

2. Develop planning, priority-setting and budgeting processes to ensure that MOE and MNR are adequately equipped to:

    * know the overall state/health of Ontario's natural environment;
    * know when degradation or impairment of the environment is imminent;
    * take action to prevent, mitigate or manage existing or imminent substantive degradation or impairment;
    * set rules and procedures governing human activities that are sufficient to protect the environment; and
    * know where rules and procedures are not being complied with, and take measures to achieve compliance.

3. Direct MOE and MNR to undertake a third party evaluation of the adequacy and distribution of technical and science expertise within their agencies.

Appendix 1
Case Studies of Ministry Programs

Ministry of Environment Case Studies

MOE Case Study #1: Inspection Programs
MOE Case Study #2: Oversight of Sewage Treatment Plants
MOE Case Study #3: Water Well Inspections
MOE Case Study #4: Certificates of Approval

Ministry of Natural Resources Case Studies

MNR Case Study #1: Aggregate Planning and Compliance
MNR Case Study #2: Parks Program
MNR Case Study #3: Fish and Wildlife Monitoring
MNR Case Study #4: Enforcement of Conservation Laws

MOE Case Study #1: Inspection Programs

Shortfalls in budget, staffing and expertise limit scope and effectiveness of inspections

Introduction

An essential component of the Ministry of the Environment's (MOE) broad mandate to protect the environment includes its responsibility to enforce compliance with environmental laws and regulations. Ontario has an impressive, and growing, list of laws designed to protect the environment, including the *Environmental Protection Act*, the *Ontario Water Resources Act*, the *Safe Drinking Water Act*, the *Nutrient Management Act*, the *Environmental Assessment Act*, the *Pesticides Act* and the *Waste Diversion Act*. In order to achieve the full intended benefits of these laws, they must be enforced.

An inspection program is a necessary and vital component of any compliance and enforcement strategy. Although incidents of non-compliance may be brought to the attention of ministry staff through various means other than inspections (such as pollution and spill reports, public complaints and applications for investigation under the *Environmental Bill of Rights*), relying on these methods alone would be inadequate. Citizen monitoring of environmental requirements is a valuable supplement to ministry compliance activities; however, it cannot be a substitute for MOE's mandated responsibility to inspect and enforce environmental laws.

The public expects that MOE has an effective inspection program that can identify (and correct) cases of non-compliance with environmental laws, provide important educational outreach services to industry, and encourage general compliance by presenting a reasonable prospect of enforcement.

An effective inspections program not only protects the environment by proactively preventing environmental incidents from occurring and promoting higher levels of compliance, but it also enhances competitive fairness in the marketplace. Inspections can help 'level the playing field' within an industrial sector by ensuring that law-abiding facilities are not competitively disadvantaged as a result of their compliance efforts.

MOE inspections support a wide statutory mandate

MOE is responsible for assessing the compliance of an estimated 125,000 to 350,000 regulated entities in Ontario with provincial environmental laws, regulations and other instruments (such as conditions in Certificates of Approval). To promote compliance, MOE has stated that its district officers conduct about 3,000 to 4,000 inspections each year. Since 2000, the Sector Compliance Branch (SCB – formerly the Environmental SWAT Team) has been supplementing the district inspection program by conducting province-wide inspection sweeps of selected sectors with a history of non-compliance. The SCB conducts approximately 1,000 additional inspections per year.

When an MOE inspector identifies a potential violation of an environmental law, regulation or other requirement, the inspector may use a range of tools to address the non-compliance – from education and outreach and other voluntary abatement programs to mandatory measures, such as

issuing tickets or Provincial Officer's Orders. MOE inspectors may also refer cases to MOE's Investigations and Enforcement Branch for further investigation and possible legal action. In addition, regulations proposed in October 2006 will soon enable inspectors to issue "Environmental Penalties" as well.

Inspectors are also responsible for conducting compliance follow-ups to ensure that contraveners have taken appropriate corrective action where necessary.

Lack of staff capacity limits inspection coverage

Starting in 1995, as a result of substantial budget cuts to MOE, the number of inspections conducted by the ministry decreased dramatically, falling by almost one half from 1995 to 1999. Although the inspection rates began to increase again after the Walkerton crisis in 2000, the Auditor General of Ontario (AGO) observed in 2003 that MOE's total inspection activity in 2002/2003 was still only at 73 per cent of the 1995/1996 levels. MOE advised the AGO that these lower inspection rates were due, in part, to the fact that MOE inspectors are now averaging far fewer inspections annually than in the early 1990s, as inspections have become more comprehensive and take longer.

It is likely that inadequate staffing is also a contributing factor to the observed decline in inspection activity; however, the ECO has not been able to access information on trends in MOE staff inspector numbers to verify this point. MOE's inspection rates have remained relatively constant since 2003.

As noted above, MOE currently has the staff capacity to conduct about 5,000 total inspections each year (including SCB inspections, but not including smog patrol inspections). This represents inspections of about two to four per cent of all regulated facilities each year. Thus, at least 96 per cent of regulated facilities will not see an MOE inspector in any given year, and many facilities can expect to go decades without inspection. In fact, MOE has acknowledged that some regulated facilities have never seen an inspector on-site.

In 2003, the AGO expressed concerns about MOE's low inspection coverage, especially given the fact that the number of regulated facilities in the province is continually growing as a result of both economic growth in the province and the growing list of new environmental laws and regulations. For example, both the *Safe Drinking Water Act* and the *Nutrient Management Act* have been enacted in the last five years, bringing additional activities under MOE purview.

Moreover, inspection coverage is not spread equally across industrial sectors. Most new inspectors that have been hired since 1999 have been hired for specific new projects – primarily for drinking water inspections. In the first three years after the Walkerton crisis, MOE hired 57 new drinking water inspectors to implement its new policy of inspecting all municipal waterworks annually, and in 2003/2004, MOE again increased the number of drinking water inspectors by 25 per cent. So while some sectors are receiving significantly improved inspection coverage, this redirection of resources results in fewer inspectors for other sectors. The AGO observed in 2003 that "the new policy of annually inspecting all municipal waterworks has had a negative impact on the Ministry's abilities to cover other environmental sectors."

Some environmental requirements are receiving no inspection attention at all. For example, MOE inspectors typically do not inspect a facility's compliance with the conditions of its environmental assessment (EA) approval or with the various other requirements under the *Environmental Assessment Act* and regulations, except to respond to complaints. The ECO, the AGO and many EA stakeholders have raised concerns about MOE's ability to monitor and enforce EA compliance. A recent internal audit by MOE found that only about 50 per cent of the proponents

audited were in full compliance with conditions of their EA approval. This poor record indicates a need for a compliance monitoring plan. The 2005 EA Advisory Panel Report recommended that MOE inspectors be provided with broader powers to inspect EA compliance and that MOE develop inspection protocols relating to EA compliance. MOE has stated that it is currently working on implementing these recommendations, but the ECO notes that an effective response will depend on adequate staff and financial resources.

Budget cuts also cost ministry critical expertise

The major budget cuts of the 1990s affected not only staff numbers, but also resulted in a significant loss of scientific expertise and experience within MOE. Following the cuts, there were fewer remaining staff members that had the level of expertise necessary to execute the detailed and technical inspections needed for complex operations. For example, when the new drinking water regulations were introduced, MOE had to approach the Professional Engineers of Ontario for water engineers because the ministry no longer had enough internal staff capable of implementing these regulations.

The loss of staff expertise in other areas of the ministry has also impacted MOE's ability to conduct inspections. When MOE's three regional laboratories were closed in 1996, scientific staff members, such as microbiologists and lab technologists, were laid off. This loss of laboratory analytical support was considered a significant loss to drinking water inspectors. While MOE has rehired a number of experts related to drinking water, other areas are still suffering from lack of staff expertise.

Inspection strategy needed to refocus available resources

With staff capacity stretched to the limit, MOE's approach to inspections has been frequently criticized as being too "reactive" and "ad hoc". In fact, MOE's 1996 internal Business Plan (approved by Cabinet) anticipated that the planned budget cuts would result in a reduction in proactive inspections, as well as scientific and technical experts in the ministry, which would reduce MOE's ability to ensure compliance with environmental standards and regulations.

To more effectively identify significant incidents of non-compliance and better protect the environment, several reports over the last few years have recommended that MOE develop a proactive, risk-based inspection strategy that targets those facilities that have the greatest potential for detrimental environmental impact.

Without a proper inspection planning strategy, high-risk facilities may go years without an inspection. For example, a 2004 audit by the AGO found no documented inspections by MOE for the single largest air-polluting facility in Canada for the previous three years (except for one inspection of its coal pile for dust emissions), despite the fact that the facility reported 36 air-related incidents to MOE in the previous year, many of which had an adverse impact on the environment.

High levels of non-compliance illustrate need for more inspections

The need for an effective inspection program by MOE is evidenced by the high levels of non-compliance with environmental requirements existing in facilities throughout the province. Inspection sweeps by MOE's Sector Compliance Branch over the past few years have found

extremely high levels of non-compliance – in the range of 90 to 100 per cent for most sectors. In addition, MOE estimates that about 40 per cent of all facilities in the province are operating without the necessary environmental approvals. Although softer approaches have been used to try to increase compliance levels, MOE has found that compliance assistance programs must be integrated with a credible enforcement threat to attain any real improvements in compliance.

MOE inspectors also face challenges in meeting their responsibility to conduct follow-up inspections to ensure that the facilities have subsequently corrected any identified compliance problems.

MOE has attempted to refocus inspection program

Following the major budget cuts of the mid-1990s, MOE developed new policies to prioritize its limited inspection and enforcement resources. In the late-1990s, MOE announced that it was scaling back its inspection and enforcement activities to focus on the more significant activities that pose a risk to the environment or public health. Between 1996 and 1998, MOE introduced new protocols and policies – the "Delivery Strategies" and the "Procedures for Responding to Pollution Incident Reports" – for responding to complaints and prioritizing abatement actions. These new policies included downloading responsibility for local nuisance impacts, such as noise, odour and dust, onto municipalities. At the same time, MOE discontinued its unannounced inspections of water well installations (see MOE Case Study #3, Water Well Inspections), and transferred its responsibility for septic system inspections to the Ministry of Municipal Affairs and Housing and local health units.

In 2004, MOE began looking for further ways to focus its inspection resources. MOE developed a risk-based approach to select facilities for its annual planned inspections; MOE now ranks facilities into three risk categories based on their potential impacts on the environment. Facilities that were deemed to pose a risk to the environment and found to be non-compliant are now either re-inspected the following year or monitored to ensure that on-going abatement activity is addressing the non-compliance. In 2005, MOE also introduced a new web-based tool that improves the ministry's ability to both rank facilities and plan future inspections.

In 2006, to improve its inspection follow-up procedures, the SCB introduced a requirement that every facility that has been ordered to take corrective action must report back to MOE by the completion date specified in the order. In addition, MOE is now using a new automated flagging system that alerts MOE staff when follow-up compliance steps are required.

Currently, MOE is developing a "modernization agenda" to further focus its limited inspection staff resources (see MOE Case Study #4, Certificates of Approval). MOE hopes, through this reform, to transfer about 75 per cent of the currently regulated facilities (i.e., the medium and lower risk facilities) to third-party and self-inspection programs.

Finally, in an initiative led by the Ministry of Labour, the proposed *Regulatory Modernization Act*, if passed, would allow greater cooperation between ministries with respect to inspections and could result in some environmental problems being identified earlier.

Capacity challenges continue

MOE's reforms address just some of the challenges facing MOE's inspections program. Even if MOE successfully reduces its inspection responsibilities to just 25 per cent of its current inspection workload (an estimated minimum 31,000 facilities), MOE's current capacity to conduct some 5,000 inspections per year would result in a 16 per cent inspection rate – a theoretic six-year

cycle to inspect all facilities. However, it would be unlikely that MOE would be able to maintain its current inspection rates without additional capacity as MOE would be inspecting only the most challenging and complex "high-risk" facilities, which take much longer to inspect. In addition, some of MOE's recent policies require that certain facilities be re-inspected more frequently (e.g., water treatment plants or high-risk facilities that were previously non-compliant), which will reduce inspection rates for other facilities.

Moreover, to meet MOE's stated goal of improving overall compliance, MOE would still need to conduct at least some audits of the lower-tiered facilities to supplement the third party reviews and self-inspections proposed in the reforms. Other experiences with self-inspection programs, such as the program under the *Aggregate Resources Act*, suggest that there are challenges associated with such an approach.

Conclusion

MOE is responsible for ensuring that the numerous regulated facilities in Ontario are complying with all of the provincial environmental laws and regulations. While it is apparent that MOE could not inspect every regulated facility, the public expects that a reasonable rate of compliance with environmental laws is being enforced. However, MOE inspects only a very small percentage of the regulated facilities each year, and current levels of non-compliance in the province are extremely high. MOE has been working hard to find ways to refocus its inspection resources, but it continues to face significant challenges.

Without access to staffing numbers, the ECO cannot conclude that staffing is the sole cause of MOE's inspection problems; however, it appears to the ECO that reduced staff capacity and staff expertise, combined with an increased workload from more regulations, more regulated facilities and more complex inspections, are key contributors of MOE's inspection problems.

MOE Case Study #2:
Oversight of Sewage Treatment Plants

Capacity constraints likely a factor in MOE's challenge to oversee Sewage Treatment Plants

Introduction

Discharges of untreated or poorly treated sewage into our waterways pose a significant threat to the environment and to human health – harming fish and plant life, threatening biological diversity, forcing beach closures and impairing the quality of Ontario's water resources. Discharges of raw sewage are considered to be among the greatest impacts on the sustainability of the Great Lakes.

The public expects that a developed country, such as Canada in the 21st century, would have proper sewage treatment infrastructure in place. Furthermore, MOE is expected to serve as a strong regulator and to ensure that this basic public service is well managed and does not pose a threat to the environment or human health.

MOE is responsible for approval and oversight of STPs

The Ministry of the Environment (MOE) is responsible for regulating the discharge of sewage into Ontario's waters and protecting provincial waters from sources of pollution. This broad duty encompasses the following responsibilities:

- approving sewage treatment plants (STPs);
- setting performance requirements for STPs;
- enforcing compliance with operating certificates and regulatory requirements; and
- monitoring performance trends and environmental impacts of STPs.

MOE is responsible for regulating the construction and operation of all STPs in Ontario by issuing Certificates of Approval (Cs of A) to facility owners. Through Cs of A, MOE may set the conditions of operation for each of the 465 municipal STPs in Ontario. These conditions may include design objectives, capacity limits (to ensure that sewage inflow volumes do not exceed the capacity of the STP and result in effluent bypass), effluent criteria (to limit the concentration of pollutants in the treated effluent to protect the receiving waters), and other operating requirements. In addition, MOE publishes policy guidelines that set out operating and performance standards relating to STPs.

As the primary regulator, MOE is also responsible for ensuring that STP operators comply with the conditions of their Cs of A, as well as with relevant legislation, regulations and ministry policies. MOE is responsible for conducting periodic inspections of STPs to assess their level of compliance and to order abatement measures or pursue enforcement action, where appropriate.

As the responsible authority for protecting Ontario's waterways, MOE is also responsible for monitoring the impacts (both short and long-term) of STP discharges and effluents on the environment and for assessing STP performance trends both regionally and over time.

To assess impacts and track trends, MOE requires a comprehensive analysis of STP performance data (such as total pollutant loadings, toxicity of effluents, volume of sewage bypasses, number of plants operating at or over capacity, etc.). This information enables MOE staff to set appropriate standards for STPs based on sound scientific and ecological information, and to develop long-term provincial plans with respect to STPs.

Restructuring shifts staff, expertise and funding control out of MOE

Until the early 1990s, MOE was integrally involved in the operation, management and financing of STPs in Ontario. The province owned and operated more than one-third (153) of the province's STPs, as well as provided operating and technical services for many municipally-owned STPs.

In 1993, in part to address the conflict of MOE acting as both operator/owner and regulator of STPs, the provincial government established the Ontario Clean Water Agency (OCWA) to take over MOE's responsibilities for operating and managing all provincially-owned STPs (and water treatment plants), as well as its responsibilities for providing operating, financial and technical assistance to municipalities. OCWA was spun off from MOE in 1995 to become an independent Crown agency.

This transfer of responsibilities from MOE to OCWA, combined with the major cuts to MOE's budget in the 1990s, resulted in a significant decrease in staff and expertise within the ministry with respect to the oversight of STPs. When OCWA was created in 1993, MOE lost 980 full-time equivalent staff members – almost one-third of its total staff. Many of these staff members were experienced scientists and engineers knowledgeable about the complex operation, design and management of STPs. These expert staff had previously provided valuable support for MOE's compliance and abatement programs and C of A reviews for STPs.

In 1997, Ontario completed its divestment by transferring ownership and operating responsibility for all STPs to the municipalities (who could still retain OCWA's services). At this time, the province virtually eliminated its "Municipal Assistance Program", which provided capital grants for municipal sewage projects from MOE's capital budget. Through this program, MOE had controlled funding decisions to upgrade STPs, which had given MOE staff some leverage in carrying out its compliance and abatement activities.

Since the late-1990s, MOE has played a significantly diminished role with respect to the administration of the province's capital funding programs for municipal sewage projects (such as the SuperBuild OSTAR program, which operated until 2003). It is possible that this loss of influence over infrastructure funding has reduced, to some extent, MOE's ability to require municipalities to upgrade their sewage infrastructure.

MOE is struggling to fulfill STP-related duties

The ECO has observed that MOE has been struggling for a number of years to fulfill many of its responsibilities with regard to regulating municipal sewage infrastructure. While the ECO suspects that inadequate capacity – in staffing, expertise and funding – is largely to blame, the ECO does not have access to MOE staffing trends related to sewage issues, and cannot confirm that inadequate capacity is the main cause. The ECO does believe that the loss of hundreds of staff with specialized expertise in sewage issues in the mid-1990s has been a contributing factor.

C of A requirements need to be updated for many plants

Though current published figures are not available, it appears that a considerable number of municipal STPs are operating under Cs of A that are over twenty-years-old. Older certificates typically reflect outdated environmental design and treatment processes and weaker effluent limits than are currently applied. As a result, many municipal STPs are discharging large quantities of inadequately treated sewage (containing high levels of biological oxygen demand, total suspended solids, phosphorus, nitrogen, ammonia, bacteria and other pathogens) into provincial waters.

MOE has acknowledged that outdated Cs of A for STPs are a systemic problem, and finalized a protocol for updating Cs of A for sewage works in January 2005. However, the protocol does not require MOE to engage in any comprehensive review and updating of Cs of A to tighten their requirements. MOE's general capacity challenge to review and update outdated Cs of A is compounded by the fact that STPs are complex, specialized facilities that require review by approvals staff with special technical expertise.

MOE is not applying a number of its own guidelines

MOE has 13 guidelines relating to the operation of sewage systems. These guidelines set technical standards for STPs and provide guidance to MOE staff in setting conditions for Cs of A. Many of these guidelines are highly technical and rely on MOE staff members' knowledge and expertise for their application. The ECO has observed that, in recent years, MOE has been failing to apply many of its long-standing guidelines relating to STPs.

Secondary Treatment:

MOE's policy guidelines state that all STPs must provide secondary treatment as a minimum level of treatment. Yet, MOE acknowledges that several municipalities in Ontario are still permitted to operate plants with only the most basic sewage treatment, known as "primary treatment." Plants with primary treatment merely screen and settle out the solids from the wastewater, and then disinfect the effluent with chlorine (or other agents) before discharging it.

Sewer Use Bylaws:

In addition to sanitary wastewater, municipal STPs also receive large quantities of wastewater from industrial and commercial operations (containing such toxic contaminants as oil, pesticides, cleaning agents, heavy metals and persistent organic pollutants). As most STPs are not designed to treat these industrial wastes, significant quantities of harmful contaminants pass partially or totally untreated through municipal STPs into our lakes and rivers. MOE's policy guidelines clearly state that: "In all cases, sewer use bylaws should be in effect and under enforcement to control the wastes being discharged to the sewer system by municipalities." Despite this policy, MOE has not required municipalities to enact sewer use bylaws to control the discharge of toxic industrial contaminants into the sewer system.

Treating Contaminants in Wastewater:

To treat the industrial and commercial contaminants that do enter the sewer system, MOE's guidelines state that STPs must ensure that their chosen sewage treatment process be compatible with the industrial waste inputs requiring treatment. In practice, MOE generally regulates only a few conventional

parameters in STP effluent (i.e., biological oxygen demand, total suspended solids and total phosphorus, as well as ammonia and E. coli on a case-by-case basis). MOE typically does not require STPs to monitor or treat any of the other toxic contaminants that are commonly found in sewage effluent.

Combined Sewer Overflows:

Every year, many billions of litres of untreated raw sewage are discharged from sewer systems into Ontario's lakes, rivers and waterways. The main cause of these raw sewage discharges are the antiquated "combined sewer systems" found in about 70 older cities throughout the province. During heavy rains or rapid snowmelt, the overflow of raw sewage and stormwater collected in the single-pipe system is discharged directly into local waterways. To address this overflow problem, MOE's guidelines require all municipalities served by combined sewer systems to develop Pollution Prevention and Control Plans (PPCPs) to avoid and contain overflows. However, MOE has not even reviewed the PPCPs for most municipalities, and estimates that about 40 per cent of municipalities with combined sewers have never prepared PPCPs as required.

Sewage Bypasses:

Some STPs, operating at or near capacity, deliberately discharge untreated (or partially treated) sewage directly into waterways when overwhelmed by incoming sewage, rather than allow the sewage to back up into basements or onto streets. MOE's guidelines explicitly prohibit all discharges of untreated sewage except in "emergency conditions." The guidelines also direct MOE to consider a municipality's compliance with the sewage bypass policies prior to issuing or amending a Certificate of Approval. Despite the fact that some municipalities experience bypass events far too frequently to be interpreted as "emergencies", MOE does not appear to be applying these policies by denying C of A amendments to those experiencing on-going problems.

Compliance relies on self-reporting and 'soft' enforcement

For the most part, MOE staff members rely on data provided by the operators of each STP to assess compliance. While this may be a practical means of reviewing the performance of a large number of STPs with limited MOE staff resources, self-reporting must be supported by a reasonable inspection rate to ensure that self-reported data is accurate. The ECO is not aware of any published MOE inspection targets for STPs. In contrast, MOE has committed to inspecting drinking water plants annually.

Where cases of non-compliance by STPs are identified, MOE has a number of legal tools available to enforce compliance (such as mandatory orders and prosecutions). In practice, MOE prefers to apply softer, unenforceable approaches (such as voluntary abatement programs) to municipal STPs. For example, in 2004 and 2005 (the most recent years for which MOE has published data), MOE issued orders to only eight per cent of the municipal facilities that reported non-compliance; the majority of contraventions were dealt with through voluntary abatement or similar approaches. This soft enforcement approach may send the misleading message that deficiencies in STPs are not a serious concern. More importantly, without firm, mandatory requirements to upgrade sewage infrastructure, municipalities are unlikely to allocate their scarce budget dollars to highly expensive sewage work improvements.

MOE has not published performance reviews since 1993

Although MOE does collect some data on each STP's operating performance (such as effluent levels and flow rates), MOE has not released an up-to-date and comprehensive summary of STP performance data since 1993. In addition, MOE has not published any current analysis of the relationship between contaminant levels in STP effluent – on an individual or an aggregate basis – and environmental problems.

Conclusion

There is overwhelming evidence that discharges of raw or inadequately treated sewage are major, chronic sources of pollution for many bodies of water throughout the province. The Ontario legislature has assigned to MOE the responsibility for protecting our water from exactly these types of impacts. Over the past decade, MOE has been struggling with the need to update Cs of A for many STPs, to apply long-standing environmental protection policies, to exercise its full range of legal tools to enforce compliance, and to monitor and report on STP performance trends. The ECO believes that the loss of staff, technical expertise and funding control in the 1990s may have contributed to MOE's challenges in fulfilling its mandate to regulate STPs.

MOE Case Study #3:
Water Well Inspections

MOE budget cuts drastically reduce water well inspection, industry oversight

Introduction

Hundreds of thousands of residents of Ontario have a direct stake in knowing that the groundwater and water wells they rely on for their domestic water supply are safe. MOE estimates that there are at least 750,000 wells of various types – municipal, industrial or domestic – in existence in Ontario, with another 10,000 to 20,000 drilled each year. This review focuses on private drinking water wells only.

Water wells need to be properly constructed to prevent contaminants from entering the well and compromising the water supply. When a well is no longer required, it needs to be properly abandoned (usually by grouting or sealing the well shut), again to protect the aquifer from contamination. Estimates of the number of abandoned wells in the province range from 500,000 to 1.5 million.

Once an aquifer becomes contaminated, remediation can be difficult. Depending on the type of contamination, extremely long periods of time may be required for aquifer conditions to improve. It is prudent to prevent contamination from occurring in the first place.

Ensuring that water in Ontario is safe for human consumption (as well as for aquatic species and wildlife) is a key expectation of the public, especially in light of the Walkerton contaminated water tragedy and subsequent inquiry by Justice O'Conner. MOE acknowledges its role in ensuring the province's water is safe – "MOE safeguards our environment by working to ensure cleaner air, water and land, and healthier ecosystems for the people of Ontario" – in its mandate. It also cites as one of its core businesses "water well quality."

Amendment of Wells Regulation has expanded MOE's responsibilities

MOE is responsible for enforcing the Wells Regulation (Reg. 903, R.R.O. 1990), under the *Ontario Water Resources Act* (*OWRA*). This regulation governs well construction, maintenance, reporting requirements and abandonment procedures. It sets minimum standards for all types of water wells – private, communal, municipal, industrial and commercial. Regulation 903 also sets licensing requirements for well contractors and technicians: those persons and businesses involved in well drilling, well boring, well digging and well pump installation.

The Wells Regulation was last amended in 2003. At that time, MOE made changes to sections dealing with well construction, technician licensing, retesting, disinfection, annular space, sealants, and other sections. The 2003 amendments also introduced new sections to require the use of well identification tags, deal with shallow works, and address the continuing education of well technicians.

The regulation, together with its supporting standards, is very complex. It takes a number of years of field work for both contractors and regulators to become reasonably familiar with the

requirements of the regulation and the details of water well technology, as well as adept at identifying and rectifying problems.

The training of well technicians in the methods, standards and requirements set forth in the regulation, has been carried out primarily at Sir Sandford Fleming College, under contract from MOE. The program is thorough and well-received, but by outsourcing this function MOE may be missing an opportunity to build in-house expertise and acquire practical insights from members of the water well industry, who make up most of the course's participants.

MOE revises its response to water well concerns

Throughout much of the 1980s, MOE had five full-time water well inspectors, as well as a chief water well inspector, who inspected private drinking water wells (based on public complaints) and conducted unscheduled inspections of new well construction sites. These staff members met periodically, throughout the year, to compare well contractor practices and findings from each region of the province – a useful process for identifying broader problems, delineating trends and enriching the expertise of MOE staff.

These staff positions no longer exist; they were eliminated between the late-1980s and mid-1990s. As of 1997, MOE has had no on-going program of unscheduled inspections of private drinking water well construction or abandonment.

As of early 2007, MOE has nine staff members assigned to the Water Well Business Unit, which manages water well information. These staff members are based in Toronto at the ministry's Environmental Monitoring and Reporting Branch. The unit responds to telephone concerns about well water safety, provides information to the public, monitors the licensing of well drillers, manages in-coming water records (which can number in the thousands each year), and maintains the water well database.

The unit does not carry out unannounced visits to well drilling or abandonment operations carried out by private well drillers. Complaints are forwarded to regional MOE staff for their consideration.

Recent enforcement of Regulation 903

In the summer of 2006, MOE's Sector Compliance Branch (SCB) carried out an enforcement blitz known as a "sector sweep". MOE described the operation as "a province-wide inspection sweep of well contractors and private well owners." MOE stated that the SCB "gathered information on the awareness and understanding of the legislation and other legal requirements related to wells, and gauged compliance with these requirements."

While it is encouraging that MOE undertook this initiative, no inspections of private drinking water wells under construction occurred during this sweep. The 'fails' or potential violations MOE encountered were predominantly 'paper' or administrative in nature, related to reporting, notification and record keeping. According to MOE, examples of non-compliance documented during the sweep, included:

* failure to provide well information packages to well owners;
* failure to submit well records to the ministry within 30 days; and
* incomplete well records.

This inspection sweep did not involve an investigation of the potential problems and standards violations that could be occurring in the field when wells are being drilled, repaired or abandoned. Had MOE looked at all aspects of regulatory compliance, or conducted unannounced field inspections, it may have found more evidence of substandard practices and a lower compliance rate with Ontario's Wells Regulation.

Other reviews confirm gaps in well inspection program

The ECO's observations are shared by others who have reviewed MOE's wells and groundwater programs. In 2004, the Auditor General of Ontario (AGO) reviewed MOE's groundwater program, and followed up on the program review in 2006. In its 2006 review, the AGO found that:

> *"… the Ministry's focus is on education and outreach rather than enforcement. In this regard, the Ministry's help desk fields inquiries and provides information to clients who have concerns about the quality of their drinking water. The Ministry was continuing to rely on complaints to identify well-water concerns and non-compliance with proper well procedures to trigger inspections… Complaint-driven inspections will continue to be addressed by the Ministry's field operations."*

Furthermore, an expert panel of scientists and engineers that reviewed water well sustainability in Ontario for the MOE concluded in its 2006 report that:

> *"Based on interviews with stakeholders, however, implementation and enforcement of Reg. 903 is inconsistent and incomplete. The MOE is commended for utilizing outreach programs to promote the proper implementation of the regulation; although, without inspection and enforcement, the Panel believes that the objectives of the regulation (i.e., improvement in the safety of the water well infrastructure) will not be achieved. In contrast, the construction, operation, maintenance and disinfection of municipal wells in Ontario are well regulated and monitored with rigorous surveillance."*

Given the high profile of well water quality concerns and the difficulties in remediating contaminated groundwater sources, it would be prudent for the ministry to conduct:

- random testing of private drinking water wells for water quality;
- random, unannounced inspections of water well construction, testing, repair or abandonment practices; and
- on-going spot-checks of well drillers for licensing and training certificates, record keeping, and provision of records to both MOE and the well owner.

With so many existing wells, new wells being drilled each year, and about 700 water well contractors active in the province, the public would understand that MOE could inspect or check on only a fraction each year. However, even a limited number of random, unannounced inspections of contractor operations would signal to the well drilling industry that MOE has a presence in the field and that the ministry is being vigilant about this public safety concern. Any given drilling firm could, at any time be subject to a site visit, inspection and even a penalty if its practices were not up to standard.

Conclusion

As of early 2007, MOE does not have any staff members dedicated to investigating private drinking water well construction, repair or abandonment operations on an on-going basis. It is apparent that MOE rarely conducts field investigations, except in the context of a sector sweep or in response to a very serious complaint or repeated complaints about specific wells, well water quality or the activity of a particular driller or contractor. Otherwise, many complaints from the public are simply documented for future reference. With hundreds of thousands of active and abandoned wells in the province, and with hundreds of well contractors operating in the field, MOE should have greater capacity to carry out well inspections.

MOE Case Study #4: Certificates of Approval

Staffing constraints hamper MOE's ability to process, review and update Cs of A

Introduction

The Ministry of the Environment (MOE) regulates activities that may have an impact on the environment by issuing a legal instrument known as a Certificate of Approval (C of A), which permits a proponent to engage in activities that MOE considers environmentally acceptable. The public expects that MOE is issuing Cs of A in a fair, consistent and timely manner to all facilities that require them, and that the conditions attached to Cs of A reflect up-to-date environmental standards.

MOE receives approximately 8,000 applications for new or amended Cs of A each year. The process of obtaining approvals from MOE, especially for new technologies, is lengthy and, according to many proponents, often difficult. The difficulties experienced in obtaining approvals may have a detrimental effect on business in Ontario, pushing leading edge businesses with innovative environmental technologies to other jurisdictions where obtaining approvals is easier. It may also be impacting our environment by deterring facilities from applying for (and obtaining) approval to implement improved environmental technologies to replace older, less effective processes.

In addition, MOE has issued well over 220,000 Cs of A since 1971. Some of the oldest Cs of A contain no conditions at all. Others (issued after 1983) do contain conditions; however, they reflect the ministry's requirements in effect at the time they were issued. Changes in environmental requirements included in new ministry policies, guidelines and standards do not apply to pre-existing Cs of A. Since most Cs of A have no expiry date and, thus, remain in effect for the life of the process or equipment (unless it is altered), they do not keep pace with MOE's changing expectations. As such, a large number of facilities are operating with Cs of A that contain conditions that are both outdated and inconsistent with similar, but newer operations.

By allowing facilities to operate under outdated Cs of A, MOE is not only permitting proponents to legally pollute beyond what is currently considered good practice, but it is also failing to provide proponents with any incentive to reduce discharges or implement better equipment and technologies.

Certificates permit MOE to manage environmental impacts

MOE's approvals process is one of its core functions and primary method of ensuring that new or significantly altered facilities, projects and activities in Ontario use appropriate technologies and operate within provincial environmental standards.

Some of the main activities that require proponents to obtain a C of A under the various environmental statutes include the construction, alteration and operation of:

* equipment or processes that may release contaminants into the air;

- "waste disposal sites," such as a landfill or incinerator;
- "waste management systems," which include systems for collecting, transporting, storing, processing and disposing of waste;
- "sewage works" for the discharge of wastewater into drains, sewers or directly into ground or surface waters; and
- "drinking water systems".

Prior to engaging in or altering any activity that requires a C of A, proponents must submit an application package to MOE. According to MOE, "all applications are reviewed by specialized technical staff who ensure the proposal will meet Ontario's environmental protection standards," before a MOE Director decides whether to issue the C of A.

Since the mid-1980s, MOE staff members have routinely attached conditions to Cs of A. These conditions, which range from emissions limits to monitoring and reporting requirements, are tailored to the individual circumstances, local environment and characteristics of the facility, and are designed to minimize impacts on human health and the environment. Proponents are legally required by the governing statutes to comply with the conditions of their Cs of A; failure to comply can result in an order to undertake abatement measures or prosecution.

In addition to approving new Cs of A, MOE's approvals staff may also review and update older Cs of A when proponents apply for changes to their operations, or when MOE staff members identify such a need through inspections or other activities (such as an *Environmental Bill of Rights* application).

Processing backlog for Cs of A is growing

MOE receives approximately 8,000 applications for new or amended Cs of A each year. Although the ECO has not been able to access MOE staffing numbers for the approvals program, it appears that MOE lacks adequate staff capacity to process these C of A applications at a reasonable rate. MOE has stated that it is only able to process about 6,500 to 7,000 applications a year. A 2004 audit of MOE's approvals process by the Auditor General of Ontario (AGO) found a backlog of 1,364 applications waiting to be processed. Since 2004, this backlog has continued to grow by about 1,000 per year. The AGO also found that MOE took eight months to process the average C of A, with some of the more complex approvals taking as long as two years (though MOE claims some delays are caused by incomplete applications submitted by proponents).

In addition, C of A applications are becoming increasingly technical and complex as scientific knowledge and technology becomes more sophisticated. Not only does this complexity mean that application reviews are more time-consuming, but it also means that MOE requires a large number of specialists (such as engineers, ecologists, air-dispersion modelers, hydrogeologists, chemists, biologists, geologists, etc.) to review Cs of A and develop environmentally appropriate conditions. The ECO frequently hears concerns from industry about delays and difficulties in obtaining Cs of A from MOE for innovative or complex technologies.

MOE attempts to improve its approvals processing program

MOE has been struggling for years to find strategies to overcome its capacity constraints and to reduce the number of applications that require processing by MOE. The following are examples of some MOE efforts to streamline its approvals processing program and reduce backlogs:

- To reduce pressure on the approvals program, MOE passed two regulations in the mid-1990s exempting certain low-risk activities (such as small fuel-burning

equipment for heating buildings) from the need to obtain approvals. MOE also proposed regulations that would allow proponents of certain other lower-risk activities to self-certify that they have met a set of standardized conditions prescribed in regulation, rather than obtain Cs of A. This part of the reform, however, was not completed. (These regulations were reviewed in the ECO's 1998 Annual Report, pp.157-160.)

* A similar strategy was advocated in the 2001 report prepared by Val Gibbons for the Ontario government, "Managing the Environment", which recommended that MOE rely more on shared responsibility with the regulated community through programs such as self-certification.

* In 1998, MOE introduced a new cost-recovery fee structure for Cs of A with the expectation that the revenues generated from the higher fees would benefit the C of A program. However, the new revenue did not result in any improvements in approval processing times or backlog reductions.

* Since 2000, MOE has been issuing "Basic Comprehensive Cs of A" (a single C of A for all of a facility's sources of air emissions), which allow a facility to make some operational modifications up to an approved limit without requiring a C of A amendment. MOE has stated that this step has reduced its Air Approval Unit's workload by about 50 per cent, allowing staff to process other C of A applications more quickly.

* MOE's Standards Development Branch introduced the "New Environmental Technology Evaluation Program", under which staff evaluate new technologies submitted by applicants and issue a "Certificate of Technology Assessment". The certificate, which notes the technical merits of the technology and its potential to meet environmental standards, is intended to expedite the engineering review of the new technology during the C of A process.

* MOE has developed some model terms and conditions for C of A applicants to help ensure that necessary information is included in the application.

* To facilitate the use of recycling, alternative fuels and new waste management technologies, MOE is currently proposing to exempt certain activities from the C of A requirements and provide a streamlined C of A process for others.

* MOE is currently working on a "modernization agenda" in an effort to "reduce the pressure on [the approvals branch] by reducing the number of applications processed by the branch each year". MOE announced that it has recently received funding to develop these significant reforms. (This development is discussed in more detail below.)

MOE's enormous C of A processing workload and the resulting pressure on the approvals staff is such that MOE must consider new approaches to its approvals program. The use of alternative strategies is necessary and, hopefully, will result in improved efficiencies. However, the ECO cautions that when MOE is required to offload or deregulate sectors from the C of A process, the consequent decrease in regulatory-oversight may present risks to the environment and human health. "Low-risk" facilities still produce impacts on the environment. Indeed, the cumulative impact of several low-risk facilities located closely together (as they commonly are) can be significant.

Modernization agenda proposes three approval mechanisms

MOE is developing a new risk-based approach to its approvals process (based partially on the model in the Gibbons report) that will focus MOE staff resources on the highest-risk activities. MOE is proposing to classify the regulated community into three categories, based on each entity's environmental risks and impacts. MOE would continue to require proponents of the highest-risk activities to obtain Cs of A. Medium-risk activities would be subject to third-party certification (i.e., a qualified professional would confirm that a facility meets MOE standards). Lower-risk activities would be subject to "permit by rule." MOE estimates that, under the proposed reforms, up to 75 per cent of all facilities currently subject to Cs of A would fall under one of the alternate programs.

MOE hopes that by removing the lower-risk facilities from the C of A process, and thus reducing the total number of applications submitted to MOE, it can reduce the backlog, improve processing times, and allow MOE technical staff to focus on the more significant high-risk projects. MOE also hopes that these reforms will provide better environmental protection by "ensuring that a greater percentage of regulated entities fall under a permitting regime."

The ECO notes, however, if MOE achieves its goal of bringing even a portion of the tens of thousands of regulated entities that currently do not have a C of A into the approvals system, MOE's C of A processing workload could actually increase in the short-term. MOE estimates that 40 per cent of facilities that require ministry approvals are currently operating with no C of A at all. It is reasonable to assume that some of these facilities would fall into the high-risk category of facilities that would need to apply for Cs of A from MOE.

Older Cs of A need to be reviewed and updated

To ensure greater environmental protection and more uniform treatment of proponents, a number of reports (including the Industrial Pollution Action Team's [IPAT] 2004 Report to the MOE, MOE's 2001 internal program effectiveness review of the Cs of A process, Justice O'Connor's 2001 Walkerton Report, as well as several reports of the AGO) have recommended that MOE develop a system to review the requirements in older Cs of A and update them to current standards.

As noted above, MOE has issued well over 220,000 Cs of A since 1971. With MOE's limited staff capacity, undertaking a comprehensive review of the numerous outdated Cs of A presents a challenge. MOE advised the AGO in 2000 that updating the Cs of A would involve a significant workload and expense for the ministry. Similarly, the IPAT report described the challenge of updating conditions in Cs of A as a "daunting prospect".

MOE making some progress on updating older Cs of A

MOE has begun the process of updating certain Cs of A. For example, following the water contamination crisis in Walkerton, MOE reviewed and updated approximately 3,000 Cs of A for municipal water treatment plants between 2000 and 2002 to ensure that every one was consistent. However, MOE has issued tens of thousands more Cs of A that potentially require updating.

Over the past couple of years, MOE has been developing and implementing new strategies for proactively updating Cs of A. These include the following actions:

* MOE has developed protocols to guide staff in determining whether changes need to be incorporated into a C of A, and to formalize a "continuous improvement cycle" so that all Cs of A keep pace with current environmental standards.

* MOE inspectors now review a facility's Cs of A to identify the need for updating whenever doing inspections.

* MOE is working on a risk-based approach for strategically selecting sectors that require C of A updating.

* Over the past few years, MOE has begun to include, for the first time, mandatory review or renewal requirements in some Cs of A. For example, Comprehensive Cs of A (for air emissions) expire after five years, and Cs of A for municipal water treatment plants must now be renewed every three years. While the addition of renewal and expiry dates in some Cs of A is a positive development, it will add to the workload of MOE's approvals staff.

Conclusion

MOE's approvals process is one the ministry's key methods of ensuring that new, expanded or altered facilities, projects and activities in Ontario use appropriate technologies, operate within provincial environmental standards, and minimize impacts on the environment. However, a considerable number of facilities in Ontario are operating with badly outdated Cs of A. The exact number is unknown, but MOE's estimates suggest that there are tens of thousands of Cs of A that may require updating. With MOE's limited staff capacity, undertaking a comprehensive review of all of these Cs of A presents a huge challenge. In addition, thousands of new applications for Cs of A are being submitted to the MOE each year at a rate faster than the ministry can handle. While MOE is taking some positive steps to address the challenges facing its approvals program, ultimately, MOE's capacity constraints are forcing the ministry to engage in triage.

MNR Case Study #1:
Aggregate Planning and Compliance

MNR study reveals serious inadequacies in planning, inspection, enforcement and site rehabilitation

Introduction

Sand, rock and gravel (collectively called aggregate) are essential for the construction of roads, highways, and virtually every other kind of infrastructure. Ontario's rapid growth in population and economy over recent decades has required a very high rate of aggregate consumption – an estimated 14 tonnes per capita per year.

There are approximately 2,800 pits and quarries under license on private land and 3,200 under permit on Crown land that supply aggregate. The ongoing growth of the Greater Golden Horseshoe is putting increased pressure on local aggregate resources – fuelling an enormous demand for the material, as well as spurring public resistance to the siting, expansion and operation of pits and quarries.

MNR is expected to develop, consult on and implement strategies to ensure that Ontario's aggregate resources are used in a sustainable manner, with regard for the needs of future generations, while providing a fair return to the Crown. This should include the evaluation and promotion of alternative materials and sources, as appropriate. The ministry should also compile (and make publicly accessible) inventories and maps of the existing resource base, and accurate information on consumption patterns and trends.

Aggregate operations have the potential to destroy habitat, negatively affect water quality and quantity, and cause noise, dust and other environmental problems. It would be reasonable to expect MNR to implement and operate an effective compliance and enforcement program, and for MNR to:

* scrutinize compliance reports submitted by industry;
* conduct site audits at a reasonable frequency;
* investigate complaints;
* ensure abatement activity and/or rehabilitation is undertaken, where required; and
* initiate enforcement action, where appropriate.

MNR leads on aggregate management

MNR is responsible for managing aggregate under the *Aggregate Resources Act (ARA*). The ministry's stated intent is to minimize adverse environmental impacts, require rehabilitation of aggregate sites and promote the conservation of aggregate resources. MNR undertakes long-term planning, considers and issues approvals, handles inspection, compliance and enforcement duties, and oversees rehabilitation of sites. Responsibility for certain administrative and research functions is shared with the aggregates industry. Each of these duties is described below.

Long-term planning critical for sustainable development

The framework for planning how and where aggregate may be dug up is laid out in a Provincial Policy Statement (PPS), under the *Planning Act*, which is administered by the Ministry of Municipal Affairs and Housing. The PPS explicitly encourages aggregate extraction as close to markets as possible, and effectively requires municipal governments to give the aggregate industry access to local deposits of aggregate.

In June 2006, the Ministry of Public Infrastructure Renewal and MNR committed to developing a long-term strategy for the:

> *"wise use, conservation, availability and management of mineral aggregate resources in the Greater Golden Horseshoe, as well as identifying opportunities for resource recovery and for co-ordinated approaches to rehabilitation where feasible."*

MNR responsible for most approvals under the ARA

MNR is responsible for issuing approvals for most applications under the ARA. Site plan approvals contain site-specific conditions, such as allowable depth of excavation, types and locations of noise and visual screens, hours of operation, rehabilitation requirements and any required protection of natural heritage. MNR has set out a system of provincial standards for site plans, reporting, notification and consultation.

There are also approximately 500 wayside permits and aggregate permits for provincial highway projects, which are issued and managed by the Ministry of Transportation (MTO), under delegated authority from MNR.

Pits and quarries that use crushing or screening equipment may require approvals for air emissions from the Ministry of Environment (MOE). MOE is also responsible for regulating pumping, dewatering and washing activities at pits and quarries, through its Permits to Take Water and Approvals for Sewage Works.

MNR responsible for complaint response, enforcement

MNR is responsible for complaint response and compliance enforcement for the great majority of aggregate operations. MOE handles environmental complaints concerning a small number of aggregate operations located on private lands in sections of Northern Ontario that are not yet designated under the *ARA*. In addition, MTO handles complaints about its own aggregate operations.

In 1997, fiscal restraints and reduced staff levels triggered a major policy reform by MNR. Since that time, Ontario's aggregate industry has operated on a self-inspection basis, submitting annual compliance reports to the ministry. MNR's inspectors no longer inspect all sites annually; instead, they have been assigned targets to field-audit 20 per cent of operations on private lands and 10 per cent of operations on Crown land annually.

MNR's website reports that since 2000, there have been fewer than 20 convictions per year on charges issued under the *ARA* (the website does not indicate how many charges were laid during that period).

MNR oversees rehabilitation of sites

The rehabilitation of aggregate sites is mandatory under the *ARA*; the Act requires that sites be rehabilitated sequentially during the lifetime of the operation, not just after closure. Operators

must provide details in their site plans on how rehabilitation will progress over time. MNR is responsible for enforcing these requirements.

The industry – through The Ontario Aggregate Resources Corporation (TOARC) – is responsible for rehabilitating abandoned sites and sites for which approvals have been revoked. TOARC also carries out research on ways to improve rehabilitation and reclamation, and is developing a rehabilitation guidance manual.

Some research & administrative duties transferred to industry

Under the 1997 regulatory reforms, the aggregate industry – through the Aggregate Resources Trust – took over a number of administrative and financial functions from MNR. The industry-operated Trust is responsible for:

* documenting tonnage production;
* invoicing and collecting licence fees and financial sureties for rehabilitation;
* distributing fees and royalties; and
* initiating research.

MNR internal review provides evidence of inadequate capacity

In response to an application submitted in 2003 under the *Environmental Bill of Rights*, MNR carried out a review of the aggregates program. Released in August 2006, MNR's review confirms that the aggregates program has been suffering from inadequate capacity – in terms of staffing, budget and expertise – for some time. In addition to overall cuts in funding and staffing, inadequate capacity is hindering MNR's aggregates program in the areas of approvals and compliance, the oversight of rehabilitation activities, and long-term planning.

Deep cuts in funding and inspectors

The August 2006 review acknowledged that there has been "limited (and decreasing) capacity (staff and support dollars) which has challenged the ministry's ability for inspection and enforcement obligations." Since 1995/1996, base funding has been slashed from $5.2 million to $1.7 million. The number of aggregate inspectors has been cut from 41 in 1997 to 20 in 2006, and support funding has also been reduced. (Although the August 2006 review did not look as far back, MNR has previously reported having 66 aggregate inspectors in 1994; representing a two-thirds cut in inspection capacity over 12 years.)

Lengthy approvals processes

The MNR review mentioned industry criticism of the ministry's lengthy reviews of site plan amendments, which can take from six months to five years.

Inspection targets not being met

Some individual inspectors are responsible for as many as 600 aggregate operations, although it is estimated that a staff person can effectively oversee a maximum of 150 sites. Inspectors have not been able to meet MNR's self-established annual performance target to field audit 20 per cent of private land licences. Actual audit rates in the last four years have hovered between 10 and 13 percent, and an average pit or quarry might only be inspected only every 6 to 10 years. MNR's target of auditing 10 per cent of Crown land operations is also

not being met; inspectors were able to audit only five per cent of such operations in 2003/2004. As a result, many violations either would never be observed, or would escape prosecution (because of a five-year statute of limitations). This low rate for regular inspections also makes it difficult for MNR to maintain an up-to-date assessment of rehabilitation progress.

Compliance problems and complaints on the increase:

MNR surveyed licensee compliance with the *ARA* within the Oak Ridges Moraine, and found that 100 sites out of 121 had compliance problems. The review noted that "Lack of staff and visibility in the field by inspectors has resulted in an increase in illegal operations and numerous complaints to MNR field staff." The ECO has observed that municipalities, which often receive the brunt of complaints from irate citizens, do not have the authority to respond or investigate. As a result, some municipalities are asking for more powers, including the right to enforce rules on site operations.

Rehabilitation activities not being verified

MNR's review noted that its database is inadequate for evaluating the effectiveness of rehabilitation activities province-wide. Neither MNR nor TOARC have the capacity to annually verify rehabilitation information reported by licensees in their production reports and their compliance assessment reports. MNR acknowledged that many more rehabilitation orders could (and should) be issued in areas like the Oak Ridges Moraine. The ministry noted that approximately 6,900 abandoned pit and quarry sites have been identified, of which 2,700 are considered candidate sites for restoration. However, very few abandoned sites are being rehabilitated through the industry-led program; TOARC considers only 70 abandoned sites in Ontario to be high priority candidates.

Long-term planning inadequate to assess and protect resource

MNR documents (both internal and public) have revealed significant weaknesses in the ministry's capacity for long-term planning on aggregate resources. An MNR internal evaluation of aggregate resource management in 2001/2002 raised concerns that the ministry had "lost much of its hydro-geological [sic] knowledge and this in turn makes it difficult to assess potential impacts extraction operations could have on water resources." The evaluation also noted, "We do not forecast future supply/demand needs very well, therefore, we are unable to properly conduct long-term planning."

The evaluation also acknowledged that the ministry had poor information on how much aggregate there is in Ontario; Aggregate Resource Inventory Papers were missing for 40 per cent of Southern Ontario and 95 per cent of Northern Ontario. The evaluation stated that "a state of the resource needs to be done every 10 years" including an "emphasis on how much was lost including a strategic aspect". The most recently published inventory of Ontario's aggregate resources dates back to 1992, and is some 15 years old. It appears that resources are not available to update this inventory, though it is generally acknowledged to be a critical planning tool.

MNR currently has a group of seven staff assigned to carry out all policy and planning for aggregate resources, and to provide regulatory oversight of an industry worth about $1 billion annually. Among other things, this group:

* develops guidelines, standards and legislation;

- provides interpretation to field staff, industry, the public and senior management;
- participates in education and training; and
- liaises with stakeholders and other agencies.

This group is also responsible for leading the development of a provincial conservation strategy for aggregate resources. This strategy has apparently been in development internally for several years, in collaboration with MTO and MOE. In April 2005, MNR informed concerned stakeholders that "the conservation strategy will be developed in an open and transparent manner and this may be achieved by allowing the public and/or stakeholders to participate in the initial development of the strategy." However, two years later, the status of this internally developed strategy remains unclear.

Some improvements initiated in 2006

In the summer of 2006, MNR initiated a pilot approach to get tough on rehabilitation problems in the Greenbelt Plan Area of Southern Ontario. The pilot program gives aggregate inspectors "reinforced policy direction" to focus on rehabilitation issues when setting inspection priorities, reviewing site applications and auditing sites. The approach was restricted to the Greenbelt Plan Area due to resource constraints in staff time and support dollars.

In June 2006, the *ARA* was amended to require that operators report on the amount of aggregate removed from a site, and to specify that related documents and inventories of materials must be kept. The amendments also gave aggregate inspectors a new power, in the form of a stop work order, which may be applied if any provisions of the ARA or its regulations are contravened.

In October 2006, the geographic scope of the *ARA* was expanded to cover additional areas in Central and Northern Ontario. In addition, the fees and royalties that aggregate operators must pay were increased, effective January 1, 2007. Annual fees had not increased for 17 years, and the minimum royalty rate for Crown-owned aggregate had not increased for more than 30 years. Annual licence and wayside permit tonnage rates almost doubled, from 6 cents per tonne to 11.5 cents per tonne. According to MNR, the extra revenue will go towards enhancing rehabilitation, and strengthening compliance through the hiring of additional enforcement officers. By January 2007, MNR had begun hiring 13 new aggregate inspectors - most for assignment in Northern Ontario.

Conclusion

MNR is responsible for managing Ontario's sand and gravel resources, in order to minimize environmental damage, require site rehabilitation and promote conservation. There is abundant evidence that for at least 10 years MNR has lacked the capacity to carry out core responsibilities related to its aggregates program. Program staff numbers and budget have both been significantly reduced compared to the mid-90s, and technical expertise has been lost as well. Areas of inspection, compliance, oversight of rehabilitation, and long-term planning have all been compromised. In 2006, MNR began to take some of the first steps needed to shore up its program, by increasing fees and royalties, by providing inspectors with "stop-work" powers, by hiring new inspectors and, through a pilot project, to make rehabilitation a priority in the Greenbelt Plan Area. Clearly, much more will be needed to rebuild the ministry's capacity in this area and to restore public confidence.

MNR Case Study #2:
Parks Program

Budget shortfalls mean MNR has difficulty fulfilling parks mandate

Introduction

Provincial parks are important to Ontario's identity. Wilderness is the defining characteristic in many people's sense of what makes Ontario's parks special and unique.

Ontario's system of protected areas includes 329 provincial parks, 292 conservation reserves and 10 wilderness areas. These areas cover 9.5 million hectares, approximately nine per cent of the province's land base. The provincial parks system attracts about 10 million visitors per year, with economic benefits extending far beyond the park boundaries. MNR estimates that the parks generate annual gross provincial economic impacts of $390 million and 14,000 person-years of employment.

The public expects that wildlife species, and the ecosystems upon which they depend, will be protected. They expect that parks, reserves and wilderness areas will be managed in a sustainable manner, and protected from damage. They also expect that world-class recreational experiences, natural heritage programs, and well-maintained camping facilities will be provided for park users. In turn, the public expects that users will subsidize the costs of campgrounds and other facilities.

MNR has broad mandate to manage system of protected areas

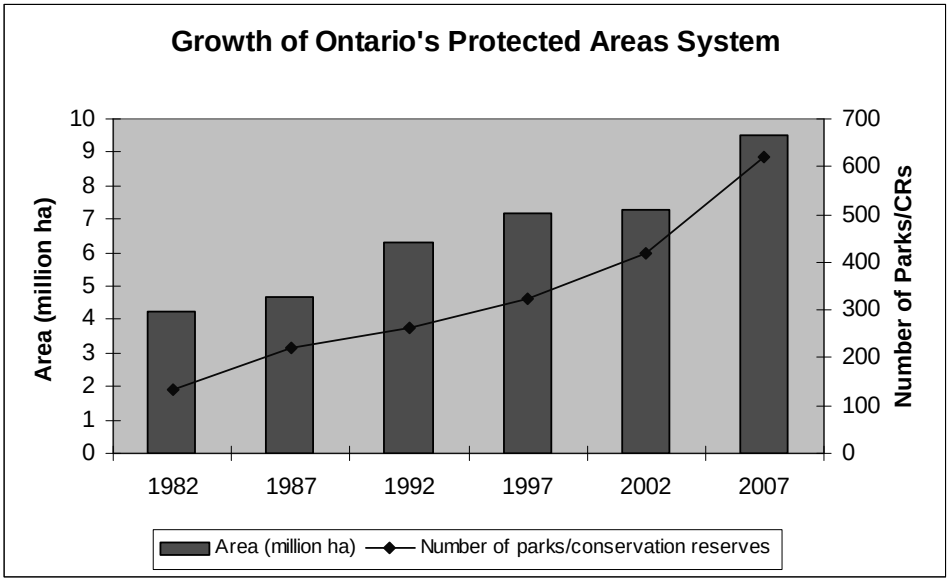
MNR is responsible for managing Ontario's system of protected areas. Its responsibilities include:

1. establishing parks and conservation reserves by regulation;
2. developing parks-related policies and programs;
3. planning for the management of protected areas;
4. managing, on an on-going-basis, the 104 operating parks that offer recreational services, such as camping;
5. monitoring and reporting;
6. providing recreational, educational and tourism opportunities; and
7. patrolling and enforcement.

Funding has failed to keep pace with growth of parks system

MNR's parks-related responsibilities have increased dramatically over the past 25 years as a result of a huge increase in both the number and total area of the parks, conservation reserves and wilderness areas under its jurisdiction, as well as a result of its expanded duties under the new *Provincial Parks and Conservation Reserves Act*, enacted in 2006.

When the *Provincial Parks Act* was introduced in 1954, there were only eight provincial parks established in Ontario. By 2007, the system had grown to include 631 parks and conservation reserves. Figure 1 illustrates the growth of the parks system since 1982.

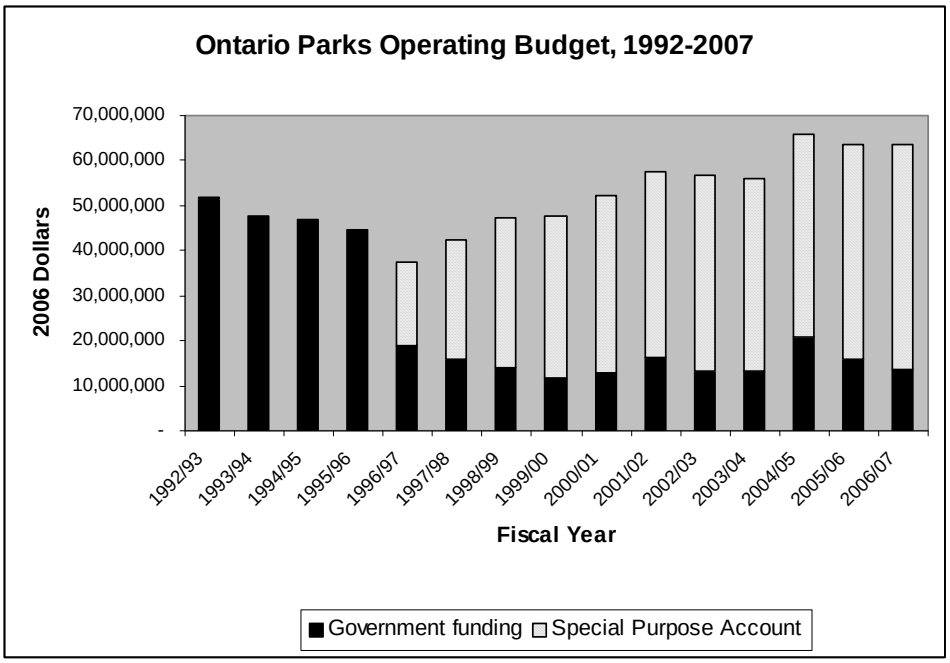


Chronic underfunding of the parks system has been documented for decades. This occurred even during periods in the 1970s and 1980s, when spending in other areas by MNR and the government overall was increasing. For example, the (former) Parks Branch share of the ministry budget shrank from 15 per cent in 1974/1975 to 9 per cent in 1980/1981, even as government spending grew by 133 per cent.

Between 1980 and 1993, the parks system lost 30 per cent of its purchasing power, even as the system grew substantially. Over that same period, visitor safety protection was reduced, park management planning ground to a crawl, few parks had professionally trained natural resource managers, most had no resident staff for most of the year, and research was reduced.

For the purposes of this case study, the ECO has focused on the period since the early 1990s, when a new business operating model was adopted. The 1996 Ontario Parks Business Plan included significant cuts to funding and staff, and forced the closure and privatization of some parks; 15 parks were no longer operated by MNR. Government funding of the Ontario Parks' operating budget was cut by 58 per cent in 1996/1997. A Special Purpose Account (SPA) was established for retaining park revenues, such as park user fees, but this did not make up for the shortfall for several years. Even with SPA funding, the money available for Ontario Parks' operations was reduced substantially in 1996/1997 – 28 per cent lower (in constant dollars) than in 1992/1993.

Figure 2 shows how government funding for parks decreased between 1992 and 2007 by 73 per cent (in 2006 constant dollars). Because of the increase in SPA revenues, the total operating budget is currently 23 per cent higher than in 1992/1993 (in constant dollars).



The percentage of costs covered by SPA revenues (comprising user fees, corporate sponsors and the sale of merchandise) has risen from 33 per cent in 1995/1996, to about 79 per cent in 2006/2007. The 1996 business plan goal of eventually operating the parks on a break-even basis remains the government's goal today. Park fees were increased substantially for the 2005 and 2007 operating seasons.

Operating expenditures for Ontario Parks have exceeded the rate of inflation since 1992, but still have not kept pace with the expansion of the parks system. Since 1992, the number of provincial parks and conservation reserves has increased by 138 per cent and the amount of land in the parks system has increased by 51 per cent, far exceeding the increase in spending.

In addition, the budget has not kept up with the increase in visitors. The number of visitors increased over 40 per cent between 1992 and 2006, about double the rate of the increase in provincial population over the same period.

An MNR study concluded that, in 2001/2002, compared to other similar Canadian and U.S. state park systems, Ontario spent substantially less per campsite, less per visit and less per hectare than any of the other jurisdictions, and recovered a greater portion of operating expenditures through revenues. MNR concluded that "low net spending per hectare likely indicate(s) that needed protection and stewardship work is not being funded; low spending per visitor may indicate that customer service and infrastructure maintenance are being short changed."

Operation of the parks system increasingly relies on volunteers. "Friends of the Park" organizations provide essential services, such as paying for staff positions to provide natural heritage education programs. By 2005/2006, the number of "Friends of the Park" groups had grown to 28, providing nearly 89,000 volunteer hours of service. In addition, park staff members often work a substantial number of unpaid hours.

MNR receives insufficient funding to maintain parks

The ECO, the Auditor General of Ontario (AGO) and others have raised concerns that the Ontario Parks Branch of MNR does not have sufficient resources to properly fulfill its mandate. These agencies have described inadequate capacity in the areas of management planning, enforcement, monitoring and maintenance of infrastructure.

The majority of provincial parks do not have approved management plans, which are essential for determining how resources will be protected and what will happen inside a park over a 20-year period. The ECO reported in 2004 that only 40 per cent of the provincial parks had an approved management plan and 72 per cent of those plans were at least 10-years-old. Only 19 per cent of non-operating parks (i.e., parks that charge no fees, have no staff on site, and offer only limited facilities) had approved management plans.

The AGO reviewed parks enforcement in 2002, and concluded that there is a significant risk that the ministry may not be maintaining provincial parks for future generations as required by the *Provincial Parks Act*. Park wardens and other ministry staff enforce this Act and other legislation, to ensure public safety and the protection of park resources, by patrolling parks and laying charges when necessary. The AGO recommended MNR review the level of enforcement activity in both operating and non-operating parks to determine whether there are "adequate levels of funding, staff and equipment."

Non-operating parks are visited by staff once a year, if at all, because scarce resources were allocated to operating parks. The AGO reported examples of illegal camping, hunting, tree cutting, vandalism and boundary encroachment by adjacent landowners in non-operating parks. A 2003 MNR document admits that without more staff it will take a number of years to visit and assess all non-operating parks, and ministry staff may never visit them all. Concerned about the neglect of non-operating parks, the ECO cautioned MNR in 2003/2004 that "it is not feasible to plan and manage all protected areas based on a cost-recovery economic model."

The AGO also reported in 2002 that park infrastructure – over $1 billion worth of buildings, visitor centres, drinking water and sewage works, and other assets – was deteriorating due to insufficient funding, resulting in health and safety risks and a decrease in park user satisfaction rates.

Since 2001, MNR has invested millions of dollars of specially-allocated capital funding to upgrade drinking water systems in parks to meet stringent new regulations, but other infrastructure continues to deteriorate due to inadequate parks base capital funding. For example, the marsh boardwalk at Presqu'ile Provincial Park, one of the best locations in Ontario to view migrating birds, has been closed since 2005 because it poses a public safety risk and there isn't funding to repair it. MNR informed the AGO in 2004 that it could take 30 years, at current funding levels, to bring the parks' infrastructure up to an acceptable state.

MNR does not have the capacity to fix these long-standing problems with the resources allocated to it. While MNR has agreed with the recommendations of the ECO and AGO over the years, it has had to set priorities for allocating the available staff and financial resources. An April 2006 document from the Ministry of Government Services makes it clear that further belt-tightening is being imposed on the parks system: "strategies … have been developed within Ontario Parks to assist them in achieving program priorities and obligations within existing budget allocations. Ontario Parks has been required to look at different and more efficient ways of doing business in order to deliver on desired government results while living within expenditure limits ..."

More staff cuts were announced in spring 2006. Summer parks staff levels were cut by 19 per cent, affecting educational and park interpretive programs, closing park stores, and requiring the

early closure of some parks. The Ontario Public Service Employees Union and environmental groups have raised concerns about the cuts to park funding in 2006.

Funding jeopardizes objectives of new parks legislation

The ECO commends MNR for reviewing its parks legislation and the creation of new protected areas, but is concerned that it will be extremely difficult for MNR to adequately administer and enforce the new *Provincial Parks and Conservation Reserves Act* without an increase in funding. A primary objective of the Act is to protect biodiversity. The Act requires the ministry to manage protected areas for ecological integrity, prepare management direction for all protected areas, and initiate new 'state of the parks' reporting. In 2006, the Ontario Parks Board also called for increased resources to implement the Act: "The Board believes that a commitment to ecological integrity will require more spending on protected areas."

Conclusion

The public has a strong and emotional connection to Ontario's parks, conservation reserves and wilderness areas; even those residents that aren't regular park visitors expect the system (of both operating and non-operating parks) to be protected and properly maintained. Unfortunately, the parks system has been underfunded for many years, to the point where the ministry has not been able to meet its legislated responsibilities, or to provide adequate services to the public. MNR does not have the capacity to manage the system, which is growing in size and complexity. Over the past few years, the number and area of protected areas has grown substantially, and new parks legislation has added a new scientific mandate and more rigorous requirements. At the same time, the amount of money allocated from general revenues to protected areas has been cut repeatedly. While park revenues have increased, they have not been sufficient to offset the combination of severe cuts in government funding, the dramatic growth of the parks system and the expanded responsibilities of MNR.

MNR Case Study #3:
Fish and Wildlife Monitoring

Lack of capacity forces MNR to employ alternative strategies to fulfill mandate

Introduction

Ontario is home to over 25,000 species of plants and animals (including invertebrates) that are distributed over 1.1 million square kilometers, 250,000 inland lakes, the Great Lakes and countless streams. Approximately 87 per cent of this area consists of Crown lands and waters, managed by MNR on behalf of all Ontarians.

Sound management of Ontario's fish and wildlife resources is critical to our social, economic and environmental well-being and to ensuring ecological sustainability. According to MNR, hunting and recreational fishing contribute more than $2.6 billion to Ontario's economy.

MNR's ability to deliver on core expectations – such as conserving biodiversity, protecting species at risk, supporting the ecological sustainability of our natural resources, enhancing hunting and fishing opportunities, and so on – depends on its capacity to obtain up-to-date information on the many elements that make up our natural heritage.

Although a ministry remains accountable for the fulfillment of its mandate, it can accommodate a lack of capacity (i.e., a lack of funds, staff and/or expertise) using a number of strategies. It may decide not to do certain activities, to scale some activities back, or to use alternative methods that are cheaper, require fewer staff or less expertise. A ministry can also accommodate a lack of capacity by divesting itself of an activity or a responsibility. In this case study, examples of how MNR has used all of these strategies to address a lack of capacity to inventory, monitor, assess and report on our fish and wildlife resources are discussed.

MNR has wide fish and wildlife responsibilities

MNR, under the authority of the *Fish & Wildlife Conservation Act* (*FWCA*), is accountable for the protection and management of all plant and animal species, with the exception of migratory birds and some aspects of fish management. MNR is also accountable for the regulation of the commercial and recreational fisheries. Under the *Endangered Species Act*, MNR can designate a species as endangered or at risk of becoming endangered.

The federal government is accountable for the protection and management of fish, migratory birds and federally-designated species at risk under the *Fisheries Act*, *Migratory Bird Convention Act* and *Species at Risk Act*, respectively. In turn, MNR is required to comply with the species and habitat protection provisions of these acts for activities conducted on Crown lands. MNR has an obligation to understand, mitigate and report on the effects that activities, such as dam building, commercial forestry and mining conducted on Crown land, have on our natural heritage.

MNR's only explicit legal obligation to implement a wildlife population monitoring program stems from the environmental assessment approvals process for commercial forest management. MNR is required to implement a program – the Provincial Wildlife Population Monitoring Program (PWPMP) – that assesses the effect of commercial forestry on wildlife. MNR has

indicated that it will ensure that no wildlife species will decline on a provincial scale due to forest management activities. MNR originally planned to monitor 92 species, but has since reduced this list by more than half in order to reduce costs. Under the current plan, MNR monitors 43 species from four wildlife groups – forest birds, mammals, salamanders and furbearers – at fixed sites. Funding for the PWPMP is supplied under MNR's Forest Management Program.

MNR has an operational obligation to provide planners of provincial and municipal roads and other infrastructure with information on local natural heritage values (such as nesting sites of osprey, home ranges of rare reptiles and amphibians, etc.), so that appropriate development and management decisions can be made. Given this broad stewardship accountability, MNR must have the capacity to make and communicate informed decisions related to the management of our natural heritage. The basis on which MNR's ecologists, biologists, zoologists, and botanists are expected to make those decisions stem from four types of activities:

* inventory activities, which generate distribution data, harvest rates, population counts, biological data (such as sex and age structures, reproductive rates, and genetics), and information on habitat quality, weather, food availability, etc.;
* monitoring activities (i.e., the collection of inventory data at regular time intervals);
* assessment activities (i.e., the analysis of inventory data); and
* reporting activities, which include the production of State of Resources reports.

Most of the operational budget is funded by licence fees and royalties

MNR's proposed operating budget for the entire Fish and Wildlife Program for 2006/2007 is approximately $74 million. In other words, the government plans to spend less than six dollars per Ontarian on managing Ontario's fish and wildlife resources, including: undertaking species at risk and invasive species programs, providing leadership for the government's biodiversity strategy, culturing and stocking fish, allocating resources, managing wildlife diseases, and meeting numerous other obligations.

Closer examination reveals that the government's general revenue contribution to the operating budget of the Fish and Wildlife Program is only about $12 million. Since 1996, the government has redirected all revenues collected from hunters, fishermen and trappers for licences, royalties and fines from the general revenue account to the Special Purpose Account – an account that cannot be cut by the government. Although MNR is managing our natural heritage on behalf of all Ontarians, the revenue from the Special Purpose Account now provides over 80 per cent of the program's operating budget and has helped compensate for cuts made to the general revenue account.

Reviews conducted in 1998 and 2002 reveal capacity problems

In response to cuts in the budget and government downsizing, MNR noted in its 1996 Fish and Wildlife Management Business Plan that it wanted to retain the capacity to assess natural heritage information and to produce State of Resources reports, but that it would be increasing its reliance on the non-governmental sector for inventory, monitoring and assessment activities. MNR noted that its field assessment programs would be "significantly impacted."

In 1998, the Auditor General of Ontario (AGO) found that population and harvest assessments of moose, black bear and white-tailed deer were not carried out frequently enough to make appropriate, informed decisions about sustainable harvest levels. The AGO also found that recreational fishing harvests were being managed without current and detailed assessment data,

particularly in Central and Northern Ontario, and that the results of fish stocking activities usually were not assessed due to a lack of funding.

In the follow-up to this audit in 2000, MNR advised the AGO that it had made some changes to its programs and that it had initiated a broad scale review of its fish and wildlife inventory, monitoring and assessment activities. This review, which was conducted in 2001/2002, identified numerous examples of capacity issues, including lack of funding, staff, expertise and equipment. It also included examples of information gaps and a lack of protocols.

In its State of the Forest Report 2001, MNR stated, "conclusions about monitored forest-based wildlife population concerns and trends at a provincial scale are not yet possible" since monitoring programs did not cover the entire province. MNR indicated that the results of additional monitoring programs would be available for the 2006 State of the Forest Report (which was not published, as of February 2007).

Monitoring problems affect mammal, bird and fish programs

Cutbacks have limited ability to survey mammals:

While more than 80 mammalian species are found in Ontario, populations of less than 10 per cent of the species are being inventoried. This is not necessarily a concern, although there is worrying evidence that MNR has limited capacity to monitor even high priority species (i.e., moose, black bear and white-tailed deer). These species have high cultural value, and revenues from their harvest contribute millions annually to our economy. Moreover, both moose and black bear are vulnerable to over-harvesting. Some of the capacity issues that have been raised by MNR staff and others include the following:

* MNR districts reported difficulties completing their aerial moose surveys every three years due to a lack of funds, planes, equipment and/or expertise during the 1990s. The schedule has since been reduced to once every three to six years, despite concerns that significant change in population levels may not be detected in a manner that allows a timely adjustment in management.

* Black bear populations are surveyed using indirect methods, such as bear occurrences at a line of bait stations, and other protocols currently under development (e.g., DNA analysis of hair caught in barbed-wire traps). Large home ranges and other factors make it impractical to use direct methods.

* Deer populations are not being surveyed across their full range due to the high cost of doing the surveys. Their abundance in some areas has resulted in increased incidents of conflict with humans and complaints that harvest rates are too low.

For furbearing species, such as marten, hares and beaver, range-wide surveys are considered by MNR to be too costly, impractical or unnecessary. For many furbearing species, protocols to directly measure populations have not been developed. Instead, estimates of population levels are based on harvest data. This approach has been challenged by some stakeholders since it often is not supported by population studies, which are required to check the estimates.

According to MNR, there are gaps in its population monitoring and assessment activities in the Hudson Bay Lowlands and Northern Ontario (an area that may be opened to forestry and mining activities soon) both in terms of area and species covered.

"Staff are at their limit now and asking them to do anything more than they are currently doing, even in the short term, even for the long term gain, will simply not get the necessary time and attention to be successful."

-- Source: MNR, 2004.

MNR relies on third party data to monitor birds:

MNR relies heavily on third party inventory, monitoring, assessment and reporting activities for information about bird populations and habitat for many of the more than 470 species of birds found in Ontario. The federal government coordinates population surveys of Ontario's migratory birds, including waterfowl and shorebird species and more than 80 per cent of landbird species (e.g., forest songbirds, hawks, owls).

MNR also relies heavily on information provided by Bird Studies Canada (BSC), a group that uses volunteers to collect data according to approved protocols. Under a partnership agreement, BSC monitors the 37 bird species identified in the PWPMP. MNR also relies on the Breeding Bird Atlas – a source of population trend data on all breeding bird species in Ontario. BSC co-ordinates the updates to the Atlas, which are done only every 20 years. In general, MNR does not inventory non-migratory bird species, although districts may conduct the occasional survey of populations of a few of the nine species of non-migratory game bird species (such as grouse and wild turkey).

In a recent review, MNR staff concluded that data obtained from some third party activities were too inconsistent or too sparse to meet its obligations. Based on this review, the ECO has serious concerns about the quality of the avian natural heritage data that MNR is relying on to advise road planners, municipalities and other stakeholders.

Sport fish inventories labeled 'ad hoc' and 'inadequate':

An MNR review conducted in 2001/2002 has described its inventory and monitoring approach to the sport fishery as being "ad hoc" and "grossly inadequate" for all but a few high profile lakes. It also noted that its information on fish habitats was inadequate for planning related to forest, municipal, water and fish management, and for mining and tourism. Furthermore, MNR has acknowledged on its website that it attempted to address issues with local fisheries on a lake-by-lake basis, but that this approach has been ineffective. MNR states that the "cost of monitoring and enforcing 'unique' solutions on individual lakes has become prohibitive."

To address these and other concerns, MNR is implementing a new approach to fisheries management, called the "ecological framework for recreational fisheries management". This approach is based on on-going intensive monitoring of fish populations in representative lakes within a zone. Some stakeholders have raised concerns that valuable information on many lakes will no longer be collected and available to fisheries managers, planners and other users of natural heritage data.

In the same review, MNR assessed its inventory of fish and aquatic habitats as incomplete and out-of-date, and inadequate for planning purposes. It noted that the capacity of districts to conduct these inventories was limited, and that inventory protocols needed to be updated to reflect current science.

As a result of a lack of operating funds, some MNR staff members have obtained contracts from other sources, including the U.S., to work on their projects on the condition that this work also supports MNR's goals and objectives.

Data and expertise needed on species of concern or at risk

MNR's Natural Heritage Information Centre (NHIC) is mandated as the authority on the province's rare plant and animal species, and has collected distribution data on an estimated 15,000 plant and animal species. Approximately 2,200 species have been ranked as being of "conservation concern", which includes species that have been designated as "at risk" or for which there are less than 100 occurrences.

NHIC collects distribution data from various sources on these species on an on-going basis. However, some taxonomic groups (such as spiders, mayflies, fungi and algae) are not in the database, and some groups that are listed are not yet ranked. For example, about 7,300 insect species, mainly beetles, butterflies, dragonflies and damselflies, are listed. However, ranking of the beetle species has been delayed in part due to a lack of expertise within MNR.

A MNR review of NHIC's database of amphibians, reptiles and vascular plants found that funding for inventory and monitoring activities for species of "conservation concern" is usually available only for species officially designated as "species at risk." There was also no capacity to track common species that may be on the decline. Although some survey protocols exist, the MNR review found that there was no program to implement them province-wide, and that there was a lack of expertise on how to identify species.

MNR slow to publish State of Resources reports

Over the last decade, several commitments have been made to produce State of Resources reports. In 1998, MNR advised the ECO that two State of Resources reports – covering wildlife and fisheries – were in preparation. In 2005, MNR advised the ECO that it would be producing State of Resources reports for the purpose of identifying information gaps, although no new information would be collected as part of this initiative. In February 2007, MNR took its first steps towards fulfilling that commitment when it published four State of Resources reports – for the American eel, Canada yew, wolf and rabies. MNR is committed to producing additional reports related to the management of fish and wildlife resources.

Conclusion

Considerable evidence exists that MNR lacks the capacity to meet its current obligations to conduct fish and wildlife inventory, monitoring, assessment and reporting activities, despite the efforts and expertise of its staff. Except for PWPMP activities related to commercial forestry operations on Crown land, MNR's broad stewardship obligations to provide sound management of our natural heritage are discretionary in nature. Without an overall strategy that describes the goals and objectives of inventory and monitoring activities – as well as plans to establish priorities – these activities are particularly vulnerable to budget cuts. MNR has managed under its current lack of capacity by dropping some activities, by scaling back other activities and by using alternative methods. It has also adopted a strategy of relying on other parties, such as Bird Studies Canada, to provide funds, people and/or expertise for some activities. As urban and rural development places greater stresses on our natural heritage, the burden on MNR to protect and manage our natural heritage will continue to grow and its lack of capacity to provide adequate information for sound decision making will become increasingly apparent.

MNR Case Study #4:
Enforcement of Conservation Laws

Cuts to budget and staffing levels have caused decline in enforcement effectiveness

Introduction

According to MNR, hunting and recreational fishing provided more than $2.6 billion in added value to the economy in 2005. Fish and game populations must be protected by science-based sustainable harvest limits, but such limits require surveillance and enforcement. For example, on some small Ontario lakes, vulnerable lake trout populations can quickly be decimated if fishing limits are exceeded or if closed seasons are violated. Local Conservation Officer (CO) patrols are the only way to address such risks. Similarly, Great Lakes commercial fisheries are a multi-million dollar industry, and require CO oversight to enforce allowable catches.

However, Ontario's natural heritage has far more than an economic value. It is estimated that more than half of all Ontarians participate in some form of fish and wildlife-related activity each year. While most Ontarians neither hunt nor fish, they do share an appreciation of nature, and they expect appropriate enforcement of laws protecting public resources, such as fish and wildlife.

Responsible hunters and anglers want the reputation of their sport protected, and expect a visible CO presence in the field to deter poachers. In turn, the general public expects that public lands, waterways and roads are patrolled to prevent the unsafe use of firearms by hunters, and to ensure boating safety. New laws to protect the Great Lakes from invasive species, such as Asian carp must be supported by compliance programs, including field and food market inspections. In addition, trained specialists are needed to investigate cases of illegally collected endangered species or wildlife parts, such as black bear gall bladders, bald eagle feathers and sturgeon roe.

Legislated responsibilities of COs have expanded greatly

Conservation Officers are responsible for enforcing a wide range of laws and regulations related to fish, wildlife, fire, parks, endangered species, the forest industry, and sand and gravel operations. Much of their time is focused on enforcing seasonal and regional limits on hunting and fishing, set forth under the *Fish and Wildlife Conservation Act* (*FWCA*). COs also have a mandate to educate the public, and to present evidence in court when prosecutions are launched. The *FWCA*, which came into force in 1999, broadened both the interpretations of several types of offences and the powers of COs to carry out arrests.

Ontario has had COs on patrol since 1892. Over the past generation, hunters and anglers have been able to access increasingly remote areas of the province, using an ever-expanding network of logging roads, and aided by the growing availability of all-terrain vehicles and global positioning systems. This has expanded the geographic range to be covered by COs, and increased the challenges they face. COs are collectively responsible for patrolling an enormous area – roughly one million square kilometers of Ontario's Crown lands.

The enforcement mandate of COs has also expanded over time. Although most of their work is still focused on enforcement of fish and game laws, they now deal with approximately 30 different

pieces of legislation. Depending on the situation, COs may be supported by Deputy Conservation Officers, Park Wardens, DNA profiling specialists, trained dogs, or aviation services. COs are also trained to enforce boating safety rules under the *Canada Shipping Act*, and provide investigative services related to meat processing to the Ontario Ministry of Agriculture, Food and Rural Affairs.

Three CO Lake Units have the very large responsibility of patrolling the Great Lakes, where they enforce regulations for sizeable commercial fisheries, as well as sport fisheries. Among other duties, these units enforce laws designed to prevent invasive species, such as Asian carp, entering the Great Lakes. Until May 2004, it was legal to sell live Asian carp, and about 720,000 kilos of live Asian carp were being imported annually to serve Greater Toronto Area food markets. COs must now enforce the *FWCA* regulation prohibiting live sales to retailers or restaurants. As well, COs must monitor fish catches for food safety, by guarding against the consumption of fish with unacceptable levels of contaminants.

New enforcement needs can arise unexpectedly. For example, the rapid spread of a new viral fish disease in the Great Lakes in 2006 prompted MNR to announce significant new bans and restrictions on the commercial harvest and sale of bait fish from the lower Great Lakes, effective January 2007. Given the economic impact this will have on commercial bait harvesters, the new rules will need enforcement.

For a number of years, MNR's enforcement program has been supported by a special investigative unit, which handles more complex investigations and serious offences. Large investigations can require several years and involve partnerships with multiple ministries, the Ontario Provincial Police, federal departments and agencies in the United States. The ministry is also placing an increased emphasis on "intelligence-led enforcement." This approach focuses enforcement staff and dollars on those violations that pose the greatest risk to public safety and ecological sustainability.

In September 2005, MNR launched the 1-800 MNR-TIPS hot-line to encourage the public to report all types of potential violations, including poaching. In the first year of operation, the TIPS line led to about 1,400 investigations and 86 charges. About 70 per cent of calls reported fish and wildlife violations.

As of April 1, 2006, the work and funding of COs is now overseen by the Director of the Enforcement Branch, and COs respond to priorities that are set province-wide.

Effective enforcement linked to budget and staffing levels

The Auditor General for Ontario last reviewed the work of COs in 1998, and reported a number of deficiencies:

* a decrease in the time spent on general deterrent patrols over the previous two years;
* insufficient operating budgets for carrying out enforcement work; and
* a decline in the number of charges laid for wildlife-related infractions.

In response, MNR increased support funding for field COs for the 1998/99 fiscal year. Available data suggest a connection between increased support funding and better enforcement: the number of contacts made, the number of charges laid and convictions all rose until 2000/2001.

In 2001/2002, enforcement figures began a gradual decline, which is continuing. MNR data, released in September 2006 in response to a freedom of information request made by the Ontario Public Service Employees Union, show that the number of CO contacts with hunters and anglers

declined by seven per cent from 2004/2005 to 2005/2006. Over the same period, the number of charges laid decreased by 11 per cent, and the number of convictions decreased by 19 per cent. These declines in enforcement statistics have coincided with evidence of decreased CO support budgets, as well as declines in CO staff numbers.

Operating budget has not kept pace with mandate

MNR's overall budget has been flat-lined for a number of years (as illustrated in Figure 2 on page 5) with profound ramifications for enforcement activities and other on-going programs. While staff salaries and benefits continue to rise with cost-of-living increases, the ministry has elected to meet those increasing salary obligations by diverting dollars away from operating budgets.

While the ministry has acknowledged that there are financial constraints, it argues that any recent budget cuts to enforcement efforts have not been large. Nevertheless, there is evidence of the negative impacts caused by budget pressures. For example, MNR's enforcement program plans for 2005/2006 describe the overall reduction of the enforcement fleet, and refer to "realignment of existing vacancies" and a need to "identify cost efficiencies." Among other things, numbers of patrol vehicles were cut in 2002 and again in 2006, with most districts now operating on a vehicle-sharing formula that provides roughly two vehicles for every three COs. Although enforcement staff members are not laid off, they are increasingly desk-bound by the lack of funds for basics, such as gasoline, vehicles and equipment.

Gasoline costs are a significant and growing expense, given recent rises in the price of oil and the large territories that need to be covered. In the early/mid-1990s, there was a trend to relocate COs from small district offices into more centralized locations in larger municipalities, resulting in some office and work site closures. As a result, some COs require two to three hours of travel time to get to remote patrol territories.

In 2006, the Ontario Federation of Anglers and Hunters raised concerns about enforcement adequacy, and questions were asked in the Legislature about inadequate controls on poaching. MNR figures indicate that COs spent an average of two-thirds of their time in the field, from April 2005 to March 2006. Observers from all sides of the political spectrum are voicing concern that support funding for COs has been cut, especially since April 2006, reducing field time for COs. Observers say that the support budget in some areas allows for patrols just once per week, except during peak moose season, when COs are out in force. In some areas, patrols are reduced throughout the year, whereas in past years patrols may have been cut back temporarily when the budget ran short at the end of the fiscal year. The ministry counters that much valid enforcement work, such as reviewing of records and interviewing, is done in an office setting.

Field staff numbers have been cut back 20 per cent since 1992

There has been, roughly, a 20 per cent cutback in field enforcement staff numbers over the past 14 years. The erosion in field CO numbers has been gradual, but inexorable: in 1992, MNR had 257 field COs (plus 90 other badge-carrying staff involved in supervision and training); in 1995/1996, MNR reported having 235 field COs; and in 1998, Ontario's Auditor General reported that the ministry had 215 COs working in the field (plus 65 other badge-carrying staff). As of December 28, 2006, MNR had approximately 200 COs and 8 investigative specialists active in the field (plus 26 supervisors).

The impacts of reduced staff numbers are being felt not only in Northern Ontario, but even in locations like the Rouge Park on Toronto's eastern edge, where illegal deer hunting is a growing concern and MNR is struggling to investigate complaints.

The CO units responsible for Lake Ontario and Lake Erie illustrate the kinds of staffing declines that have occurred. Both units have lost staff since 2005. Lake Ontario's complement of COs dropped from five to a mere two; they are responsible for enforcing all sport and commercial fishing rules not only on Lake Ontario, but also the Niagara River and the St. Lawrence River to the Quebec border. Lake Erie, which supports a commercial fishery with a dollar value more than 20-times larger than that of Lake Ontario's, was patrolled by six COs in 2005 – now down to five. And while each of the two Lake Units previously had its own supervisor, they now share one; they also share one Intelligence Investigative Officer.

The enforcement of sport and commercial fishing rules on the Upper Great Lakes (Lakes Huron and Superior) rests with six COs, overseen by one supervisor, and supported by one Intelligence Investigative Officer.

Conclusion

Despite the fact that enforcement responsibilities of COs have increased and become more complex over the years and despite the geographic expansion of hunting and angling activities, there has been a long, gradual slide in CO enforcement capacity. There are currently about 20 per cent fewer COs in the field than there were 14 years ago. Some of the remaining COs have been shifted to centralized regional offices, requiring longer travel times to reach the resources they are expected to protect. Patrol time in the field is being limited by tight operating budgets. It is likely that these reductions in staffing and constraints on operating budgets have a connection to MNR's declining enforcement statistics. The numbers of public contacts, charges and convictions all have been in decline since 2001/2002.

Appendix 2
Overview of Ontario Government's Budget-setting Process

The process of establishing government spending priorities and meeting program delivery and fiscal objectives includes a number of steps and procedures involving Ontario ministries, Cabinet Office and other agencies. This section provides an overview of three major processes which guide the spending and finances of the Ontario government: the Budget-setting process, the Estimates process and Results-based Planning.

Budget

Once a year, usually in the spring the Minister of Finance tables a budget in the Provincial Legislature. This document sets out the revenue projections and spending priorities for the Ontario Government for the forthcoming fiscal year (April 1st to March 31st). Typically the Minister of Finance holds a number of pre-budget consultations at which stakeholders can provide input into the process. However, the contents of the budget are kept confidential until it is tabled in the legislature. Only certain members of the Ontario government, certain staff of the offices of the Premier and Minister of Finance (MOF), and cabinet committees (such as Treasury Board and Management Board of Cabinet) would have knowledge of some or all of its contents. In effect, most of the large-scale financial numbers and spending directions are established by the Finance Minister through the budget process.

The implications of this centralized, top-down approach were noted by Justice O'Connor in his Report of the Walkerton Inquiry:

> "*Beginning in 1992-93 and continuing until 1997-98, the budget of the Ministry of Environment (MOE) underwent very substantial reductions…The budget reduction targets for the MOE were not set by that ministry. They also did not involve a review of the question of whether the reductions could be achieved without sacrificing the MOE's capacity to fulfill its statutory mandate. Rather, the reduction targets were initiated by the central agencies, and the MOE's responsibility was to develop strategies for achieving those targets."*
>
> Report of the Walkerton Inquiry, Part One, (2002), Chapter 11

Estimates

Since the budget primarily establishes the large-scale numbers (i.e., how many dollars each ministry will be allocated or reduction targets to be achieved), it is left up to ministry staff at each ministry to determine how they will live within their allocated spending envelope. Each ministry itemizes the programs and expenditures which they are planning to operate or undertake for the current fiscal year and tabulates these program-by-program numbers in a document called the "Estimates." The Ministry of Finance describes the estimates in the following way: the estimates set out the details of the operating and capital spending requirements of ministries and constitute the Government's annual formal request to the Legislature for approval of the expenditures involved. Once approved by the Legislature in the *Supply Act*, the Estimates become the legal spending authority for each ministry. The Ministry of Finance and Ministry of Government Services coordinate this process and assist ministries in compiling estimates information following a standardized format.

Results-based Planning

In addition to the budget-setting and estimates process, ministries need to carry out a process that the current government has established called "Results-based Planning (RbP)." Formerly, through the late 1990s and early 2000 years, the government employed an annual "Business Plan Model." The Results-based Planning process is multi-year in range, although it can be modified annually. Though the name has changed, the intention of both processes is essentially the same – to harness the activities of all the ministries to ensure that they focus on the stated priorities of the government. The Ministry of Finance uses this description of RbP: "With Results-based Planning, ministries demonstrate the alignment of resources to strategies and programs to achieve the government's priorities and results, and fulfill statutory obligations."

Through observation of this process and its resulting documentation, the ECO has noted that ministries are often required to 'pigeon-hole' some of their programs and statutory obligations into a few broad objective categories (e.g., "Strong People, Strong Communities") whether or not such alignment is really sensible for that ministry. For example, in 2007 MOE's RbP Ministry Overview Statement as posted on its website reads: "Ministry activities contribute to the government's key priority "Better Health" and to the result "Preventing illness, promoting wellness" and the supporting result "Reduce illnesses from smoking, obesity and environmental pollution." Most residents of Ontario would likely characterize MOE's principal obligation to be the protection of Ontario's air and water quality and the integrity of its ecosystems, and less so to be achievement of the "Better Health" priority.

Examples of Priorities Adopted by the Ontario Government (2004-2007)

- Success for Students
- Better Health
- Strong People, Strong Communities

MOE's 2006/2007 Results-based Plan does, however, go on to become far more specific and focused on environmental matters (e.g., "MOE will continue to work to improve the protection of water quality and quantity in lakes, rivers and underground aquifers). The water program includes monitoring and testing water quality, responding to spills, inspecting drinking water systems and enforcing regulations to ensure safe, clean drinking water and to protect and conserve water resources."

Aside from the budgeting and result-based planning processes, the system of preparing estimates and estimates-review is where most of the detail about planned expenditures is reviewed and authorized. Each year, the estimates are reviewed item-by-item and voted on by an 11-member all-party committee of the Legislature called the Standing Committee on Estimates. Ministry staff members appear before the Committee to answer questions and provide detail. Some of the ministries' estimates may be approved within a few weeks; the entire review process for the twelve ministries chosen each year by the Committee must be completed by late November.

The order of ministries and the time allotted for the review of their estimates involves a number of factors. More time, priority and interest is often accorded to large budget ministries, such as Education, Health and Long-Term Care, although smaller ministries like Energy, Environment and Natural Resources are also chosen. As the fiscal year progresses, ministries have the option of making a submission to Cabinet for special or unpredicted spending requirements that have arisen within the current fiscal year. Also as the fiscal year progresses, both the budget-setting and estimates processes commence for the following fiscal year.

In summary, while the estimates process reviews the spending review function, the process of establishing the budget is where the significant spending directions are established as well as the relative magnitude of each ministry's budget compared to the others. Most large-scale financial decisions and spending directions are established by the Finance Minister through the budget process. Ministries currently rely on Results-based Planning to guide the organization of spending activities and program development.

Appendix 3
MOE'S Mandate and its Evolution

History of Growing Responsibilities

According to the MOE website, "[MOE] is responsible for protecting clean and safe air, land and water to ensure healthy communities, ecological protection and sustainable development for present and future generations of Ontarians." To meet this mandate, MOE's core functions generally include the following activities:

- developing provincial regulations, policies and standards with respect to air quality, water quality, land use and waste management;
- monitoring the environment for the purposes of identifying risks and trends, assessing the effectiveness of existing ministry programs, and assisting in the development of new regulations, standards, policies and programs;
- issuing permits, approvals and licenses to ensure that risks to the environment and human health associated with industrial, commercial and industrial activities are minimized;
- administering the environmental assessment (EA) program to ensure that EAs are conducted in accordance with the *Environmental Assessment Act* to protect the environment from the unnecessary effects of significant projects; and
- conducting inspections, investigations, and abatement and enforcement activities in order to ensure compliance with environmental legislation.

Since being formed in 1971, MOE's responsibilities and core functions have grown. The volume of work in many core program areas, such as MOE's inspections, enforcement and approvals programs, has greatly increased as the provincial economy, the number of laws and regulations, and the resulting number of regulated facilities in Ontario have all grown. The increasing complexity of many programs, resulting from advances in scientific knowledge and technology, has also contributed to a larger workload for MOE staff. For example, ministry review of applications for certificates of approvals for air emissions has become significantly more complex and time consuming as air modeling has become more sophisticated.

In addition, many new or more specialized program areas have emerged over the past few decades to address new challenges or new ministry priorities, continuously adding to MOE's list of responsibilities. These include the following examples:

- In 1985, to address concerns about the environmental impacts of chemical spills, MOE proclaimed the "Spills Bill" (Part X of the *Environmental Protection Act*) and created the Spills Action Centre to provide a quick response to spills.

- In the late 1980s and into the 1990s, diversion of waste from disposal became a priority for MOE, resulting in several new ministry initiatives. For example, MOE passed the "3Rs Regulations" in 1994, which require businesses and institutions over a certain size to conduct waste audits and set up waste reduction and source separation programs.

- To address the challenge of industrial discharges of toxic contaminants into Ontario's waterways, in the late 1980s, MOE introduced the "Municipal Industrial Strategy for Abatement" (MISA) program, rolling out new regulations for each of nine key industrial sectors from 1993 to 1995.

* In the mid-1990s, to meet the needs of an increasingly engaged public, MOE introduced the *Environmental Bill of Rights* (EBR) and established the Environmental Registry and the EBR Office. MOE also introduced other programs and policies to involve the public in environmental decision-making.

* In the late 1990s, air quality became a top priority for the ministry. In 1999, MOE established the Drive Clean Program aimed at reducing vehicle emissions. MOE created almost 40 new staff positions (the first new positions created since the major staff cuts of the mid-1990s) dedicated solely to administering this program.

External pressures (such as national and international commitments, political and media pressure, environmental crises, etc.) have also resulted in MOE acquiring new program responsibilities. For example, during the 1980s, both acid rain and ozone depletion in the stratosphere emerged as major new air quality concerns. MOE's air quality branch was charged with the added responsibility of regulating major acid gas emission sources and, a few years later, of regulating ozone-depleting substances.

One of the most notable recent examples of an event that has shaped MOE's program planning and budget allocations is the May 2000 Walkerton water contamination crisis. In the years before 2000, MOE staff members dedicated, on average, only three per cent of their total time to the communal drinking water program. After Walkerton, MOE dramatically increased its expenditures directed towards water protection. MOE added a number of new programs, such as accrediting labs and licensing drinking water operators, while the Ontario government passed several new statutes, including the *Safe Drinking Water Act,* the *Nutrient Management Act* and the *Clean Water Act,* as well as regulations under these Acts.

Most recently, climate change has emerged as a new responsibility for MOE. Although the issue of climate change has remained largely unaddressed by MOE, in January 2006, MOE announced that understanding the impact of climate change and preparing strategies to deal with it is one of its top priorities. This additional challenge of addressing climate change will likely place further pressure on MOE for new programs, staff and other financial resources.

Ministry Planning: Prioritizing Programs and Allocating Resources

Each year MOE prioritizes its programs and activities and determines the ministry direction for the coming year in order to decide how to allocate its resources. MOE does produce long-term strategies and objectives for certain individual program areas or media; however, MOE has no publicly-available, integrated long-term planning documents (similar to MNR's high-level strategic plans), which set out the long-term vision and priorities for the entire ministry.

MOE's priorities have typically shifted every few years. (As noted above, air quality and toxic discharges were the ministry's top priorities in the 1990s, resulting in the 'Drive Clean' and 'MISA' flagship programs. Post-Walkerton, any program related to drinking water or source water protection became the top priority.) The priority or flagship programs have shaped MOE's expenditure allocations, and often, MOE's focus on these immediate pressures and high priorities has squeezed resources in other core, non-priority program areas.

Alternate Delivery Strategies

Gradual cuts to MOE's budget over many years by successive governments have eroded MOE's capacity to carry out all of its core activities. MOE states on its website that protecting Ontario's

air, land and water, "requires a significant commitment of day-to-day resources." However, as a result of the gradual budget cuts over many years, it appears that MOE simply does not have the "day-to-day resources" needed to meet all of its core responsibilities.

MOE has adapted to these budget constraints over the past two decades by constantly reprioritizing and finding creative alterative strategies to deliver under-resourced programs or activities. For example, the "Managing the Environment" report, prepared for the Ontario government by Val Gibbons in 2001, recommended that MOE shift away from its traditional roles as regulator and enforcer and place more emphasis on its role as system manager, putting greater reliance on the use of shared responsibility and partnerships with the regulated community, non-governmental organizations (NGOs) and the public. Although the Gibbons Report was not formally adopted, MOE has used this strategy to deal with programs it can no longer manage.

The alternative strategies taken by MOE are sometimes the best or only option available in the circumstances. These strategies can even be positive solutions that result in improved efficiencies. However, MOE must possess the capacity to carry out its mandated core functions effectively and, where it must rely on the assistance of others (agencies, governments or NGOs) to carry out programs, MOE must retain the ultimate responsibility as steward of the environment.

Examples of programs being delivered through alternate strategies

The following are a few examples of programs and environmental protection responsibilities that MOE has, over the past 15 years, downloaded to municipalities, offloaded, in whole to or in partnership with, industry, organizations or NGOs, scaled back, deregulated or simply terminated.

* In 1993, MOE eliminated its free laboratory services for testing drinking water quality samples submitted by municipalities. In 1996, as a result of further budget cuts, MOE closed its three regional laboratories. Municipalities became responsible for their own water testing through privatized labs.

* MOE divested itself of the responsibility for operating drinking water and sewage treatment facilities. In 1993, the provincial government established the Ontario Clean Water Agency (OCWA) to take over its responsibility for operating all provincially owned sewage and water treatment plants (as well as assisting municipalities operate their facilities where needed). In 1995, OCWA was spun off from MOE to become an independent Crown agency, and, in 1997, Ontario completed the transfer by conveying ownership and operating responsibility for all treatment plants to the municipalities (which could still retain OCWA's services if desired). This termination of MOE's operating services resulted in a considerable loss of staff, expertise and knowledge within MOE with respect to the oversight of drinking water and sewage treatment services.

* In 1996, the provincial government terminated MOE's successful, decade-old rural beach cleanup program. The Provincial Rural Beaches Strategy Program and its component Clean Up Rural Beaches (CURB) program were developed by MOE in 1985 to identify sources and impacts of rural water pollution (such as bacteria from septic systems and agricultural fecal pollution) and to lead remediation programs. With funding from MOE, Conservation Authorities and MOE staff had conducted local water quality studies and developed remedial strategies for the restoration of water quality at several provincial rural beaches. The government had also provided grant money to assist rural residents in repairing septic systems and improving agricultural practices.

* In January 1997, MOE terminated almost all of its funding to the Regional Action Plan Coordinator and the Public Advisory Committees, which oversee the remediation of the local "Area of Concerns" (i.e., areas with toxic substance problems) in the Great Lakes. MOE stated that the funding would have to come from the private sector and other donors.

* In the late 1990s, MOE announced that it was scaling back its inspection and enforcement activities to focus on the more significant activities that pose a risk to the environment or public health. MOE discontinued its inspection program for water well installations (see MOE Case Study #3, Water Well Inspections) and septic systems (new systems continue to be inspected by local health units, but existing septic systems now typically go uninspected unless a problem becomes known). MOE also downloaded responsibility for local nuisance impacts such as noise, odour and dust to municipalities.

* In 2002, the province created Waste Diversion Ontario (WDO) – a non-government corporation comprised of industrial, municipal and non-governmental representatives – to take on the responsibility of developing, implementing and operating the province's waste diversion programs (including the Blue Box recycling program). Although MOE retains the responsibility for overseeing WDO's activities, this arrangement has removed a significant burden from MOE.

* Since the early 1990s, MOE has scaled back considerably its environmental monitoring activities. MOE increasingly relies on other groups (i.e., agencies, industry, volunteers) to continue monitoring areas from which it has withdrawn. For example, MOE now relies on Ontario's "Lake Partner Program", a group of volunteer cottagers, to conduct water quality (phosphorus and clarity) monitoring of cottage lakes. MOE also increasingly relies on the Conservation Authorities for taking on additional water monitoring responsibilities, and on industry for self-monitoring with respect to air emissions.

* MOE has also explored strategies for partnering with industry on pollution control. For example, MOE ran a "Compliance Assistance Pilot Program" from 2002 to 2004, in which MOE provided funding assistance to industry associations to carry out education on compliance. (Unfortunately, MOE found that there was no clear evidence of improved compliance resulting from this program.)

Appendix 4
MNR's Mandate and its Evolution

History of Growing Responsibilities

The Ministry of Natural Resources (MNR) describes itself as "the steward of Ontario's provincial parks, forests, fisheries, wildlife, mineral aggregates, petroleum resources and the Crown land and waters that make up 87 per cent of the province." The ministry administers 53 different statutes. The ministry's core functions are:

- developing provincial legislation, regulations, policies and standards to govern the sustainable use and protection of Ontario's natural resources;
- planning, on-going operation and management of Ontario Parks, conservation reserves and other Crown lands;
- monitoring, assessment, scientific research and information management, including the provision of geographic and natural resource information;
- issuing permits, approvals and licenses granting rights to use Ontario's natural resources (e.g., to conduct forestry operations, operate pits and quarries, hunt and fish, buy or lease lands, build dams, and other activities); and
- conducting inspections, investigations and enforcement activities.

Predecessors of the Ministry of Natural Resources have existed for over 100 years. When the ministry was created in 1973 from the Department of Lands and Forests, its core responsibilities included forestry and fire fighting, Crown lands, fishing and hunting, and management of a few provincial parks. MNR's responsibilities have grown, as the amount of work and its complexity have increased. New or more specialized program areas have emerged over the past few decades to address new challenges, continuously adding to MNR's list of responsibilities.

For example, the parks system has grown dramatically, and new legislation puts a priority on ecological integrity. The number of pits and quarries requiring approvals and inspections continues to grow, along with new rules and planning processes. Timber management has become "sustainable forest management" requiring comprehensive planning processes for all forest values. The former fish and game program has shifted and expanded to focus on wildlife conservation, including protection of species at risk and biodiversity, controlling invasive species and wildlife-borne diseases like rabies. MNR has had to modernize its information management systems as well, as it now provides maps and information about Ontario, primarily in electronic form, to other ministries and clients. MNR's public consultation and conflict resolution workload has also increased, along with the number and type of resource-based conflicts, and requirements under the *Environmental Assessment Act* and *Environmental Bill of Rights*.

External pressures (such as crises, national or international commitments, political or media pressure, etc.) have also resulted in new or increased responsibilities and budget needs. For example, 97 per cent of the increase in MNR's operating budget in 2006/2007 can be attributed to funding for forestry programs, in response to a crisis in the forest industry. In 2005 and 2006, the ministry announced new programs, primarily direct supports to the forest industry, costing over one billion dollars over five years. The ministry also set up a new Secretariat in its Forests Division to administer the Ontario Forest Sector Competitiveness Strategy. The Strategy includes money for the forest industry in the form of road funding, loan guarantees, a prosperity fund, electricity rebates, a refund of stumpage fees and other support.

Similarly, a crisis in electricity generation capacity, combined with increasing calls for a shift to renewable energy sources, has resulted in a new government priority to increase the production of renewable energy in Ontario. MNR's role is to provide new opportunities to develop wind, water

and biomass resources for electricity generation. The ministry has created a new Renewable Energy Section in MNR, developed new policies, drafted maps that identify high potential sites, and made Crown lands and waters available for development.

Sometimes these new flagship programs were allocated short-term funding, which often ended before the initiative was completed, or didn't provide for on-going operating costs. The Ontario's Living Legacy land use program was funded with five years of dedicated funding. When the five years ended in 2004/2005, MNR still had to regulate and prepare management plans for a large number of the new protected areas out of its decreasing base funding.

Ministry Planning: Prioritizing Programs and Allocating Resources

MNR has had to adapt to the budget constraints of the past two decades by constantly reprioritizing and finding creative alternative strategies to address under-resourced programs or activities. During the 1990s, MNR's staff was reduced by about one-half, most of the decrease coming between 1995 and 1997, and had only recovered slightly by 2005.

MNR's staff and budget were cut hard between 1995 and 1998 as part of a strategy to reduce the size and cost of government. Each ministry developed a business plan identifying the ministry's role and the most cost effective way to carry it out. They identified "core businesses" or their primary responsibilities, and refocused activities on areas of key government priority. Most ministries, including MNR, moved away from delivering programs and services themselves, restructured ministry operations, reduced the number of regulatory permits and revised regulations.

MNR's priorities have shifted a number of times over the years. Each year MNR prioritizes its programs and activities and determines the ministry direction for the coming year in order to decide how to allocate its limited resources. During MNR's business planning since 2003, any ministry activities that did not either support the new government's priorities, or could not be described as "core public interest" (activities required by legislation) were identified as areas for "transformation," which means that they would be discontinued, redesigned or transferred.

The ministry developed a new strategic directions document *Our Sustainable Future (OSF)* in 2005, to bring the ministry's activities into line with new government priorities. The document sets out long-term directions and current priorities. "We are working to promote healthy, sustainable ecosystems and the resource economies and communities that depend on them. We will work to conserve biodiversity, protect greenspace, protect source water, ensure sustainable forestry, support renewable energy and enhance opportunities for outdoor recreation." OSF sets out a vision of sustainable development, a mission of ecological sustainability, and a commitment to protecting biodiversity.

Our Sustainable Future also outlines five strategic goals that support current government priorities:

* enhance a healthy natural environment for Ontarians;
* promote economic growth for Ontario communities;
* protect public health and environmental safety from natural and human-made hazards, such as forest fires, floods, drought and erosion;
* facilitate stewardship, partnerships and community involvement; and
* achieve organizational excellence for improved public service.

OSF also sets out key strategies and proposed actions, including the priorities for each of the five strategic goals, to be incorporated into the ministry's yearly results-based business planning.

Priority or 'flagship' programs have shaped MNR's recent budget planning, and often, MNR's focus on addressing these more immediate pressures and higher priorities has resulted in other, non-priority, responsibilities being squeezed. For example, at the same time as MNR was directing new money to the Forest Sector Competitiveness Strategy programs, other areas of the forest management operating budget were cut. At the Standing Committee on Estimates in 2005, the Deputy Minister explained that "The ministry is one of several ministries across government that has been flatlined in its budget, and in order to manage all of the programs, including our forestry program, we've had to shift resources to highest-priority needs."

Overall, between 1992 and 2007 there has been a major shift from MNR directly carrying out resource management activities (e.g., planting trees, managing Crown lands, stocking fish, etc.) to regulating, setting policy and relying on industry and partners to deliver many former MNR responsibilities. While some rebuilding of programs and funding has since occurred, the shift towards the ministry steering, while others deliver, remains the model today. This model is not necessarily a problem in and of itself, although experience has now proven that the ministry must maintain a core competency to oversee alternative delivery strategies, and occasionally, to retain some core responsibilities itself.

Alternative Delivery Strategies

The ministry has used a number of "alternative delivery systems" to cut costs, including downloading, offloading, partnering, privatization and reliance on stakeholders and volunteers. A number of Acts, regulations and policies have been revised to remove legal requirements for MNR to carry out certain responsibilities, and to direct the regulated industry to carry out those activities (for example, the responsibility to inspect forestry and aggregate operations). In some cases, the ministry carried out detailed planning for the alternative delivery strategies; but in others, the ministry simply discontinued programs (for example, involvement in Remedial Action Plans for the Great Lakes, and the Southern Ontario Forestry Program).

Examples of programs being delivered through alternate strategies

Following are just a few examples of programs that MNR has, over the past 15 years, downloaded to municipalities, offloaded (in whole or in part) to industry, organizations or NGOs, scaled back, deregulated or simply terminated.

* A number of environmental protection responsibilities have been downloaded to municipalities and conservation authorities, such as protecting natural heritage on private lands, and protecting wetlands.
* Other activities have been transferred to volunteers, organizations and user groups (for example tree planting, land acquisition, many monitoring activities, and Southern Ontario forest conservation).
* In many cases, MNR has set up advisory committees, councils and other bodies to perform former MNR functions.

One major initiative to reduce red tape and costs, was the amendment of the *Public Lands Act* and *Lakes and Rivers Improvement Act* to reduce the number and type of permits issued and enforced by the ministry. The number of permits was reduced by about 80 per cent in 1997, and many remaining permits are currently proposed to be removed from MNR's *Lakes and Rivers Improvement Act* regulation. Conservation Authorities will regulate work around water and wetlands under the *Conservation Authorities Act* instead.

New funding mechanisms have been set up for some of MNR's programs, for example Trusts administered by the forest, aggregates and oil, gas and salt resources, to fund research, forest regeneration and rehabilitation of abandoned pits and quarries. The Special Purpose Accounts (SPAs) described in the case studies for the Fish & Wildlife and Parks Programs allow those programs to reinvest all revenues collected through licence fees, user fees and other sources such as corporate sponsors, back into the programs. When the Fish & Wildlife SPA was set up in the mid-1990s, the government significantly reduced funding from the Consolidated Revenue Fund (CRF), but said that base funding from CRF would be kept at a constant level in the future (not reduced when revenues increased) in order to grow the program. Instead, the ministry has cut the base CRF funding repeatedly. In 2005, MNR staff explained at the Standing Committee on Estimates that they cut the base funding from general revenue for parks and fish and wildlife, expecting the reduction to be off-set by increases in revenues "So the reduction is offset by revenue, more or less...it's a part of the way we're managing the program within our general management as a flat-line ministry."

Appendix 5
Budget and Staff Notes

MOE Budget Notes, Figure 1

* Between 1993/1994 and 1997/1998, as well as for fiscal year 2002/2003, the Ministry of Energy was amalgamated with MOE. The values presented in Figure 1 exclude the budget of the Ministry of Energy.
* The values for the years prior to 1994/1995 have been restated to exclude the expenditures of the Ontario Clean Water Agency.
* The year 2002/2003 excludes $12 million announced in Ontario budget.
* The 2001/2002 budget was prepared on the accrual and consolidation basis. Commencing in 2003/2004, estimates were presented on the accrual basis of accounting. Information for 2002/2003 and earlier years is presented on the modified cash basis. For some ministries, this change can result in variances in year-to-year comparisons.

MOE Staff Complement Notes, Figure 7

* In the graph, all dates are as of March 31 of the fiscal year indicated, except in 1996 and 2002 when February data was used due to the timing of labour disruptions.
* Prior to March 31, 1995, MOE's staff strength included water and sewage treatment plant operators. As of September 1994, the Ontario Clean Water Agency (OCWA) formed and those FTEs were transferred out of the MOE staff strength. MOE staff transferred to OCWA carried out similar functions and duties at OWCA.

Operating Budget Notes, Figure 9

* The portion of the chart termed "All other operating expenses" refers to the allocations for: Agriculture, Food and Rural Affairs + One-Time and Extraordinary Assistance, Attorney General, Board of Internal Economy, Children and Youth Services, Citizenship and Immigration, Community Safety and Correctional Services, Culture, Democratic Renewal Secretariat, Economic Development and Trade, Energy, Teachers' Pension Plan (TPP), Executive Offices, Finance – Own Account, Ontario Municipal Partnership Fund, Power Purchases, Contingency Fund, Government Services, Pension and Other Employee Future Benefits, Health Promotion, Intergovernmental Affairs, Labour, Municipal Affairs and Housing, Northern Development and Mines, Office of Francophone Affairs, Public Infrastructure Renewal, Research and Innovation, Secretariat for Aboriginal Affairs, Tourism, Transportation

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