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River Voices

Enforcing the Clean Water Act:
A Tool for Smarter Growth

One of the greatest costs of sprawling development is the damage caused to our water resources. Construction near rivers and streams can result in significant erosion and sedimentation that affect the aquatic life, swimming and aesthetic enjoyment of our waters, as well as, the function of water supply treatment and wastewater treatment.

Enforcing the Clean Water Act

The Clean Water Act is a tremendously powerful and far reaching mechanism for restoring and maintaining the health of the nation's waters, but, unfortunately, it is very poorly enforced in most states.

If the Clean Water Act were more thoroughly and thoughtfully implemented and enforced, many Smart Growth principles would be fulfilled. Encouraging implementation and enforcement of the Clean Water Act as part of the attention paid to how our cities, suburbs and rural areas are developing can lead to sustainable patterns of growth.

Some ideas of the Clean Water Act implementation and enforcement at the state level include:

Understanding the condition of the water
TOOL: Water quality standards

All Clean Water Act tools depend on water quality standards to protect existing uses. The Clean Water Act requires all states (and allows for tribes) to develop their own water quality standards that (a) meet minimum federal requirements and (b) can address specific conditions within the state or specific basins.

Water quality standards are comprised of designated uses, water quality criteria and an antidegradation policy and implementation procedures (see pg.4).

Proper development and full enforcement of water quality standards would encourage smarter growth by:

- Identifying all water uses (such as aquatic life, swimming, boating, etc.) that need protection from detrimental human activity.

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A message from U.S. EPA on Smart Growth and the Clean Water Act

For most of EPA's 30-year history, policymakers have focused on regulatory and technological approaches to reducing pollution. These efforts have met with significant success. Emissions from point sources such as power plants and refineries have been reduced through the use of cleaner fuels and technology, and some of the most visible environmental problems (e.g., lead in gasoline, sulfur dioxide from industry) have been addressed. Despite these successes, technological solutions are unlikely to provide the solution to all our environmental challenges.

SMART GROWTH PRINCIPLES

- Mix land uses
- Take advantage of compact building design
- Create a range of housing opportunities and choices
- Create walkable neighborhoods
- Foster distinctive, attractive communities with a strong sense of place
- Preserve open space, farmland, natural beauty and critical environmental areas
- Strengthen and direct development towards existing communities
- Provide a variety of transportation choices
- Make development decisions predictable, fair and cost effective
- Encourage community and stakeholder collaboration in development decisions

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River Network

Connecting People, Saving Rivers

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River network is a national organization whose mission is to help people understand, protect and restore rivers and their watersheds.

From the President


Linda Kliewer

Sprawl kills streams. It also kills lakes, wetlands and the rivers they feed. Nothing else harms our waters more surely, thoroughly and permanently.

Much has been said about the ill effects of sprawl on the quality of the air we breathe and the lives we lead. Not nearly as much has been said about its effects on the waters that sustain us.

During typical development, the burden of silt and other pollutants that area streams carry is hundreds of times higher than normal. The effects usually last far longer than the development itself. This alone is enough to choke the life from most living waters.

After typical development, the burden of oil and other pollutants that area streams carry is hundreds of times higher than normal. In addition, flows are drastically altered. Highs are much higher and lows are much lower. Abundant, living waters are succeeded by muddy, polluted ditches that are nearly dewatered, except when they are flooding.

There are many dimensions of this complex issue. It needs to be addressed from many different angles, using many different tools. We focus first in this issue of *River Voices* on one of the most important: the Clean Water Act.

Why? Because our nation's most comprehensive water law—properly interpreted and applied—does much more than simply regulate direct discharges from factories and sewage treatment plants. It provides a *framework for watershed assessment, planning and action*.

Today, we know sprawl kills rivers. States that want to get a grip on one of today's biggest water quality problems have all the authority they need in the Clean Water Act to do so. Our job in the watershed protection community is to help them realize this—and to help the public convince its officials that they have not just the *authority*, but the *responsibility* to protect our vital interest in clean waters.

Don Elder

Enforcing the Clean Water Act, cont.

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- Developing protective criteria for pollutants or habitat disturbance associated with redevelopment, new construction and new roads.
- Protecting all uses in the water from impacts of development, such as sedimentation, urban runoff and disturbance of habitat, by requiring all projects to avoid, decrease or minimize impacts through better siting and management practices.

How do we protect the existing quality of our waters?

TOOL: Antidegradation policy

We spend a great deal of time and energy identifying and trying to solve problems in the water, but not nearly enough time protecting the quality of water from future degradation. Yet, the antidegradation policy of the Clean Water Act requires all states to establish procedures to keep waters healthy. Every state has an antidegradation policy, but few of them fully meet the requirements of the federal regulations.

Antidegradation review is based on three principles:

(1) Protect existing uses;
(2) Protect and maintain high quality waters; and
(3) Protect and maintain specially designated outstanding waters.

Proper development and full enforcement of antidegradation policies and implementation procedures would encourage smarter growth by:

- Requiring that all new development and redevelopment be evaluated regarding (a) harm to any existing uses, (b) alternatives to degradation of high water quality must include social and economic analysis and public involvement and (c) impact on designated "outstanding waters."
- Requiring that proposed new or increased wastewater discharges undergo an alternatives analysis that publicly looks at social and economic necessity for environmental impact.
- Creating additional pressure in higher quality waters to concentrate development rather than developing out farther into rural areas.

What pollutants are allowed to come into our waters?

TOOL: NPDES permits, especially stormwater related permits

The system designed for identifying and controlling the wastewater discharged into our waters is called the National Pollutant Discharge Elimination System (NPDES). The permits that are issued to dischargers are supposed to set limits for and require monitoring of pollutants discharged.

Within the last year, new regulations have been enacted that expand the regulation of the discharge of stormwater pollution into waterways. These regulations address a broader definition of discharge that includes runoff from streets and rooftops, construction sites and industrial facilities. Under the NPDES program this pollution is to be controlled through development and implementation of stormwater pollution management plans.

Proper development and full enforcement of wastewater and stormwater discharge permits would encourage smarter growth by:

- Requiring attention to the existing quality of the receiving water and potential cumulative impacts (especially regarding pollutants related to development impacts) of all current and proposed permits associated with new construction or additional wastewater.

- Prohibiting discharge associated with development that will worsen an existing problem in the water.
- Encouraging more compact and/or infill development to maximize existing infrastructure rather than building excess capacity into rural areas.
- Requiring plans for preventing or minimizing stormwater pollution at the community level that can be used hand-in-hand with growth management plans for municipalities, counties or regions.

What changes to wetlands are allowed?

TOOL: **Dredge and fill permits (Clean Water Act, section 404) and state water quality certification (Clean Water Act, section 401)**

The permits for dredging and filling of wetlands are generally issued by the U.S. Army Corps of Engineers, usually in cooperation with state water quality agencies. Michigan and New Jersey have been delegated full authority for substantial parts of this permitting process. The Corps is supposed to evaluate alternatives to the proposed fill and to require impacts to the wetlands to be (1) avoided whenever possible, (2) minimized if they are not avoidable and (3) mitigated once they occur. Unfortunately, this process often leaps directly to the mitigation step.

All states are allowed to review the Corps decisions about wetland dredging and filling through a provision of the Clean Water Act, section 401. This provision allows states to block or condition the proposed activity if it will violate the state's water quality standards. The state may also waive the right to review Corps permits. That is frequently the case.

Proper development and full enforcement of wetland dredge and fill permits would encourage smarter growth by:

- Eliminating illegal wetland fill and development, especially in areas that may not be part of a larger community-supported development plan.
- Encouraging the states to review wetland permits for their impact on existing or planned uses of the water (protected in water quality standards) instead of waiving that right.
- Requiring a thorough evaluation of alternatives to the wetland impact before jumping to mitigation strategies.
- Preventing unnecessary damage to aquatic resources and wetland functions that communities depend on (such as slowing the release of stormwater, filtering pollutants and recharging groundwater) as part of their natural infrastructure.
- Preventing unnecessary development of wetlands, and allowing only more compact development in the most environmentally protective location within a site, through the required sequence of avoid, minimize and mitigate.

What is the plan to fix the problems in our water?

TOOL: **Watershed restoration plans (Total Maximum Daily Loads)**

Problems in each waterbody are summarized by states every two years in the threatened and impaired waters (Clean Water Act, section 303(d)) list. Once problems have been identified in a given watershed, a plan must be developed to solve them. These plans are called Total

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Enforcing the Clean Water Act, cont.

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Maximum Daily Loads (TMDLs). In the course of developing the Total Maximum Daily Loads, states should account for current growth and development plans, as well as, anticipate future growth.

Proper development and full enforcement of the threatened and impaired waters lists (303(d)) and watershed restoration plans (TMDLs) would encourage smarter growth by:

- Identifying waters threatened by poor development on the 303(d) list.
- Prohibiting or restricting new development that will contribute to existing problems in the water.
- Including current and future development in the calculation of protective pollutant levels in the water.
- Requiring discussion and decisions about likely and allowable pollution contribution from existing and planned development.

What is the Public's Role?

Is the Clean Water Act working perfectly? No, what law is? But the power of the Clean Water Act is in the strong public involvement requirements and opportunities. People who want to keep **swimming** at a particular beach can and should inquire about the **bacteria levels** that will be discharged out of a new wastewater treatment plant. People who believe in the **social and economic reasons to protect existing water quality** can and should ask about **antidegradation review** of any development. People who believe in the **beneficial functions of wetlands** to a community can and should comment on the **necessity and extent of filling** associated with a development.

In other words, our development patterns can be influenced by our desire, as it was expressed in the primary goal of the Clean Water Act, to "restore and maintain the chemical, physical and biological integrity of our nation's waters." Growth will not be smart until it fully embraces this goal as well.

By Gayle Killam
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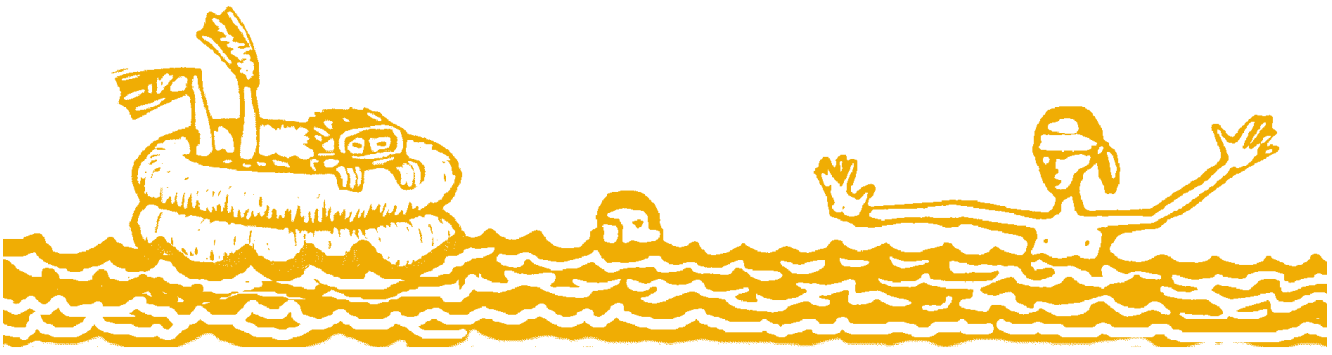

A Message from U.S. EPA, cont. from page 1

There is a growing consensus that our nation's traditional environmental protection system is not able to handle an increasingly complex set of environmental challenges. Indeed, problems such as polluted runoff from streets and farms, global climate change, and loss of habitat and biodiversity require a broader set of tools than those we have relied upon in the past. As the challenges become more complex and difficult in the 21st century, fundamentally new approaches and new partnerships must be developed to meet these challenges.

Policy-makers are realizing that decisions regarding development patterns have significant impacts on the natural environment. In recent years, cities, states and regions around the nation have begun planning for smart growth. Smart growth is an increasingly popular development strategy that combines higher density, vibrant walking environments and accessibility to jobs, shopping and residences to create healthy neighborhoods (see principles above). It changes the terms of the development debate away from the traditional growth/no-growth question to "how and where should new development be accommodated?" Smart growth is development that simultaneously achieves:

- **Economic development and jobs** that create employment and business opportunities, improves local tax base, provides neighborhood services and amenities, and creates economically competitive communities.
- **Strong neighborhoods** that provide a range of housing options giving people the opportunity to choose housing that best suits them. Smart growth provides the choice to walk, ride a bike, take transit or drive. It maintains and enhances the value of existing neighborhoods and creates a sense of community.
- **Healthy communities** that provide families with a clean environment. Smart growth balances development and environmental protection, accommodating growth while preserving open space and critical habitat, reusing land, and protecting water supplies and air quality.

Recent research has found that dispersed, low density development can exacerbate non-point source pollutant loadings by converting absorbent open space into compacted lawns and increasing impervious surface with large amounts of transportation-related infrastructure (e.g., driveways, parking lots and roads). One possible remedy to minimize impacts on regional water quality is to encourage higher density developments that consume less land and minimize overall regional imperviousness.

A smart growth strategy directs development to existing communities, encourages compact community design and preserves open space, all of which can relieve development pressures at the edge and better protect environmental resources, including water resources. These actions can reduce regional impervious cover, which can minimize impacts to water quality.

Across the country, cities, regions and states are recognizing that smart growth can and should be leveraged to protect environmental quality. Specifically, smart growth can be used to meet some water quality goals. The Clean Water Act (CWA) requires that communities reduce stormwater runoff, reduce pollutant loads in impaired waterbodies and prevent degradation of pristine waters. Smart growth approaches can be used to help meet the goals of the CWA.

EPA is working with states and local governments to identify smart growth approaches that can be implemented so communities have great water and great neighborhoods. For more information on EPA's smart growth program, go to **www.epa.gov/smartgrowth.**

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The Clean Water Act and Sprawl

An Illinois Permitting Opportunity

By Albert Ettinger, Senior Staff Attorney, Environmental Law and Policy Center

Cynthia Skrukrud, Ph.D. Illinois Chapter Clean Water Advocate, Water Sentinels Project Sierra Club

The Problem

Suburban sprawl and other development clearly have degraded water quality in many parts of the country. While agricultural land uses (e.g., fertilizers, pesticides, animal feeding operations) certainly pollute, development of farmland and undeveloped areas increases stormwater run-off. Completed development affects water quantity and quality by reducing the amount of permeable surface area. Streams in urbanized areas experience greater variation in flow as groundwater recharge that slowly releases flow to streams is reduced and more run-off flows directly into streams during storm events. Water that formerly was cleaned as it percolated through the soil, instead lands on streets, parking lots and rooftops where it picks up contaminants and then pollutes streams. In Northeastern Illinois, the quality of streams is inversely correlated with the population density of the watershed.[1]

Also, while the sanitary waste and other wastewater that naturally results from new subdivisions and shopping centers receives some level of treatment, the current practice in most locations is to pipe wastewater, far more polluted than the receiving waters, to the nearest stream. This is a problem if the receiving water is a small stream. The basic biological integrity of high quality small streams will be destroyed by sewerage treatment plant flows that discharge nutrients, ammonia, endocrine disrupting chemicals and other pollutants. Indeed, the discharge of even pure water is likely to affect the biological integrity of a stream, if it disrupts the natural flow regime.[2]

What Can You Do?

Proper implementation of the Clean Water Act will not stop sprawl dead in its tracks. It will, however, reduce the impacts of sprawl on water quality and create disincentives for developments that affect greenfield sites and high quality waters. To accomplish this, clean water advocates must:

- Work to establish strong antidegradation standards for their states that prohibit allowing new discharges where they will harm existing water uses or the discharges are not really necessary to allow important social or economic development.[3]
- Follow the National Pollutant Discharge Elimination System permitting process to see that permits are not granted that will violate the antidegradation standards or other standards.
- Work to establish strong Stormwater permits for your state that require industries, construction sites and municipalities to develop effective stormwater pollution prevention plans and then actually follow them.[4]
- Comment on wetland dredge and fill permits (Section 404 of the Clean Water Act) to prevent illegal wetland fill projects and to insist that wetland fill permits are conditioned on prevention of soil erosion from the site.
- Use wastewater planning or land use tools available in your state to prevent new construction that will degrade water quality from being permitted.[5]

1 Dennis W. Dreher, *Watershed Urbanization Impacts on Stream Quality Indicators in Northeastern Illinois*, in D. Murray and R. Kirschner (eds.) Proceedings of a National Symposium: Assessing the Cumulative Impacts on Watershed Development on Aquatic Ecosystems and Water Quality (March 1996).

2 N.L. Poff, J.D. Allna,M. Bain, J.R. Karr, K.L. Prestergaard, B.D. Richter, R.E.Sparks and J.C.Stromberg: *The Natural Flow Regime*; BioScience Vol.47, No. 11, pp 769-84,(Dec.1997)

3 40 CFR § 131.12

4 See generally Environmental Defense Center v. U.S.EPA,319 f.3d.398 (9th Cir. 2003)

5 Openlands Project, Protecting Illinois Environment through a Stronger Facility Planning Area Process,(Oct.2001) available at http://www.openlands.org/reports/FPA%20Report.pdf(last checked July 28,2003)

Paying Attention to NPDES Permits Pays Off for Illinois Clean Water Advocates

Over the last few years, reviewing draft NPDES permits, especially those for expansion of discharges, has paid off for Illinois clean water advocates through better permits and more attention to development impacts on water resources in the fast growing Chicagoland area.

Village of Huntley and the Kishwaukee River

The rapidly-growing Village of Huntley, located 45 miles northwest of Chicago, proposed a series of expansions to their wastewater treatment system. By calling for a public hearing on the first of those proposed expansions, advocates were able to negotiate a reduction of the wastewater discharged to the South Branch of the Kishwaukee River during summer months when pollution-sensitive, young aquatic life are present in the river. The resulting permit calls for land application during those months and requires the Village to study the impacts of their discharge on the receiving stream through biweekly sampling before any additional discharge expansions are proposed. A biologic survey of the aquatic insects and mussels in the river was performed prior to the discharge expansion in order to provide baseline information on the inhabitants of the river. The survey will be repeated again after three years to measure the impacts to those populations over time. In addition, the Village of Huntley has agreed to explore more alternatives to wastewater discharge.

The Fox River and the Fox River Study Group

On the Fox River, which lies 35 miles east of downtown Chicago, concerns about cumulative impacts of multiple wastewater discharge expansions led the Sierra Club, Friends of the Fox River and Prairie Rivers Network to appeal a permit issued to the Fox River Water Reclamation District, the second largest discharger to the river. That appeal resulted in the formation of the Fox River Study Group, a diverse stakeholder group that has come together to investigate, model and address the cumulative impact that development decisions by many individual communities will have on the river.

credit: Prairie Rivers Council

In both these examples, NPDES permit review and challenges by river advocacy groups resulted in outcomes, which are addressing the broader issue of how sprawl impacts water resources. In each case, communities are now taking a step back and including an assessment of the impacts of their development plans on water resources in their planning. While it is still early in the process, it is the hope that these efforts will lead communities to adopt development practices different from the norm, ones that will sustain and enhance the quality streams which lie at the western, developing edge of the Chicagoland region.

Stopping construction in Vermont

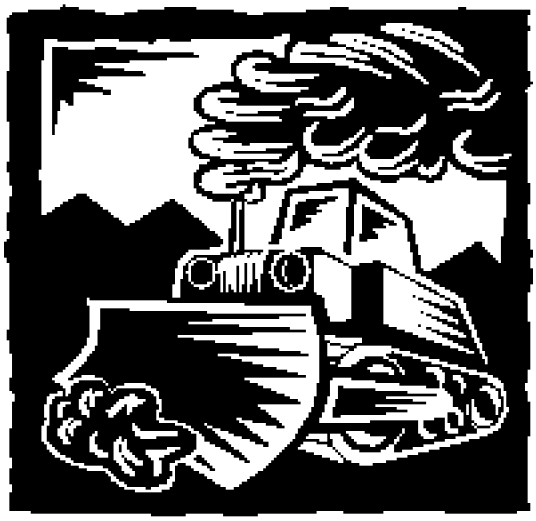
Pushing for Development that Protects Water Quality

By Gayle Killam
Director, River Protection and Restoration Program
River Network

with input from

Kelly Lowry
General Counsel
Vermont Natural Resources Council

What?! Did protection of water quality actually stop development? A decision in favor of water quality reverberated across the country in 2001 when construction of a new Lowe's home improvement store was halted just outside Burlington, Vermont, in the fastest growing county in the state. The Clean Water Act regulations prohibit the permitting of pollution when it will "cause or contribute" to an existing problem.[1] The neighborhood residents and local environmental groups argued that the construction of the store would have an impact on the small brook that runs behind the developed corridor, Potash Brook. The Potash Brook community came together to protect their backyard creek, forming the Voice for Potash Brook.



Stormwater permits required before construction begins are intended to prevent or sufficiently address any pollution that might be caused by the disturbance of the land. In this case, there already were problems in Potash Brook (most significantly too much erosion and sedimentation) and the state's development of a required plan for fixing those problems was a long way off. Because of this situation, preventing a worsening of the problems was critical.

When the Water Resources Board (a citizen board that rules on protests to decisions made by the Agency for Natural Resources) decided in favor of protecting Potash Brook from additional pollutants, it raised a fundamental question for all agencies and permittees in waters that violate water quality standards in any way: Can they (and if so, HOW do they) allow for continued development before completing the watershed restoration plan required to address the problems?

New Stormwater Regulations

Needless to say, this situation is not unique. You are experiencing it all around you, no matter where you live. And during the last six months, new, more comprehensive federal stormwater regulations have gone into effect across the nation to address stormwater pollution associated with all construction sites that are at least an acre in size. These regulations can also include smaller sites when they are part of a larger development or at the discretion of the water quality agency.

All eyes were on Vermont when its legislature passed a bill in 2002 that was widely supported by the interested parties in this debate. It called for Watershed Improvement Permits (WIPs) that were essentially general permits intended to cover all the regulated construction activity in a watershed. The first WIPs produced by the Vermont Agency of Natural Resources did not meet the intent of that agreed-upon legislation, according to Conservation Law Foundation and Vermont Natural Resources Council, and they were appealed back to the Water

1 40CFR122.4

Resources Board. The Board has agreed that they don't satisfy the expectations of the legislation, and the recently-elected Governor has asked the legislature for another solution to this problem. Unfortunately, the current administration does not appear to be moving toward a solution that is in favor of water quality.

In the meantime, the Water Resources Board required Lowe's to demonstrate that their redevelopment of the existing site would not increase the amount of pollution entering Potash Brook above the current levels. Because Lowe's was able to demonstrate that its new stormwater system would actually reduce the amount of pollution entering Potash Brook, they got their permit. Construction will not begin immediately, however, because the permit has been again appealed.

Municipal Stormwater Pollution Programs

The new federal stormwater regulations also assign responsibility for controlling urban industrial stormwater runoff, one of the greatest contributors to water quality impairment across the country. In "urbanized areas," based on the 2000 census, municipalities are required to inform and involve the public as they develop plans to address construction site runoff, post-construction runoff, illicit discharges and pollution prevention. As you can imagine, these elements are all related to existing and future development patterns. Opportunities to include smart growth principles in the development of stormwater management plans for municipalities and industries can be capitalized on through the required public involvement.

Leading to Smarter Growth?

Ultimately, implementing and enforcing the Clean Water Act does not require that all development cease. Instead, it simply requires that growth is planned, carried out and maintained in a manner that will not have a

negative impact (and hopefully can have a positive impact) on the quality of the waters you care about most.

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Stormwater Permits: www.epa.gov
Click on "water," "stormwater," then "NPDES stormwater permits."

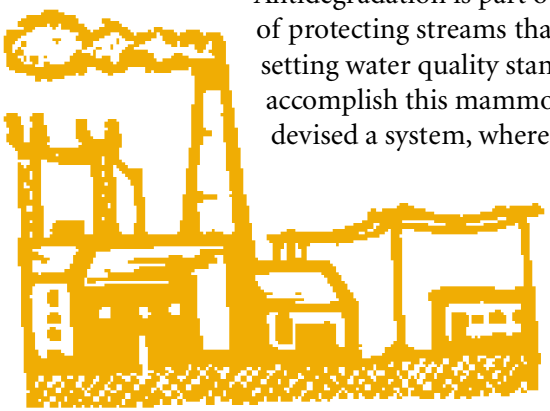
Antidegradation is Anti-Pollution, not Anti-Growth

By John Wilmer, Esq.

Prior to 1972, our Nation's waters were badly polluted, mostly from industrial and sewage point sources. The Clean Water Act was meant to eventually eliminate this pollution. The keystone of this federal act was the National Pollutant Discharge Elimination System, or NPDES, a nationwide system for requiring dischargers to meet end of pipe pollution limits. This system would reduce contaminants going into those streams already polluted and had a future goal of zero discharge.

Protecting unpolluted streams, however, remained a problem. Regulators wisely predicted that future activities on unpolluted streams might continue the legacy meant to be corrected by the Clean Water Act. Regulators also wisely predicted that they could not prohibit discharges or activities that threatened these unpolluted streams.

In order to keep clean streams clean, the federal government included in the Clean Water Act regulations a provision that predated the 1972 Act, the antidegradation policy. Under this provision, the United States Environmental Protection Agency (EPA) requires states to have antidegradation policies and implementation methods. The EPA does not dictate state antidegradation standards unless a state fails to meet the minimum federal requirements.



Antidegradation is part of a larger process of protecting streams that starts with setting water quality standards. To accomplish this mammoth goal, the EPA devised a system, whereas, states would have primary responsibility for designating the uses of their streams; such as recreation, boating, cold water fishes, etc. Pennsylvania currently has sixteen different uses, while some states only have a few uses.

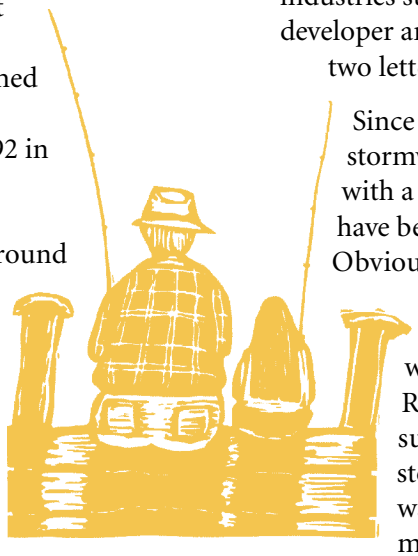
The use designation process is the first prong of the three-part requirement for classifying streams. The second prong involves devising water quality criteria to protect those uses. Low temperatures, for example, would be required for a stream that supports a trout population. Antidegradation is the third prong and requires protection of better quality streams. In Pennsylvania, "high quality"streams and "exceptional value" or outstanding streams are designated and given greater protection.

When citizen groups in rural or semi-rural settings in Pennsylvania have attempted to obtain "high quality" or "exceptional value" designations for streams, they have usually been met by stiff resistance from developers, businesses and municipalities—all claiming that growth will be drastically halted. Antidegradation, however, encourages clean growth, which is growth that takes the natural resources into consideration as part of the planning process. The purpose of antidegradation is to keep our clean streams clean. Discharges into these streams will be more tightly controlled, wetlands and natural habitats will be preserved, storm water will be recharged into the ground instead of eroding stream banks, etc. Development can occur, but only if the streams and wetlands are kept clean.

Developers, in fact, are beginning to realize the advantages of clean streams. After all, why do people want to live in rural or semi-rural settings? Is it because they want polluted streams and diminishing natural features? Of course not. It is just the opposite. Future homeowners want the peace and tranquility offered by clean streams, wetlands and wildlife. Many businesses want a clean environment to attract employees and customers.

The Valley Creek Story

The Valley Creek watershed, in Chester County, Pennsylvania, offers a perfect example of an "exceptional value" stream located in a semi-rural setting that has withstood the assault of industry, malfunctioning sewage systems and over development. It is twenty miles from Philadelphia and in the Route 202 corridor, which is one of the fastest growing areas in Pennsylvania. The watershed was designated as "exceptional value" in 1992 in a controversial decision, precisely because of the development occurring around it. Prior to this date, "exceptional value" streams were those located out in the wilderness on which there were no threatened developments. In other words, the only streams previously given that status were streams that did not, at the time, need the protections offered by "exceptional value" status.



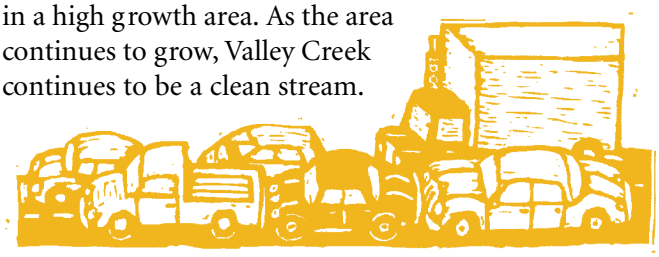
Even though Valley Creek had excellent water quality and a naturally reproducing wild brown trout population—it also contained PCB's (a toxic contaminant) from a nearby train yard. It was a fly fisherman's dream, albeit a "catch and release" stream because of the bioaccumlative effects of PCB's in the trout. Another positive feature was that the last two miles of this fourteen mile stream flowed through Valley Forge National Historical Park. Yet, it was in a high growth area and government was worried that such a designation would receive widespread opposition. Ironically, the government initially wanted to designate only that portion that ran through the national park.

What convinced the state body to award "exceptional value" status was the over 14,000 letters of support from all manner of people, groups and businesses. The largest two employers in the county, and their employees numbering over ten thousand, overwhelmingly said that they wanted to protect this clean stream. Numerous other white collar and service industries supported this designation. One developer and his engineer were the only two letters in opposition.

Since that time, over forty stormwater permits, each associated with a different construction project, have been issued for Valley Creek. Obviously, its "exceptional value" status has not dissuaded home and business developers from wanting to build in the region. Recently, there has been successful litigation to require stormwater dischargers in the watershed to use recharge methods rather than detention basins, primarily because of the stream's "exceptional value" status. Development has continued, but in a way that keeps the stream flowing and reduces harm from large volume discharges.

Support for Special Protection

The stream has maintained its excellent water quality, as well as its attraction as a major fishing area and tourist spot through Valley Forge Park. The herculean efforts of those people and groups who have fought to keep this clean stream clean have proven that it is possible to apply antidegradation in a high growth area. As the area continues to grow, Valley Creek continues to be a clean stream.



Citizens Take on Wetland Protection:

Elk Rapids, Michigan

By Scott McEwen
Water Resources
Programs Director
Tip of the Mitt
Watershed Council

For as long as residents of the Village of Elk Rapids could remember, "the marsh" on the edge of town had defined the southern boundary of Elk Rapids. Residents of this picturesque Lake Michigan community trusted that the appropriate State and Federal wetland laws protected "the marsh" from disturbance. They were understandably shocked to wake up one morning last year to see dump truck after dump truck of fill being placed into the marsh, ultimately filling over ten acres of wetland for a sprawling 24-unit subdivision. Over 700 dump truck loads (7,000 cubic yards) of fill were eventually placed in the marsh…all without a wetland permit from the Army Corps of Engineers.

credit: Tip of the Mitt Watershed Council

Aerial photo of 2002 illegal wetland fill in Elk Rapids, Michigan.

The Federal Water Pollution Control Act of 1972 (referred to as the Clean Water Act, as amended) provides the regulatory framework for the federal government to control activities that impact waters of the United States. Section 404 of the Act regulates the discharge of dredged or fill material into the waters of the United States and is intended to minimize adverse impacts by preventing the unnecessary loss of wetlands.

Today, the wetland destruction of this project has been halted. This is a direct result of residents caring enough about how their community was growing, learning about the Clean Water Act's wetland protection provisions, and taking the necessary steps to ensure that the Army Corps of Engineers stopped this massive wetland violation. Most fundamentally, wetland regulations provide a method of avoiding and minimizing wetland impacts and protecting the wetland functions these environments provide communities. These principles help guide growth in the most environmentally "smart" manner.

There is much to be learned from the efforts of Elk Rapids residents. Like wetlands across the county, the Elk Rapids wetland is part of the community's "green infrastructure" that provides such ecosystem services as water quality protection, flood attenuation, erosion prevention, stream flow moderation and wildlife habitat. As their Village grows, the residents and the local government of this coastal community recognize that they can save on the costs of new water infrastructure systems by preserving the naturally functioning wetlands, floodplains and urban stream corridors.

Requirements for Every Project

No permit to fill wetlands or other waters of the United States can be approved unless the project meets the 404(b)(1) guidelines. These guidelines are an essential road map that citizens, like those in Elk Rapids, must use if they are to effectively engage in wetland permitting and help guide environmentally sustainable development. The guidelines require the applicant to comply with four main requirements to

ensure the proposed project does not have a significant or avoidable negative impact on water resources.

1) **Alternatives:** Prohibits issuance of a permit for projects where feasible, less environmentally damaging alternatives are available.

2) **Adverse Impacts:** Prohibits issuance of a permit for projects that would cause, or contribute to, significant adverse impacts to the aquatic environment.

3) **Water Quality:** Prohibits issuance of a permit for projects that would violate any applicable state water quality standard.

4) **Mitigation:** Requires project proponents to eliminate avoidable impacts and to minimize and compensate for unavoidable impacts to the extent appropriate and practicable.

credit: Tip of the Mitt Watershed Council

Sediment-laden water running off illegal wetland fill: discharges directly into Lake Michigan.

Asking the Right Questions

Army Corps staff must review proposed wetland projects considering these regulatory standards and criteria laid out in the law. The Corps must also consider public input, comments of local governments and the findings of other state and federal agencies. The effectiveness of citizens in wetland permitting depends upon how relevant the arguments they make are to the regulatory standards that agency staff must apply. The three main questions that wetland protection advocates should always consider are:

Do "practicable" alternatives exist? If a project is not dependent upon being located in a wetland (for example, it could be argued that cranberry farm or peat mine is dependent on being in a wetland), then less damaging alternatives are presumed to exist. As part of the permit review, a permit applicant must first plan to avoid wetland impacts. Once planning efforts to **avoid** wetlands have been exhausted, then, **minimizing** the impacts on wetlands is necessary. Finally, if there must be wetland impacts, then the last step in the sequence is **mitigating** for any damage done to the wetland. An applicant cannot jump immediately to minimization or mitigation without considering how they can first avoid wetlands. Alternatives that avoid and minimize impacts to wetlands include the use of only "upland" building sites, alternate methods of construction to minimize fill, alternative configurations of developments, alternative sizes of projects, and using alternate locations not presently under the applicant's control but reasonably available.

Local knowledge regarding alternatives is essential. In Elk Rapids, residents knew that there were non-wetland locations within the property where houses could be built without any impact to wetlands. A compact conservation design in the upland areas is the smart growth alternative. This would allow for a portion of the property to be developed, while still preserving vital wetland functions. Reviewing such alternatives and allowing public input would have been a necessary part of a wetland permit, if it had been properly sought.

cont. on page 16

Wetland Protection, cont.

cont. from page 15

Is the project in the public interest? Wetland degradation harms the public by effectively depriving the functions and values that those wetlands provide. The Corps must consider: 1) is there a demonstrable need in the community for the project, and 2) will the benefits of the project to the community outweigh the harm to the public?

Public interest consideration can influence a project in either direction—toward protection of wetland functions or as a means to allow wetland destruction. The 24 unit development proposed for the Elk Rapids marsh was within the Village limits, so it was argued that the highest and best use of the property was a sprawling "infill" subdivision in a wetland to avoid developing outside the Village limits. Some argue for relaxed wetland permit process within urban boundaries to allow for infill development in order to minimize the cumulative impact of growth on the urban fringe.

Will an unacceptable disruption to the aquatic resources result? What will be the individual and cumulative impacts on public and private uses of the wetland and its functions? Is the wetland habitat for threatened or endangered species? Have the impacts been minimized to the greatest extent possible? How will adverse impacts be mitigated by the applicant?

Role of Citizen Involvement

The success of any regulation largely depends upon public support. The residents of Elk Rapids quickly learned that local citizen action is instrumental in providing a political force to promote wetland protection at all levels of government and to help guide growth in the most sustainable manner. Citizens provide information critical to making the most informed decision regarding alternatives and the loss of functions, and they serve as the "public conscience" during the process by highlighting the fact that wetland regulations exist to protect the public's interest in maintaining the community ecosystem services and functions that wetlands provide.

Smart growth means many things to many people, but for the residents of Elk Rapids, putting an infill development in a naturally functioning wetland is not smart growth, nor will protecting the wetland necessarily lead to sprawl. They discovered that the proper wetland permitting (avoidance, minimization, and mitigation) could have led to a compact development in the most appropriate upland location in a way that protected the wetland. There are some that will argue that compact design and infill and water resource protection and restoration are competing interests, but for the residents of Elk Rapids these two goals are not contradictions.

including growth in the "clean-up" plan

By Merritt Frey

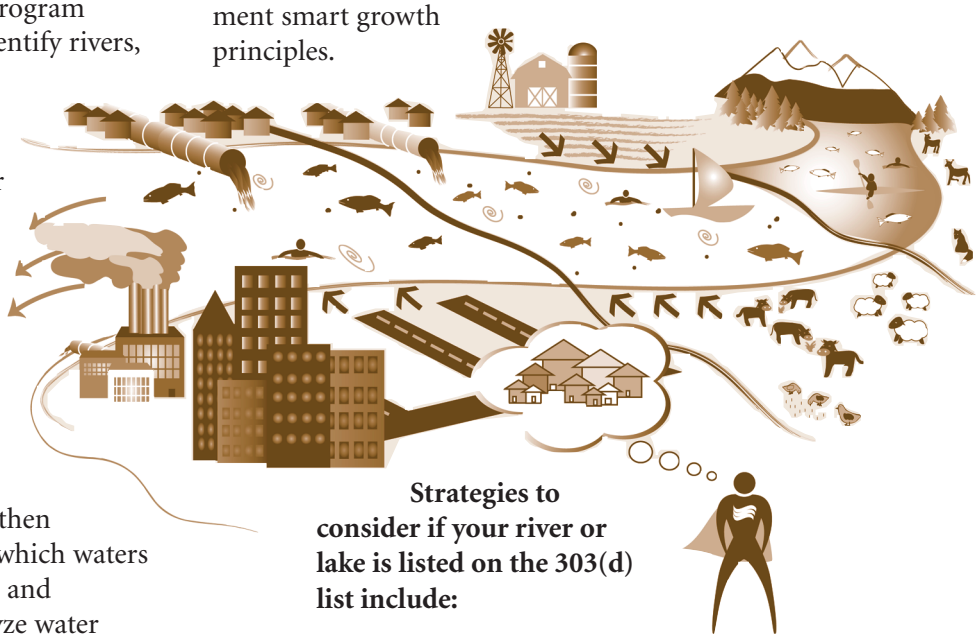
So what to do when development threatens to overwhelm the progress we've made restoring our rivers, lakes, and coastal waters? Luckily, the drafters of the Clean Water Act created a backstop for when the Act's other requirements didn't result in safe waters—the Total Maximum Daily Load (TMDL) program. The program requires that states and EPA identify rivers, lakes and coastal waters that remain polluted and then develop a cleanup plan or a Total Maximum Daily Load for each waterbody.

TMDL Program

The TMDL program or process includes three basic steps. First, states **develop lists of waters—called 303(d) lists—in need of clean up** because they do not meet state water quality standards. States then **prioritize their lists** to decide which waters must be cleaned up first. States and localities then collect and analyze water quality data, models and other information to **decide what is the most efficient way to reduce pollution**, developing a TMDL cleanup plan.

A TMDL is both a calculation and a plan: **a calculation** of the maximum amount of a pollutant that a river, lake or coastal water can receive before becoming unsafe, and **a plan** to lower pollution to that identified safe level by allocating parts of the pollutant total to each contributor to the problem. Basically, every contributor (whether a sewage treatment plant, a farmer's field or a suburb on septic systems) is allowed a certain amount or percentage of the total pollution—known as their allocation.

The TMDL process can be a useful structure for smart growth debates and policies. From the first step of listing through the on-going work of implementing a TMDL restoration plan, strategies for connecting water quality protection and restoration with vibrant, livable communities abound. Does this mean that developing a TMDL requires growth to stop? No! Growth needs to be anticipated and incorporated into creative solutions to our water quality problems, which should be designed to implement smart growth principles.



Strategies to consider if your river or lake is listed on the 303(d) list include:

✔ *Triage for impaired waters: controlling additional pollution*

Even before a TMDL is developed, 303(d) listing in and of itself can be a powerful tool for protecting rivers from the impacts of growth. The pertinent regulation is found in the Code of Federal Regulations at Part 122.4. The regulation clearly bars states from issuing permits "[t]o a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards." If a river is already violating standards (i.e., is listed on the 303(d) list), increased pollution will contribute to the violation.

This regulation, often referred to as a "prohibition" on new and expanded

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Promoting Smarter Growth, cont.

cont. from page 17

dischargers, has rarely been implemented as such. However, in a recent case in federal District Court in Missoula, Montana, the court issued an order enjoining the Forest Service from proceeding with timber harvesting in certain watersheds on the Lolo National Forest until TMDLs were established—implementing the prohibition. Clean water advocates should investigate this tool when faced with threat that could impact an already impaired stream or river. For an example of this strategy in action, see the Vermont story on page 10.

✔ *Accounting for future growth plans and impacts*

A TMDL watershed cleanup plan is all well and good, but what happens when the sewage treatment plant expands or a farmer sells his land to a developer who puts in twenty-five homes on septic systems? Good question!

TMDLs should be designed to account for future growth. The most direct way to do this is to set aside a portion of the pollution total as an allocation for future growth. How much is set aside? That can be based on models, general growth trends or even an educated guess. This portion can then be allocated by the state to a new or expanded discharger or land use, as the need arises.

In practice, this rarely happens and is not required in the national regulations. Of 45 TMDL allocations examined nationwide by Oliver Houck, only seven quantified future development.[1] But that doesn't mean you shouldn't advocate for it! Some states do require growth be addressed—find out if your state is one of them. Even where it isn't required, you should argue on the side of common sense: If an agency allocates the entire allowed pollution amount, there can be no new or expanded contributions of the pollutant. This is an awkward place for a state agency to find themselves—saying purely, "no." Alternatively, the state would have to reopen a TMDL each time a new discharger entered the picture…sending themselves right back to the pre-TMDL drawing table. This is a waste of time and resources—rare commodities at all state agencies these days.

✔ *Information cross-fertilization*

TMDL development can provide information that will be useful in smart growth planning and targeting. Depending on the nature of the watershed, TMDLs can identify sensitive aquatic areas, erosion or runoff prone lands, land use patterns generally, and more. On the flip side, existing smart growth plans (and the research behind them) can provide valuable information for the TMDL process such as land use patterns, population growth, trends, transportation development and more. River advocates should work to connect the TMDL process with the planning process in order to share information, reduce costs and improve likelihood of success with the plan.

Oregon has the nation's most comprehensive "smart growth" land use policies.

credit: Jean Hamilla

1 Houck, Oliver A., *Clean Water Act TMDL Program: Law, Policy and Implementation*, Environmental Law Institute,se cond edition,2002.

✔ *Reasonable assurances*

When a TMDL is created, it must include "reasonable assurances" that it will be implemented and will in fact solve the problem. Reasonable assurances include restoration strategies based on Federal, State, or local authorities and/or voluntary actions. So, smart growth polices can serve as "reasonable assurances" when local ordinances, city plans and other mechanisms are on the books. This connection works both ways—clean water advocates should demand that existing or proposed smart growth policies be part of the water quality solution; smart growth advocates should use the TMDL as a mechanism to argue for the need for smart growth policies in the area…and the benefits of those polices.

✔ *Bringing people and dollars to the table*

TMDL development can bring people and money to bear on growth challenges. For example, 303(d) listed waters are high priorities for funding through several federal grant programs, as well as many state and local programs. The funds available to implement TMDLs, if properly directed, can also implement smart growth strategies such as buffers or greenways, sewage systems and more. Similarly, TMDL development may bring people to the table who have never sat down together before. This is a wonderful opportunity to introduce or advance the principles of smart growth as one solution to a common problem.

✔ *Threatened waters*

Keep in mind that the Clean Water Act envisioned using the TMDL program to protect and restore threatened waters, as

credit: Josh King

The scenic Sandy River enters the Columbia River just 16 miles east of Portland, Oregon.

well as waters that were already impaired. States are required to identify threatened waters on their 303(d) lists and to develop TMDLs for those waters.[2] If a local stream or lake is likely to be stressed by booming development, a proposed highway, or some other effect of growth, the TMDL program can be used to protect the waterbody. River advocates should push to have the waterbody listed on the 303(d) list, and request that a TMDL be developed before further growth is allowed.

TMDLs are not a smart growth silver bullet—but they can provide a useful structure for making informed decisions about growth options with our water resources in mind. River lovers should speak out in support of smart growth strategies throughout the TMDL process, advocating for smart, clean growth to help protect and restore a central community resource—clean rivers, lakes and coastal waters.

Merritt Frey is the former Watershed Restoration Program Director for the Clean Water Network.
mkfrey@mindspring.com

2 40CFR130.7(b)(4)

Just the Facts

Did You Know?

Sprawl produces from five to seven times the sediment and phosphorus as a forest and nearly twice as much sediment and nitrogen as compact development.

Smart Growth Network, www.smartgrowth.org

Runoff from road construction is a contributing cause to the proliferation of the fish-killing microbe Pfiesteria.

Environmental Media Services, www.ems.org

Sprawl threatens water quality as rain runoff from roads and parking lots carries pollutants into streams, rivers and the ocean. Sprawl also reduces our water supplies. As roads, parking lots, driveways and roofs replace meadows and forests, rainwater can no longer seep into the ground and replenish our aquifers. Instead, it is swept away by gutters and sewer systems.

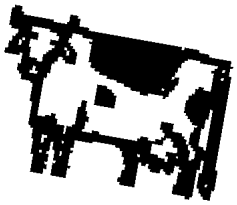
New Jersey Future, www.njfuture.org

On average, sprawling low-density residential development usually costs local governments more to provide public services than it returns to local coffers. For example, one recent study found that for every dollar taken in, it currently costs Loudoun County, VA, only $.50 to provide public services to farms, but $1.55 to provide public services to residentially developed land. Another study estimates that the property tax yield of land in two- to three-acre lots can be up to nine times lower than the same area in quarter-acre lots. This means sprawl produces less tax money for schools, police and fire stations, parks and other public services.

Smart Growth Network, www.smartgrowth.org

The visual effects of sprawl on humans has been studied by researchers, reports *Once There Were Greenfields*. People recover from stress faster and more completely when exposed to natural outdoor environments. And hospital patients who could see a cluster of trees instead of brick walls outside their windows had shorter post-operative stays and needed fewer painkillers, according to a 1991 report in the *Journal of Environmental Psychology*.

Environmental Media Services, www.ems.org



More than 400,000 acres of farmland are converted to development every year in the U.S., according to the Sierra Club, or 45.6 acres every hour.

Environmental Media Services, www.ems.org

The U.S. Geological Survey says that U.S. wetlands have been destroyed at a rate of 60 acres an hour over the 200-year period of the 1780s – 1980s. Human activity has taken over 53 percent of the 221 million acres of wetlands that once existed in the continental U.S.

Environmental Media Services, www.ems.org

Did You Know?

The increase of impervious surfaces—roofs, parking lots, driveways—means water cannot be absorbed into the ground and instead pours into storm drains or directly into waterbodies. The normal filtration system of tree roots, grass and soil that absorb phosphorous and pollution is absent, allowing contaminants to go directly into the water.

Environmental Media Services, www.ems.org

About half the animals and a third of the plant species listed as endangered or threatened are dependent on wetlands, according to the U.S. Geological Survey. Wetlands are often filled in for development.

Environmental Media Services, www.ems.org

When just 10% of the watershed is developed, streambeds start to degrade due to increased runoff. After about 20%, if the watershed is developed, most streams have been severely degraded or destroyed.

EPA Watershed Events, Fall 1999

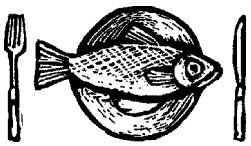
The Trust for Public Land found in a 1998 study that land conservation improves the quality of life in a community and also gives a boost to its bottom line. *The Economic Benefits of Parks and Open Space* says that investment in land conservation had added up to billions of dollars for communities across the country.

Environmental Media Services, www.ems.org

Sprawl increases the risk of flooding. Development pressures lead to building on floodplains and the destruction of wetlands, natural flood-absorbing sponges. In the last eight years, floods in the United States killed more than 850 people and caused more than $89 billion in property damage. Much of this flooding occurred in places where weak zoning laws allowed developers to drain wetlands and build in floodplains.

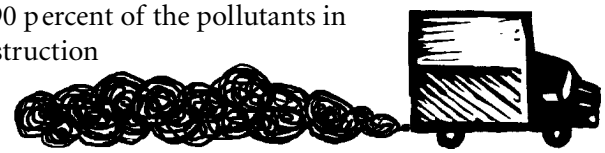
Sierra Club: http://www.sierraclub.org/sprawl/factsheet.asp

Water consumed in cooking, drinking, etc. is not affected by either planning or density. However, water for lawn watering is affected by both. Clustering [development] alone can save 6 percent of total water consumption, but the high density planned development can save 35 percent over low density sprawl development.



The Costs of Sprawl: Executive Summary; http://gulliver.trb.org/publications/tcrp/tcrp_rpt_74-a.pdf

As sprawl increases our reliance on cars and driving, it makes our air dirtier and less healthy. Cars, trucks and buses are the biggest source of cancer—causing air pollution, spewing more than 12 billion pounds of toxic chemicals each year, or almost 50 pounds per person. Our wetlands—nature's water filters—are also under attack. Each year more than 100,000 acres of wetlands are destroyed, in large part to build sprawling new developments. Since wetlands can remove up to 90 percent of the pollutants in water, wetlands destruction leads directly to polluted water.



Sierra Club: http://www.sierraclub.org/sprawl/factsheet.asp

Compiled by Katherine Luscher Director, Partnership Program River Network

Resources & References

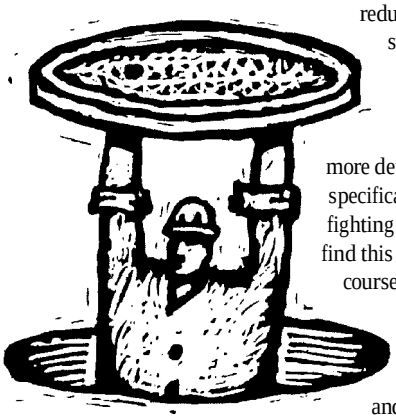
Organizations Working to Address Sprawl

The **American Farmland Trust** works nationwide to protect farmland from suburban sprawl and has extensive fact sheets on sprawl issues related to farmland, such as conservation easements, economic costs of farmland vs. development and the Farmland Protection Policy Act. http://www.farmland.org.

The Conservation Fund provides a comprehensive range of conservation services to a diverse clientele, including government agencies, corporations, foundations, nonprofit organizations and individuals. From land identification and acquisition to mitigation and disposition to land advisory and training, the Fund's services are designed to offer turnkey solutions to meet our partners needs. Through a range of activities, The Conservation Fund helps communities build strong partnerships, develop an in-depth understanding of the regional economic opportunities and capitalize on the unique environment their historic commercial buildings provide. http://www.conservationfund.org/.

The National Trust for Historic Preservation provides information, technical assistance and advice to organizations and individuals working to preserve their communities and avoid urban sprawl. http://www.nthp.org.

Through a range of projects, the **Natural Resources Defense Council** is extensively involved in fighting the negative impacts of urban/suburban sprawl in cities and towns across the country. NRDC's multidisciplinary approach to sprawl can be summarized in three primary categories—influencing metropolitan growth patterns, reducing damages to the natural environment and strengthening our cities. http://www.nrdc.org.



In 1999, **River Network** produced *The Clean Water Act: An Owner's Manual*. This explanation of the Clean Water Act provides more detail on the tools discussed in this issue. It also specifically discusses which tools might be useful for fighting sprawl in Chapter seven, page 132. You can find this information in our online Clean Water Act course at www.cleanwateract.org. Click on "Problems and Solutions." www.rivernetwork.org.

Scenic America is dedicated to preserving and enhancing the scenic character of America's communities and countryside. Scenic America are advocates for local, state and federal laws that help protect and enhance natural beauty and distinctive community character. http://www.scenic.org/.

The Sierra Club's Challenge to Sprawl Campaign is calling attention to the problem of sprawl with yearly reports, providing resources for activists across the country, and exploring how transportation patterns can be improved to make our neighborhoods safer and more convenient. Included on their webpage is a *Challenge to Sprawl Campaign Toolkit*; fact sheets and additional resources. http://www.sierraclub.org/sprawl/.

Smart Growth Network was formed in response to increasing community concerns about the need for new ways to grow that boost the economy, protect the environment and enhance community vitality. The site also posts the complete text of officials' speeches on sprawl and recent press on smart growth. http://www.smartgrowth.org.

The **Sprawlwatch Clearinghouse's** mission is to make the tools, techniques, and strategies developed to manage growth, accessible to citizens, grassroots organizations, environmentalists, public officials, planners, architects, the media and business leaders. The webpage has information about local, state and federal policies on sprawl and lots of links to government sites, and a timeline of pending legislation and sprawl studies. http://www.sprawlwatch.org/frames.html.

Trust for Public Land practices a unique blend of market-based entrepreneurial conservation.TPL helps communities acquire endangered open space,create urban parks and promote bond issues to purchase open spaces. http://www.tpl.org/.

Publications on the Web

Smart Growth and the Clean Water Act by the Northeast-Midwest Institute. This study investigates the relationship between three Clean Water Act programs and "smart growth," an approach to development that emphasizes greater density. http://www.nemw.org/SGCleanWater.pdf.

Smart Growth: Weathering the Storm - Are state budget shortfalls shortchanging smart growth initiatives? By Natural Resources Defense Council. This March 2002 report from NRDC, Sprawlwatch and Smart Growth America rounds up what some state legislators are doing—or not doing—to protect smart growth initiatives. Available online at: http://www.nrdc.org/cities/smartgrowth/pstatebgts.asp.

Sprawl Costs Us All. For information about how taxpayers subsidize sprawl, read this Sierra Club report online: http://www.sierraclub.org/sprawl/report00/sprawl.pdf.

A **Smart Growth Bibliography** focusing on fiscal impacts of sprawl can be found at: http://www.smartgrowth.org/bibliographies/smartgrowth/by_area/fiscal_impacts.html.

The **Vermont Forum on Sprawl** has various publications available including: *Growing Smarter – Making Smart Growth Work*; *Growing Smarter – Best Site Planning for Residential, Commercial & Industrial Development*; and *Community Rules: A New England Guide to Smart Growth Strategies*. http://www.vtsprawl.org/.

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