

Issue Brief: Auditing Your Town's Development Code for Barriers to Sustainable Water Management

CONTENTS

► Why audit your code?

This issue brief is intended for town officials who want to understand how development regulations in their community affect local water resources. Municipal development codes – the set of regulations that control the built environment – can have a great influence on the availability of clean and healthy water for drinking, recreation, and commercial uses. This in turn affects the community's social, environmental, and economic vitality.

Comprehensive plans, zoning codes, and building standards are just a few examples of regulations that intentionally or unintentionally regulate the way water is transported, collected and absorbed. Regulations that produce dispersed development or large amounts of impervious cover, for example, can impair stream water quality, worsen flooding, and reduce recharge of drinking water supplies. Auditing local development codes for such unintended consequences is an exercise that many communities are finding well worth the effort.

[Why audit your code?](#)

[Steps in the process](#)

[Case study](#)

[Resources to help you get started](#)

► Steps in the process

In its Code and Ordinance Worksheet, the Center for Watershed Protection recommends a four-step process for conducting a code audit for more sustainable water outcomes¹; the following is adapted from that guide.

1. Identify the codes (and people) that affect water

A great range of local regulations can affect water quality and quantity. The first step in a code audit is to gather the plans, ordinances, and other regulations that may have an impact – either directly or indirectly – on water resources (see box, right). It might not be obvious which codes are relevant, so err on the side of gathering more than you will need.

Regulations that may affect water

Zoning ordinances
Building codes and design standards
Subdivision ordinances
Street standards
Parking requirements
Erosion and sediment control rules
Stormwater management ordinances
Parks and open space plans
Landscaping and tree ordinances
Grading ordinances
Floodplain or buffer regulations
Environmental regulations
Water and sewer district plans
Dept of Public Works standards

- Parking requirements
 - Street design, lay-out, right-of-way, and cul-de-sacs
 - Landscaping, planting, buffers, trees
 - Neighborhood density
 - Low impact development
 - Drains, sewers, stormwater detention facilities
 - Maintenance requirements
 - Streams, wetlands, floodplains, and natural areas
 - Community open space
- Be sure to flag any ordinance that contains the words roof, curb, edge, or tree as these typically affect water.²

Just as important as the rules governing water are the *people* in charge of developing and implementing those rules. Think about which agencies and stakeholders have authority over development rules, and invite them to be a part of the audit right from the start. The development process is often quite complex and involves multiple governmental departments and agencies. Convening a team that includes representatives from these various agencies will help build support for the audit process and make the work more manageable.



2. Score your codes against model codes

The next step is to evaluate your codes against a model or benchmark. Worksheets such as the Center for Watershed Protection's [Code and Ordinance Worksheet](#) or EPA's [Water Quality Scorecard](#) walk



you through categories of regulations, for example those governing streets, parking, and buffers, and help you score your regulations against model standards that have been shown to result in healthier water resources. Alternatively, you may wish to develop your own scoring formula based on codes borrowed from a community you'd like to emulate.

As you evaluate your code, remember that there is no one-size-fits all approach to sustainable water management, and that what works in one community may not be appropriate for yours. Further, how you measure up depends on your community's particular challenges and goals. Is your principal aim to reduce impervious cover? Conserve natural areas? Reduce stormwater pollution? Regulations affecting these particular areas may deserve closer scrutiny. Nevertheless, walking through the entire code audit will help you identify areas of weakness in your regulations, including ones you might not have expected.

3. Prioritize which development policies and practices should be changed

Using the scores developed in the preceding step, your audit team now determines which areas of your code should be targeted for change. To prioritize, it is helpful to consider which regulations pose the greatest impediments to sound water management and/or those that, if changed, would yield the greatest water benefits.

It will also be worthwhile to identify the low-hanging fruit: those amendments that will be easiest to implement logistically and/or politically. Examples might include allowing activities that are currently needlessly prohibited such as using pervious paving material, creating vegetated swales along roadways or parking lot edges,

sharing parking facilities, and installing low impact development features such as green roofs. Relaxing minimum parking requirements and stall sizes may also be relatively popular and easy fixes.

4. Launch a roundtable process to amend rules

With your code audit scores and your prioritized list of changes in hand, the next step is to convene a local roundtable tasked with overseeing the code amendment process. The roundtable should consist of your initial audit team, plus additional key players as appropriate (see box, right). This team will review the audit, create a formal prioritized list of code amendments, oversee the development and adoption of new regulatory language or standards, and conduct public outreach as needed in order to address stakeholder concerns and build buy-in.

Partners to consider including in the process

Planning and Zoning staff
Code Enforcement staff
Public Works staff
Emergency Management staff
Elected officials
Development professionals
Key business leaders
Environmental organizations
Citizen groups

Ideally, roundtable members will become champions for a regulatory framework that supports better water management in the community. This will help the code amendment process go beyond fixes to isolated regulations. Smart water management policies and practices should be integrated into the entire planning and permitting process, including not only the zoning code, but also the comprehensive plan, the site plan review process, and the post-construction inspection and enforcement protocol. It should become part of the planning culture in your town.

▷ Case study: Cleveland Heights Sustainability Audit³

In 2010, Cleveland Heights, Ohio, initiated a sustainability audit to review of the city's zoning code and other regulations in order to remove barriers to ecological practices in land development and building construction. The review process included two phases: the first was designed to engage the public and the second to develop an easily understood and administered document. Planning staff and consultants reviewed general zoning provisions as well as specific provisions for large-scale developments, residential districts, commercial districts, accessory structures and uses, principal uses, parking standards, and landscape and water conservation. The final report made the following recommended changes:

- **Large-scale development process:** expand planned development to include sustainable benefits; encourage energy efficient buildings, conservation easements, innovative water management, public infrastructure improvements (complete streets, bike lanes), public open spaces, public plazas, public art, ADA compliant units, proper solar orientation
- **Residential districts:** allow greater lot coverage; reduce impervious surfaces and parking requirements
- **Commercial districts:** encourage pedestrian-oriented, compact design, transparency along street frontages; bike access and storage; connections to surrounding areas; high quality, sustainable building materials; proper and appropriate landscaping
- **Accessory structures and uses:** allow structures and uses that encourage alternative energy production (solar, thermal, wind), water and energy efficiency (rain barrels, cisterns, clotheslines, rain gardens), and local food production (greenhouses, chicken coops)
- **Parking standards:** adjust parking demand formulas; include *maximum* number of parking spaces rather than minimum; allow land-banked parking; update shared parking flexibility; reduce parking for car-sharing programs; allow car sharing in parking lots and structures; allow compact spaces; allow parking for charging of electric vehicles; allow semi-pervious material for paving; require parking lots over a certain size to use semi-pervious materials for a percentage of the parking lot; encourage retention basins; require


bike parking in new lots; create design and siting requirements for bike parking; allow racks in the public right-of-way where space is available

- **Landscape and water conservation:** minimum installation sizes for all plant types; allow for naturalized lawns and native landscapes and gardens; establish recommended and prohibited plant list

Resources to help you get started

Top Ten Green Infrastructure Issues in Plans and Codes, Tetra Tech, 2011: Part of the webcast “Using Local Codes to Cultivate Green Infrastructure.” Identifies common code barriers in local codes and ordinances, and offers solutions.


Using Local Codes to Cultivate Green Infrastructure and Foster Sustainable Stormwater Management, US EPA Region 5, 2011: Describes the interaction of zoning and building codes with water quality; presents several examples of code audits; and highlights the top 10 obstacles to green infrastructure in local codes and ordinances.

 **Water Quality Scorecard**, US EPA, 2009: A program evaluation tool that local governments can use to identify the barriers to green infrastructure in local codes and ordinances. The scorecard guides municipal staff through 230 policies, codes, and incentives that could be adapted to promote sustainable stormwater management.

Revising Local Plans, Codes, and Ordinances, US EPA 2009: One of six two-hour webcasts on green infrastructure offered by EPA in the spring and summer of 2009.

Managing Wet Weather with Green Infrastructure Municipal Handbook, US EPA 2008: Provides local governments with a step-by-step guide to growing green infrastructure in their communities. Chapters address funding options, retrofit policies, green streets, rainwater harvesting, and incentive mechanisms

Better Site Design: A Handbook for Changing Development Rules in Your Community, Center for Watershed Protection, 1998: Outlines 22 guidelines for better developments and provides detailed rationale for each principle. Also examines current practices in local communities, details the economic and environmental benefits of better site designs, and presents case studies from across the country.

 **Better Site Design Code and Ordinance Worksheet**, Center for Watershed Protection, 1998: Allows users to enter data to see how the local development rules in their community stack up against the model development principles outlined in the Better Site Design Handbook (above).

¹ Center for Watershed Protection. 1998. *Code and Ordinance Worksheet*. http://www.cwp.org/online-watershed-library/cat_view/64-manuals-and-plans/82-stormwater-management-manuals-plans-and-guidance

² US Environmental Protection Agency. 2012. *Green Infrastructure Website: How Can I Overcome the Barriers to Green Infrastructure?* http://water.epa.gov/infrastructure/greeninfrastructure/gi_barrier.cfm

³ Ibid. For more info on the case study, see: http://water.epa.gov/infrastructure/greeninfrastructure/upload/gi_webinar_part4.pdf