V. WHAT CAN BE DONE AT THE LOCAL LEVEL: TOOLS YOU CAN USE

Assessing a municipality's existing laws and practices and any gaps that exist is one step towards protecting water quality. Determining how to fill the gaps is another step.

A. MUNICIPAL LAND USE TOOLS THAT CAN ADDRESS WATER RELATED ISSUES

Comprehensive plans, zoning laws, and subdivision regulations establish a community's overall vision and means for its implementation. These tools can address a multitude of issues, and since they all deal with land use and development, the tools also affect with water quality.

Comprehensive Plans, Zoning Laws, and Subdivision Regulations are considered the "building blocks" of municipal land use regulation in New York State, and are the basis for many other activities that a municipality carries out. While common in many areas of New York State, it should not be assumed that these building blocks exist in every community, or are always as up-to-date or as well-crafted as they should be. In terms of developing local laws to protect water quality, determining whether these three building blocks are present and current is the first task.

1. Comprehensive Plan: Comprehensive plans set out the broad goals and vision of a community. They should be developed with widespread citizen input, and used by the land use decision makers in a community (planning board, zoning board of appeals, conservation board, code enforcement officer, planner, municipal board, and elected officials). The plan should reflect current conditions and issues of the municipality, where the community would like to be, and how to reach those goals. Specifically, it should identify the type and intensity of development to be accommodated. A Comprehensive plan which is too generalized may not serve to effective guide future development future development.

The Comprehensive Plan is often best thought of as a strategic document that contains actions and notes responsible entities to implement actions. According to a 2003 survey by the New York State Legislative Commission on Rural Resources, 90% of cities, 64% of towns and 62% of villages in New York had adopted written Comprehensive Plans. The information in the Comprehensive Plan should inform the community's zoning law.

2. Zoning: Zoning is the most commonly and extensively used local technique for regulating land use and development. Zoning also serves as an important means for implementing the Comprehensive Plan. According to a 2003 survey by the New York State Legislative Commission on Rural Resources, 100% of cities, 79% of towns and 88% of villages in New York had adopted zoning laws or ordinances.

Ideally, the Zoning Law should be based on the community's Comprehensive Plan. By using various concepts within zoning, such as density and use regulations, a community can implement the goals and vision of the Comprehensive Plan. Certainly, this is easier said than done and many Comprehensive Plans contain goals and objectives that fail to make it into the binding legal language of the Zoning Code.

To help make the leap from Comprehensive Plan to Zoning to implementation and enforcement, the Zoning Law should be written in a way that is concise and easy to understand. Including graphics to illustrate concepts, and simple things such as page numbers and tables of contents help make Zoning easier to use and understand.

There are two important sub-sections that are usually (but not always) included in zoning that merit further discussion. These are site plan review and environmental protection overlay districts (EPODs).

a. Site Plan Review: Site Plan Review addresses the layout and design of development on a single parcel of land. The site plan review process is one of several means of plan implementation that communities may use. Site Plan review is a process of greater municipal scrutiny and review for certain uses and/or structures. It is commonly considered supplemental to other land development guidance controls and is usually included within a community's zoning law. It may, however, be a stand alone law, as some communities without zoning are using.

b. Environmental Protection Overlay Districts (EPODs): An overlay zoning district can be delineated by a municipality for a geographic area to provide additional regulations to address a topic of particular concern, such as an environmentally sensitive area, a floodplain, or an historic district. An overlay zone, as the name suggests, overlaps other, underlying zoning districts, and does not affect the uses allowed within such underlying zones. With respect to water quality, an Environmental Protection Overlay District (EPOD) can be an effective control. Many communities have adopted overlay zoning districts to protect natural resources and water quality. One example is the Town of Irondequoit in Monroe County. Another example is the Town of Ulysses, in Tompkins County, which has an overlay district pending adoption.

3. Subdivision Regulation (this includes allowing or mandating conservation subdivision or clustered development): One of the most common land use activities is the subdivision of land. The subdivision process controls the manner by which land is divided into smaller tracts of land. Subdivision regulations ensure that when development occurs, streets, lots, open space and infrastructure are adequately designed and the municipality's land use objectives are met. Aspects of Subdivision Regulation that many municipalities find useful include: distinction between major and minor subdivision, timeline for subdivision of land, a three stage process (conceptual plan, preliminary plan, final plan) for review, and the ability for the municipality to charge the applicant for expenses incurred as a result of retaining outside consultants. These and other features should be integrated into a concise, easy-to-understand subdivision law. Used correctly, the subdivision law is a key tool used to implement the objectives of the comprehensive plan.

4. Stand Alone or Targeted Laws: In addition to the three "building blocks" of land use control, municipalities can also adopt stand alone local laws to address issues that impact quality. There are many different laws of this type; a few examples include timber harvesting laws, sediment and erosion control laws, and junk storage laws. Stand alone laws are explained in greater detail in the following sections.

B. WATER RELATED ISSUES: *WHY AND HOW THEY CAN BE ADDRESSED BY MUNICIPALITIES*

1. Open Space Preservation
2. Sewer and Water Infrastructure
3. Onsite Wastewater
4. Flood Plain Management
5. Environmentally Sensitive Areas: Wetlands and Riparian Areas
6. Erosion and Sediment Control
7. Stormwater Management and Drainage
8. Road Maintenance
9. Junkyards
10. Waste Storage
11. Mining, Drilling (wells)
12. Agriculture
13. Forest Management
14. Boating/Marinas

1. Open Space Preservation: Open space is often valued by community residents for its aesthetic qualities. In addition, open space can serve important water quality and natural resource goals by limiting development on sensitive areas. Public accessible open space adjacent to lakes and streams is an important community amenity and tourism benefit, as well as an indirect water quality "outreach" tool. If the public has access to the water, they are more apt to develop connections to the water and care about water quality issues. Waterways are then seen more as a community amenity and not just an amenity for those who own property along it. Of any level of government, municipalities are often in the best position to protect open space since development activities that reduce open space are regulated locally.

A municipality should develop an open space plan or an assessment of open space resources included as part of the comprehensive plan. This plan/assessment should categorize open space resources, examine their use and function within the community, set priorities for their protection, and consider the best options for the use and protection of open spaces.

Purchase of development rights (PDR) is a technique whereby the municipality pays a landowner for the "development rights" of a parcel. In return for that monetary payment, an easement is placed on that property, ensuring that it remains as agriculture land or open space. Although PDR has been used to preserve farmland, it can also protect ecologically important lands or scenic parcels essential to the character of the community. While PDR is a form of open space preservation without the municipality having purchase the property outright.

The 'transfer' of development rights (TDR) is similar to the 'purchase' of development rights (PDR). Under the New York State zoning enabling statutes, areas of the municipality which have been identified through the planning process as in need of preservation (e.g. agricultural land) or in which development should be avoided (e.g. municipal drinking water supply protection areas) are established as "sending districts." Development of land in such districts may be heavily restricted, but owners are granted rights under the TDR regulations to sell the rights to develop their lands. Those development rights may thereby be transferred to lands located in designated "receiving districts." Transferable development rights usually take the form of a number of units per acre, or gross square footage of floor space, or an increase in height. The rights are used to increase the density of development in a receiving district.

A municipality can preserve open space through several ways. It is important to ensure that the open space policies of the open space plan or comprehensive plan are implemented through the municipality's land use controls such as zoning, the site plan review process, and subdivision regulations. Local coordination with the Department of Environmental Conservation's State Open Space Plan is also important. In addition, nonprofit organizations such as various Land Trusts and the Nature Conservancy can offer assistance with open space preservation techniques that have worked in communities across New York State.

2. Sewer and Water Infrastructure: Sewer and water infrastructure is usually approved by and/or built by the municipality. Careful planning and review of all such infrastructure is very important since new sewers can significantly improve water quality in an area with failing septic systems. However, new sewer and water infrastructure can also lead to increased development, more impervious surfaces and the potential water quality problems that are associated with development.

The municipality should have regular and active dialogue/planning with regional entities on sewer and water provision such as water authorities and watershed councils. Also, the municipality should clearly and specifically state in comprehensive plans where the community would like to see such infrastructure and areas where it should be limited.

3. On-site Wastewater: On-site wastewater systems are the number one source of nonpoint source pollution within New York State. The reasonable lifespan of a septic system is 25-40 years – a "biomat" will slowly accumulate and eventually overwhelm the bacteria's ability to digest; then a new leach field is needed and is the only real solution – additives and/or pumping will not solve the problem at that point. Only 10% of NYS soils are considered to be truly ideal for septic systems. A high percentage of private wells are contaminated by improperly functioning septic systems. This poses not only a threat to water quality but also an immediate public health hazard. Through the local regulatory process and the issuance of building permits and certificates of occupancy, a municipality can have significant control over on-site wastewater systems.

Onsite wastewater (septic) systems are regulated by county and state health laws, but localities can offer an additional level of regulation. Proper design and functioning of on-site systems is as important as the proper design and functioning of a public sewer system. Collectively, on-site wastewater systems are pieces of the community's infrastructure. A properly-functioning septic system is both complex and fragile, further underscoring the need for regular inspection, maintenance and homeowner education/outreach.

A municipality can amend their existing laws to include the provisions of an on-site waste water system model ordinance. They can also customize a model ordinance to address situations that may be unique to their community. County Health Departments, Soil and Water Conservation Districts, and the Cornell Cooperation Extension can be valuable partners on this issue. Using overlay zoning and the site plan review process to more closely scrutinize development in sensitive areas are also techniques that can be utilized in conjunction with stand-alone onsite ordinances.

Additional information on the management of septic systems, including inspections, can be obtained through the New York Onsite Wastewater Treatment Training Network (OTN).

4. Flood Plain Management: Flood plains are very often environmentally sensitive areas located near streams and lakes. Usually a portion of the flood plain is wetland area. Good flood plain management not only improves public safety, but can lead to less development on sensitive areas near water bodies and therefore can contribute to water quality protection. With participation in the National Flood Insurance Program's Community Rating System, a good flood plain management program can reduce flood insurance premiums for property owners. Most municipalities have their floodplains mapped.

Most municipalities *do not* have a detailed base flood elevation mapped. Therefore, all communities should be mapped so that there is a defined base flood elevation (known as the "A Zone" on Flood Insurance Rate Maps). If there is no defined base flood elevation a licensed engineer should be used, along with design standards, for the siting and construction of every new development in the floodplain.

How to implement?

- Flood Prevention Ordinance model (New York State Department of Environmental Conservation model). *Almost all municipalities in New York have adopted some form of this ordinance; knowledge of it, and the regular appointment of a Flood Plain Administrator, and rigorous enforcement is less widespread;*
- Integration of flood prevention concepts into zoning laws and site plan review processes;
- Designation of, and public outreach regarding, a Flood Plain Administrator (as required by the Flood Prevention Ordinance);
- Attendance at New York State Department of Environmental Conservation and Federal Emergency Management Agency training sessions by the Flood Plain Administrator.

5. Environmentally Sensitive Areas: Wetlands, Riparian, and Lakeshore Areas: Construction of new buildings, roads and parking lots are activities that are typically regulated by the municipality. Such development often impacts environmentally sensitive areas such as wetlands, stream corridors, and lakeshore areas. And although some wetlands are regulated by State and Federal agencies, municipalities can incorporate a greater level of oversight. Wetlands, including temporary wetlands known as 'vernal pools,' contribute an important natural habitat, are often a scenic amenity, and act as a natural stormwater retention system. Preserving and utilizing natural wetlands as stormwater retention facilities can lessen the need for costly manmade systems.

Retaining natural vegetation is an important factor in limiting erosion and sedimentation, especially during construction activities. Municipalities have the ability to control the disturbance of vegetation through the local regulatory and permitting process for development.

Riparian areas are lands located adjacent to streams or rivers, and lacustrine areas are lands located adjacent to lakes. Establishing buffers along streams, rivers, and lakes provides protection from development. Naturally vegetated buffer areas provide not only habitat but water quality benefits as well, by stabilizing soils that could be eroded by overland flow and enter surface waters, facilitating infiltration of through leaf litter into the soil, where natural biological and chemical processes take place, and trapping sediment, all of which together can maintain the integrity of waters, and supported uses. Municipalities are in the best position to establish effective vegetated buffers along waterway since development activities that impact water bodies are regulated locally.

Wetlands are often in flood plains or riparian areas, so limiting flood plain and stream-side development has the added benefit of protecting wetlands. Local knowledge of appropriate state and federal regulations (especially on the part of the Code Enforcement Officer) is very important. They are the "first line of defense" in protecting water resources and can inform property developers to file for all appropriate permits with the Army Corps of Engineers and the New York State Department of Environmental Conservation.

Much like the regulation of setbacks from roads and adjacent properties through zoning language, a municipality can regulate development near streams and wetlands with appropriate zoning language. Once adopted as part of zoning, it is important to allocate adequate resources for fair and consistent enforcement. There is also the possibility of adopting a Water Protection Overlay district, which covers all zoning areas but more strictly regulates activities near streams, lakes, and wetlands.

A municipality can protect sensitive areas through several means. These include adoption of environmental protection overlay districts (EPODS) as part of their zoning law. Riparian protection can be implemented through setbacks in the zoning code, and the site plan review process (for individual sites) and subdivision regulations (for larger developments). Alternatively, some municipalities have chosen to protect wetlands and riparian areas through their sediment and erosion control laws. Finally, careful administration of a flood prevention ordinance (which many municipalities have), can restrict development on flood prone, which are also often environmentally sensitive and/or riparian areas.

6. Erosion and Sediment Control: Construction of new buildings, roads and parking lots are activities that are typically regulated by the municipality. Activities involving land clearance can create erosion, which leads to sedimentation of waterways. Not only a significant cause of nonpoint source pollution, sedimentation can increase costs for municipalities in terms of ditch and storm drain cleaning. Development in areas with steep slopes is of particular concern, as the potential for more damaging erosion and sedimentation is greater.

Adoption of a well-crafted sediment and erosion control law or incorporating standards within zoning, subdivision, and site plan review controls are recommended techniques. Integration of New York State's Phase II Stormwater Regulations at the municipal level would greatly assist in controlling erosion and sedimentation from construction activities. To help implement stormwater controls, the Department of Environmental Conservation and the Department of State teamed up to produce the *Stormwater Management Gap Analysis Workbook for Local Officials* (SWMGAW). This assessment tool focuses on stormwater issues, and lists code language that *should* be present somewhere in municipal law and asks the municipality to identify it. It is available through the NYS Department of Environmental Conservation.

Areas of a municipality such as steep slopes, areas with very erodable soils, or areas adjacent to water bodies, face particular challenges when it comes to erosion. Adoption of effective zoning, subdivision, and site-plan regulations that specifically regulate the impacts that development in these can have on the water resources of the municipality is important. Adoption of an Environmental Protection Overlay District (EPOD), which can place more stringent regulations on these particularly sensitive areas, can also be very effective.

7. Stormwater Management and Drainage: Impervious surfaces such as roofs (building areas), roads, driveways, and parking lots are regulated by the municipality through its zoning laws, subdivision laws, and site plan review processes. Once water runs off of private property, it tends to become the problem of the municipality. Poorly designed or maintained public drainage infrastructure, such as ditches, can cause erosion, which leads to sedimentation of waterways. Not only a significant cause of nonpoint source pollution, sedimentation can increase costs for municipalities in terms of ditch and storm drain cleaning. There are many ways the municipality can improve the construction, operation and maintenance of this drainage infrastructure, which in turn leads to less damage to both private and public (roads, bridges, etc) property and improved water quality.

Adoption of a well-crafted sediment and erosion control law or incorporating standards within zoning, subdivision, and site plan review controls are recommended techniques. Integration of New York State's Phase II Stormwater Regulations at the municipal level would greatly assist in controlling erosion and sedimentation from construction activities. To help implement stormwater controls, the Department of Environmental Conservation and the Department of State teamed up to produce the *Stormwater Management Gap Analysis Workbook for Local Officials* (SWMGAW). This is the same assessment tool used in this report; it is used to compare the language currently present in municipal codes against the model code language that the DOS and DEC believes *should* be present in order to provide comprehensiveness. Regulated MS4 communities are currently the only municipalities subject to mandatory compliance with the standards set under Phase II Stormwater Regulations. As such, they are required by federal and state law to revise their local laws to meet said standards by January 1, 2008.

There is also the option of adopting an Environmental Protection Overlay District (EPOD), which can encompass particularly environmentally sensitive areas of the municipality (such as lakeshore or stream-side areas) with more stringent regulations. Finally, it is necessary for a municipality to allocate adequate resources for fair and consistent enforcement of any law once it is adopted.

Municipalities should also ensure that municipal highway/public works departments are trained in, and follow best management practices, such as establishing vegetation in newly cleaned ditches. The Highway Superintendent Road and Water Quality Handbook, Edition II, the Cornell Local Roads Program, and training opportunities with county and state transportation departments are resources. A municipality should regulate new road ditches through Subdivision Regulations and Site Plan Review.

Municipalities also have the option of forming a special district, known as a 'drainage district." Drainage districts are becoming more and more important as municipalities seek stable funding sources for the improvement, construction, operation, and maintenance of drainage structures, retention ponds, basins, ditches, and culverts. Developers, property owners, or homeowner's associations cannot always be depended upon to maintain stormwater facilities on a long term basis. Drainage districts are similar to special taxing districts used for schools, libraries, fire protection, sewers, sidewalks, and lighting.

8. Road and Bridge Maintenance: Municipalities are often responsible for dozens of miles of roads and roadside drainage-ways and ditches. Roadside ditches are part of the publicly-owned drainage infrastructure that collects water from a public road and adjacent development. Poorly designed or maintained ditches can lead to sedimentation of waterways. Not only a significant cause of nonpoint source pollution, sedimentation can increase costs for municipalities in terms of ditch and storm drain cleaning. Winter road maintenance, de-icing practices, and de-icing material storage practices can also negatively impact water quality.

There are many ways the municipality can improve the construction, operation and maintenance of this drainage infrastructure, which in turn leads to less damage to both private and public (roads, bridges, etc) property and improved water quality. Regular maintenance of existing infrastructure and establishing vegetative cover following maintenance using hydro-seeding are some examples; ensuring the consistent use of these practices is the greatest challenge. Municipalities should ensure that municipal highway/public works departments are trained in and follow best management practices. The Highway Superintendent Road and Water Quality Handbook, Edition II, the Cornell Local Roads Program, and training opportunities with county and state transportation departments are resources. A municipality should regulate new road ditches through Subdivision Regulations and Site Plan Review. Municipalities also have the option of forming a special district, known as a 'drainage district." See number *7. Stormwater Management and Drainage* above.

9. Junk: In addition to State environmental permitting, junkyards often undergo regulatory processes through local zoning. Junkyards can have significant impacts on water quality as old vehicles and appliances might leak oil or other hazardous and toxic liquids into the soil. After first contaminating the soil, liquid waste will eventually reach the groundwater and pollute local water resources.

A municipality can revise its zoning to limit junk yards to less environmentally sensitive areas or prohibit junkyards altogether. If they are permitted or mentioned in zoning or other regulations, a municipality should ensure that the definition of "junk" encompasses such things as old appliances, household waste, or uninhabitable mobile homes. Such an action helps to regulate aspects of junk not covered by state law and ensures greater compatibility with surrounding land-uses.

10. Waste Storage: Storing of waste (hazardous waste, garbage, etc.) can have water quality impacts when rainwater runs off such materials and into local water bodies. Whether dealing with their own facilities or regulating private property, municipalities can enforce waste storage regulations.

One of the best things a municipality can do to address waste storage is to simply maintain an inventory of old municipal and private waste sites (particularly on farms). There is also the potential for local laws that are more stringent than federal and state regulations. Appropriate Code Enforcement Officer training is also important.

11. Mining and Drilling: Mining operations can have significant impacts on surface and groundwater resources. Large mines can alter drainage patterns and affect water tables. Even smaller operations can, like any land disturbance, cause erosion, leading to sedimentation of waterways. Not only a significant

cause of nonpoint source pollution, sedimentation can increase costs for municipalities in terms of ditch and storm drain cleaning. The siting and drilling of gas, oil, brine, and other types of wells can impact water quality. Local knowledge of state regulations in this matter is important.

A municipality can use traditional zoning powers, such as limiting mining to particular zoning districts as a regulated land use. It can also apply local laws – such as a steep slope environmental protection overlay district – to mining, provided the law is written in such as way as to cover many uses/activities and does not single out mining. A municipality can also participate in the DEC permitting process through the Mined Land Reclamation Law (MLRL) (New York State Environmental Conservation Law, Article 23, Title 27) and regulate small scale mines that fall under the threshold of the MLRL. Finally, a municipality has the option of completely prohibiting mines from the entire municipality.

Knowledge and enforcement of State and Federal regulations is important. Oil, gas and solution mining is regulated by New York State under NYCRR Parts 550-559. The Department of Environmental Conservation has the basic responsibility for administering and regulating activities relative to the natural resources of oil and gas within the State.

12. Agriculture: Agricultural activities can have significant impacts on water quality. Runoff from farms carries higher levels of phosphorus and nitrates, leading to algae growth and oxygen depletion in nearby water bodies. Sediment washed from plowed field can choke public drainage ditches and streams. However, well-managed farmland can help protect water quality. Although many agricultural issues are regulated at the State level by the Department of Agriculture and Markets and the Department of Environmental Conservation, local municipal knowledge and encouragement of good agricultural practices can greatly assist water quality efforts. Local government is the level of government that the agricultural community is closest too, and often feels the most comfortable with, so a municipality's position on good farming practice can help further water quality efforts.

Local right-to-farm laws document the importance of farming to a community and put non-farm rural residents on notice that generally accepted agricultural practices are to be expected in farming areas. In small, rural municipalities, personal connections are often very important and many municipal administrations have close relationships with the farming community. Therefore, municipalities can actively encourage farms to participate in voluntary programs of the Natural Resources Conservation Service (NRCS) and the Soil and Water Conservation District (SWCD) such as the Agriculture Environmental Management (AEM) I Program and the Conservation Reserve Enrollment Program (CREP). AEM helps farms manage the environmental impacts from manure and agricultural chemicals, and CREP helps maintain natural vegetation, especially along streams.

A well-developed Agriculture Preservation Plan (either stand alone or as part of a municipal Comprehensive Plan) helps a municipality prioritize its agricultural assets. Encouraging, acknowledging, and rewarding farm participation in environmentally friendly practices such as AEM, CREP, and other programs is something that can be done at the municipal level. The 'Lake Friendly Farmer' program in Ontario County and the 'Lake Friendly Farm' program of the Cayuga Lake Watershed Network are two such models.

Finally, the American Farmland Trust published a *Guide to Local Planning for Agriculture* in New York in 2005. This concise, easy-to-use document is a very valuable resource for municipalities in New York State.

13. Forest Management: Municipalities can and do regulate timber harvesting. As with any land disturbance, timber harvesting can increase erosion and sedimentation. Sediment entering waterways is

not only a significant cause of nonpoint source pollution, but can also increase costs for municipalities in terms of ditch and storm drain cleaning. There are several ways to address this issue, from property owner education and outreach through County Soil and Water Conservation Districts and/or Cornell Cooperative Extensions, to municipal registration of large timber harvests, to enforcement of existing public highway laws (public highway laws often prohibit the deposition of mud and dirt on public roads). The most comprehensive method would be the adoption of a well-crafted Timber Harvesting Law.

14. Boating/Marinas: For municipalities with navigable waterways, recreational boating can have significant impacts on water quality, such as waste disposal and boat maintenance. The infrastructure necessary for boating, such as launches and marinas undergo the local zoning and permitting processes, so a municipality can have significant oversight on where and how these facilities are built.

Adoption of an effective zoning law or Dockings and Moorings Law which addresses vessel waste and other sources of pollution related to boating. The addition of a vessel pump-out facility at marinas and boating areas is a key provision in this regard. Grants are avail able for pump-out facilities at public and private marinas from the New York State Environmental Facilities Corporation through the Federal Clean Vessel Act.