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Abstract

The health of a natural body of water is inextricably linked to the condition of its watershed. Land cover and land use activities within a watershed are the sources of nonpoint source pollution, the greatest water quality problem facing U.S. waters today, and are influenced by such wide-ranging entities as governmental agencies, industries, conservation groups, farmers, and private property owners. Because traditional regulatory measures have been inadequate in curbing nonpoint source pollution, collaborative watershed management has emerged as a means to improving and protecting water bodies. This study examines one collaborative watershed management program, the Lake Erie Balanced Growth Program, in terms of its effectiveness at developing multi-jurisdictional watershed plans that will likely be implemented in a widespread and consistent manner throughout the watershed. The study identifies the roadblocks encountered by the Balanced Growth Program pilot projects, such as mistrust among participants, the influence of politics, and governmental fragmentation, and offers recommendations as to how the program may be improved to overcome these roadblocks in the future. The study found the most significant problem emerging from collaborative watershed management is that of indifference towards healthy watershed behavior and cooperation in a collaborative effort. Future watershed management efforts should allocate more resources towards education and motivation of local governments particularly to encourage them to participate in collaborative watershed management and follow through on the implementation of the resulting watershed plan.
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Chapter 1: Introduction

Section 1.1 The Watershed/Water Body Connection

The health of a natural body of water, be it a stream, river, lake or estuary, is inextricably linked to the condition of its watershed (Barham 2001). Watersheds are finely-tuned ecosystems with vast and complex spatial and temporal interconnections (Nadeau and Rains 2007). By definition, precipitation that falls within a watershed either returns to the atmosphere via evapotranspiration, infiltrates into the ground where it may contribute to interflow or groundwater, or runs off into a single stream, river, or lake (Randolph 2004, 367; Ward and Trimble 2004). Watershed characteristics, such as land cover and slope, greatly impact the volume, speed, and route by which water moves through the watershed to its outfall. Freshwater systems provide an enormous range of habitat for species that depend on the periodic processes of flooding, sediment and nutrient flows, temperature, and relationships with other members of the food web for survival (Daily 1997). Therefore, the characteristics of a watershed are not simply an issue of hydrology and hydraulics, but also contribute to the conditions of the water body habitat. For example, stormwater runoff collects surface chemicals, nutrients, and sediment as it moves across the land’s surface and transports them to the water body. Furthermore, trees at a stream’s edge provide shade, regulating the temperature of the water; prevent erosion of stream banks; and drop leaves and woody debris into the stream, providing a food source for organisms (Daily 1997; Pace and Groffman 1998). These are just two examples of watershed/water body interconnections that indicate that each watershed ecosystem is an intricate balance of timing and shared resources.

Described above is an ecosystem that omits human influence. This is, of course, a false omission because humans are, more often than not, a part of the ecosystem of a watershed and contribute significantly to modifications within that ecosystem that result in disruptions to the hydrologic cycle, the destruction of habitat, and the detrimental overabundance of chemicals.
Development of land introduces impervious surfaces (e.g. pavement and rooftops) and heavily compacted soil to watersheds, and it eliminates trees and vegetated areas. Impervious surfaces increase runoff volumes, reduce groundwater recharge, lower stream base flows, and increase the speed with which runoff reaches streams and rivers, resulting in higher incidences of flooding and erosion (Randolph 2004; Hough 2004, 31). Furthermore, human activities such as the construction of dams and bridges, the filling in of headwater streams, the draining of wetlands, and the piping of streams all alter the hydrologic cycle of a watershed and destroy habitat, either directly or through the modification of systems which support the habitat. In addition to the modification of the hydrologic cycle, impervious surfaces and other land uses introduce to natural water bodies non-point source pollutants such as toxins, pathogens, nutrients, and sediments, which are transported by stormwater runoff and contribute to water quality degradation (Randolph 2004; Hough 2004, 32). Although water bodies can assimilate to some level of watershed modification, they eventually reach the point where they can no longer sustain life and can no longer self-regulate (Randolph 2004).

Measures must be put in place to protect water bodies from the impacts of development before these impacts become irreparable. Watershed management is a watershed and water body protection approach based on the notion that water quality and ecosystem problems can and must be addressed at the watershed level rather than with singular focus on the individual water body itself (Randolph 2004). The purpose of watershed management is to take an integrated approach to analyzing man’s impacts on watersheds and then mitigating them. Because many water quality problems originate with land use or land development, land use planning is often an important part of watershed management (Mitchell 2005). Watershed management can include the installation of best management techniques such as riparian buffers, which can filter pollutants from stormwater runoff and provide necessary stabilization for stream banks (Pace and Groffman 1998). Land conservation is another watershed management technique that
aims to preserve lands with high ecological value, such as critical habitats, wetlands, and stream and river corridors (Schueler and Holland 2000). Through watershed management, local governmental agencies can encourage or even mandate better site designs such that their stormwater management practices better mimic the natural hydrologic cycle of the area (Schueler and Holland 2000). Because the quality of water is influenced by so many human activities, the methods of improving water quality mentioned here only scratch the surface of the avenues which can be explored by a watershed management program to positively impact the ecosystem.

Section 1.2 Governing the Watershed

Anyone who has spent time in the realm of governance will concede that it is rare to find an organization within government that has authority that completely encompasses a policy issue and can, isolated from other government entities, fully achieve the desired policy intentions (Imperial 2005, 4). In few arenas is this more pronounced than in the arena of watershed management. In focusing on the watershed as the unit of analysis, planning, and protection, complications arise for several reasons. First, water resources, like other common pool resources (CPR), are difficult to govern. Access to water resources, for example, is largely open and nearly impossible to completely control (Lubell 2004b). A second issue is that the watershed, as an ecological and physical boundary, often does not coincide with the established political boundaries to which funding, social identity, and power structures are related. Lastly, not only is a watershed potentially governed by several different political jurisdictions, but it is also impacted by wide range of human behaviors, each potentially governed by a different agency within the given political jurisdiction (Lubell 2004b).

In the United States, the command-and-control approach has been the traditional approach to the management of environmental issues since the environmental legislation of the 1970s (Lubell 2004a, 341). The command-and-control approach is characterized by centralized, top-
down regulatory control which largely discounts ecological interconnectedness and watershed-based thinking (Lubell et al. 2002; Clark et al. 2005, 198). The Clean Water Act (CWA), an example of top-down regulatory control, was passed by the United States Congress in 1972. The Act requires municipal wastewater treatment facilities and regulates pollutant discharges into waterways. The CWA has worked quite well in mitigating some forms of pollution, particularly point source pollution, which results from identifiable discharges from discrete locations (Lubell 2004b). However, now that point source pollution is largely contained, the main problem that water bodies face is from non-point source pollution and habitat destruction (Lubell 2004b). Command-and-control techniques, which generally depend on uniform, one-size-fits-all regulations overseen by a central agency, are relatively inflexible in the face of different and changing conditions and are therefore not appropriate for controlling these more nebulous pollution sources, which vary by content, location, and over time (Lubell 2004b; Clark et al. 2005, 198). In addition, the structure of regional government is a collage of local governments and agencies which have varying levels of power and responsibilities and often overlapping and diverse economic and political priorities (Margerum and Whitall 2004). Lubell et al. note that command-and-control approaches are not well suited for addressing issues that span multiple environmental media, political jurisdictions, and government agencies (2002). Lastly, issues within a watershed have been found to be less scientific and technical, and more political and social. Although science can help to define the problems in the watershed and the solutions for correcting those problems, implementation requires understanding the players involved, power struggles, and values and ideologies of the population and of the political leaders (Imperial 2005, 283). Traditional command-and-control methods leave no room for the negotiation and cooperation required for integrated and holistic watershed management.

If considered within the framework of political contracting, transaction costs (i.e. the costs, financial or otherwise, associated with a given method of issue regulation or management) are
at their lowest when the structure of the government institution fits the structure of the “collective-action problem at hand” (Lubell 2004b). In the case of watershed management, the command-and-control method has high transaction costs for all involved. For example, those with economic interests fear additional regulations that are accompanied by higher costs, delays and headaches. Those with environmental interests fear the continuing destruction of habitat and degradation of water quality (Lubell et al. 2002). Both interest groups have called for reducing the costs associated with implementing such regulations as the Clean Water Act and increasing the efficiency and flexibility of the implementation process (Clark et al 2005, 198).

The failures of the command-and-control approach and the increasing focus on the watershed planning unit have been met with the emergence of a new type of governance strategy. Cooperative, decentralized institutions have become the new paradigm not only in watershed management, but in all forms of environmental policy (Lubell et al. 2002; Clark et al. 2005, 198; Lubell 2004a, 341). This approach, which focuses on achieving consensus and cooperation among “competing stakeholders, concerned citizens, and relevant public agencies”, is often referred to as collaborative management (Lubell 2004a, 341). More specifically, these participants include local government zoning board members, developers whose land development schemes may be affected by the decisions of the collaborative effort, land owners whose property values may be impacted, members of environmental non-profit agencies and conservation groups, and average citizens concerned about flooding and the quality of the water running through the streams in their backyards. The popularity of the collaborative approach in the watershed management realm has evidenced itself in the number of collaborative watershed organizations which have materialized across the nation in recent years (Clark et al 2005, 198).
Section 1.3 Defining Collaboration

Collaboration is defined by Imperial “as any joint activity, by two or more organizations, intended to create public value by working together rather than separately” (2005, 286). The process of collaboration involves actors who remain autonomous and who use “shared rules, norms, or organizational structures to make collective decisions” (Imperial 2005, 286). Because the actors remain autonomous, methods such as negotiation, compromise, bargaining and politics must be utilized to encourage and maintain voluntary involvement (Imperial 2005, 287). Interaction within these collaborative efforts is more free-flowing and social than interaction that is mandated by formal authoritative decree. Imperial notes that collaboration relies on “personal and organizational relationships, mutual interests, and reputation” (2005, 287).

Collaborative institutions share several characteristics, as laid out by Lubell. They are generally inclusive, seeking participation from a wide swath of interested private and public parties. Though they establish for themselves a specialized set of rules particular to their organization, nearly all of them rely on consensus or near-consensus as the decision-making mechanism (Clark et al. 2005, 199). By and large, implementation of plans created by collaborative institution is voluntary, not carrying with it new regulatory requirements. There tends to be less resistance to actions that require only voluntary cooperation, and through voluntary efforts, problems outside of the normal regulatory structure can be more easily addressed (Lubell 2004b). Because implementation is voluntary, the collaborative effort focuses on social capital mechanisms, such as building networks, trust, and norms of reciprocity, to ensure continuing cooperation among its participants. Lastly, collaborative institutions, more flexible than governmental institutions, make room for the adaptation of their plans based on new data and changing conditions (Clark et al 2005, 199; Lubell 2004b).
Within the realm of watershed management, collaborative institutions are referred to as “watershed partnerships” or “watershed management organizations (WMOs).” Kenney et al. presents the following definition of a watershed partnership:

“A primarily self-directed and locally focused collection of parties, usually featuring both private and intergovernmental representatives, organized to jointly address water-related issues at the watershed level or similarly relevant physical scale, normally operating outside of traditional governmental processes or forums, and typically reliant on collaborative mechanisms of group interaction characterized by open debate, creativity in problem and solution definition, consensus decision-making, and voluntary action” (2000).

These watershed partnerships or WMOs generally take a holistic approach to watershed management, meaning that they do not confine themselves to narrow jurisdictional concerns, but try to consider the watershed as a whole geographically and all of the “physical, ecological, social and economic interconnections” and impacts which occur within the watershed (Margerum 2001, 421).

Collaborative watershed management practices can encompass a wide range of activities, including statutory land use changes, water quality monitoring, educational outreach, land conservation efforts, and revisions to land development practices (Clark et al. 2005, 197). The focus of watershed management can also vary considerably. For example, WMOs in the East generally focus on water quality issues, while WMOs in the West place more emphasis on water quantity (Clarke et al. 2005, 197). Collaborative activities of a WMO can be temporary or permanent, project-based or ad hoc, and often these activities fall into three categories: operational, policy-making, and institutional (Imperial 2005, 288).
Section 1.4 Study Objectives

Clearly, collaborative watershed management has advantages over the traditional command-and-control approach to governance; however, it also has challenges. In particular, collaborative watershed management must achieve multi-jurisdictional support of a significant magnitude to ensure that the results of the planning process will actually be implemented by the major stakeholders in the watershed. The objective of this study is to evaluate a collaborative watershed management program, called the Lake Erie Balanced Growth Program, with regards to its effectiveness at garnering the support of political jurisdictions within the watersheds in which it is implemented such that the watershed plans produced are likely to be implemented in a meaningful way. This study will also examine what roadblocks or difficulties the program encountered in its implementation and will result in a set of recommendations intended to help the Lake Erie Balanced Growth Program overcome these difficulties in the future. The study will examine and compare four case studies, one for each of the pilot projects that are currently implementing the program, in light of the following two research questions:

Research Question 1: How effectively has the Lake Erie Balanced Growth Program been able to produce watershed plans that garner the support of the political jurisdictions within the watersheds such that the plans will likely be implemented in a consistent and widespread manner throughout the watersheds?

Research Question 2: What major roadblocks were encountered in the implementation of the Balanced Growth program, and what steps could be taken in the future to avoid or overcome these roadblocks to achieve the multi-jurisdictional implementation of the Balanced Growth program?

The following is an outline of the structure of the remainder of this study. Chapter 2 elaborates on the challenges to multi-jurisdictional watershed collaboration, as found in the literature.
Chapter 3 examines the role of local government in collaborative watershed management. The role of local government is particularly important for the evaluation of the Lake Erie Balanced Growth Program because the program focuses primarily on land use and land development decisions, which fall primarily within the jurisdiction of local government. Chapter 4 discusses the Lake Erie Balanced Growth Program in greater detail, and in Chapter 5, each of the pilot projects of the program are introduced. Chapter 6 discusses the analysis of the case studies in light of Research Question 1, and the analysis of the case studies in light of Research Question 2 is found in Chapter 7. In Chapter 8, the recommendations for improvement to the Balanced Growth Plan are set forth. The conclusion in Chapter 9 outlines the limitations of the results, where further study is warranted, and final thoughts on the Balanced Growth Program.
Chapter 2: Challenges to Multi-Jurisdictional Collaboration in the Watershed

As noted previously, because watersheds are impacted by so many different human activities, effective watershed management requires the coordination, collaboration, and integration of multiple political jurisdictions and governmental agencies. Often the challenges which complicate multi-jurisdictional cooperation and collaboration have nothing to do with science but stem from social structures and political frameworks. This section details some of the most prevalent challenges to multi-jurisdictional collaborative watershed management.

Section 2.1 Fragmented Responsibilities and Concerns

The responsibilities and powers with regards to the management of water are fragmented in multiple dimensions across the watershed, complicating efforts for unified watershed management. First, as was noted previously, depending on the size of the watershed, it may be comprised of several different political jurisdictions – townships, cities, states, or even countries (Deyle 1995). Each political jurisdiction, with its own unique geographic position, generates its own watershed impacts and receives its own unique set of watershed benefits. Each has established its own development policies, growth agendas, and ideology (Imperial 2005, 283). Often the spatial interconnections among the political jurisdictions which share a watershed are ignored, and these jurisdictions do not consider the impacts their actions may have on the same shared water system downstream and the watershed benefits on which other political jurisdictions rely (Mitchell 2005).

The fragmentation of watershed responsibilities goes beyond simply sharing a watershed with other political jurisdictions. Fragmentation also occurs across various resource-sharing agencies and levels within the individual government. This fragmentation is referred to in the literature as the “silo effect” (Mitchell 2005). The silo effect may be characterized by both
vertical fragmentation and horizontal fragmentation of power and responsibilities and refers to the incapacity or disinclination of these various agencies and/or levels of government to consider their mandates in light of those of other groups (Mitchell 2005). In other words, the efforts of these various agencies are not coordinated in terms of actions or even objectives, thus accentuating the boundaries or edges between these agencies (Mitchell 2005). Critics argue that although these boundaries can be moved with forged alliances and shared goals, they cannot be eliminated entirely (Mitchell 2005).

Vertical fragmentation refers to the fragmentation of responsibilities from one level of government to another - from local to county to state to national government (Deyle 1995; Mitchell 2005). Each of these political jurisdictions holds a different set of powers and responsibilities that affect the quality of the water body they share. For example, a township generally has its own zoning code which impacts how land is developed within its boundaries, but that same township may have to defer to the county government for subdivision construction standards and stormwater management regulations. However, within that same watershed, an adjacent city may have control over all three of these elements within its boundaries. In addition, local governments, which are typically most impacted by watershed management decisions and most responsible for implementation of those decisions, lack the authority or resources to take on this responsibility adequately (Ryan and Klug 2005).

Horizontal fragmentation within the silo effect refers to the fragmentation of responsibilities among the various agencies within one level of government (Mitchell 2005). The management of water is fragmented across management functions (e.g. education, permitting, and installation of best management practices), water issues (e.g. water quality, stormwater drainage, sanitation, and municipal water supply), water body types (e.g. surface water and ground water), water use sectors (e.g. agricultural, residential, industrial, recreational, and ecosystem management sectors), and geographic locations (e.g. estuaries, headwaters,
wetlands, and coastal zones) (Deyle 1995; Imperial 2005, 283). Separate agencies are often responsible for each of these, and interaction among these agencies can often be limited despite the fact that these sectors are largely interdependent (Deyle 1995). The system is seldom considered as a whole, with the economic, social, and environmental objectives among the sectors regarded for their complementarities and their conflicts (Mitchell 2005). In addition, too often public agencies, like forestry, agriculture, and recreation, which do not consciously focus on watershed management as part of their missions, have some of the greatest impacts on water quality and watershed management (Deyle 1995). Furthermore, an organization’s mandate or legislative authority can create real and/or perceived constraints to involvement in collaborative watershed efforts. Some organizations are simply not permitted to delegate their management or regulatory authority, or their mandate may be so narrow so as to dissuade them from taking a holistic approach (Margerum 2001, 421). Other organizations may use this as an excuse to shortcut discussion and avoid consideration of different interpretations of how regulations or management of watershed issues may be carried out (Margerum 2001, 421). Deyle (1995) refers to the current framework of water resources management as “organized anarchy,” which is characterized by poorly-defined and inconsistent goals, uncertain steps for accomplishing goals, and constantly-shifting participation by individual actors. In other words, the current framework is extremely inefficient, with inconsistencies, duplications of effort, and conflicts among agencies. The presence of conflicting goals can lead participants in the watershed management to avoid clarification of those goals so that no compromise is forced (Deyle 1995). Though fragmented, power exists in the current institutions; however, the framework for how the powers interact and coordinate with one another often does not exist (Mitchell 2005). Often no clear leader emerges or is encouraged to emerge to direct the framework into making the difficult but necessary decisions within the watershed. So, in a sense, everyone is responsible and no one is responsible (Mitchell 2005).
Section 2.2 The Complication of Politics

The fragmentation of roles, responsibilities, and power among various political jurisdictions and the agencies and levels of government within them is further complicated by the fact that the management of water is decided in the political arena. Blomquist and Schlager (2005) define politics as the "process of allocating and exercising decision-making power". Because water is a valuable natural resource, the decisions made regarding the management of water can be controversial and contentious, which is why politics adds one more social obstacle to watershed management (Blomquist and Schlager 2005).

Elected officials or governmental decisions makers are generally looking for two types of windows through which they can push forward significant policy: problem windows and political windows (Deyle 1995). A problem window refers to a situation where a problem has arisen that has enough public attention and pressure such that it requires action. In these situations, decision-makers evaluate the available solution options and choose the most viable one. Political windows are sought by politicians who are anxious to increase their visibility or stature in the community or region by forwarding their own pet policy issues. These politicians look for opportunities to implement their vision (Deyle 1995). This dynamic can be seen in the realm of watershed management when politicians choose to direct spending towards water-related projects based on the results of a political analysis, rather than a scientific one (Deyle 1995). In addition, participation of individual political jurisdictions in decision-making and/or implementation may increase or decrease depending on the political importance of the specific issue at hand or the “administrative perception of the problem and its relevance to the organization” or the community (Deyle 1995; Margerum 2001). Margerum notes that two significant preconditions to participation in watershed management efforts are “perceived interdependence with other parties and high stakes for the potential participant” (2001).
The argument, however, is often not that watershed management should be done – it has been an accepted practice for decades – but, rather, how it should be done (Blomquist and Schlager 2005). Should watershed-based institutions be formed? Should existing jurisdictions transfer some of their responsibilities to a regional agency such that they are integrated at a watershed level? How do these local jurisdictions act responsibly towards their watershed without compromising the economic health and well-being of their constituents? Even deciding the boundary by which watershed management efforts will focus is a choice, and choices allow room for politics (Blomquist and Schlager 2005). Political jurisdictions and agencies fear the loss of autonomy, resources, and power. Unwillingness to share power can prevent organizational involvement in collaborative efforts, and power struggles within WMOs can undermine the results (Margerum 2001, 425). In addition, people within these organizations fear disruptions to their organizational processes, goals and resources. Organizational leaders fear that it may appear that the needs and interests of local constituents are being subjected to the interests of the collective watershed agency and they would lose public support. These fears are exacerbated by the uncertainty of the outcome of the watershed management efforts and the financial costs associated with participating (Deyler 1995). Therefore, deciding on the organizational structure and which government or agency will take the lead in the planning are two early hurdles that may be difficult to overcome (Ryan and Klug 2005).

Watershed boundaries are natural boundaries, which set them apart from the randomness and volatility of man-made boundaries and gives them some cultural significance (Blomquist and Schlager 2005). However, while they represent the limits of hydrological processes and habitats, but they do not represent the limits of many social and economic causes and effects (Blomquist and Schlager 2005). Political and administrative boundaries are not meaningless. People generally do not describe their homes relative to their watersheds, and people relate more closely with their local government than with their local watershed group (Barham 2001).
Therefore, politics within and among political jurisdictions will always complicate watershed planning because the watershed is not the primary boundary to which people identify their communities.

**Section 2.3 Lack of Trust**

Political challenges among multiple jurisdictions cannot be achieved without trust (Clark et al. 2005). In a study examining how Washington State’s Watershed Planning Act is being implemented through collaborative watershed planning efforts, all respondents to a survey identified trust as a major challenge to multi-jurisdictional planning and one of the most crucial elements in a successful watershed management program (Ryan and Klug 2005). Often watershed management groups are structured such that a staff member from each local jurisdiction or agency represents his organization as a member in the group. The group members collaborate and make decisions regarding the entire watershed, and the staff members must report back to their elected officials and convince them to support the decisions of the watershed group. This scenario leaves open the potential for challenges to two types of trust: mutual trust and social trust (Ryan and Klug 2005). Mutual trust is the trust that develops between two individuals, whereas social trust is the trust between two organizations or institutions (Ryan and Klug 2005). Both types of trust are crucial to achieving the collaboration necessary for watershed management. Mutual trust must be formed among the members of the watershed planning group. Individuals must understand each other’s positions and trust each other’s motives before they will be able to reach consensus on watershed planning issues (Ryan and Klug 2005). This interpersonal trust depends heavily on the behavioral characteristics of the individuals involved, such as open-mindedness, respect, honesty, and listening (Webler et al. 2003, 108). However, even when consensus is reached, implementation is not guaranteed. Mutual trust must also exist between the representative of the local
government or agency in the watershed group and the local elected officials to whom he must report (Ryan and Klug 2005).

Mutual trust is considered to be a building block of social trust (Ryan and Klug 2005). Like relationships between individuals, relationships between political jurisdictions or agencies can be long and wrought with cooperation, conflict or a mixture of the two. Because jurisdictions within a watershed are by nature in close proximity to one another, they often have a significant history of interaction, for better for or for worse. Once trust has been established between neighbors slowly over time, it must be maintained, or it will erode easily with any negative events and with inevitable changes in staff and administration (Imperial 2004, 310). Relationships among organizations, if they lack social trust, can present an enormous hurdle to accomplishing meaningful collaboration on watershed issues, and this kind of trust can be much more difficult to repair than trust among individuals (Ryan and Klug 2005). On the positive side, trust within a relationship generally lowers the transaction costs of collaborative watershed efforts because it allows for smoother, more efficient resource exchanges. In addition, trust can develop through participation in collaborative watershed organizations, and that trust can spill over to facilitate unrelated issues (Imperial 2005, 304).

Section 2.4 Lack of Resources

Another more obvious challenge to multijurisdictional watershed management, and the one most often cited by watershed management groups, is a lack of resources (Imperial 2005, 297). These resources can include funding, staff, technical expertise, and adequate time to plan and implement (Margerum and Whitall 2004; Imperial 2005, 297; Roy et al. 2008, 349). As mentioned previously, local governments are responsible for the vast amount of the burden of implementation, and they often do not have the technical expertise or the money to adequately do that job. Of all of the resources mentioned above, studies have indicated that funding is the most frequently noted key to the success or failure of WMO activities (Clark et al. 2005, 201).
Collaborative efforts of any kind require some immediate transaction costs, such as devotion of staff or staff time to attend meetings and write reports. Some organizations decide that these costs are too great, particularly if they were not figured into their agencies’ work plans and priorities, and therefore decide not to donate their resources to the collaborative effort. This is an issue not only for government agencies, but also for nongovernmental organizations, who often have only one or two paid staff members with the remaining support from volunteers (Margerum 2001, 424-425). Participation in the collaborative watershed management effort may therefore be a voluntary action from committed individuals in their free time rather than work done during their work day (Margerum 2001, 425).

Time is also an important resource that often limits multi-jurisdictional collaboration. Considerable time is necessary to establish watershed planning groups, secure adequate resources, and determine how they will be organized, what roles each member will take on, and how decisions will be made (Ryan and Klug 2005; Imperial 2005, 305). Watershed organizations often follow a trial and error process in their infancy where they discover which organizations within the watershed will make good partners and which activities will be most successful (Imperial 2005, 305). Even more significantly, considerable time is necessary to establish both social trust and mutual trust such that meaningful collaboration is possible (Ryan and Klug 2005; Imperial 2005, 305). Research has shown that new watershed management organizations require at least a year to adequately grapple with all of these tasks, and in that time period, the risk for the organization to fail is at its highest (Imperial 2005, 306).

**Section 2.5 Lack of Organizational Guidance**

Another common problem that organizations face when committing to collaborative efforts within a watershed is a lack of organizational guidance. In other words, many administrators and managers do not know how to relate the work being done within the collaborative watershed management organizations to the decision-making process within their own organization or
government. The result can be that at watershed management meetings the organizational representatives have difficulty making decisions. Often, they have trouble distinguishing between their governmental or organizational and personal viewpoints (Margerum 2001, 425). This problem is of particular significance when the issues being addressed by the watershed group have not been clarified within the individual organizations, making it difficult for their representatives to voice the opinion of their organizations (Margerum 2001, 425).

**Section 2.6 Uncertainties Surrounding New Techniques**

One last roadblock that is often faced by watershed management efforts is uncertainty regarding recommended watershed techniques. Watershed planning is a relatively new approach to stormwater management, requiring some out-of-the-box thinking for engineers and public works officials. Often, the recommendations resulting from watershed planning effort also diverge from traditional practice. For example, low impact development (LID) techniques are stormwater management technologies that more closely mimic the natural hydrologic cycle and, therefore, better protect against ecological damage and water quality problems. However, as Roy et al. (2008) explain, these tools are often passed over for conventional stormwater management procedures because of the uncertainties surrounding their usage. First, little data exist that demonstrate the performance of the LID tools under various environmental conditions. As a result, engineers and planners are hesitant to use a method that has not been proven in their region, under their local soil and precipitation conditions (Roy et al. 2008). In addition, unlike conventional means of stormwater management, such as the use of detention basins that have well-understood construction and maintenance costs, cost estimation for LID techniques has less history. Not only is the cost of construction and maintenance difficult to determine, but the design standards in most cases have not been developed. Existing engineering design standards largely focus on conventional means of stormwater management, with limited performance standards and guidelines for LID techniques (Roy et al. 2008). In fact, existing
design standards of many communities actually impede the use of newer LID tools (Roy et al. 2008). Engineers, developers, and planners lack sufficient data regarding how to design with LID tools in their region, and they lack sufficient and reliable data on how much these LID tools will cost as compared to conventional means. They also lack a firm understanding of how the LID designs will function in their area once installed. All of this uncertainty contributes to resistance to change on the part of the development community and local governments (Roy et al. 2008).

Uncertainty over watershed planning implementation techniques is not limited to LID. Transfer of development rights (TDR), for example, is often hailed as the ideal, everyone-wins solution. TDR is tool used by some jurisdictions to reign in urban sprawl by allowing for the transfer of the right to develop from a property that the jurisdiction would like to conserve to a property that is more suitable for development. In transferring the right to develop, the property from which the right is taken is essentially placed under a conservation easement, while the property to which the right is awarded is able to develop at a higher density than what would be allowed under strict zoning regulations. TDR is not as simple as the concept might indicate, however (Lane 1998). Although there are many successful programs, namely in Montgomery County, Maryland and the New Jersey Pinelands, TDR still faces many obstacles. Usually, it is easy for a community to agree on what lands should be protected through the TDR program, but it is not as simple to decide on what areas will see an increase in development and what that development will look like. Sometimes the market for new development in the receiving area is not strong enough to support higher density development, and sometimes the agency administering the program is not sophisticated enough to handle applying design controls to the new development (Lane 1998). In addition, although planners like higher-density, clustered development, much of the general public does not and additional public education is needed regarding its values. Lastly, TDR programs must conform to existing local regulations, including
effective state enabling legislation that establishes the “clear legal authority” of the agency administering the program. Sometimes this legislation does not exist, which makes TDR illegal to implement (Lane 1998). Uncertainty surrounding innovative watershed management techniques, such as LID and TDR, can hinder the implementation of a watershed plan.

As conveyed in this chapter, the hurdles facing collaborative watershed management are many, ranging from politics and mistrust to a simple lack of resources. The next chapter will begin to discuss how these hurdles can be addressed through the role of local governments in collaborative watershed management efforts.
Chapter 3: Local Government Participation

The Ohio Lake Erie Balanced Growth Program, which will be described in detail in a subsequent chapter, focuses on impacting land use and land development decisions in the watershed. As a consequence, this program relies heavily on local government action. Therefore, before delving into the details of the program and its pilot projects, it is first helpful to discuss the role of local governments in collaborative watershed management.

Section 3.1 The Role of Local Government

Of all of the organizations involved in a given WMO, the importance of the involvement of local governments cannot be overemphasized. The participation of local government is a critical element to the successful implementation of the policy outcomes of watershed management efforts for several reasons (Webler et al. 2003, 106). First, local governments are responsible for the implementation of regulations at the local level. In addition, local governments have control over land use decisions and development methods within their jurisdictions. Because land use plays such a critical role in the health of a watershed, support by local government in watershed management planning and policies is essential. Local officials also have unique knowledge of their community’s needs, politics, resources, and concerns, and they often wield great influence within their community and can affect public support for environmental protection efforts (Webler et al. 2003, 106).

Section 3.2 Levels of Participation

Margerum has categorized the levels at which organizations and/or governmental institutions can choose to participate in a WMO (2001, 423). First, they can choose to be nonparticipants and avoid involvement at all. This can be particularly problematic if the nonparticipating organization or political jurisdiction encompasses a large percentage of the watershed. A second level of participation is as an “observer organization,” one which observes the activities
of the WMO but does not actively contribute. “Partner organizations” are organizations which contribute their own staff and resources to their active participation in the WMO. These organizations are fully engaged in the planning and implementation of the watershed management efforts. The last level of participation is as a “sponsor organization” which is an organization which either has a great deal of authority, such as the EPA, or has a significant financial commitment invested in the watershed management effort (Margerum 2001, 423). Like any organization within a WMO, local government can choose a variety of different roles, from supporter of the watershed management initiative, to partner in it, to “drowner” of it (Chess et al. 2000, 251). The next section details the potential motivations behind this choice.

Section 3.3 Why Local Governments Participate

Lubell notes that watershed partnerships are more likely to surface when possible benefits offset the transaction costs of establishing and supporting new institutions (Lubell et al. 2002). It follows that watershed planning partnerships are most likely to form in watersheds that a) are plagued by acute pollution problems, b) have limited command-and-control supervision and enforcement, and c) have the resources to supersede the transaction costs (Lubell et al. 2002). It is no surprise that these characteristics also largely explain why local governments choose to get involved in WMOs. The following, in greater detail, are several of the most significant motivations behind why local governments get involved in collaborative watershed management.

3.3.1 Environmental Problems. In general, greater environmental problems faced by a watershed lead to the assumption of greater benefits in joining watershed partnerships. The severity of an environmental problem can be measured by several different indicators, such as the direct measure of water quality, potential damage to water quality due to urban runoff or agricultural runoff, or the population pressure in the watershed (Lubell et al. 2002). Weak
enforcement of existing environmental regulations also encourages participation in watershed partnerships to fill the void left by regulators (Lubell et al. 2002).

3.3.2 Benefits to Their Communities. Local governments are likely to get involved in planning partnerships if they perceive a true benefit to their communities. Sometimes these benefits are in the form of increased funding or linkages to other issues unrelated to watersheds. In other cases, local governments may see collaboration in the watershed management effort as a means to achieve local agendas or to improve the health, safety, and welfare of their citizens (Webler et al. 2003, 107).

3.3.3 Social Capital. Local governments sometimes are more willing to get involved when they feel optimism that their own actions will be followed by the actions of their neighbors in positively contributing to the watershed management effort (Webler 2003, 107). This same dynamic was seen in a study by Lubell that analyzed the factors contributing to the cooperation of farmers in watershed management efforts. Farmers were more willing to contribute when they felt that their actions would have a positive effect on their neighbors’ likelihood of participating as well. It was found that this feeling of social capital increases with increasing interactions among the farmers and among the farmers and watershed management organizers. What Lubell refers to as the “norms of reciprocity” create the expectation that cooperation will be returned to other people in the group (Lubell 2004).

3.3.4 Appropriate and Adequate Resources. Individuals within local government may be more willing to participate in collaborative watershed management efforts if they feel they have appropriate expertise and resources to do so effectively. These resources include technical assistance and funding from federal and state government which both enhance the capacity of local governments to contribute (Webler et al. 2003, 107).
3.3.5 Personal or Social Values. The personal values of individuals within local government certainly influence whether or not they move their agency to participate in the watershed (Webler et al. 2003, 107). Similarly, in Lubell’s study of farmers, he found that many of the farmer’s who chose to participate in the watershed management planning and implementation were driven by the social and moral values – they believed in their moral obligation to act as stewards of the earth (Lubell 2004, 347).
Chapter 4: The Lake Erie Balanced Growth Program

The Lake Erie Balanced Growth Program is a watershed planning program developed by the Ohio Lake Erie Commission (OLEC) in response to the 2000 Lake Erie Protection & Restoration Plan. This plan recommended that a voluntary, incentive-based program focused on achieving balanced growth in the Ohio Lake Erie Watershed be established. The term “balanced growth,” as defined by the Lake Erie Balanced Growth Task Force is a “strategy to protect and restore Lake Erie and its watersheds to assure long-term economic competitiveness, ecological health, and quality of life” (Ohio Lake Erie Commission 2004, 4). Approved by the OLEC in 2004, the Balanced Growth Program concentrates on the linkage between land use and the health of the watershed. The Lake Erie Balanced Growth Program differs from other major planning efforts in Ohio in that it focuses exclusively on land planning and development regulations that impact new development and re-development and how growth can be achieved both physically and economically without further compromising the health of the Lake Erie Watershed (OLEC 2004). Furthermore, the program provides a framework in which local governments are encouraged to think and act on a watershed level, rather than limiting their thoughts to their own jurisdictional boundaries (OLEC 2004, 12). The term “watershed” can refer to drainage basins of several different sizes. As this is still a pilot program, OLEC chose pilot projects with watersheds of various sizes, from 17 to 267 square miles. Based on the outcome of the pilot projects, in the future the Balanced Growth Program may specify the size of watershed most appropriate for application of the program.

As noted previously, the Lake Erie Balanced Growth Program is voluntary. Rather than relying on regulatory mandates, the program instead relies on incentives and political support of local governments to encourage implementation of the final Balanced Growth plans. In this way, the program avoids both interfering with the local governments’ control over their own land use decisions and creating unfunded mandates (OLEC 2004, 14). The implementation incentives are
provided by various State of Ohio agencies and include such items as added consideration on grant applications for projects that contribute to the priority areas defined by an approved Balanced Growth plan and greater access to state agencies through the State Assistance Work Group for participating local jurisdictions (CRCPO 2008a). A full list of the incentives is provided in Appendix A.

Section 4.1 Establishing a Watershed Planning Partnership

The process of creating a Balanced Growth plan for a watershed under the Lake Erie Balanced Growth Program begins with the formation of a Watershed Planning Partnership. Because watershed planning is a regional effort, partnerships should be comprised of a range of interests, including, but not limited to, representatives from local governments, planning organizations, non-governmental organizations, chambers of commerce, and/or regional planning bodies. Only two requirements are imposed on the partnership: it must include a representative from a state agency to provide guidance and input from the state-level and, in an effort to ensure the implementation of the final plans, it must prove that it has the support of local governments who have the land-use planning and regulatory authority (OLEC 2004, 19). To demonstrate support, the task force recommends that partnerships include enough representation from local governments to encompass 75% of the geographic land area of the watershed, 75% of the local governments in the watershed, and 75% of the population within the watershed (OLEC 2004, 19).

Section 4.2 Developing the Watershed Balanced Growth Plan

Once the Partnership is formed, it may begin the process of developing the watershed plan. First, the group must assess a range of watershed characteristics including existing land uses, local economic factors, type and amount of housing, the watershed’s physical features and ecology, population distribution, and water quality. The Partnership must then designate Priority
Development Areas (PDAs) and Priority Conservation Areas (PCAs). As the names might indicate, PDAs are areas where development is, for a variety of reasons, desirable and to be encouraged, while PCAs are areas of high importance in terms of ecology, agriculture, recreation, or heritage and are, therefore, intended for protection and restoration (OLEC 2004, 15-17). Although a separate category for agricultural lands was not included in the original Watershed Balanced Growth Program, two of the four pilot projects, which will be discussed in the next chapter, adopted a third category of Priority Agricultural Areas (PAAs) because the conservation of farmland is too different from the conservation of sensitive natural features. Therefore, PAAs are areas of prime farmlands, operating large farms, and/or farms which are enrolled in agricultural programs, all of which contribute to viable agricultural production (TMACOG 2009a).

**Section 4.3 Approval and Implementation**

Because local governments have control over land use and development standards, much of the burden of the implementation of the Watershed Balanced Growth Plans rests on them. Therefore, the participation of the local governments is encouraged throughout the process. In addition, once the plan is complete, the Watershed Planning Partnership must present the plan to the regulatory body of each of the local governments within the watershed and request that the plan be approved by resolution by that local government. The majority of the watershed’s local governments (i.e. meeting the 75% requirements noted earlier) must approve the plan by resolution before the plan can be presented to the Ohio Lake Erie Commission for state approval. Once the plan is complete and approved by the State, local governments are eligible for incentives from the State for implementing the plan (See Appendix A). Local governments are encouraged to implement the final, approved Watershed Balanced Growth Plan in the following ways:
• Update or amend their existing comprehensive land use plans so that they reflect the Watershed Balanced Growth Plan;
• Establish a comprehensive land use plan if none exists to aid in the formal implementation of the Watershed Balanced Growth Plan;
• Adopt the model ordinances recommended by the Lake Erie Balanced Growth Task Force, which focus on best management practices (see Section 4.6);
• Direct funding to support the developments areas and the conservation areas established by the watershed plan when maintaining existing infrastructure (OLEC 2004, 19).

Section 4.6 Balanced Growth Model Ordinances and Guidance Documents

As part of the Balanced Growth Program, the Balanced Growth Blue Ribbon Task Force developed model regulations and guidance documents that detail appropriate watershed behavior and protection for voluntary adoption by local governments. The model regulations are for stormwater management, riparian/wetland protection, coastal protection, and meadow protection. The guidance documents cover the following development-related topics: conservation development, compact development, source water protection, agricultural lands protection, tree and woodland protection, scenic protection, historic preservation, steep slopes protection, transfer of development rights, brownfields redevelopment, and access management (OLEC 2005). OLEC notes that adoption of these recommended documents requires first that the local government formulates a public policy that would make the adoption of these documents into the zoning code logical and legally defensible. In other words, public policy related to the protection of natural resources must first be added to the local comprehensive plan. The development of a Watershed Balanced Growth Plan as discussed above is the
process for developing this public policy which can then be added as an update to local comprehensive plans.

Section 4.7 The Future of the Lake Erie Balanced Growth Program

The Lake Erie Balanced Growth Program was developed by the Ohio Lake Erie Commission as a means to achieving growth within the Ohio Lake Erie Watershed. The program considers the interrelationship of economic and environmental considerations to maximize the economic potential of the watershed while at the same time minimizing additional negative impacts to its ecological health. According to the OLEC, Lake Erie is Ohio’s most important natural resource, and as stewards of this great natural resource, the citizens of Ohio must work to balance the many different interests in the Lake (OLEC 2004, 8). Despite the program’s current focus on the Ohio Lake Erie Watershed alone, the Ohio Water Resources Council recently voted to expand the program statewide so in the future it might benefit all of Ohio’s waters.

Section 4.8 Data Collection Method

The data used in this study regarding the Lake Erie Balanced Growth Program and its four pilot projects were derived from several sources. The first sources were the reports issued by the OLEC regarding the Balanced Growth Program and the individual Balanced Growth Plan reports issued by the individual watershed planning partnerships. To supplement the reports, interviews were conducted with each of the watershed planning partnership directors and with a representative from the OLEC. Interviews were also conducted with representatives from several of the local governments within each watershed. Appendix B contains the interview questions for both the planning partnership directors and the local government representatives. Finally, public meeting minutes and other resources posted on government websites and watershed organization websites were utilized as well.
Chapter 5: The Balanced Growth Pilot Projects

In 2005, OLEC chose the Chagrin River Watershed, the Swan Creek Watershed, and the Rocky River Upper West Branch Watershed to act as pilot projects for the Lake Erie Balanced Growth Program (see Figure 1). A fourth watershed, the Chippewa Creek Watershed, was chosen in 2006 (see Figure 1). Since that time, each watershed planning partnership has developed a watershed balanced growth plan, and these plans are currently in various stages of approval and implementation. In the following subsections of this chapter, each of the four pilot projects of the Lake Erie Balanced Growth Program will be introduced in detail.

Figure 1. Lake Erie Balanced Growth Program pilot project location map.
Section 5.1 Chippewa Creek Watershed

5.1.1 Watershed Characteristics. The Chippewa Creek watershed is a 17-square mile watershed that is a tributary to the lower Cuyahoga River in northeast Ohio (see Figure 2). It has been designated by the Ohio EPA as a warm-water habitat and has been recognized as one of the last remaining somewhat healthy subwatersheds in the Lower Cuyahoga River Watershed (CRCPO 2008a).

Steep slopes characterize the watershed, and these slopes, combined with the rapid urbanization of the area, have led to flooding of the creek and erosion of the stream banks in recent years during heavy rain events (CRCPO 2008b). These issues have been exacerbated...
by the previous draining of wetlands and the encroachment into floodplains of existing
development. The creek itself is approximately 8 miles long and winds through mostly
residential neighborhoods before it enters the Cleveland Metroparks’ Brecksville Reservation
and the Cuyahoga Valley National Park and outlets into the Cuyahoga River. Only 26% of the
watershed currently remains undeveloped, and these undeveloped areas contain
environmentally significant features (CRCPO 2008a). As can be seen in Figure 3, Chippewa
Creek Watershed spans portions of five cities, all within one county, though the vast majority of
the watershed falls within just three of those cities: Brecksville, Broadview Heights, and North
Royalton.

Figure 3. Chippewa Creek Watershed political jurisdictions and subwatersheds (CRCPO 2008a)
5.1.2 Origin of Chippewa Creek Watershed Balanced Growth Plan. The Chippewa Creek Balanced Growth project was initiated by the Cuyahoga River Community Planning Organization (CRCPO), a nonprofit organization that administers the Cuyahoga River Remedial Action Plan (RAP), the Cuyahoga American Heritage River Initiative, and the Cuyahoga/Lake Erie Environmental Restoration Technology Enterprise Center (CRCPO 2008b). CRCPO was created in 1988 by the Ohio EPA to create and administer the RAP. One of the goals of CRCPO is to delist the Cuyahoga River from its status as an impaired water. To this end, one of the objectives is to establish smaller watershed groups for each of the tributaries to the Cuyahoga River and to work within these small watershed groups to establish consistent land use approaches that will protect the watershed from further damage. In this effort, CRCPO had already approached some of the mayors within the Chippewa Creek Watershed about the importance of better land management and the implementation of best management practices. When the Balanced Growth Initiative arose, it fit closely with CRCPO’s objectives. With the support of the mayors of the three main cities of the Chippewa Creek Watershed, CRCPO applied for the grant money through OLEC, but was denied. They later sought and received a grant from the Ohio Coastal Management Assistance Grants Program to develop a state-endorsed Balanced Growth Plan (CRCPO 2008a).

CRCPO chose the Chippewa Creek Watershed in particular for several reasons. First, one of the leading members of CRCPO lives within the watershed and grew up there. In turn, he had developed relationships with some of the mayors within the watershed. Also, the mayors of the cities were friendly with each other and were open to the idea of the program. Lastly, Chippewa Creek flows through a valuable national park, which would benefit from additional stewardship efforts. As fate would have it, approximately 10 days after CRCPO received the grant, the Chippewa Creek Watershed was struck by a 500-year flood, lending further political and community support to the Balanced Growth project.
5.1.3 Planning Partnership Characteristics. Two of the five watershed cities have only a very small portion of their area within the watershed and, therefore, opted not to participate in the Balanced Growth project. The remaining three cities, North Royalton, Broadview Heights, and Brecksville, chose to take an active role in the development of the watershed Balanced Growth plan for Chippewa Creek (CRCPO 2008a). At the request of CRCPO, the mayors selected representatives from their communities to participate in the watershed planning partnership. The representatives included elected officials, staff members and citizens from each of the three cities. In this way, the Chippewa Creek Watershed Planning Partnership fulfilled the objective of being community-led. Although the three cities had not worked together previously as a watershed, two of the cities share a school district, and all of them had a good working relationship with one another.

Staff members of the CRCPO led the planning effort and ultimately prepared the final document. The CRCPO staff consisted of a watershed planner, a GIS professional, a graphic designer, and the director who, in essence, chaired the planning partnership. They consulted closely with the watershed planning partnership in several well-attended meetings to develop criteria for analysis and to review and improve the Priority Area designations (CRCPO 2008a). No professional consultants were hired.

5.1.4 Plan Development Process. The first step in developing the Balanced Growth Plan was to provide each community representative with a “Scoring Priorities for Conservation of Important Watershed Features” worksheet where they ranked the importance of watershed features and their functions. The following were the top five features ranked by the partnership: areas in imminent danger of property damage, floodplains for flood water management, wetlands for flood water management, small streams and primary headwater areas, and steep
slopes for erosion protection. The survey results were used to help identify watershed characteristics to be utilized in the GIS analysis (CRCPO 2008a).

Once the necessary data was collected, CRCPO staff members developed a map of all sensitive areas and asked the planning partnership to prioritize these important natural features based on community needs and their importance to the function of the watershed. Based on the outcome of this prioritization, the staff performed a multi-criteria analysis in GIS and produced a composite map of critical natural features. The staff then looked at a recent aerial of the watershed and identified large tracts of undeveloped land, which did not necessarily coincide with existing parcel lines. On these large undeveloped tracts, the partnership identified PDAs and PCAs using the natural features already developed for the PCAs and looking at factors like availability of infrastructure, proximity to highway, and the development attitude of the community to identify the PDAs (CRCPO 2008a).

The Chippewa Creek Watershed Planning Partnership then looked at each individual large tract of land and made recommendations as to how that land might develop and what factors should be considered (CRCPO 2008a). Although one composite map of PCAs and PDAs was submitted to OLEC, the individual maps for each large tract will be used by developers and local governments to plan each site. Figure 4 is a map of the final PCAs and PDAs for Chippewa Creek Watershed and the criteria by which this map was developed.
5.1.5 Status. The Chippewa Creek Watershed Balanced Growth Plan has received all of the necessary local government approvals, and on December 17, 2008 OLEC approved the plan (CRCPO 2008c). The Chippewa Creek program has been so successful that CRCPO is
currently working on using the same framework to produce a Balanced Growth plan for the Brandywine Watershed, another tributary within the Cuyahoga River basin.

5.1.6 Implementation. The Chippewa Creek Balanced Growth Plan is in the early stages of implementation, but some steps have been taken. The North Royalton and Broadview Heights have already adopted many of the Balanced Growth recommended model ordinances, and the City of Brecksville is currently working on amending its code to include the recommended ordinances (CRCPO 2008a). Although none of the cities have updated their comprehensive plans with the Balanced Growth plan yet, representatives from the cities have indicated that the plan will be utilized in future land use planning activities. According to CRCPO, the plan will be maintained into the future by a permanent Chippewa Creek Watershed Planning Partnership, which will be operated by representatives from the three cities. At least one city has already indicated its willingness to contribute funding to the partnership and will be encouraging the other cities follow.

At least one development decision has already been made as a result of the Balanced Growth program in the Chippewa Creek watershed. While the Balanced Growth plan was being crafted, a developer requested a zone change to facilitate new development for a piece of property that would eventually be designated a PCA. At the public meeting where the zone change request was heard, the members of the public who had been involved in the watershed planning partnership spoke out against the project and substantively criticized the proposed project for the damage it would cause to the watershed. The developer eventually withdrew his request.

Section 5.2 Upper West Branch of the Rocky River Watershed

5.2.1 Watershed Characteristics. The Upper West Branch of the Rocky River Watershed, which will from this point forward be called the Rocky River UWB Watershed, is an approximately 70 square-mile watershed in northeast Ohio (see Figure 5). The primary land
use in the watershed is agriculture, while the urbanized areas comprise only 8% of the watershed. The watershed contains no particular special features, and, according to the Medina County Soil and Water Conservation District (SWCD), no extensive studies have been done with regards to its biggest threats. The watershed boundary addressed by the Balanced Growth project has changed a few times throughout the process, as will be discussed in more detail later. The current project area is comprised of seven townships and two cities, all within Medina County (see Figure 6).

Figure 5. Rocky River UWB Watershed location map.
5.2.2 Origin of the Rocky River UWB Watershed Balanced Growth Plan. The Rocky River Watershed Council, a prominent non-profit advocacy group for the entire Rocky River, wanted to apply for the Balanced Growth Program grant to complete a plan for the entire watershed, but the group did not have the capability at that time. Instead, they approached several agencies within Medina County government to take on the Balanced Growth project for a smaller portion of the watershed, the Upper West Branch. Medina County SWCD finally accepted the project and applied for the grant. The Upper West Branch of the Rocky River was chosen by OLEC as a pilot project likely because it was a smaller watershed, as compared with the other pilot projects, and Medina had already worked through a similar land suitability analysis over virtually
the same area in the county’s Joint Economic Planning Committee Land Use Compatibility Study.

5.2.3 Planning Partnership Characteristics. In an effort to form a watershed planning partnership, the Medina SWCD held one or more meetings early in the process to which were invited representatives of the local governments. However, interest in participation from local governments was low, so the watershed planning partnership in the end consisted only of county government staff and officials, and stakeholders from the development, agricultural, and conservation communities (Medina SWCD 2008). A full list of the watershed planning partnership members can be found in the Appendix C. The only substantial citizen and/or local government involvement occurred at the public meetings of each political jurisdiction where the citizens and public officials had opportunity to voice their opinions.

The planning partnership staff consisted of two part-time representatives from the Medina SWCD and some supporting GIS assistance from the Medina County Planning Services Department, though much of the GIS analysis was done by the SWCD. The planning partnership staff members admittedly had less experience in watershed planning than the staff of the other pilot projects, and neither had been involved in the Balanced Growth project from its inception. Beyond the Balanced Growth Program, the SWCD staff members were also charged with NPDES Phase II compliance, a contentious issue with some local governments.

5.2.4 Plan Development Process. To develop the criteria by which the PCAs and PDAs would be designated, the Watershed Planning Partnership broke out into three committees: agriculture, conservation, and development. Then, the staff performed the multi-criteria analysis in GIS to produce the first draft of PCAs and PDAs. Criteria for PCAs included floodplains, riparian areas, forests, steep slopes, conservation easements, and wetlands. Criteria for PDAs included sewer service, proximity to major highways, community reinvestment areas, and
commercial and industrial zoning. The planning partnership assumed that all areas not in conflict with PCA or PDA designations were highly suitable for residential development. The partnership chose to indicate the areas of PCA/PDA overlap differently with the intention that these areas would receive special consideration as to the type and intensity of development that would occur on them.

Along the way, the planning partnership determined that agriculture, originally included under the PCA designation, required its own designation because farmers did not want to feel that the future use of their land was limited to conservation and because the kind of conservation required for working farmland is different than that of sensitive environmental features. Therefore, the Rocky River UWB Watershed Planning Partnership created PAAs for agricultural lands whose owners indicated a strong commitment to maintaining their lands as agriculture into the future. Criteria used to designate PAAs include farms enrolled in agricultural districts, operating farms, locally significant farms, and the presence of local utilities.

After the plan was reviewed by the Planning Partnership, the staff took the plan to each of the local jurisdictions individually and presented the plan at public meetings. Several times the local governments requested revisions to the plan, and the planning partnership staff presented the plan again at a subsequent meeting, after the requested revisions were incorporated. One such instance of this occurred in Medina Township. The planning partnership had designated the area along a major route in Medina Township as PDA; however, this conflicted with Medina Township’s desire for that land to remain undeveloped as a scenic route and an important resource for the jurisdiction. At the township’s request, the planning partnership agreed to change the designation of this area to Local Preference Area. Through this designation, Medina Township may be able to receive incentives for conservation, but not for development. The entire final Balanced Growth Plan for the Rocky River UWB can be found in Figure 5.2.4 below.
5.2.5 Status. At last contact with Medina SWCD (April 2009), the staff had completed the first draft of the Balanced Growth Plan report and were seeking approval from OLEC.

5.2.6 Implementation. The future implementation of the Rocky River UWB Balanced Growth Plan seems somewhat uncertain. Once the plan is approved by the OLEC, ownership of the plan will move to the hands of the Medina County Department of Planning Services who will work with the local governments to update their comprehensive plans and make sure that these governments are aware of the PDAs and PCAs in their communities as development requests arise. Medina SWCD was not aware of any local governments intending on adopting the
suggested Balanced Growth model ordinances and thought that only one township may be currently working on updating its comprehensive plans with the results of the Balanced Growth project. I contacted this township, and the zoning administrator admitted that the township was updating its comprehensive plan, but she did not know if it would include the Balanced Growth plan information. She stated that her township supported the plan in part because it didn’t adversely affect the township in the way that it was going to negatively affect other townships. In speaking with the zoning administrator for another township, she was not aware of how the Balanced Growth plan would be implemented and directed me to talk with SWCD. The City of Toledo is the only local government in this watershed that intends on incorporating the Balanced Growth Plan into the city’s comprehensive plan.

**Section 5.3 Swan Creek Watershed**

**5.3.1 Watershed Characteristics.** The Swan Creek Watershed is a 204-square mile watershed located in the Western Lake Erie Basin (see Figure 8). Swan Creek, which is approximately 40 miles long and captures more than 200 miles of creeks and ditches, is a major tributary of the lower Maumee River, which outlets to Lake Erie (TMACOG 2009). In terms of important environmental features, the majority of the geologic area known as the Oak Openings Region lies within the Swan Creek Watershed. Oak Openings is a region of very rare ecosystems that are home to the highest number of state-listed species in Ohio, including the Lark Sparrow and the Karner Blue Butterfly (TMACOG 2007).
The watershed is comprised of a mixture of agricultural lands, cities, and suburban developments, and several jurisdictions within the watershed are beginning to feel the pressure of urban sprawl. From a government perspective, the watershed is comprised of twenty-three political jurisdictions: five villages, two cities, thirteen townships, and three counties (see Figure 9) (TMACOG 2009).
5.3.2 Origin of the Swan Creek Watershed Balanced Growth Plan. Although watershed groups have existed for years in the Swan Creek Watershed, no one watershed group had the capacity to take on the Balanced Growth Program. The Toledo Metropolitan Area Council of Governments (TMACOG) is a Regional Council of Governments that covers most of the watershed and works with the local governments within the watershed on problems that cross jurisdictional boundaries, such as transportation and environmental issues. TMACOG has been in existence in some form since the 1960s and, in the 1970s, became heavily involved in water quality issues (TMACOG 2009b). TMACOG initiated the grant application for the Swan Creek Watershed Balanced Growth Plan (TMACOG 2009). Once the grant proposal was accepted by OLEC, the staff devoted two representatives from TMACOG to the project, one representative from Lucas Soil and Water Conservation District (SWCD), and a GIS consultant (TMACOG 2007). With the exception of the Lucas SWCD staff member, the staff members stayed consistent throughout the project.
5.3.3 Planning Partnership Characteristics. The intention of TMACOG was to form a watershed planning partnership comprised of high-level government officials, such as county commissioners, township trustees, and city councilmen, with the hope that these people could collectively develop a "consensus-based watershed-scale land use plan that could be implemented without conflict because all of the affected parties" had taken part in the formation of the plan (TMACOG 2009). In addition, the staff chose to form a Technical Committee comprised of members of the watershed who were not public officials but who had special knowledge that they could contribute to the designation of priority areas. The Technical Committee was to provide an advisory function to the Planning Partnership, answering any of their more technical questions. However, as one TMACOG staff member noted, Swan Creek isn’t good enough or bad enough to get people too excited. So, despite several invitations to local governments to participate, the turnout at the Watershed Planning Partnership meetings was low, and, by default, the Technical Committee became the ad hoc decision making body in Swan Creek Balanced Growth Project. The Technical Committee was chaired by a Lucas County Commissioner and vice-chaired by the Fulton County Planning Commission Director. The remainder of the team was comprised of a wide range of stakeholders and professionals, representing conservation, development, agriculture, public works and engineering departments, zoning departments and park districts (TMACOG 2009). The Technical Committee also had representation from state government, including the OLEC, the Ohio Department of Transportation (ODOT), the ODNR Division of Forestry, and the USDA Natural Resources Conservation Service (TMACOG 2009). In addition, several citizens attended Technical Committee meetings, which they learned of through staff presentations at their local government public meetings (TMACOG 2009).

5.3.4 Plan Development Process. The Technical Committee chose the criteria for assessing the watershed and drafting the priority areas. GIS was utilized to perform this analysis with the
assistance of a GIS consultant. Once the first draft was complete, the Technical Committee commented on draft Priority Area maps and worked through any conflicts with designations. Then, staff members began the work of obtaining feedback and approvals from each of the individual local governments. Because the elected officials for the most part had not been involved in the development of the plan as originally intended, the process of reviewing the plan with each government was time consuming. Decisions with regards to changes to the plans were then made on a jurisdiction-by-jurisdiction basis rather than at the overall watershed level. Over 20 public meetings and 5 watershed meetings were required to receive input and achieve resolution approvals from the required percentage of local governments.

The Technical Committee made some decisions with regards to their approach to the designation of Priority Areas. First, like in the Rocky River UWB Watershed pilot project, the Technical Committee quickly found that the needs and methods of conservation necessary to preserve environmentally sensitive areas, such as the valuable Oak Openings Region, are vastly different than those which should be applied to agricultural activities. They also realized that, because of the importance of agricultural to the watershed’s economy and heritage, it must be handled separately from the PCA designation. Therefore, the Swan Creek Technical Committee also created PAAs that were intended to preserve commodity agricultural uses (TMACOG 2009). With agricultural areas removed from the PCA designation, PCAs then focused entirely on the protection and conservation of natural, sensitive areas, like riparian zones, rare habitat, floodplains, and wetlands, and the ecological benefits and processes that these areas provide (TMACOG 2009).

Second, the original Balanced Growth Program lumped all development uses into one category. Yet, the Technical Committee felt that residential, commercial, and industrial developments each had unique needs and the characteristics of land that might serve those needs would vary. Therefore, the Technical Committee developed a different set of criteria for each of these types
of development, thus creating a higher level of detail in land use planning. Each type of PDA had its own map for the sake of the watershed’s use, but the Technical Committee provided the State with one map of combined PDAs, per the recommendations of the Balanced Growth Program (TMACOG 2009).

Figure 10 below is the final Swan Creek Balanced Growth Plan, and Figure 11 summarizes the priority area selection criteria that were voted on by the Technical Committee to create the map. It is important to note that, unlike many of the other pilot watersheds, the Swan Creek Technical Committee chose to eliminate criteria/data which had “a low level of long-term certainty” which eventually included existing zoning, Land Use Plan and Comprehensive Plan designations, plans for the future extension of water and sewer districts, and other long-range infrastructure expansion plans. The Committee instead chose to focus on characteristics that were reasonably permanent and had low variability (TMACOG 2009).

Figure 10. Swan Creek Balanced Growth plan (TMACOG 2009).
Figure 11. Priority Area Selection Criteria Summary (TMACOG 2009).

5.3.5 Status. The Swan Creek Watershed Balanced Growth Plan has over the 75% support required by the Balanced Growth Program, and TMACOG is currently seeking the approval of OLEC (as of April 2009).

5.3.6 Implementation. TMACOG was aware of four local governments, out of 23, who are updating the comprehensive land use plans and will include the results of the Swan Creek Watershed Balanced Growth Plan. TMACOG was not aware of any local jurisdictions adopting the model ordinances promoted by the Balanced Growth Program. A TMACOG staff member commented that, if nothing else, the Balanced Growth Plan forced local jurisdictions, many for the first time in a long time, to take a look at where they are and where they want to be with regards to the development of their land, and it forced them to talk to their neighbors about the same. If nothing else, the program served as a significant regional planning exercise which will likely have indirect repercussions, if not direct.
Section 5.4 Chagrin River Watershed

5.4.1 Watershed Characteristics. At 267 square miles, the Chagrin River Watershed located east of Cleveland, Ohio is the largest pilot project watershed (see Figure 12). Low density residential is the primary land use within the watershed; however, approximately 50% of the watershed is undeveloped or underdeveloped (CRWP 2006). In addition, the areas in and around the watershed continue to feel development pressure from the outward expansion of the City of Cleveland (CRWP 2006). The watershed has seen a population increase of 16.7% from 1970 to 2000 (CRWP 2006). In terms of geopolitical composition, the watershed is comprised of 4 counties, 14 cities, 8 villages, ten townships and four park districts (see Figure 13).

Characterized by high quality forests and aquatic habitat, the Chagrin River Watershed has seventy-one miles of the river designated as State Scenic River (CRWP 2006). Residents of the watershed value environmental health at the same level that they value maintaining the visual character and green space of their community.
Figure 12. Chagrin River location map.
5.4.2 Origin of Plan and Planning Partnership Characteristics. The Chagrin Watershed Partners, Inc. (CRWP), an established watershed partnership, initiated the grant application to lead the Balanced Growth program. CRWP was formed in 1996 in response to growing fears over flooding, erosion, and water quality (CRWP 2006). Ninety-five percent of the local governments within the watershed are dues-paying members of CRWP. In return, CRWP provides technical assistance, guidance on model ordinances, a model NPDES Phase II Storm Water Management program, and stakeholder education. CRWP is funded by a combination of membership dues, foundation grants, and federal and state grants (CRWP 2006). Over the years, CRWP has developed a trusting relationship with most of the jurisdictions within its membership. The Balanced Growth Program, when it became available, seemed to be a natural extension of what CRWP was already doing and what it was already advising its members to do. CRWP also felt that the Balanced Growth program was an opportunity to bring funding and incentives to its watershed and an opportunity to reinforce the zoning decisions of the local governments. The director of CRWP has been the same throughout the Balanced Growth
process, and she has been supported by three other staff members and a consultant, which was hired to perform the GIS analysis.

5.4.3 Plan Development. A steering committee that included representatives from some local governments was involved in the beginning of the process to guide the criteria by which to establish the priority areas. After that, however, the majority of the data collection and the GIS analyses were done by the staff and consultant. The first draft of the plan was then presented to the various local jurisdictions within the community for their comments, recommended revisions, and, finally, for their approvals. Citizens were only involved in the process so far as they had opportunity to provide comments at public meetings. In some cases, CRWP facilitated meetings between neighboring jurisdictions to work out coordinated, shared PCAs and PDAs.

5.4.5 Status. As of May 2009, the Chagrin River Watershed Balanced Growth Program has resolutions of approval representing 40.8% of the watershed land area, 54% of the population, and 64.7% of the watershed communities. CRWP is confident that it will reach the required 75% eventually.

5.4.6 Implementation. CRWP believes that five or six communities will update their comprehensive plans with the Balanced Growth Plan to start. CRWP had earmarked some of the OLEC grant money as pass through funding to the City of Aurora and Newbury Township to aid them in updating their comprehensive plans. CRWP has recently received another grant that will be used to fund two more comprehensive plan updates.

Because CRWP has been working with their local government to improve their zoning codes for years, many of the watershed’s communities had already adopted some or all of the model ordinances that are now recommended by the Balanced Growth Program. Fourteen
communities, for example, already have riparian setbacks, and 72% of the communities have revisions to their engineering requirements which allow for green infrastructure.
Chapter 6: The Effectiveness of the Balanced Growth Program

In this chapter, the pilot projects introduced in the previous chapter will be analyzed in light of the two research questions proposed in Chapter 1.

Research Question 1: How effectively has the Lake Erie Balanced Growth Program been able to produce watershed plans that garner the support of the political jurisdictions within the watersheds such that the plans will likely be implemented in a consistent and widespread manner throughout the watersheds?

The goal here is to gauge the levels of effectiveness of each of the pilot projects and then weigh the overall effectiveness of the program based on these findings. To gauge the overall effectiveness, the research question itself must be dissected and each piece assessed individually as done in the subsections below. Table 6.1 summarizes the evaluation of the Balanced Growth Program associated with Research Question 1.

6.1.1. “The Lake Erie Balanced Growth Program has been able to produce watershed plans.” Though this may seem elementary, it is an important first step to determine if these individual Balanced Growth Pilot Projects were able to produce complete watershed Balanced Growth plans within the bounds of the funding, resources, and time frame offered by the Balanced Growth Program through the OLEC. With the exception of Chippewa Creek, each pilot project received a specific amount of grant money from OLEC, allocated in one-year increments over three years, with a deadline of January 1, 2009. The deadline has since been extended by OLEC to March 2009. Chippewa Creek received a separate, much smaller grant through the Ohio Coastal Management Assistance Program with matching funds from local sources. All of the pilot projects received continuous support and feedback from OLEC staff,
including quarterly meetings at which all pilot project directors met to discuss ideas, roadblocks, and approaches to implementing the program.

Referring to Table 1, a “Complete Plan” is defined as a plan that has achieved the support of political jurisdictions amounting to 75% of the watershed land area, 75% of the watershed population, and 75% of the watershed’s local governments. “Yes” under the category of “Complete Plan” means that the plan has achieved the required approval. In a few cases, the OLEC has forgiven one of the three percentage requirements and has indicated that it will approve the particular Balanced Growth plan with its current local government support. In these cases, I have assigned the pilot project a “yes.” “Pending” means that the plan has not achieved the majority of the approval required, but the watershed planning partnership is optimistic that the required approvals will be achieved soon. The last row in the Balanced Growth Resources section of the table identifies whether or not the plan has been approved by the OLEC. “Yes” means that it has received official approval. “Pending” means that all of the approvals have been reached, and the Balanced Growth report is being finalized for submittal to OLEC. “No” means that the time frame for achieving OLEC approval remains uncertain.
<table>
<thead>
<tr>
<th>Pilot Projects</th>
<th>Chippewa Creek</th>
<th>Upper West Branch of Rocky River</th>
<th>Swan Creek</th>
<th>Chagrin River</th>
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<tr>
<td><strong>Funding</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding Amount</td>
<td>$35,950 with matching local funds</td>
<td>$199,657</td>
<td>$196,657</td>
<td>$200,000</td>
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<td>Was the Funding Adequate?</td>
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<td><strong>Time</strong></td>
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<td>9/14/2005</td>
<td>9/14/2005</td>
<td>9/14/2005</td>
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<td>March-09</td>
<td>March-09</td>
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<tr>
<td>Approval Date</td>
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<td><strong>Indicators of Support from Local Government</strong></td>
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<td></td>
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<td></td>
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<tr>
<td>Percentage of the Area of the Watershed Approving the Plan</td>
<td>98%</td>
<td>73%</td>
<td>91%</td>
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<td>Percentage of the Population of the Watershed Approving the Plan</td>
<td>Over 75%</td>
<td>93%</td>
<td>97%</td>
<td>50%</td>
</tr>
<tr>
<td>Percentage of the Local Governments Approving the Plan</td>
<td>66%</td>
<td>80%</td>
<td>87%</td>
<td>59%</td>
</tr>
<tr>
<td>Motivation behind Plan Adoption</td>
<td>1. Avoid future flooding</td>
<td>1. Potential benefits from incentives</td>
<td>1. Plan is in keeping with exiting planning goals</td>
<td>1. Preservation of existing scenic character / in keeping with current planning goals</td>
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<td>Percentage of local governments which were represented on the advisory committee responsible for overseeing the first draft of the Balanced Growth Plan</td>
<td>3 of 3</td>
<td>1 of 11</td>
<td>10 of 16</td>
<td>0 of 36</td>
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<td>Likely role of local governments in maintaining plan into the future.</td>
<td>Representation &amp; Funding</td>
<td>No Role</td>
<td>Representation, Funding mechanism yet to be identified</td>
<td>Funding</td>
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<td>Perception of the strength or weakness of the state incentives.</td>
<td>According to Planning Partnership Directors</td>
<td>Weak</td>
<td>Weak</td>
<td>Weak</td>
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<tr>
<td>According to Local Governments</td>
<td>Uncertainty, but optimistic about strength</td>
<td>Uncertainty, but optimistic about strength</td>
<td>Uncertainty, but optimistic about strength</td>
<td>Uncertainty, but optimistic about strength</td>
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<tr>
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<td></td>
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<td>Consistency in the rules used to designate PDAs and PCAs from jurisdiction to jurisdiction within the same watershed</td>
<td>High</td>
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<td>Medium/Low</td>
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<td>Use of Existing Zoning as Criteria for PDA</td>
<td>No</td>
<td>Yes</td>
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<td>Yes</td>
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</table>

*According to watershed planning partnership directors

*OLEC moved deadline from December 2008 to March 2009

*Requirement forgiven by OLEC

*Number of local governments is actually 5, but two have negligible area in watershed and were discounted for this section.
As Table 1 indicates, OLEC has only officially approved the Chippewa Creek Balanced Growth Plan, and CRCPO was able to achieve this by the original OLEC deadline of December 2008. Both the Swan Creek and the Rocky River Balanced Growth projects have achieved the required levels of local government support, and both are working on finalizing their reports for submittal to OLEC. The Chagrin River Balanced Growth project lags behind the other three. All four watershed partnership directors indicated that the funding, timeframe, and other resources provided by the OLEC through the Balanced Growth Program were adequate to develop the plan and achieve local government approvals. Time, however, has become an issue for the Chagrin River Pilot Project, which has the largest watershed and the most local governments of the pilot projects. CRWP has indicated that less time should have been spent in working out the details of the analysis methodology, and more time should have been spent sooner on discussing the Balanced Growth Program with local governments.

6.1.2. “The watershed plans garner the support of the political jurisdictions within the watershed such that the plans will likely be implemented.” Implementation of the Balanced Growth Plan can take the form of several different actions. One implementation measure is to adopt the model ordinances recommended by the Balanced Growth Program, which include riparian setbacks and floodplain protection. Another implementation measure is updating a local government’s comprehensive plan to include the results of the Balanced Growth Plan. Other implementation measures might include considering each new development proposal in light of the Balanced Growth Plan or directing local resources to support development plans within PDAs and support conservation efforts in PCAs.

At this point in the program, it is too early to evaluate the project implementation itself. For example, several local governments have adopted model ordinances, yet these actions cannot, in most cases, be attributed solely to the Balanced Growth Plan per se, but rather are due to the previous and continued effort of the watershed partnership directors to influence the land use
behavior of their watersheds both within and outside of the Balanced Growth Program. Two of the three main cities within the Chippewa Creek watershed have adopted the model ordinances, and the third city is working on doing the same. CRWP, which has been promoting similar model ordinances for years, has kept a detailed inventory of the ordinances of its member communities. For example, at present, communities representing 44% of the watershed have riparian and wetland setbacks, 75% have erosion and sediment control regulations, and 22% have conservation development codes (CRWP 2008). In contrast, in the Upper West Branch of the Rocky River Watershed, none of the local governments have adopted model ordinances to date.

Looking at another implementation measure, a few local governments among the pilot projects have already updated their comprehensive plans with the results of their Balanced Growth Plans, and a few more are in the process of doing so. However, comprehensive plans are often updated at regular intervals every few years, and several local governments who will likely include the Balanced Growth Plan in their comprehensive plans will not do so until the next scheduled plan update, which may be a few years down the road.

Again, because the pilot projects are just now completing their plans, it is not fair to evaluate the effectiveness of the Balanced Growth Program at this time based on these implementation techniques. Therefore, instead of looking at the implementation that has occurred to date, we have assessed the support of the local governments for the watershed Balanced Growth plans as a gauge for the likelihood that these governments will implement the plans in the future. The results of this assessment are also summarized in Table 1.

Approval of Plan. The first indicator of support is the adoption of a resolution approving the watershed plan, as required by the Balanced Growth Program. Without support from 75% of the political jurisdictions, also representing 75% of the land area of the watershed and 75% of
the population of the watershed, the Balanced Growth Plan will not be approved by OLEC. As can be seen in Table 1, all but the Chagrin River watershed have attained the required local government approvals.

**Involvement in Plan Creation.** A political jurisdiction that approves the Balanced Growth plan by resolution is not required to do anything towards implementation of the plan. Therefore, a second, possibly more telling, indicator of support is the involvement of local government representatives in the watershed planning partnership or the technical committee which advised and supervised the drafting of the Balanced Growth Plan. Direct involvement in the creation of the plan is both an indication of genuine interest and an investment of time and resources, both of which suggest a greater likelihood that the local government takes ownership in the plan and, therefore, has a greater inclination to utilize the plan in the future.

As Table 1 indicates, the level of government participation varied dramatically across the pilot projects. All three of the primary cities within the Chippewa Creek watershed fully participated in the development of the Balanced Growth Plan with support from the city mayors. With so few local governments to involve, this cooperation and involvement was much easier to achieve. In the Rocky River project, only one of the local governments, Medina County, participated in the creation of the plan, despite efforts in the beginning of the project to attract other local governments to join the effort. TMACOG and the Swan Creek Balanced Growth Project faced similar difficulties in achieving local government participation in the watershed planning partnership; however, representatives from several local governments within the Swan Creek watershed donated their time to the technical advisory committee that ultimately directed the development of the balanced growth plan. Despite the involvement of these representatives on the technical advisory committee, TMACOG still found it difficult to achieve political support from local governments because the elected officials, and thus the governmental decision-makers, were not involved in the process. CRWP made similar overtures to the local governments
within the Chagrin River watershed to get involved in the Balanced Growth Project. Receiving little response, CRWP worked virtually alone in creating the first draft of the Balanced Growth plan.

**Motivation to Approve Plan.** A third indicator of support that may characterize a government’s likelihood of implementing the Balanced Growth plan is its motivation behind approving the plan. In this study, I did not have the resources to survey all of the local governments involved in each of the pilot watersheds. However, interviews with the directors of each pilot project and representatives from a few local governments in each watershed have provided enough information to generalize the nature of the motivation behind the approvals in each watershed. Clearly, all of the local governments are interested in taking advantage of any incentive that might benefit their communities. They all, to some degree, also have interest in environmental quality; however, this was rarely, if ever, mentioned as the main motivating factor. Beyond that, local governments in the Swan Creek Watershed and the Chagrin River Watershed were receptive to the Balanced Growth Plan because it largely supported their existing land use decisions and/or zoning. The local governments in the Chagrin River Watershed are particularly interested in maintaining the scenic beauty that characterizes their area. In the Rocky River Watershed, several local governments, primarily the rural townships, were wary of the Balanced Growth Program and approved it only when they felt that it would not adversely affect their communities. In other words, the motivation was that there were no disincentives and that there was hope for incentives. Lastly, Chippewa Creek’s motivation is palpable in that the watershed very recently experienced a devastating 500-year flood. The watershed communities are anxious to put into place any measures that may prevent a future flood.

**Long-Term Maintenance of Plan.** Often, despite the significant amount of time and resources invested in the watershed planning effort, implementation falls well short of hopes and expectations because the plan, developed collaboratively, has no “home,” little legal basis, and
therefore a low level of legitimacy (Mitchell 2005). The fourth indicator of support from political jurisdictions, therefore, is the local government’s involvement in the long-term maintenance of the plan, namely whether or not each local government participates in and/or pays fees to support the permanent home of the plan. In other words, for the plan to be utilized long term, it must be placed in the care of an organization that will maintain it and update it over time. If local governments play a financial role in maintaining the plan, they are more likely to feel ownership of the plan and its implementation.

As noted in Table 1, the Chippewa Creek Watershed Planning Partnership is still working out the details as to how the plan will be maintained into the future. CRCPO believes that the Partnership will ultimately be funded, at least in part, by each of the three local governments and that representatives of each jurisdiction will sit on the partnership. The Rocky River Balanced Growth Plan, upon approval by OLEC, will be handed over to the Medina County Department of Planning Services, which will administer the plan. The local governments in Medina County will have no role in maintenance of the plan beyond approving those changes that directly apply to them individually. For the Swan Creek Balanced Growth Plan, TMACOG has recommended that a standing committee of TMACOG be formed with representation from all of the participating local governments. This committee will maintain the plan, although a funding source has not yet been identified. The Chagrin River Balanced Growth Plan already has a home in the CRWP, which is partially funded by membership dues from the local governments within the watershed.

**Strength of Incentives.** The last indicator of support from political jurisdictions is the perceived strength of the incentives for implementation. The incentives to adopt a resolution of support for the plan need only be minimal if nothing is required of the local government beyond the resolution. In many cases, the local governments were not required to devote resources to the creation of the plan; for the most part, any changes they requested to the plan were honored;
they are in no way required to implement the plan; and approving the plan by resolution may help them in the future. These were reasons enough to support the plan through approval. Implementation of the plan, however, requires more substantial incentives, particularly in jurisdictions which primarily have PCAs, where implementation of the plan could result in loss of tax potential. At this point, only state incentives are available equally to all of the political jurisdictions involved. Therefore, the perception of strength or weakness of these incentives is an important indicator of the support of local governments to implement the plan. All of the watersheds planning partnership directors adamantly perceive the state incentives to be weak and believe they will do little to encourage the implementation of the Balanced Growth plans. Most of the local governments I spoke with knew of the state incentives only obliquely and were cautiously optimistic about what they might provide. Many of them stated that any opportunity to improve their chances of winning competitive grants is welcome.

6.1.3. “The plans will be implemented in a consistent manner throughout the watershed.” Consistency in implementation can be looked at from several different angles: consistency in process of how each development proposal is evaluated against the Balanced Growth plan; consistency in regulations which protect critical features; and consistency in the rules used to designate PDAs, PCAs, and PAAs throughout the watershed. At this point, none of the watershed partnerships, much less the local governments, has worked out the details of how the plan will be utilized in the development approval process. Therefore, this indicator cannot be used for evaluation. In addition, at this point any model ordinances which have been adopted by a local jurisdiction are largely due to influences outside the Balanced Growth Program, and thus this is not a good indicator for the effectiveness of Balanced Growth itself. However, the last indicator, consistency in the rules used to designate priority areas, can be evaluated to determine consistency in future implementation.
The evaluation of consistency in priority area designation is summarized in Table 1. A “high” level of consistency indicates that the same criteria were applied across the entire watershed to designate PDAs and PCAs, with little to no changes made by local governments. A “medium” level of consistency indicates that the same criteria were applied across the entire watershed to prepare the first draft of PDAs and PCAs, but a few subsequent isolated changes were made to these designations based on requests from local governments. A “low” level of consistency indicates that the same criteria were applied across the entire watershed to prepare the first draft of PDAs and PCAs, but widespread subsequent changes were made to these designations based on requests from local governments.

In the Chippewa Creek pilot project, representatives on the watershed planning partnership voted on the criteria for establishing the priority areas, the same criteria were applied through the entire watershed, and no notable changes were made to the PCAs and PDAs prior to the approval of the Balanced Growth Plan by the local governments. Therefore, the Chippewa Creek project received a “high” rating.

In the Rocky River pilot project, a few isolated compromises were made. The planning partnership chose to create a Local Preference Area because the partnership criteria for development were in conflict with the local criteria for conservation in Hinckley and Medina Townships. Also, because of the resolution at which the partnership did its GIS analysis, some land areas fit both the criteria for conservation and for development. As overlap areas, they will each be dealt with individually, and conservation developments will be encouraged. These overlap areas leave room for interpretation and, therefore, inconsistency in application, resulting in a “medium” ranking.

In the Swan Creek Watershed, TMACOG found that because elected officials from each of the local governments were not involved in the drafting of the watershed plan, the plan was subject
to more scrutiny and changes as TMACOG presented it to the individual jurisdictions. Therefore, several small changes and a few major changes to the plan were requested by local governments throughout the watershed. The final Balanced Growth plan has two special priority areas where JEDD agreements influence the development of the areas. Based on these adjustments, Swan Creek received a “medium/low” rating with regards to consistency.

Because Chagrin River is such a large watershed with so many member communities, CRWP could not feasibly involve all of them in the preparation of the first draft of PCAs and PDAs. Therefore, once the first draft was complete, CRWP took the plan to each of the local governments individually and worked with them to modify the plan to their liking. As a result, although the PCAs and PDAs were originally established based on the same criteria throughout the watershed, in revising the plan, the method of the determining the final PCAs and PDAs for each political jurisdiction was different, depending on the desires of the local government. For example, some local governments wanted the priority areas to follow parcel lines, while other did not, for fear that the plan would be confused for a zoning map. Because of the significant amount of irregularity among jurisdictions in the designation of the priority areas, Chagrin River received a “low” rating with regards to consistency.

*Existing Zoning.* The use of existing zoning designations as a criterion used to identify PDAs is related to this discussion of the consistency with which priority areas are designated across the watershed. As a few watershed groups have argued, zoning is an indicator of where existing infrastructure is located and where development is desired to be located, and ignoring existing zoning in the process of designating priority areas opens the potential for additional conflicts with local governments. As with the case of Chagrin, the CRWP largely sold its local communities to the notion of the Balanced Growth Program as further support for their zoning and land use decisions. Yet, zoning codes and designations vary from one local government to
the next. They change over time and sometimes with the election cycle. Also, zoning
designations are often established with little regard for permanent and sensitive natural
features. Therefore, the use of existing zoning designations as a criterion potentially adds
uncertainty to the Balanced Growth Plan and contributes to inconsistencies in the delineation of
priority areas across the watershed. For these reasons, the use of existing zoning was added
as an indicator in the analysis of the last section of Research Question 1.

6.1.4. Discussion. For the most part, through the Balanced Growth Program, watershed
planning partnerships produced Balanced Growth Watershed Plans within the bounds of the
resources provided by the program. Again, the Chagrin River Watershed may have been
simply too large to capture support within the given time frame. However, with the lessons
learned from this pilot project, it might be feasible to apply the program to a watershed of similar
size if a different approach is taken. In other words, CRWP spent a considerable amount of
time in the beginning of the process ironing out the analysis methodology. In future applications
of the program, that methodology would likely be more solidified from the beginning, leaving
more time to talk with local governments directly and obtain their support.

The ability of the program to ensure that the Balanced Growth Plans will actually be
implemented and implemented consistently across the watershed is more problematic. As was
discussed in Chapter 3, local governments are most likely to implement watershed plans if they
are faced with a severe environmental issue. Chippewa Creek is the only watershed which falls
into this category, and the likelihood of its Balanced Growth Plan being implemented is high.
The involvement of Chippewa Creek’s local governments in the development of the plan and
potentially in the maintenance of the plan into the future may be more a result of the severe
environmental issue than an interest in the Balanced Growth Program per se, but that could not
be determined from this study.
At this point, the likelihood of the local governments within the Rocky River UWB watershed implementing the Balanced Growth Plan is low. No local governments participated on a watershed level in the creation of the plan, and none will participate in the maintenance of the plan. The main motivating factor for the local governments in this watershed to implement the Balanced Growth Plan is the state incentive package, and at this time the impact of the incentive package is uncertain at best. Of the pilot projects, this is the only watershed where none of the local governments is moving towards incorporation of the plan into its comprehensive plan or adoption of the model ordinances, except where necessary for NPDES Phase II compliance.

The Swan Creek Balanced Growth Plan appears to have a higher chance of being implemented than that of Rocky River because the plan is in keeping with the land use planning goals of several of the local governments. In many cases, the Balanced Growth Plan was actually adjusted to make this true. In addition, significant interest in the plan was exhibited by representatives of several local governments within the watershed who participated on the Technical Advisory Committee, which contributes to a higher likelihood of plan implementation.

The analysis above is somewhat misleading for the case of Chagrin River. Although Chagrin River has lagged behind the other pilot projects in local government approvals, the CRWP has been successfully encouraging local governments to adopt the model ordinances and to incorporate the priority areas into their comprehensive plans. Lack of local government involvement in the creation of the plan may be less due to disinterest than to learned reliance of these governments on CRWP to hold their hands individually through these types of programs. Five or six local governments have already updated their comprehensive plans with the results of the Chagrin River Balanced Growth Plan, and several more have adopted the model ordinances proposed by Balanced Growth Program. How much of these successes can be directly attributed to the Balanced Growth Program alone is unclear. CRWP has been working
with its communities for years to adopt similar model ordinances to protect sensitive areas. However, the Balanced Growth Program has leant additional weight and resources to the effort. Because of the limitation of the current data, the long-term maintenance and home of the plan becomes particularly important. Although CRWP has fallen behind the other pilot projects in achieving the necessary approvals for OLEC approval, in the long run, CRWP may be more successful in achieving a relatively consistent protection of sensitive areas and water quality throughout the watershed.
Chapter 7: Roadblocks to Implementation

This chapter focuses on the second research question dealing with the roadblocks and challenges that the Balanced Growth pilot projects encountered.

**Research Question 2:** What major roadblocks were encountered in the implementation of the Balanced Growth program, and what steps could be taken in the future to avoid or overcome these roadblocks to achieve the multi-jurisdictional implementation of the Balanced Growth program?

In this chapter, the roadblocks will be identified, and the characteristics of each of the watershed pilot projects that may have contributed to their success or failure in overcoming these roadblocks will be examined. In Section 7.1, each of the roadblocks will be described, and the roadblocks encountered by each pilot project will be identified. In Section 7.2, the relationship between the characteristics of the watershed and a pilot project’s capacity for overcoming each of the roadblocks will be explained. In Section 7.3 and Section 7.4, the characteristics of the watershed planning effort and the perspectives of the local governments respectively are related to a pilot project’s capacity for overcoming the roadblocks. Finally, in Section 7.5, each of the pilot projects will be analyzed based on the relationships developed in the previous sections.

Section 7.1 Identifying the Roadblocks

7.1.1. Discussion of Roadblocks. Table 2 summarizes the roadblocks experienced by the pilot projects. In the table, unless otherwise specified, a rating of “yes” means that this roadblock posed a significant problem for the pilot project, and a rating of “no” means that this roadblock had little or no influence on the pilot project. In the remainder of this section, each of the roadblocks is defined.
**Governmental Fragmentation.** Fragmentation of governments in the watershed, each local government with its own growth agendas, created difficulty in achieving agreement on a watershed plan. Also, fragmentation from one level of government to another or fragmentation among agencies at the same level of government with regards to mandates and/or objectives resulted in confusion about the roles and responsibilities of each in the implementation of the Balanced Growth Plan. The Lake Erie Balanced Growth Program has eliminated some potential aspects of fragmentation in focusing solely on comprehensive planning and zoning, which generally rests in the hands of one agency within local governments. However, all of the pilot projects were frustrated to some degree by the fragmentation of government within their watersheds.

**Table 2. Roadblocks encountered by Balanced Growth Pilot Projects.**

<table>
<thead>
<tr>
<th>Roadblock/Conflict</th>
<th>Chippewa Creek</th>
<th>Upper West Branch of Rocky River</th>
<th>Swan Creek</th>
<th>Chagrin River</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governmental Fragmentation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Limited Political Support</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Mistrust/Fear</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Lack of watershed-level participation by local governments</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>No clear plan for implementation by local governments</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Uncertainties Surrounding Techniques</td>
<td>Yes: Wetlands banking; Tax abatement for PCAs</td>
<td>Yes: Riparian setbacks for farming activities</td>
<td>Yes: Achieving mechanisms that share burden of conservation</td>
<td>Yes: Conservation Development; TDR</td>
</tr>
<tr>
<td>Concentration of conservation in one or more jurisdictions does not align with jurisdictions' future development goals</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Limited Political Support.** Political support takes various forms, from approval of the watershed plan to actively taking a role in the development of the plan. The perceptions that participation in a watershed-level activity may be a forfeiting of some local power or may be a waste of time
and resources on efforts not directly benefiting local constituents are political concerns that may hamper an elected officials willingness to get involved in or approve the Watershed Balanced Growth Plan. Sometimes, the influence of politics is more direct, such as the refusal to approve a plan in the face of vocal public opposition, despite the merits of the plan.

Mistrust. Some local governments mistrust either the individuals or the watershed organization leading the planning partnership, or they mistrust state government interfering in local land use concerns. This lack of trust affects the willingness of the local government to participate in the Balanced Growth Program and ultimately to approve the plan.

Lack of Watershed-Level Participation by Local Governments. Local governments did not participate in the development of the Balanced Growth plan on a watershed-wide basis, but rather restricted their focus to their own jurisdictions. The lack of participation at the watershed-level resulted in additional work for directors of the watershed planning partnerships, who were then forced to sell the Balanced Growth plan jurisdiction-by-jurisdiction and revise the plan on an individual jurisdictional basis to achieve the necessary local government approvals.

No clear plan for implementation by local governments. Several of the local governments within the pilot project are not sure how the Balanced Growth Plan will be implemented in their jurisdictions.

Uncertainties Surrounding Techniques. The development techniques and/or the cost/benefit sharing tools (e.g. transfer of development rights, conservation subdivisions) suggested by the Balanced Growth Program are unproven, unfamiliar, or not readily available.

Concentration of conservation does not align with jurisdiction’s future development goals. The physical layout of the watershed resulted in areas that have a high concentration of sensitive environmental features that are highly desirable for conservation. This high concentration of
priority conservation areas impacted some political jurisdictions much more than others and was, in some cases, in conflict with a jurisdiction’s goals for future development.

Many of the roadblocks or conflicts encountered in the process of implementing the Balanced Growth Program were also described in the literature as common problems faced by collaborative environmental management efforts. A few of prominent problems mentioned in the literature, such as a lack of resources or a lack of organizational guidance, were not faced by the Balanced Growth pilot projects and have therefore been omitted from the evaluation. Most resources, for example, were obtained through the grant money and by the watershed planning partnership agency. All of the agency directors felt that they had the necessary resources to accomplish the project. The only resource the local governments were requested to contribute was time. That said, all of the funding was utilized in the development of the plan, so additional funding will likely be necessary to implement each plan and maintain it into the future.

The second roadblock omitted from the analysis is a lack of organizational guidance, which means that local government administrators did not know how to relate the work being done in the watershed planning partnership by local government representatives to the decision-making processes occurring within the local government itself. This roadblock was not experienced by the pilot projects for a couple of reasons. The Chagrin River and the Rocky River UWB projects had no real representation from local governments in the formation of the first drafts of their Balanced Growth plans. When seeking local government approvals of the plans, CRWP and Medina County SWCD went directly to the legislative body of each local government, resulting in no opportunity for organizational confusion. In the Swan Creek watershed, the technical committee members from local governments volunteered to be involved in the development of the Balanced Growth plan and did not necessarily act as representatives from their employers. Therefore, TMACOG still had to approach each local government individually in a similar
manner as CRWP and Medina County SWCD. Only the Chippewa Creek pilot project requested that the mayors of each city within the watershed choose representatives for the watershed partnership. No organizational confusion appeared to arise. This may be due to both the clarity of the mission, which was to prevent future flooding, and to the non-binding nature of the Balanced Growth plan.

**Section 7.2 Qualities of the Watershed**

This section focuses on the characteristics of the watershed to which the Balanced Growth program is applied that may have impacted the success or failure of the collaborative watershed management effort at overcoming roadblocks encountered. Table 3 summarizes the characteristics of each pilot project.

**7.2.1 Size of the Watershed.** The size and physical composition of the watershed play a role in the success of a watershed management effort because they contribute to the complexity of the problem. Obviously, larger watersheds are likely to have more political jurisdictions, more stakeholders, more diversity in land use, and more opportunities for conflict. In addition to the issue of complexity in developing the watershed plan, there is also the issue of effectiveness. Watershed planning efforts that are applied to smaller scale watersheds are generally more effective than large-scale watershed plans (Iles and Oleskiewicz). According to the Center for Watershed Protection (CWP), the scale of the watershed is “the critical factor in preparing effective local watershed plans” (Schueler and Holland 2002, 162). The CWP considers 50 square miles or more to be too large of a scale at which to conduct watershed planning. According to CWP, beyond 50 square miles, watershed plans lose their focus. Too many stakeholders become involved, and the “responsibility for implementing the plan diminishes.” Individual projects become divorced from their impact on the water body in question. In short, watershed planning in a watershed larger than 50 square miles is “too big to be effective” (Schueler and Holland 2002, 163).
Relating the size of the watershed to the Balanced Growth Program roadblocks, the application of the program to larger watersheds increases the potential for the project to encounter any one of the roadblocks described in Section 7.1. However, larger watersheds particularly face the following two roadblocks: the exacerbation of governmental fragmentation because more political jurisdictions and agencies are involved and lack of watershed-level participation by local governments because achieving watershed-level meetings becomes increasingly unfeasible as the number of stakeholders increases.

7.2.2 Physical Composition of the Watershed. The CWP also notes that larger watersheds experience various types of water quality contamination sources, urban and non-urban, which complicate the planning process (Schueler and Holland 2002, 162). The physical composition of a watershed, regardless of the size of the watershed, contributes to the ease or complexity of the watershed management effort. Watersheds with uniform land use and a uniform dispersion of sensitive areas are likely be easier to plan and manage because landowners within the watershed are impacted similarly by the watershed management implementation and because the range of issues impacting the quality of the shared water body are limited (Schueler and Holland 2002, 146). Many watersheds, however, are not uniform and have areas of sensitivity concentrated in one area of a watershed or in one political jurisdiction within the watershed, while the areas better suited for development are concentrated in another. This can lead to conflict among watershed stakeholders when the responsibility of achieving or maintaining water quality burdens some more than others. Therefore, the physical composition of the watershed can impact the ability of a watershed planning project to overcome the following roadblocks: governmental fragmentation, willingness to participate on a watershed level, and the concentration of conservation areas in a few political jurisdictions.

7.2.3 Political Composition of the Watershed. Beyond the number of political jurisdictions within the focus watershed, the types of political jurisdictions that comprise the watershed can
also impact the complexity of the watershed planning process and how the watershed planning project is received. Ohio has three basic types of local governments: municipalities, counties, and townships. Municipalities include both cities and villages, with villages designated based on having populations of less than five thousand residents. In Ohio, these three types of political jurisdictions do not have equal powers. According to the Ohio Revised Code, townships are only eligible to adopt a “limited home rule government.” With regards to land development power, townships that have adopted limited home rule government have the power to govern their own zoning regulations. However, townships are not entirely independent. Proposed township zoning resolutions must be reviewed and approved by the county planning commission prior to their approval by township trustees. Townships must also rely on county government for engineering and soil and water conservation powers. Therefore, townships must still abide by county subdivision regulations, building codes, and erosion and sediment control regulations, all of which impact watershed planning efforts. Counties are permitted by the Ohio Revised Code to regulate building and zoning requirements in unincorporated areas of the county. However, if the townships within their boundaries have adopted their own zoning regulations, the county acts only in an advisory role. Counties have more control over land development regulations than townships in that they also have engineering and building regulatory authority. Yet, the powers of Ohio counties are limited to the powers expressly provided in the Ohio Revised Code. Municipalities have the greatest amount of power. Municipalities can choose to utilize the structure provided in the Ohio Revised Code, or they can choose to adopt their own charters that delineate how their government will function. Municipalities have full control over land development regulations within their boundaries, including zoning, engineering, and building codes (Ohio Revised Code 2008). Because of this disparity in the powers of the different types of local governments, in watersheds that are comprised of a variety local government types, watershed planning efforts may be more likely to encounter problems with governmental fragmentation, a lack of implementation strategy, and
uncertainties surrounding techniques. The county-township relationship may be the source of
the greatest level of confusion.

The character of land use within a watershed, often associated with the type of political
jurisdiction, can also impact how a watershed planning program is received. It has been
documented by studies that urban residents are generally more interested in local
environmental issues than rural residents (Van Liere and Dunlap 1980). One reason for this
divide is that rural residents often have jobs, such as farming and mining, that are “extractive” of
the natural environment, and, therefore, these residents have a utilitarian attitude towards
nature. They are heavily dependent on the use of the environment and therefore are less
focused on protection measures. A second reason for difference in attitudes between rural and
urban areas is also economic. Small towns and rural townships often rely on economic growth
for their survival and act to protect opportunities for economic growth at the expense of
environmental quality (Van Liere and Dunlap 1980). Residents of rural areas tend to be more
skeptical of watershed management efforts and tend to exhibit less trust in federal and state
government. Therefore, watersheds that contain higher percentages of rural townships may be
likely to face the challenges of a lack of political support, lack of trust in state government and
regional planning efforts, and a lack of willingness to participate in watershed-level activities.

7.2.4 Severe Environmental Issue. Watersheds that face severe environmental problems are
more likely to garner the attention of the public and of lawmakers and create the political
opportunity to achieve consensus in the watershed to accomplish significant watershed
management action (Lubell et al. 2002).

7.2.5 Grassroots Support/Social Values. Successful watershed management must either
overcome or work within the political system. If environmental stewardship is held by the
watershed community as a social value, watershed management efforts will likely have more
grassroots support and will therefore be more successful politically and practically than in communities that do not hold environmentalism as a social value (Lubell 2004a). Grassroots efforts can result in ordinances that encourage or even require watershed protection methods (Roy et al. 2008). Therefore, grassroots support can be a positive in overcoming the roadblocks of a lack of political support, a lack of watershed-level participation, mistrust, and no clear plan for implementation.

**Section 7.3 Qualities of the Collaborative Effort**

The characteristics of the watershed planning partnership and the process followed in the implementation of the Balanced Growth program also affected the pilot projects' abilities to overcome roadblocks. This section will describe these characteristics.

**7.3.1 Participation.** Achieving the right kind of participation is essential for the success of a collaborative effort. The “right” kind of participation involves geographic diversity and demographic diversity. It also involves determining where the power, both official and unofficial, lies within a given community and tapping into that power through appropriate representation (Chess et al. 2000). Government participation and scientific participation must also be included in the partnership membership (Chess et al. 2000). Lubell (2004b) notes that inclusiveness in participation creates more room for conflict but that it is still better to have the input of all stakeholders up front. Excluding a stakeholder creates the risk of that stakeholder attempting to undermine the process at a later date (Lubell 2004b). The levels of participation in the watershed planning effort can impact political support, mistrust/fear of the program, and the intention for implementation of the plan into the future.

**7.3.2 Trust.** As discussed in Chapter 3, trust is a vital element to collaborative watershed management – trust between individuals, trust between local governments, and trust in the watershed partnership agency. Trust in the watershed partnership agency is a function of the
relationships that agency has built in the community over time and what role the agency has filled. Lack of trust in the watershed agency has the potential to result in a lack of political support for the project, an inability to overcome lack of trust in state government, a lack of interest in participating on a watershed level, and a lack of interest in developing a clear plan for implementation of the final plan.

7.3.3 Adequate Resources. Obviously, successful multi-jurisdictional watershed management efforts require adequate resources such as funding, technical expertise and time (Randolph 2004; Bonnell and Koontz 2007). For example, a Washington State study found that watershed planning groups that had been established prior to Washington’s Watershed Planning Act had much greater ease in creating their watershed plans. These groups had already ironed out their organizational structure and their decision-making processes and already established mutual trust, if not social trust, among their members (Ryan and Klug 2005). The resource of time played a role here in allowing these organizations to establish themselves, and, in turn, they outperformed the organizations which had only recently formed.

Funding opportunities, such as grants or transfer payments from the state and federal governments, provide local governments with incentives to engage in watershed management and dramatically increase the number and activities of watershed partnerships within a given watershed (Lubell et al. 2002). Some of this funding may be used to hire consultants to provide supplemental technical support where the capacity of the local government falls short (Ryan and Klug 2005). Regardless of its use, adequate funding is essential for the success of watershed management (Clark et al. 2005, 201).

As mentioned previously, all of the pilot project directors indicated that they had adequate resources to implement the Balanced Growth Program. The issue of resources did not play a
significant role in any of the pilot projects in overcoming the roadblocks discussed in this chapter. Therefore, this characteristic is not further evaluated.

7.3.4 Shared Vision and Interdependence. The fragmentation of responsibilities and powers with regards to water management doesn’t necessarily prohibit multi-jurisdictional collaboration and the successful implementation of watershed management programs. However, before any headway can be made, jurisdictions within the watershed must recognize that they are interdependent in improving the quality of their shared water body (Deyle 1995). This often occurs in the face of a common environmental problem (Deyle 1995). Once this interdependence is recognized, a shared vision can be established, and collaboration on a method of achieving that vision can begin (Deyle 1995). A lack of shared vision and interdependence may contribute to governmental fragmentation, a lack of political support, lack of watershed-level participation, and no clear plan for implementation.

7.3.5 Credible and Efficient Process to Achieve Common Goals. Webler’s study, as discussed in Chapter 3, found that the design of the collaborative watershed management process was of the utmost importance to ensure to the participants that “efficient and competent use” of their efforts would be made (Webler et al. 2003). In order to achieve widespread participation, the organizers of the planning partnership need to also prove to the potential participants that the effort is “capable of producing meaningful results and that meeting times will be productive towards achieving goals” (Webler et al. 2003). In addition, the organizers of the planning partnership must describe the project in the language of “environmental values and community rewards” in order to encourage some local government officials to participate. To this end, the Webler study found that local government officials appreciated when leaders of the watershed management organization visited their jurisdictions, discussed with them local concerns, and better defined how participation in the watershed partnership would benefit their communities (Webler et al. 2003).
In Table 3, the processes that each pilot project followed in implementing the Balanced Growth Program are simplified and outlined in general steps. Balanced Growth projects whose processes are less than credible and efficient are more vulnerable to roadblocks such as a lack of organizational guidance, a lack of watershed level participation, and ill-defined intention on the part of the local governments to implement the final product.

7.3.6 Scientific Knowledge. The presence of strong scientific knowledge regarding the physical interactions in a given watershed is a major catalyst to resolving conflict among the players in the watershed and greatly improves the success of the watershed management effort (Lubell 2004b). A strong scientific knowledge on the part of the watershed planning partnership director can contribute positively to trust, political support, and the implementation of the plan because the value of the watershed plan is more concretely understood by the local governments and their publics.

Section 7.4 Local Government Perspective

Chapter 3 discussed the role of local government in collaborative watershed planning and their common motivations for participating. The role of local government in the Balanced Growth Program is of the utmost importance because the local governments bear the responsibility for ultimately implementing the plan. Therefore, the perspectives of the local governments with regards to the Balanced Growth Program, meaning their motivations for participating in the program and implementing the plan, can in some ways be both the cause of the roadblock and the roadblock itself. High on the list of motivations are the local government’s perception of how the program will benefit their communities and how the program reinforces their existing values and efforts. As secondary motivations, the interdependence and social capital local governments share with their neighbors can also influence their commitment to the Balanced Growth Program. These elements of local government perspective influence political support for the program, a willingness to overcome fear and mistrust to achieve a common goal, a
willingness to participate in watershed-level discussions, and a commitment to implementing the plan into the future.

Local governments chose to take roles with various levels of active participation in the Balanced Growth pilot project. In Table 3, this characteristic is rated using Margerum categories discussed in Section 3.2. The categories are the following: nonparticipant, observer, partner, and sponsor. The only sponsoring organizations are the directors of the Balanced Growth partnerships and the OLEC itself. Because each of the watersheds contained nonparticipants and observer local governments, each of the pilot projects have been rated based on the predominant category of participation within the particular watershed. Although individual attitudes toward conservation of environmental features vary across jurisdictions and across watersheds, an attempt was made to characterize the dominant sentiment towards environmental conservation as experienced by the pilot projects.

**Section 7.5 Analysis of Pilot Projects**

In this section, each of the pilot projects are evaluated in light of the roadblocks and the characteristics that may contribute to a project’s vulnerability to those roadblocks, described above. They are evaluated in order of least roadblocks encountered to most. Table 3 summarizes the characteristics of the pilot projects.
Table 3. Characteristics of the Balanced Growth Pilot Projects.

<table>
<thead>
<tr>
<th>Characteristics of Watershed or Planning Partnership</th>
<th>Chippewa Creek</th>
<th>Upper West Branch of Rocky River</th>
<th>Swan Creek</th>
<th>Chagrin River</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of Watershed (sq. miles)</td>
<td>17</td>
<td>80</td>
<td>205</td>
<td>267</td>
</tr>
<tr>
<td>Characterization of Land Use</td>
<td>Urbanizing</td>
<td>Rural (except at two city centers)</td>
<td>Even mixture of urban, rural, open space and agricultural</td>
<td>Low-Density Residential</td>
</tr>
<tr>
<td>Number of Political Jurisdictions</td>
<td>5 (2 contain insignificant areas of land in watershed)</td>
<td>10 (including Medina County)</td>
<td>23</td>
<td>36</td>
</tr>
<tr>
<td>Number of Politcal Jurisdictions Supporting*</td>
<td>3</td>
<td>8</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Qualities of the Watershed as Percentages of the Total Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cities</td>
</tr>
<tr>
<td>Townships</td>
</tr>
<tr>
<td>Villages</td>
</tr>
<tr>
<td>Counties</td>
</tr>
<tr>
<td>Severe Environmental Issue</td>
</tr>
<tr>
<td>Grassroots Support/Social Value</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Qualities of the Collaborative Effort</th>
<th>CRCPO: Non-profit community-based watershed group established by OEPA for the entire Cuyahoga River Watershed</th>
<th>Medina County Soil &amp; Water Conservation District</th>
<th>TMACOG: Multi-jurisdictional organization of dues-paying members, comprised of government and non-government representatives</th>
<th>CRWP: Non-profit watershed group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Agency</td>
<td>1988</td>
<td>1944</td>
<td>1970s</td>
<td>1996</td>
</tr>
<tr>
<td>Participation in the Watershed Planning Partnership</td>
<td>Operates the Cuyahoga River Remedial Action Plan (RAP)</td>
<td>Administers soil and erosion control issues within the county, more recently, administers NPDES Phase II Compliance</td>
<td>Neutral forum for coordinating on common multi-jurisdictional problems, such as transportation and environmental issues.</td>
<td>Works with member communities to develop planning and design strategies to address stormwater management.</td>
</tr>
<tr>
<td>Trust in Agency</td>
<td>Yes</td>
<td>Mixed</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Shared Vision and Interdependence</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Credible and Efficient Process</td>
<td>Yes</td>
<td>Mixed</td>
<td>Mixed</td>
<td>Mixed</td>
</tr>
<tr>
<td>Scientific Knowledge</td>
<td>Yes</td>
<td>Unknown</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Table 3 (continued). Characteristics of the Balanced Growth Pilot Projects.

<table>
<thead>
<tr>
<th>Characteristics of Watershed or Planning Partnership</th>
<th>Chippewa Creek</th>
<th>Upper West Branch of Rocky River</th>
<th>Swan Creek</th>
<th>Chagrin River</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prior to BGI</strong></td>
<td>Discussed with local mayors the benefits of watershed planning; goal of Cuyahoga RAP to create tributary level watershed groups.</td>
<td>Promoted erosion and sediment control practices</td>
<td>Promotes best management practices and participates in other watershed management efforts elsewhere in region</td>
<td>Worked with local governments to improve best management practices and conservation of sensitive features.</td>
</tr>
<tr>
<td><strong>First step</strong></td>
<td>Achieved political support from 3 city mayors personally.</td>
<td>Resolutions of support from 75% of local governments for applying for Balanced Growth Program grant.</td>
<td>Resolutions of support from 75% of local governments for applying for Balanced Growth Program grant.</td>
<td>Resolutions of support from 75% of local governments for applying for Balanced Growth Program grant.</td>
</tr>
<tr>
<td><strong>Second Step</strong></td>
<td>Grant Submittal &amp; Approval</td>
<td>Grant Submittal &amp; Approval</td>
<td>Grant Submittal &amp; Approval</td>
<td>Grant Submittal &amp; Approval</td>
</tr>
<tr>
<td><strong>Third Step</strong></td>
<td>Request that mayors appoint representatives to the watershed planning partnership.</td>
<td>Attempt to garner local government and public participation</td>
<td>Attempt to garner local government and public participation</td>
<td>Attempt to garner local government and public participation</td>
</tr>
<tr>
<td><strong>Fourth Step</strong></td>
<td>Identification of analysis criteria</td>
<td>Formation of partnership with no local government representation</td>
<td>Advisory technical committee with some local government representation became acting partnership</td>
<td>Steering committee with local government participation advised CRWP which acted as partnership</td>
</tr>
<tr>
<td><strong>Fifth Step</strong></td>
<td>GIS analysis and first draft of priority areas</td>
<td>Identification of analysis criteria</td>
<td>Identification of analysis criteria</td>
<td>Identification of analysis criteria</td>
</tr>
<tr>
<td><strong>Sixth Step</strong></td>
<td>Modification of priority map based on input from planning partnership</td>
<td>GIS analysis and first draft of priority areas</td>
<td>GIS analysis and first draft of priority areas</td>
<td>GIS analysis and first draft of priority areas</td>
</tr>
<tr>
<td><strong>Seventh Step</strong></td>
<td>Presentations to and approvals by local governments</td>
<td>Modification of priority map based on input from planning partnership</td>
<td>Modification of priority map based on input from planning partnership</td>
<td>Modification of priority map based on input from planning partnership</td>
</tr>
<tr>
<td><strong>Eighth Step</strong></td>
<td>N/A</td>
<td>Presentation of map to local governments</td>
<td>Presentation of map to local governments</td>
<td>Presentation of map to local governments</td>
</tr>
<tr>
<td><strong>Ninth Step</strong></td>
<td>N/A</td>
<td>Revisions requested by local governments</td>
<td>Revisions requested by local governments</td>
<td>Revisions requested by local governments</td>
</tr>
<tr>
<td><strong>Nineth Step</strong></td>
<td>N/A</td>
<td>Approvals by local governments</td>
<td>Approvals by local governments</td>
<td>Approvals by local governments</td>
</tr>
</tbody>
</table>
Table 3 (continued). Characteristics of the Balanced Growth Pilot Projects.

<table>
<thead>
<tr>
<th>Characteristics of Watershed or Planning Partnership</th>
<th>Chippewa Creek</th>
<th>Upper West Branch of Rocky River</th>
<th>Swan Creek</th>
<th>Chagrin River</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Local Government Participation in Plan Development</td>
<td>Partner</td>
<td>Nonparticipant/Observer</td>
<td>Observer/Partner</td>
<td>Observer/Partner</td>
</tr>
<tr>
<td>Severe Environmental Problems</td>
<td>Yes: Recent Flooding</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Do local governments perceive a benefit to their communities?</td>
<td>Yes: Prevent Flood Risk</td>
<td>Yes: State Incentives</td>
<td>Yes: State Incentives; Support for land use decisions</td>
<td>Yes: Protection of Natural Beauty &amp; Support for Zoning</td>
</tr>
<tr>
<td>Social Values in Support of Conservation?</td>
<td>Yes: Fear of future flooding; Concern for protection of natural beauty; Concern for stewardship of creek, which flows into a national park</td>
<td>Mixed: Conflict between property rights concerns, mostly from rural townships, and interest in protection of natural beauty</td>
<td>Mixed: Dramatic variation in attitudes towards conservation</td>
<td>Yes: Equal interest in environmental protection and protection of natural beauty</td>
</tr>
<tr>
<td>Social capital &amp; trust among neighboring governments</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Shared Vision and Interdependence</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

In Appendix D, each pilot project has its own table where the characteristics of the project are rated based on whether or not they helped or hindered overcoming each of the roadblocks. A plus sign (+) indicates that the characteristic likely improved the pilot project’s chances of overcoming the roadblock. A negative sign (-) indicates that the characteristic likely decreased the project’s chances of overcoming the roadblock. When no connection between the characteristic and the roadblock could be established, the space was filled with “n/a”. The roadblocks of uncertainties regarding techniques and concentration of conservation in one or a few jurisdictions were left off of the individual pilot project tables because no relationship exists between the characteristics of the pilot projects and these roadblocks. These two roadblocks will be discussed further in Chapter 8.
7.5.1 Chippewa Creek. The Chippewa Creek Balanced Growth project clearly encountered the fewest problems in the development of the plan.

Governmental Fragmentation. Due to the small size of the Chippewa Creek Watershed, CRCPO had to contend with only three political jurisdictions, all of which are cities with the same powers and responsibilities and all of which hold the same basic, yet urgent, goal of mitigating the potential for another major flood. Therefore, fragmentation of government, though present, created little hindrance to the watershed-level collaboration. Because all three were cities, there was no need to include the county in the creation of the plan, which further reduced fragmentation. The Cities of Broadview Heights, North Royalton, and Brecksville understood that they were reliant on each other to improve the condition of the watershed, and because they shared a common problem, they trusted each other to share in the solution. The only concerns of governmental fragmentation were expressed in reference to other state agencies, like the Ohio Department of Transportation, whose planning and project implementation do not always coincide with the goals of the Balanced Growth Plan and program philosophy. Similar conflicts will surely be experienced by the other pilot project as well if, as one watershed planning partnership director put it, the Balanced Growth Plans are not given “diplomatic recognition” by other state agencies. In other words, other state agencies must consider their mandates in light of the Balanced Growth Program if the Watershed Balanced Growth Plans are to be fully successful.

Lack of political support. Lack of political support was also not an issue. The CRCPO watershed planning partnership director had been discussing the merits of watershed-level planning with the three city mayors well before the Balanced Growth Program had been developed and had secured their support prior to applying for the grant to implement the Balanced Growth Program in the Chippewa Creek watershed. It is the opinion of the CRCPO director that an essential first step to the Balanced Growth program is to achieve the political
support of the local governments. The director was able to achieve this front-end political support in part because of the trusting relationship that he and CRCPO had developed with the communities over time and the trust that the communities had in each other. Admittedly, this type of support and involvement of each of the local governments is much more feasible to attain in smaller watersheds with fewer political jurisdictions and less geopolitical variety. Yet, we will never know if these first steps alone would have resulted in the project’s apparent success. Coincidentally, the grant application was approved ten days after the watershed experienced a 500-year flood. The mayors were able to earn political points since they already had signed on to this watershed master planning program, and any hesitation on the part of the cities to commit to the Balanced Growth Program disappeared.

Once political support had solidly been achieved, it was maintained through the direct involvement of community members in the development of the plan. Chippewa Creek mayors were asked by CRCPO to appoint representatives – elected officials, government staff, and members of the general public – to the watershed planning partnership as a way of encouraging them to take ownership in the process. Members were involved in every step from determining the analysis criteria to making finer recommendations after the GIS analysis. This involvement made the final official support of each local government much easier to achieve.

*Lack of Trust.* As mentioned previously, most of the mistrust and fear expressed in the other pilot projects originated in the rural townships. The Chippewa Creek watershed is an urbanizing watershed comprised mainly of three cities inhabited primarily by upper-middle class people who had just collectively experienced a 500-year flood. If lack of trust or fear of state interference was experienced in the development of the Chippewa Creek Balanced Growth Plan, it was easily overcome. Trust in CRCPO, trust in each other, and community involvement in every step of the development of the Balanced Growth Plan also served to dispel any mistrust in state government interference.
Participation at watershed level. The Chippewa Creek watershed pilot project is the only pilot project that was able to achieve complete watershed-level participation of the local governments throughout the development and approval of the plan. Several circumstances contributed to this success. The front-end attainment of the political support of the mayors got the local governments involved early. The small size of the watershed made watershed-level cooperation more manageable and efficient. Because only three local governments were involved, the discussions always centered around areas in close geographic proximity to each participant’s jurisdiction, which likely kept people feeling interested and feeling that their time was utilized effectively. However, potentially the greatest instigator to watershed-level involvement may have been the major flooding event which preceded the start of the project.

Plan for implementation. Because the local governments within the Chippewa Creek have a strong interest in doing everything possible to mitigate future flooding, the implementation of the Balanced Growth Plan by each is not a question. Two of the three local governments have already adopted most of the model ordinances recommended by the Balanced Growth Program, and the third is in the process of doing so. Each of the three governments intends on either incorporating the Balanced Growth plan into its comprehensive plan or at least using it as a guide to inform the update of the plan. The bottom line is that the Balanced Growth Plan fits with each of the government’s overall jurisdictional goals, and therefore it will be implemented where feasible.

Furthermore, the Chippewa Creek Balanced Growth Plan report provides invaluable guidance with regards to specifically how the plan should be implemented in the watershed. First, it provides detailed development or conservation recommendations for each priority area in the watershed. Second, the report clearly identifies recommended implementation tools. For each implementation tool, the plan lists the key roles involved, such as legislator, engineer or service department, and developer, and the key actions required of each role in the implementation of
the tool. An excerpt of the plan is provided in Appendix E for illustration. Each tool is also
accompanied by an inventory of where each of the local governments within the watershed
stands with regards to compliance with the particular recommendation. Because local
governments may be confused about the importance of each recommendation relative to each
other, the Chippewa Creek plan also provides a prioritization of the recommendations, listing
them by order of importance in terms of watershed impact.

Uncertainties surrounding techniques. All of the pilot projects experienced uncertainty with
regards to implementation techniques. CRCPO is investigating the potential for a watershed
transfer of development rights program, but has criticized TDR as being overly complicated.
CRCPO also suggests that, in lieu of TDR, tax credits could be given to property owners who
have allowed conservation easements over valuable sensitive environmental features on their
land. CRCPO has also been working on a wetland banking system where disturbance of
existing wetlands within the Chippewa Creek watershed are mitigated within the watershed
rather than somewhere else, as currently permitted. These tools would be useful in the
implementation of the Chippewa Creek plan, but are not yet readily available and require further
investigation to determine their legal and practical feasibility.

7.5.2 Chagrin River. The Chagrin River Watershed pilot project may have moved at a slower
pace than the others, but it accomplished much in terms of strong long-term support and
implementation along the way.

Governmental Fragmentation. At 267 square miles, the Chagrin River watershed is the largest
of the four pilot projects and is comprised of 36 cities, townships, villages and counties.
Although each local government had its own agenda, many of the communities in this
watershed shared similar values and priorities with regards to the preservation of green space
and the aesthetic quality of the watershed. These shared values are evidenced in the
composition of CRWP, whose membership is made up of local governments representing 95% of the watershed. In the Chagrin River watershed, the health of the watershed and the aesthetic nature of the area are high priorities for all of the local communities, which eliminates some of the governmental fragmentation. In addition, vertical fragmentation of government was avoided in that the counties, preferring to leave local land use decisions to the local governments, chose to wait to vote on their support for the Balanced Growth Plan until each of the local governments within the counties had approved the plan.

Limited Political Support. It is difficult to pass judgment on the level of political support the Chagrin River watershed governments have for the Balanced Growth Program. Although CRWP has yet to achieve the necessary number of resolutions of support, this seems less an indication of political support than it is simply a result of the size of the watershed and the sheer number of local governments. Other signs, such as the 95% membership of local governments in CRWP, point to the support these local governments have for watershed protection and preservation of the watershed’s natural beauty. In fact, CRWP has indicated that lack of political support has not been a problem for the pilot project.

Lack of Trust. Although CRWP occasionally hears concerns regarding mistrust of state interference in local land use decisions, these fears did not present a significant roadblock to the implementation of the Balanced Growth Program in the Chagrin River Watershed. Much of the Chagrin River watershed is comprised of low density residential development inhabited by upper middle class people who are just as interested in the environment as they are in keeping their communities green. Many of these communities, as mentioned previously, have very trusting relationships with the CRWP, of which they are dues-paying members.

Uncertainties Surrounding Techniques. CRWP expressed concerns regarding a couple of recommended implementation tools. The transfer of development rights tool (TDR) is not
available to townships because they are not authorized to utilize TDR through state enabling legislation in Ohio. CRWP also noted that conservation subdivisions are difficult to approve in many townships because the areas that are best for conservation subdivisions generally do not have sanitary sewer. Most health departments will not approve onsite septic systems for small lots, which leaves these developments with no viable sewer option.

Participation at Watershed Level. With 36 local governments to coordinate, governmental fragmentation was obviously a roadblock to the successful completion of the watershed’s Balanced Growth Plan. Although effort was made in the beginning of the project to include representation from all local governments on a steering committee, it was nearly impossible logistically to hold watershed-level planning discussions in this way. As a result, CRWP developed the plan for the most part independently of the local governments and then spent significant time speaking with each jurisdiction individually to address individual concerns and to adjust the Balanced Growth plans per requests from the individual jurisdictions. In a few cases, CRWP coordinated the meeting of adjacent local governments to discuss and manage shared priority areas, but the majority of the local governments kept their focus on their own land and the direct interests of their constituents. As a result, the Balanced Growth plan to a large degree lost its watershed-level focus.

Plan for Implementation. In the Chagrin River watershed, CRWP has been working with its member communities for years to implement exactly what the Balanced Growth program proposes. CRWP keeps close count on what model ordinances have been adopted by which communities. CRWP also has been working with several communities to update their comprehensive plans to include protection for vital natural resources. CRWP will continue to work with its communities, one-by-one if need be, to achieve the goals established by its Balanced Growth Plan. The member communities pay dues to CRWP for this kind of technical support and guidance and are, in a sense, partners in the effort. Therefore, any confusion with
regards to implementation will certainly be actively addressed by CRWP into the future. Also, in terms of motivation, the watershed’s local governments were most interested the Balanced Growth Plan as further reinforcement for their efforts at focusing conservation and development in particular areas and further legal backing for their zoning decisions. Both of these benefits were promoted heavily by CRWP when marketing the Balanced Growth Program to its member governments. Because the Balanced Growth plan is a continuation of their planning goals, it is likely to be implemented in these communities.

Discussion. CRWP may have approached the Balanced Growth Program from a different direction than CRCPO did with the Chippewa Creek Balanced Growth Plan, but the future results are likely to be very similar. CRWP is targeting its member communities one-by-one to improve their land use practices as they relate to the watershed. CRCPO is doing the very same thing, except grouping the targeted communities by smaller watersheds. Instead of tackling three political jurisdictions from anywhere throughout the Cuyahoga River watershed, CRCPO is targeting watersheds of smaller tributaries. In the end, the local governments in both the Chagrin Watershed and the Chippewa Creek watershed are being heavily encouraged to adopt model ordinances and are also being encouraged to think about their role in the watershed. The end result will likely be virtually the same.

7.5.3 Swan Creek. At 205 square miles, Swan Creek is the second largest watershed of the pilot projects. The watershed is significantly different from both Chippewa Creek and Chagrin River in the diversity of land uses within its boundaries. Swan Creek was chosen, in part, because it is comprised of urbanized areas, agricultural areas, and residential areas. For this reason, it was susceptible to a wider array of problems.

Governmental Fragmentation. Like in the Chagrin River watershed, TMACOG had difficulty achieving watershed-level planning discussions with its 23 watershed political jurisdictions, a
mixture of cities, villages, and townships. Unlike in the Chagrin River watershed, the communities within the Swan Creek watershed lacked cohesiveness around shared priorities or around a significant environmental problem, which made governmental fragmentation more pronounced. The counties within the Swan Creek watershed chose to refrain from approving the plan officially until the plan had been approved by the local governments. The counties did not want to contradict the desires of the local governments or infringe on their local land use rights. In this way, governmental fragmentation was somewhat mitigated.

**Limited Political Support.** The Swan Creek pilot project was not impacted significantly by politics, except for the lack of interest the local government officials had in participating in the watershed planning partnership. Their lack of interest did pose a problem for TMACOG because it ultimately resulted in a lot more work to gain the support of the local government officials for the final plan.

**Lack of Trust.** Trust was challenge for the Swan Creek pilot project. Many jurisdictions, particularly townships, expressed significant mistrust in state government and feared allowing the state any kind of influence over their local land use decisions. A few jurisdictions also expressed concern about adding another layer of government and complexity to the development process. TMACOG has been working in the Swan Creek watershed area for decades and over that time has developed relationships with most of the local governments within the watershed. Had these relationships not been previously established, the Balanced Growth process would have been significantly more difficult and would have required much more time to achieve a positive result.

**Watershed-Level Participation.** Like the Chagrin River pilot project, the Swan Creek pilot project had difficulty gaining the interest and commitment of high-level officials representing each of the local governments to participate in watershed level discussions. However, in a sense,
watershed-level participation by local governments was nearly achieved on the Technical Committee, which was comprised of a wide range of stakeholders, including a few public officials and governmental representatives from engineering, zoning and public works departments. As a result, almost every local government had a representative on the Technical Committee who was aware of the purpose and direction of the Balanced Growth. Unfortunately, because these representatives were not acting as official envoys from their local governments, this participation did not serve the full purpose of watershed level participation, which was to ease the plan approval process through each government’s legislative body. Because the officials of each local government were not up to speed on the plan, the plan lacked credibility and had to be sold to each local government individually. In order to achieve approval, changes were made to the plan at the request of each local government, so it lost its watershed-level focus to a large degree.

Several potential reasons exist to explain why TMACOG was not able to achieve watershed-level involvement by all of the local governments. First, TMACOG posits that because the initial meetings focused on determining the criteria by which the watershed would be analyzed, many local government officials, who are used to planning by location rather than criteria, did not feel that their time was well spent. Secondly, one of the county planners surmised that too much effort was focused at achieving the direct involvement of elected officials who often felt that their time was best spent focused within the borders of their jurisdiction. Lastly, the number of local governments in the watershed may have been a hindrance to the feasibility of getting all representatives in a room together multiple times to work out the details of the Balanced Growth plan.

Plan for Implementation. In the Swan Creek watershed, the local governments I spoke with stated that they will implement the Balanced Growth Plan so far as it coincides with their
existing development goals, but no specifics were given. Four of the local governments have or will soon be updating their comprehensive land use plans with the results of the Balanced Growth Plan. TMACOG has prepared no inventory to determine how many of the local governments have adopted model ordinances. Further, the Swan Creek Balanced Growth Plan report provides little guidance as to the responsibilities or priorities of each local government for implementation. The report itself seems to be intended more for the use of OLEC rather than for local use within the watershed.

Uncertainties Surrounding Techniques. TMACOG mentioned only one issue surrounding implementation techniques, and that is a need for a mechanism for achieving the sharing of cost associated with conservation concentrated in one or two political jurisdictions.

Concentration of Conservation Did Not Align with Local Government’s Development Goals. Surprisingly, only the Swan Creek watershed experienced the problem of a concentration of PCA falling in one or a few political jurisdictions. Several townships in the watershed expressed concern over the distribution of PCAs. Most of the PCAs are located in the Oak Openings region of the watershed (see Figure 14). Swanton Township, in particular, had voiced concern that the township had already done its part in conserving the resources of the watershed without compensation. The Township was not interested in designating additional land to conservation, which would eliminate its potential to generate tax revenue (TMACOG 2009). Thus, the township refused to support any additional PCAs, but would accept some additional PAA. The township also wanted areas around the Toledo Express Airport to be designated as PDAs. To resolve this issue, staff worked with the Airport area Joint Economic Development District (JEDD) group, which includes Monclova Township and Swanton Township, to create the Airport/Oak Openings Area as a special priority area (TMACOG 2009).
Figure 14. Airport Oak Openings Area (TMACOG 2009a)

Final Thoughts. Swan Creek was able to make enormous strides in a short period of time to establish a watershed planning partnership via the technical committee, to create the plan, and to gain the approvals of the necessary number of local governments to achieve OLEC approval. Yet, the TMACOG, like Chagrin, seems to have fallen short in terms of developing a uniform watershed plan. Unlike Chagrin, however, TMACOG does not appear to be working as closely with its member communities to encourage them one by one to adopt model ordinances and to help them update their comprehensive plans. As a result, the Swan Creek Balanced Growth Plan will likely have less impact on the watershed behavior of its local governments because of the absence of continued outreach.

7.5.4 Rocky River UWB. The Rocky River UWB Balanced Growth pilot project experienced the most significant roadblocks and will, consequently, likely see the least amount of plan implementation in terms of conservation of sensitive watershed features.
Governmental Fragmentation. Compared to the Swan Creek and Chagrin River watersheds, the Rocky River UWB pilot project encompasses a relatively small watershed, currently only 70 square miles. At its largest, the pilot project boundary included 80 square miles and 14 political jurisdictions, only two of which were cities and the rest townships. With all of these political jurisdictions within one county, governmental fragmentation should have been less of a problem than in Swan Creek or Chagrin River, yet governmental fragmentation within this watershed appeared to pose a greater problem. In terms of horizontal fragmentation of government, each of the local governments within the Rocky River pilot project seemed to have a different set of priorities in terms of their land use decisions. A few jurisdictions were very concerned about conservation of areas that were not even deemed PCAs by the planning partnership. The two cities in the watershed were happy with the Balanced Growth Plan because they are virtually built-out, and the Balanced Growth Program may help them with redevelopment opportunities. Many of the rural townships were hesitant about the entire process. Therefore, despite the relatively small size of the pilot project watershed and the relatively few political jurisdictions within it, the planning partnership was pulled in several different directions.

In addition to this governmental fragmentation, which is somewhat inherent in all watershed planning, the Rocky River pilot project encountered another type of governmental fragmentation, more vertical in nature. In speaking with representatives from local governments within the pilot project, a few of the rural townships referred me to Medina County SWCD for information regarding how the Balanced Growth plan would be implemented. They seemed unaware that the responsibility for implementation rests in the hands of the local governments who make the local land use decisions. In this pilot project, the role of the county versus the role of the townships in taking on ownership and leadership in implementation of the plan seemed to be a cause for confusion. In the other pilot projects, this did not appear to be an issue. One reason for this may be that, unlike the other pilot projects, the Rocky River pilot project was led
by a county department. Furthermore, Medina County itself doesn’t seem to be clear within its own agencies as to how the plan could be implemented. The Medina County SWCD said that the county did not intend on adopting any of the model ordinances as part of their subdivision regulations proposed by the Balanced Growth Program. The leadership of county government could have been successful in unifying the local governments, but it was not in this case.

**Lack of Political Support.** By early 2008, the Rocky River Balanced Growth Plan had received resolutions of support from 12 of its 14 jurisdictions. However, in the following months, political support became a significant obstacle for the Rocky River pilot project. It faced considerable vocal opposition from a small group of citizens, mostly farmers, concerned about property rights and state government control. Presented with strong pressure from the opposition at public meetings and with no equally vocal support for the program to counteract the opposition, township trustees in four townships withdrew their support for the plan. As a result, the watershed planning partnership was forced to adjust the boundaries of the pilot project to achieve the necessary local government approvals for the plan to be eligible for OLEC approval.

Although the project experienced a severe example of political fallout, it exhibited signs of a lack of political support early in the process. As discussed previously, rural areas are less likely to be willing to engage in watershed management activities. In addition, local government officials were not eager to get involved in the watershed planning partnership, further demonstrating a lack of political support.

**Lack of Trust.** Part of the reason why the Rocky River Balanced Growth plan lost some of its political support was a lack of trust, both in state government and in the Medina County SWCD. Many of the townships in the watershed were suspicious of state government interfering in local land use decisions and feared that they would lose their autonomy. Despite assurances to the contrary, citizens and government officials alike were concerned that OLEC would assess their
land for additional taxes if they approved the Balanced Growth plan. In addition, many community members were distrustful of the representatives from Medina County SWCD because the same Medina SWCD representatives also led the NPDES compliance process that recommends unpopular riparian setback ordinances. Many community members, particularly farmers, feared that approving the Watershed Balanced Growth plan meant that they were required to adopt riparian setbacks, and no amount of discussion could convince them otherwise. Ironically, trust among the rural townships actually worked against support for the program because once one township rescinded its support, it became a domino effect with three others following suit. Because the local governments were not inclined to get involved in the development of the Watershed Balanced Growth Plan, they had no mechanism to overcome their mistrust.

*Participation at Watershed Level.* The Rocky River UWB pilot project, like Swan Creek and Chagrin River, had difficulty achieving watershed level participation by the local governments. Although attempts were made by Medina County SWCD in the beginning of the Balanced Growth process to include representation from the local governments within the watershed planning partnership, the turnout was low, and the final composition of the partnership included only county level departments and representatives from other stakeholders in the area, such as the Farm Bureau, the real estate and development community, and the land conservation community.

*Plan for Implementation.* In the Rocky River pilot project area, the future of implementation of the Balanced Growth plan by the local governments is unclear. Medina County SWCD is unaware of any local governments moving to adopt the recommended model ordinances or to include the Balanced Growth plan in their comprehensive land use plans. The Balanced Growth Plan report provides little direction as to how the local governments are encouraged to implement it. In fact, the report spends more effort explaining that the plan is voluntary and that
nothing is required. Once the plan is approved by OLEC, the Medina County Department of Planning Services will take ownership of the plan with the intention that the department will guide local governments in their land use decisions relative to the plan.

Uncertainties Surrounding Techniques. Because the local governments within the Rocky River pilot project have seemingly little interest in implementing the plan, uncertainties surrounding implementation techniques did not emerge as a major problem. Riparian setbacks seemed to be the only technique discussed because of the disfavor it held among the farming community. Farmers expressed concern and confusion about riparian setbacks, arguing that the setbacks would devalue their property and prevent them from working the land, despite the fact that riparian setbacks do not apply to agricultural activities in Ohio.

Discussion. The fear and mistrust which permeated the Rocky River UWB pilot project appear to have undermined the project to a large degree. In actively seeking to dispel the unfounded fears of the township leaders and community members, the watershed planning partnership heavily emphasized that in approving the Balanced Growth plan, the local governments were required to do nothing. While focusing so strongly on the voluntary aspect of the program may have helped the partnership achieve or maintain support from the remaining communities within the pilot project boundary, it also seems to have taken the focus away from the purpose of the Balanced Growth Program, which is to affect land use decisions and practices. The Rocky River watershed planning partnership seems to have strayed from encouraging the adoption of model ordinances. Even Medina County, the sponsoring agency behind this effort, appears to have no intention of adopting any of the model ordinances into its subdivision regulations.
Chapter 8: Recommendations

In this chapter, several recommendations will be presented. Some of these recommendations are derived from successes that one or more of the Balanced Growth pilot projects experienced. Other recommendations come from additional research into collaborative intergovernmental efforts. These recommendations should be considered by OLEC and by the directors of the watershed planning partnerships in the future implementation of the Balanced Growth Program.

Section 8.1 Overcoming Governmental Fragmentation

Recommendation #1: Implement program in smaller watersheds or watersheds with limited geopolitical diversity.

Recommendation #2: Implement program in watersheds united by a common cause or priority.

The problem of governmental fragmentation cannot be avoided entirely, and it would defeat the purpose of collaborative watershed management if it were. However, the influence of governmental fragmentation on a collaborative watershed management effort can be mitigated in three general ways: selecting small watersheds, selecting watersheds which have limited geopolitical diversity, and selecting watersheds in which the local governments share a common cause or priority.

Both the Center for Watershed Protection (CWP) and the EPA recommend utilizing the subwatershed, which according to the EPA generally ranges in size from 15 to 60 square miles, as a primary planning unit (Schueler and Holland 2000, 146; EPA 2008). CWP provides several reasons for this. First, CWP notes that on this small scale the relationship between impervious surface cover and its impact on the condition of the water body is more evident, and, therefore, the impact of individual projects on the subwatershed are more clearly identifiable. Second, CWP recognizes that smaller watersheds have fewer political jurisdictions and associated stakeholders to include in the process. Third, watershed plans for subwatersheds can generally be developed in one year’s time, and the impacts of the plan can be more rapidly assessed.
Fourth, on a very basic level, subwatersheds can fit on a 24” by 36” sheet with enough detail to be useful (Schueler and Holland 2000, 146). In short, CWP recommends separating larger watersheds into smaller, more manageable subwatersheds in order to produce meaningful watershed plans (Schueler and Holland 2000, 163). McGinnis (1999) also recommend smaller watersheds for planning purposes due to the importance of maintaining a sense of community within the planning area for the long-term success of the plan. Watershed planning efforts at smaller scales tend to establish stronger ties to the local community and are able to garner greater local participation in the protection of the watershed (Curtis et al. 2002).

The Chippewa Creek watershed embodied all of these recommended characteristics. Not only is it a small watershed comprised only of cities with similar landscape, but all of the cities shared the common and immediate threat of flooding. The Chagrin River watershed, though much larger than the Chippewa Creek Watershed, is comprised of local governments which largely share the common priority of maintaining the natural greenness of their communities. OLEC and watershed groups seeking to implement the Balanced Growth Program in a watershed should consider these characteristics in their selection of the watershed.

Section 8.2 Achieving Political Support/Overcoming Mistrust

Recommendation #3: Require commitment to participate in the program from the majority of the local governments in the watershed as part of grant application.

Political support of the local governments is a key ingredient to the successful implementation of the Balanced Growth Program. Without political support, active participation of the local governments in the watershed planning process will not be achieved, the approval of the final plan will not be received, and implementation of the plan by local governments will likely not occur. According to CRCPO, attaining political support for the Balanced Growth Program should be the very first step in the implementation process. The value of this approach was
evidenced in the Chippewa Creek pilot project. Prior to applying for the grant, the mayors of the primary cities within the watershed had already agreed to participate in the project. The grant application to become a pilot project in the Balanced Growth Program did require proof, in the form of resolutions or acknowledgements of support from 75% of the local governments within the watershed, that the local governments were supportive of the grant request for the program. However, these acknowledgements of support do not appear to indicate a commitment by these local governments to participate fully in the program should the grant application be successful. Therefore, it is recommended that, as part of the grant application, the grant applicant must provide documentation of the support of a majority of the local governments within the watershed that includes a commitment by these local governments to participate in watershed level discussions and planning efforts. Such a commitment would result in the garnering of political support more efficiently and overcoming mistrust among stakeholders.

**Recommendation #4:** Request that local government elected officials appoint representatives to the watershed planning partnership.

Lack of local ownership is one of the most common problems faced by collaborative watershed planning efforts. Because local officials or planning staff may feel that the prospect of watershed planning is daunting, they may be inclined to allow the responsibility of the project to rest with the technical consultant or watershed organization. Although this may allow the plan to be developed in an efficient manner, the end result often does not have the built-in local government support necessary to translate into implementation. When local government staff members rely too heavily on technical consultants to develop the watershed plan, the result is often a lack of ownership or understanding of the final product by the staff members, followed by a lack of investment in seeing the plan through to implementation (Schueler and Holland 2000, 163). In the Chippewa Creek pilot project, CRCPO requested that the mayors of the primary cities appoint representatives from the community to the watershed planning partnership. It is
recommended that all directors of planning partnerships request that mayors, trustees, or commissioners appoint representatives to the watershed planning partnership. This effort not only forces the elected leadership of the local governments to take some ownership in the process, but it also ensures, as much as possible, that the people who participate in the watershed planning partnership will take the role seriously because they participate at the request of the government leadership.

**Recommendation #5: Seek a wide range of stakeholder participation, with particular focus on power centers that will likely oppose the plan.**

The purpose of watershed planning is to make a significant difference in how watersheds are developed such that existing resources and water quality can be protected. Proposing significant changes to patterns of development in a region often can be controversial. The watershed planning process should provide stakeholders with an early opportunity to contribute meaningful input in the development of the plan rather than requesting feedback towards the end of the study (Schueler and Holland 2000, 164). If stakeholders do not feel that they were afforded a chance to significantly participate, they will be more likely to put their efforts into opposing the plan in the end stages (Schueler and Holland 2000, 164). Therefore, local government participation, though extremely important, is also not enough. As was seen in the Rocky River UWB project, a group of citizens successfully waged war against the Balanced Growth Plan at the end of the plan development process, even after the local governments had approved the plan. Had the Rocky River UWB watershed planning partnership sought out participation from the likely opposition in the beginning stages of the project, it may have been successful in winning over this group of people by incorporating some of their ideas.
**Section 8.3 Achieving Watershed-Level Participation**

One of the central goals of the Lake Erie Balanced Growth Program is to get local governments to look beyond their political jurisdictional boundary to think about their role within their watershed. Achieving this goal means that local governments must sit down and talk with one another and understand their interdependence in maintaining or reclaiming the health of their shared watershed and water body. All recommendations previously discussed also apply to achieving watershed-level participation.

**Recommendation #6**: Streamline the watershed balanced growth plan development process to ensure that watershed partnership members feel that participation is an efficient use of their time and allows them to make valuable contributions to the effort.

In addition to overcoming the challenge of convincing local governments that the issue is worthy of their participation, the process of plan development must be perceived as credible and efficient and a valuable use of a participant’s time. For example, as noted in the Swan Creek pilot project, local government representatives felt that their time was not well utilized in discussing the analysis criteria, which was something intangible to them. In the Chagrin River pilot project, it was acknowledged that the watershed was simply too large to feasibly hold watershed-level planning meetings. It is recommended that OLEC re-evaluate the process to consider whether it can credibly achieve the results it seeks, whether it provides the opportunity for participants to offer valuable input, and whether the process of producing a watershed plan is efficient throughout. One potential solution is to vote on analysis criteria as a watershed-level group and then split into smaller, sub-watershed-level committees to review and fine-tune the post-GIS analysis watershed balanced growth plan. This way, local government representatives are still providing input on a watershed level, but the majority of their time is spent on watershed issues closer to or within their political jurisdictions.
Section 8.4 Clarifying and Encouraging Implementation

Achieving approval of the final Watershed Balanced Growth plan is not the last step in the Balanced Growth process. The purpose of the Balanced Growth program is to protect and improve the water quality of Lake Erie. It is not enough to simply create a plan, but rather every effort must be made to implement the plan. Although implementation by local governments is and should remain strictly voluntary, watershed planning partnerships and OLEC must strongly encourage tangible outcomes by the means recommended below.

According to CWP, a common reason why watershed plans are not implemented is that the document is too complex and does not clearly convey the watershed management recommendations that local governments are supposed to implement (Schueler and Holland 2000, 163). As was discussed in Section 7.5, several local governments were unclear as to how the Balanced Growth plan would be implemented in their jurisdictions. Several of them noted that they would be waiting for guidance from the leadership of the watershed planning partnerships. Yet, after having approved the Balanced Growth Plan, the leadership of the political jurisdiction should be very clear as to how the plan is recommended to be implemented in their area. The following recommendations are intended to help watershed partnerships better clarify the roles and tasks of each stakeholder in the watershed in the final reports.

**Recommendation #7:** Establish a watershed planning partnership with representation from all local governments in the watershed and secure a funding source.

Although the onus of implementation of the Balanced Growth Plan rests with the local governments, the watershed planning partnership could take an active role in promoting the implementation of the plan as well. As a first step, it is recommended that formation of the permanent watershed planning partnership follow the directions of the Balanced Growth Program and include representation from the local governments within the watershed. The
watershed planning partnership will likely find it necessary to secure a funding source to carry out its normal operations. In the Chippewa Creek watershed, CRCPO is working to establish a system in which the member governments pay dues to the watershed planning partnership, much like CRWP functions.

Once established, instead of simply maintaining the Watershed Balanced Growth Plan, these partnerships could work with their local governments to achieve comprehensive plan updates and adoption of model zoning ordinances, again, much like the role that CRWP plays in the Chagrin River watershed. For example, CRWP used some of its OLEC grant funding to partner with one of its member local governments to update its comprehensive plan. CRWP signed a Memorandum of Understanding (MOU) with this local government that documented the details of their agreement. Lastly, these partnerships could stay abreast of new development in the area and making recommendations with regards to how the proposed development could be improved to meet the intentions of the Watershed Balanced Growth Plans. Always, the partnership should support and provide technical assistance to the local governments rather than chastisement.

**Recommendation #8:** Provide a clear list of roles and actions for each recommendation of the Watershed Balanced Growth Plan.

Watershed Balanced Growth Plan reports should leave no room for confusion as to what each agency or stakeholder within each political jurisdiction is being asked to do in the implementation of the plan. It is recommended that watershed planning partnerships follow the model presented by CRCPO in the development of the Chippewa Creek Balanced Growth Plan report, as previously described.

**Recommendation #9:** Prioritize the recommendations based on anticipated impact within the watershed as related to program and community goals.
Because Balanced Growth Plans present a variety of recommendations, some that will have more impact than others in the protection of important natural resources, it is recommended that the report provide a prioritization of the recommendations so that local government officials can better allocate funding and efforts at implementation.

**Recommendation #10:** Provide an inventory of the existing regulations of each local government and how they relate to the Watershed Balanced Growth recommendations.

To further eliminate any vagueness with regards to the recommendations to adopt Balanced Growth model ordinances, it is helpful to identify how each local government currently addresses the recommended restrictions of each model ordinance. This would allow local governments to evaluate their regulations in contrast to the model ordinances, compare their ordinances with their neighbors’, and further clarify the steps each local government needs to take to fully implement the Balanced Growth Plan. At this time, only the Chippewa Creek Balanced Growth Plan report includes an inventory of this kind. However, CRWP also keeps track of the ordinances of its member communities and works with them to improve their regulations that affect the health of the watershed. It is recommended that all of future watershed planning partnerships follow suit.

**Recommendation #11:** Improve state incentives package available to local governments who have adopted Watershed Balanced Growth Plans.

As much of the literature documents, watershed plans are implemented when local governments believe that their communities will experience a benefit in doing so. The state incentive package is one avenue by which local officials can be encouraged to implement their Watershed Balanced Growth plan. However, the directors of all of the pilot projects agree that currently the state incentives to implement the Balanced Growth plans are weak and offer little in the way of actual incentives. The directors and a few local government representatives noted
that they would like to see more grant money provided specifically to Balanced Growth communities, particularly with regards to the Clean Ohio and Ohio Public Works Commission programs. They would also like to see significantly higher points given to projects that are consistent with the Watershed Balanced Growth plans.

**Section 8.5 Education and Motivation**

Ignorance of and indifference toward healthy watershed behavior are two enormous problems facing any watershed planning effort, including the Lake Erie Balanced Growth Program. In many ways, these are the root causes of nearly all roadblocks to watershed planning. If ignorance and indifference cannot be overcome, effort on the part of local governments will not be expended to overcome any subsequent roadblocks. To overcome ignorance and indifference, communities must first be educated with regards to the importance of watershed health and their role in impacting the watershed. Education of their environmental impacts alone is often not motivation enough to move local governments to participate in watershed management activities.

Occasionally, as in the case of the Chippewa Creek watershed, the motivation behind partnering in the Balanced Growth project is clear and in the form of an environmental problem. Environmental problems, as discussed in the literature, are a sure way of getting local governments and community members involved and interested in good watershed behavior. But, what if these kinds of circumstances don’t exist? What if, like in the case of Swan Creek, the creek isn’t bad enough to get anyone excited about it, and it isn’t good enough to get anyone excited about it? Before undertaking the Balanced Growth Program in a watershed of this nature, the motivation behind this type of watershed planning effort must be embraced by the local governments within the watershed and their community members. The motivation doesn’t necessarily have to be environmentally benevolent in nature. The inhabitants of the Chagrin River watershed, for example, are equally interested in protecting the environment and
in maintaining the “green nature” of their communities. Interest in environmental protection alone may not have been enough to motivate them to participate in the Balanced Growth Plan, but because the plan was in keeping with their existing efforts to keep their communities green, it was easily accepted. The motivation behind involvement and implementation of the Balanced Growth plan must be strong and tangible from the perspective of the local government for the program to make a genuine difference, and the watershed planning partnership can be instrumental in helping local governments become aware of their motivation. The following recommendations are geared towards educating local communities with regards to good watershed behavior and towards finding or providing tangible motivation for local governments to implement the Balanced Growth plan.

**Recommendation #12:** Provide funding to educate the population of the watershed, particularly in watersheds that have people with lower educational backgrounds.

A hypothesis of collaborative environmental planning is that higher social classes are more interested in environmental issues. However, a study by Van Liere and Dunlap (1980) found that the connections between two aspects of social class, income and occupational prestige, and environmental concern were weak. A moderately strong connection resides between education and environmental concern (Van Liere and Dunlap 1980). This knowledge can be utilized in the following way: OLEC should consider the education of the watershed population when allocating resources to Balanced Growth plans. In watersheds where the population has less access to environmental education, more resources should be devoted in the beginning to educating the population. Through education some motivation for involvement in the planning and implementation of the watershed planning effort is likely to arise.

**Recommendation #13:** Allocate a portion of funding for two-way communication/education opportunities.
Studies indicate that two-way communication, meaning door-to-door efforts, surveys, meetings, and programs, is more effective than one-way communication in achieving public interest and participation in watershed planning efforts (Durham and Brown 2000). Two-way communication is costly and time-intensive, so the resources of the watershed planning partnership must be weighed against the potential benefits of such an effort, which can be both to educate the public and encourage public participation in the planning process. Actively seeking public involvement in certain steps in the watershed planning effort, such as agreeing on priorities and plan goals, can increase the awareness of the issue in the community and add legitimacy to the end product. Two-way communication outreach may be significantly beneficial in areas where political support for watershed planning activities is difficult to achieve, such as in rural areas where mistrust and disinterest in watershed planning are often prevalent.

**Recommendation #14: Educate local governments on the budgetary benefits of engaging in collaborative watershed management.**

Where no environmental issue is at stake and where no regulatory mandate is in place, the motivation for a local government to act to protect its watershed often comes down to money. Local governments want to know the fiscal benefit of engaging in collaborative watershed management as compared to those associated with their current stormwater management activities. In other words, how will collaborative watershed management affect their pocketbooks? To answer this question, it is recommended that at least one Balanced Growth Pilot project engage in an in-depth cost-benefit analysis of the Balanced Growth Program in a subwatershed. The results of this one study could then be extrapolated and applied to other watersheds that are considering using the Balanced Growth Program. The cost-benefit analysis would consider issues ranging from the cost of GIS technicians, time required for meetings, and conservation of sensitive lands to the reduction in spending on storm sewer maintenance, a reduction in the loss of property due to soil erosion, and maintained beauty of the landscape.
Once the fiscal benefits of collaborative watershed management are defined within one watershed, the information can be used to educate other local governments, providing them with concrete rationale for engaging in watershed management activities.

**Recommendation #15:** Utilize GIS build-out scenarios as education tools to allow communities to see the consequences of their zoning and land use decisions.

Part of the education of local communities within the watershed is helping them to understand the consequences of their land use and development decisions. Watershed partnerships could take their GIS analysis one step further and provide build-out scenarios based on current zoning ordinances, recommended conservation areas, and recommended model ordinances. These more concrete representations of potential futures may help lawmakers and the general public better understand the consequences of their decisions.

The analysis of future conditions could be taken even further utilizing such models as the Long-Term Hydrologic Impact Assessment (L-THIA) model to estimate the impact of the proposed future land use changes on non-point source pollution and volumes of surface runoff. L-THIA is an online program that provides an evaluation of the long-term average impact of current decisions with regards to future land use (Tang et al 2005). The watershed planning partnership may take the resulting estimates of pollutants and volumes and discuss what these levels of impacts mean in terms of the health and visual quality of the watershed’s streams.

Another promising planning tool is the Envisioning System, a technology that has been developed in Australia that allows communities to explore potential future scenarios of landscape changes. It is a decision or planning support software that allows the community to see the environmental impacts of various land use configurations. The system also includes an interface where communities can express their opinions on proposed landscape changes, and it
serves as a means to educate communities about their relationships with their environment (Stock et al. 2006).

Section 8.6 Overcoming Uncertainties Surrounding Techniques

Uncertainty surrounding techniques that could aid in the implementation of the final Balanced Growth Plans arose in the course of each of the pilot projects. Transfer of development rights, wetlands banking, and conservation developments are just a few of the techniques that were considered by the watershed planning partnerships, but were recognized as troublesome for various reasons as previously described. Addressing the difficulties associated with these techniques is beyond the scope of this thesis, so they will only be briefly discussed here.

To some degree, these issues are already being addressed. The OLEC, for example, has already recommended to the State of Ohio that enabling legislation be extended to townships to allow townships to engage in transfer of development rights. In addition, the Ohio State University Extension notes that technological advances in small community sanitary treatment systems now makes conservation development in rural areas feasible (Blaine and Schear). Tools such as Joint Economic Development Districts (JEDDs) and intergovernmental agreements provide means to share costs and revenues and could be applied to watersheds to share the costs of conservation and the revenues of development across political jurisdictional lines when the burden of conservation -- which benefits the entire watershed -- is not evenly distributed throughout the watershed.

All of these tools/techniques have transaction costs. In order for local governments to be willing to overcome the transaction costs and seek more difficult solutions, they must perceive the importance of the issue at hand. For example, for local governments to be willing to invest the time and money to set up an intergovernmental agreement to address watershed management issues, they must believe that the watershed issues are of high importance and that the results
of the agreement are of high value to their citizens. As with many of the roadblocks encountered by the Balanced Growth pilot projects, this roadblock largely comes down to the motivation of the local governments. Tools exist or could be developed, yet it is the motivation to pursue them that is in question.

Section 8.7 Additional Recommendations from Pilot Project Directors

The following recommendations were suggested by one or more pilot project directors; however, in some cases I have expanded upon the initial recommendations with my own thoughts.

Recommendation #16: Keep the program voluntary with no disincentives.

Each of the pilot project directors expressed that the key to the program’s success and the willingness of the local governments to participate is its voluntary status. These local governments perceive no risk to getting involved in the collaborative watershed management effort, only benefit.

Recommendation #17: Add Priority Agricultural Areas officially to the Balanced Growth Program.

Although they are not necessary in every watershed, they are useful in highly agricultural watersheds because farmers in general do not want their properties to be listed as PCAs. They fear that this designation would impede their ability to sell their land for development in the future.

Recommendation #18: Relax requirement to achieve approvals from local governments representing 75% of the watershed political jurisdictions, 75% of the population, and 75% of the land area.
In two cases, the pilot project was able to meet two out of the three requirements, but not all three. It is recommended that the requirement be lowered to achievement of two out of the three benchmarks before the Watershed Balanced Growth Plan can be submitted to the OLEC for final endorsement.

**Recommendation #19:** Consider a different approach to the participation of rural townships in the Balanced Growth Program.

Townships in Ohio are a less powerful form of government, having some powers of self-government, but not all. Townships must consult with county government before making changes to their zoning codes, if they have their own zoning codes. In addition, townships rely on county government for engineering and subdivision regulations. Rural townships appeared to present the most opposition to the Balanced Growth Program as compared with the other local government types. Therefore, the OLEC should consider different approaches to the application of the Balanced Growth Program to rural townships. On the moderate end of the “different approach” spectrum, in watersheds that have a high percentage of rural townships, more time and funding for education may be necessary in the beginning stages of the Balanced Growth Program. On the more extreme end of the spectrum, to minimize governmental fragmentation and to mitigate the roadblocks of mistrust and lack of political support, OLEC may consider allowing watershed planning partnerships to leave all townships, except urban townships, out of the Balanced Growth process. In other words, the Balanced Growth program would not require watershed partnerships to achieve the approvals of township trustees if the plan was approved by both the county regional planning commission and the county commissioners. In this scenario, only approvals from urban townships, those townships with populations greater than 15,000 residents, would be required as part of the Balanced Growth Program. This latter approach may be controversial in that it may inflame the mistrust of rural townships by sidestepping the issue entirely. To encourage some collaboration with the rural
townships on the Balanced Growth plan and still avoid seeking approvals individually from them, the watershed planning partnership could consult with representatives from the townships via the county regional planning commission, if one exists for the particular county.

One last approach that OLEC may consider in watersheds that have high percentages of rural townships is to include the participation rural townships in the development of the overall watershed plan, but to encourage the adoption of the Balanced Growth model ordinances into the county subdivision regulations rather than the individual local government zoning codes. This approach would allow rural townships to maintain their autonomy in planning for the land within their boundaries, but would enforce higher levels of model ordinance implementation throughout the county.

**Recommendation #20: Improve consistency in priority area designations across Balanced Growth projects.**

Each of the pilot projects developed its own method for designating priority areas, resulting in a great deal of inconsistency among the designated priority areas of the pilot projects. As noted previously, many inconsistencies even exist among the priority area designations within a given pilot watershed. Because all of these local governments are in competition with one another for grant funding, inconsistencies in criteria used to designate priority areas results in inconsistencies in the advantages of the priority area designation across areas of the same designation. OLEC should consider creating a baseline set of criteria for each priority designation across watershed planning partnerships. This baseline would provide consistency on the criteria that are important for the protection of the watershed. Watershed planning partnerships should then be allowed flexibility to add to the criteria based on issues that are of importance to the communities within the particular watersheds. For example, riparian wetlands provide vital services in any watershed and should be always be in the criteria for PCAs. Some
communities might desire to protect their scenic highways. Although scenic highway buffers would not be in the PCA criteria for all watersheds, it may be added to the PCA criteria for a specific watershed without undermining the purpose of the PCA.
Chapter 9: Conclusions

Section 9.1 Final Thoughts on the Lake Erie Balanced Growth Program

The Lake Erie Balanced Growth Program addresses land use decisions and development practices within the Ohio Lake Erie Basin in a language that local governments understand. The program takes a practical and systemic approach to improving and maintaining the health of watersheds by looking at land use over the entire watershed, and it complements other EPA programs, such as the 319 program, which focuses on water quality improvements and indicators, often foreign to most local government officials and lay people. In addition, the Balanced Growth Program fits hand-in-hand with NPDES Phase II compliance requirements. Also, unlike most watershed planning programs encountered in the literature, the Balanced Growth Program is an attempt at achieving completely voluntary watershed planning and participation with no intention to create new regulations or mandates and not directly seeking to comply with existing regulations and mandates. In this sense, the Lake Erie Balanced Growth Program is ambitious.

Yet, for all of its value, the Balanced Growth Program, when implemented, exposes its flaws. If the success of the program, as stated by more than one pilot project director and OLEC representative, is simply to get local governments talking with each other and thinking at the watershed level, the program largely failed. Only the Chippewa Creek pilot project was able to secure watershed-level planning. The other pilot projects resorted to watershed-level planning primarily without the participation of the local governments and sought local government plan revisions and approvals one-by-one. Discussions among local governments were few and isolated, and not watershed-wide. If watershed-level thinking and participation is a necessary ingredient to a successful Watershed Balanced Growth plan, much more attention and resources need to be devoted in the early stages of program implementation to secure the political support and involvement of local governments in the process. Education outreach, the
development of personal and trusting relationships, and providing these local governments with ample motive to overcome indifference and ignorance with regards to watershed issues are all necessary to move local governments to act.

The Balanced Growth Program also lacks evidence of generating dramatic changes in attitudes regarding watershed behavior by the local governments. Chippewa Creek watershed communities would likely have sought out means to reduce their risk of another 500-year flood without the Balanced Growth Program. CRWP was already working with its local communities to adopt model ordinances and protect their natural resources through elements in their comprehensive plans; the Balanced Growth program simply offered another source of funding and perspective on this effort. In the course of obtaining approvals of the local governments within the Swan Creek watershed, several communities requested changes to their priority areas that would be more in keeping with their current comprehensive land use plans and development goals. The Rocky River pilot project communities do not appear to be doing anything differently than they were before. Therefore, the Balanced Growth program likely just reinforced existing efforts by these communities. Yet, however the community arrived at its desire to preserve sensitive areas and develop others, the Balanced Growth Program does provide additional context to a community’s efforts in this regard, and it adds a layer of incentive towards the implementation of these goals.

The Chippewa Creek pilot project has proven that, in small watersheds with a significant environmental problem as immediate motivation, the ideal local government involvement in collaborative watershed management can be achieved. Yet, although the Chagrin River pilot project did not have nearly the same level of local government participation, it may result in the same level of watershed protection. The CRWP continues to work with its member organizations, one-by-one to encourage the adoption of model ordinances and the conservation of sensitive environmental areas. This begs the following question: is the participation of local
governments in watershed level planning necessary? If, at the end of the process, local governments are still only concerned with what is occurring within their own boundaries, are the attempts made to achieve watershed-level participation wasted?

Section 9.2 Expansion of Program Statewide

As mentioned previously, the Ohio Water Resources Council has voted to expand the Lake Erie Balanced Growth Program statewide. Before doing so, however, it is recommended that several issues be considered. First, there is the issue of the state incentives. Already, the directors of the pilot projects feel that the state incentive package is weak. Time will tell if the local governments conclude the same as they try to receive funding for projects that are in keeping with the Balanced Growth Plans. The pilot project directors expressed concern that, in expanding the program statewide, the already weak state benefits would be further watered down, making them virtually meaningless. The OLEC argues that offering the program to the entire state may actually improve the state incentive package because more state agencies would be willing to offer incentives to a program that was not limited to just a portion of the state.

Another consideration in the expansion of the Watershed Balanced Growth Program statewide is the intensity of time and resources required both to educate communities about best local land use practices and to produce the plans. OLEC staff members spend a considerable amount of time travelling to the various communities within the Ohio Lake Erie Watershed to train local governments and other watershed stakeholders about healthy watershed practices. For communities to accept this kind of training, a relationship must first be developed between the communities and OLEC. This kind of care and individual treatment requires time and resources and will require much more of both once the plan is expanded statewide. Also with regards to time and resources, at least one pilot project director noted that the Watershed Balanced Growth process requires a highly complex GIS analysis and that it is unlikely that many watershed groups will have the resources to utilize this process. Therefore, either a
lower-technology methodology must be devised to implement the program, or the OLEC must find much more grant money to fund new Balanced Growth projects across the state.

Section 9.3 Future Research

Although this study was able to draw several conclusions regarding the Lake Erie Balanced Growth Program, several avenues for further study still exist. First, a more in-depth study into the fragmentation within each individual government within the watershed would be useful to better understand how a program like the Balanced Growth Program infiltrates the operations of local government. For example, some of the techniques promoted by the Balanced Growth Program, such as conservation development, require cooperation with the local Engineering Department to accomplish. How do local governments absorb the Watershed Balanced Growth plan into their operations once they have approved it?

Additional study is also necessary over the next several years to examine whether or not the Watershed Balanced Growth Plans actually impacted land development patterns within their watersheds. How many PCAs were spared from development, and what was the mechanism used? How many developments in PDAs received grant funding? In addition, it would be valuable to learn what role the watershed planning partnerships play into the future in terms of maintaining and implementing the plan. Are the Watershed Balanced Growth Plans updated over time or are they static documents?

Lastly, further study is necessary to analyze the consistency in the rules used to designate priority areas from watershed to watershed. For example, some pilot projects used existing zoning as a criterion to establish PDAs, while other pilots ignored zoning entirely and focused strictly on features that would not change. Consistency across projects is necessary because different pilot watersheds will likely be competing against each other for grant money, and using different criteria to establish priority areas impacts the quality of the proposed project and its
impact on the watershed, which will in turn influence the project’s standing in the competitive grant process.
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**Data**


Appendix A
List of State Incentives
What is the fundamental principle to guide state agencies under the Balanced Growth Program?
If local governments can agree on areas within a watershed where development is to be encouraged (PDAs) and areas where conservation activities are to be promoted (PCAs), the State of Ohio will support those decisions by aligning state programs to support those decisions, and conversely will not utilize state programs to violate those locally based decisions.

What are the objectives of the state incentives package?
• Promote economically and environmentally sound watershed-based planning by local governments
• Provide incentives for development in PDAs
• Promote redevelopment in PDAs
• Provide incentives to promote conservation activities in PCAs

What is included in the state incentive package for local governments?
• **State Program Inventory** – a list of all state programs and funding sources that could be used to support conservation in the PCAs and development or redevelopment in the PDAs.
• Opportunity to work with state agencies through the **State Assistance Work Group** – this group is charged with assisting the participating local governments in identifying and obtaining technical and financial resources that can be used to support PCAs and PDAs.
• **Streamlining and Predictability** – the State Assistance Work Group will develop methods to provide more advance predictability and streamlining for site-related decisions in PCAs and PDAs.
• **Financial and Technical Special Incentives** – a list of these special incentives is provided in the Lake Erie Balanced Growth Strategy. The special incentives include specific grant and technical assistance programs that offer added consideration for projects that are within PCAs and PDAs.

For more information, please visit [www.epa.state.oh.us/oleo](http://www.epa.state.oh.us/oleo) or call (419) 245-2514.
Lake Erie Balanced Growth Program
State Assistance Work Group

What is the role of the State Assistance Work Group?
One of the state incentives for local governments is the opportunity to work with state agencies through the State Assistance Work Group. The State Assistance Work Group will be charged with assisting the Balanced Growth Watershed Planning Partnerships (WPPs) and participating local governments in identifying technical and financial resources that can support Priority Conservation Areas (PCAs) and Priority Development Areas (PDAs). The state agencies will assist in identifying sources of support, providing agency guidance on utilizing support, and promoting awareness of the local WPP intentions within the agencies.

Which state agencies are currently represented on the State Assistance Work Group?
The agencies represented include the six member agencies of the Ohio Lake Erie Commission (Ohio Departments of Natural Resources, Development, Transportation, Agriculture, and Health, and the Ohio Environmental Protection Agency), along with the Ohio Water Development Authority. These members have prior knowledge and involvement in the Lake Erie Balanced Growth Program and will be considered the chartering members. Federal agencies that provide funding for development and conservation projects, other state agencies, and appropriate institutional partners will also be invited as deemed appropriate by the chartering member state agencies.

What are the specific goals of the State Assistance Work Group?
- Help Watershed Planning Partnerships and local governments identify the most appropriate programs from the State Program Inventory that will support the PDA and PCA areas in the watershed.
- Provide the agencies with knowledge and familiarity with each Balanced Growth Watershed Plan and the local development and conservation goals.
- Evaluate the impact of proposed rule changes by the state agencies and provide comments that best incorporate balanced growth considerations as new rules or rule revisions are developed. Review funding priorities to provide suggestions on how they can be supportive of balanced growth.
- Identify any additional programmatic resources or policy changes that will help align state programs and polices with Balanced Growth Watershed Plans.
- Develop public information resources (fact sheets and websites) to assist Watershed Planning Partnerships.

For more information, please visit [www.epa.state.oh.us/oleo](http://www.epa.state.oh.us/oleo) or call (419) 245-2514.
Lake Erie Balanced Growth Program
Financial and Technical Special Incentives

What are Financial and Technical Special Incentives?
These include existing funding sources and programs that have incorporated Balanced Growth-specific considerations in their applications processes.

How will the Financial and Technical Special Incentives be applied?
The Financial and Technical Special Incentives will be available in watersheds that have a state endorsed Balanced Growth Plan or in some cases are working on a plan. They are generally in the form of additional consideration (extra priority ranking, interest rate discounts, or special support) for funding applications that will implement specific activities in PDAs or PCAs. There are also special considerations for technical assistance from the state in local communities that are participating in Watershed Planning Partnerships who have completed an endorsed Balanced Growth Watershed Plan.

What is included in the Financial and Technical Special Incentives?
The following table is a short summary of what is offered as special incentives in Balanced Growth Watersheds. Complete descriptions of the programs, including the sponsoring agency and contact information, are contained in the Lake Erie Balanced Growth Strategy dated December 12, 2007 and in the State Program Inventory appendix to the Strategy.

Special Incentives Summary Table

<p>| Coastal Management Assistance Grant Program | Technical and/or financial support for Balanced Growth Plan or proposed Projects in PCAs. |
| Watershed Coordinator Grant Program         |                                           |
| Recycling Market Development Grant Program  |                                           |
| Scrap Tire Grant Program                    |                                           |
| Land &amp; Water Conservation Fund Program      |                                           |
| Nature Works Program                        |                                           |
| Clean Ohio Trails Program                   |                                           |
| Recreational Trails Program                 |                                           |
| Streams &amp; Storm Water Program               | Prioritize staff resources toward watersheds with endorsed Watershed Balanced Growth Plans. |
| Ohio Lake Erie Conservation Reserve Enhancement Program | Set aside an undetermined amount of funds from each fiscal year allocation of $1 million toward PCAs, for |</p>
<table>
<thead>
<tr>
<th>Program/Program Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grassland Restoration Program</td>
<td>Provide additional points to applicants working on a Balanced Growth Plan or who propose priority projects in a focus area.</td>
</tr>
<tr>
<td>Wetland Restoration Program</td>
<td>Align for protection of PCAs.</td>
</tr>
<tr>
<td>Ohio Agricultural Easement Donation Program</td>
<td>Modify to support PCAs.</td>
</tr>
<tr>
<td>Agricultural Security Area</td>
<td></td>
</tr>
<tr>
<td>Clean Ohio Agricultural Easement Purchase Program</td>
<td></td>
</tr>
</tbody>
</table>
| Water Pollution Control Loan Fund | Align to support PCAs and PDAs including:  
• Funding for best water quality management practices for land development  
• Funding for municipal storm water best management practices  
• Funding for land and water conservation and restoration actions with water quality benefits.  
Additional priority points for qualifying Balanced Growth projects |
| Fresh Water Loan Group | Additional ½ percent discount on loans. |
| Community Assistance Loan Program | |
| Lake Erie Protection Fund | Priority for projects to develop and implement Balanced Growth watershed plans. |
| National Flood Insurance Program Community Rating System | Discounts to flood insurance premium rates on flood insurance policies sold for properties within the community. |
| Dam Safety Linked Deposit Program | Below market rate loans for the removal of dams. |
| Dam Safety Loan Program | |
| Floodplain Mgmt. Technical Assistance | FEMA approved flood mitigation plans result in local community eligibility for a full array of pre- and post-disaster mitigation funds and assistance. Inclusion of strategies and actions to address flood risk and protect floodplain resources in Balanced Growth Plans can easily be incorporated into mitigation plans. |
| Dam Safety Technical Assistance | |
| Statewide Geologic Mapping | |
| Ohio Coastal Erosion Area Remapping | Technical geological information in support of Balanced Growth Plan. |
| Side-scan Sonar Substrate Mapping | |
| 166 Direct Loan Program | |
| Rapid Outreach Grant | Strongly encouraged for businesses planning to expand within Priority Development Areas (PDAs). |
| Roadwork Development (629) Account | |
| Ohio Job Creation Tax Credit | Tax credit would be strongly encouraged for businesses planning to expand within Priority Development Areas (PDAs). |
| 208 Planning (aka State Water Quality Management Plan) | Provides a mechanism to strengthen local land use and sewer infrastructure planning; OEPA review of |
wastewater discharge permits and sewer PTIs in PDAs. “Specific prescriptions” regarding wastewater treatment and disposal options would be binding upon OEPA in permitting actions; permits must be consistent with approved 208 plans.

<table>
<thead>
<tr>
<th>Clean Water Act Section 319 Implementation Grants Program</th>
<th>OEPA provides additional scoring/credit for projects that are proposed in watersheds where a Balanced Growth Plan has been completed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Supply Revolving Account</td>
<td>Utilize priority point system for potential loan projects to recognize consistency with balanced growth plans.</td>
</tr>
<tr>
<td>Small City Program</td>
<td>Participating in and meeting the Balanced Growth Initiative will be criteria that goes into selection of projects.</td>
</tr>
<tr>
<td>Transportation Enhancements</td>
<td></td>
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</table>
Lake Erie Balanced Growth Program
State Program Inventory

How will the State Program Inventory help the Watershed Planning Partnerships?
This inventory is intended to be a resource for Watershed Planning Partnerships to help identify programs that will support conservation in Priority Conservation Areas and development or re-development in Priority Development Areas. These are existing state programs that have been identified as specifically impacting land use change decisions. The intent is that the state will consider the existence of PCAs and PDAs in the use of these programs to support land use planning and land use change that is beneficial to the local communities and to Lake Erie as outlined in the Lake Erie Protection and Restoration Plan.

How is the State Program Inventory presented?
The State Program Inventory is a list of state programs compiled by whether or not they will support Priority Conservation Areas or Priority Development Areas. The list is structured by conservation or development effect, and then by three factors: infrastructure, direct site impact, and planning/technical assistance services. It is currently contained as an appendix in the Lake Erie Balanced Growth Strategy, which was approved in an updated version by the Ohio Lake Erie Commission on December 12, 2007.

What is included in the State Program Inventory?
- **Conservation Programs** – there are a total of 45 state programs and funding sources in the Inventory that could be used to support conservation in the PCAs. This includes one program for Metro Park infrastructure, 30 that are site specific (for example, site acquisition or restoration), and 14 for services (such as forestry or watershed action plan technical assistance).
- **Development Programs** – there are a total of 109 state programs and funding sources in the Inventory that could be used to support development or re-development in the PDAs. This includes 33 programs for infrastructure (primarily transportation and water, through ODOT, OWDA, and OEPA), 65 that are site specific (for example, various community development programs), and 11 for services (such as minority business assistance or planning programs).

It should be noted that a few programs appear on both lists, since they could be used to support either conservation or development (for example, the ODNR – Division of Soil & Water Conservation, Streams and Storm Water Program serves a range of purposes).

For more information, please visit [www.epa.state.oh.us/oleo](http://www.epa.state.oh.us/oleo) or call (419) 245-2514.
Lake Erie Balanced Growth Program
Streamlining and Predictability Incentives

Why would streamlining and predictability of state regulatory programs be an incentive?
The unpredictability and long time frame typically needed to secure permits presents significant challenges to successful development practice. Extended permit review periods and conflicting information across regulatory agencies jeopardizes private developer ability to finance projects reasonably and bring projects to completion. Therefore, state efforts to streamline these processes and make them more predictable would serve as an incentive for private developers and local communities if they could anticipate streamlined, predictable decision making to encourage development or redevelopment in the PDAs and consistently greater levels of difficulty for equivalent projects in PCAs.

Which state regulations can be streamlined and made more predictable?

- A rules package for stream mitigation, wetland mitigation, and 401 certification is in the process of being developed by OEPA. Development of these rules should provide improvements to predictability and timeliness in the permitting process.
- Ohio EPA is in the process of developing and issuing general NPDES permits for a variety of discharges in order to increase efficiency and to help make it easier for various dischargers to obtain an NPDES permit.
- Programs that require consistency between federal, state or local actions and specifically adopted plans (e.g. Ohio Coastal Management Program and Section 208 Plans) are another method that Watershed Planning Partnerships and local governments can use to assure that state and federal actions are consistent with their Watershed Balanced Growth Plans. Programs that depend upon local recommendations (e.g. ODOT in MPO areas) will reference consistency with a locally adopted and state endorsed Watershed Balanced Growth Plan where such a plan has been completed.
- The State Assistance Work Group will look at additional methods to provide more advance predictability pertaining to site-related decisions. While these regulatory changes will generally be available statewide, they also will address the need for state regulatory streamlining and predictability in Balanced Growth Watersheds.

For more information, please visit www.epa.state.oh.us/oleo or call (419) 245-2514.
Watershed Planning Partnership Director or Staff Member

1. How/why was your planning partnership formed?
2. Did your planning partnership have any other projects prior to the Balanced Growth Plan?
3. Had communities in your watershed ever acted together as a watershed prior to the Balanced Growth Plan effort?
4. What is the membership composition of your partnership?
5. What was the level of involvement/participation of the local governments within your watershed? What role did they play?
6. What level of involvement/participation did members of the public have in the process?
7. What time commitment was requested of participants in the Balanced Growth Plan?
8. Why did your planning partnership decide to pursue the Balanced Growth Program?
9. What was your strategy for developing your Balanced Growth plan?
10. Did you encounter any roadblocks or any noteworthy successes in developing the plan?
11. Were any significant compromises necessary to achieve agreement on the designation of priority development areas and priority conservation areas?
12. What was your strategy for gaining the approval of the local governments?
13. What roadblocks have you encountered in working to achieve approvals from local governments?
14. What is your perception as to how the Balanced Growth plan will be implemented by each of the local governments?
15. How receptive have local governments been to updating their comprehensive land use plans with the results of the Balanced Growth plan?
16. How receptive have local governments been to adopting the Balanced Growth model ordinances?
17. Have any real estate developments been impacted by the Balanced Growth plan to date?
18. What is your overall satisfaction with the Balanced Growth program?
19. What might you have done differently in implementing the program?
20. How much did fragmentation of local government impact the planning process and how much will it impact the implementation? (Vertical and Horizontal Fragmentation)
21. How much did politics play a role in achieving local government cooperation?
22. How much grassroots support is there within the population of the watershed to protect it?
23. What is your sense of the trust among the jurisdictions within your watershed? Did trust play a role in generating your Balanced Growth Plan?
24. Do you feel that you have adequate resources to accomplish all aspects of the plan (including education, implementation, etc)?
   a. If not, what resources are you lacking in?
25. What is the decision-making process of your planning partnership?
26. How stable is the population in your watershed? Is it transient?  
27. What is the greatest source of water quality degradation in your watershed? 

**Representatives from Participating Local Governments**

- What role does your government agency play in impacting land use decisions?  
- Why did your local government choose to become involved in the Balanced Growth pilot project?  
- What was your role in the development of the plan?  
- What was the most challenging aspect of developing the plan?  
- Were any significant compromises necessary to achieve agreement on the designation of priority development areas and priority conservation areas?  
- Has your local government approved the Balanced Growth plan? Why or why not?  
- How does your local government intend on implementing the Balanced Growth plan?  
  - Will its comprehensive plan be updated?  
  - Will it be adopting the Balanced Growth model ordinances?  
  - Will it be providing any additional incentives for the implementation of the plan?  
- Are any priority development areas or priority conservation areas located within your political jurisdiction?  
- What is your overall satisfaction with the Balanced Growth program?  
- What might you have done differently in implementing the program?  
- Is there grassroots support within your jurisdiction for watershed protection?  
- Were there any fears that your government agency was abdicating some of its power or responsibilities to the watershed partnership?  
- Would you rank your involvement as Observer, Partner or Sponsor?  
- Do you feel there is trust among your government and the other local governments within the watershed? Do you have a history of cooperation?  
- Do you feel that you have the adequate resources to be involved in the partnership and to implement the partnership recommendations? What additional resources might be necessary?  

**Representatives from Non-participating Local Governments within the Pilot Watershed.**

- What role does your government agency play in impacting land development/land use decisions?  
- Was your local government aware of the Balanced Growth pilot project?  
- Why did your local government choose to remain uninvolved in the planning partnership?  
- Are environmental issues important to your community?  
- Do you feel that your watershed has serious environmental problems?
• What incentive could have been offered that might have been more successful in achieving your involvement?
• Is your local government interested in approving the final Balanced Growth plan? Why or why not?
• Are any priority development areas or priority conservation areas located within your political jurisdiction?
• Did politics play a role in your agency’s decision not to participate?
• Where people within your administration fearful that your government agency would be abdicating some power or responsibility to the watershed partnership?
• Is there grassroots support within your jurisdiction for watershed protection?
• Do you feel there is trust among your government and the other local governments within the watershed? Do you have a history of cooperation?

Representatives from the Ohio Environmental Protection Agency or the Ohio Lake Erie Commission

• How was the framework of this program developed?
• What is your perception of the success of the Balanced Growth Program to date?
• What particular challenges or successes has the program experienced?
• What about the program will need to change in order to apply it to the entire state of Ohio?
Appendix C
Watershed Planning Partnership Members
Chippewa Creek Watershed Planning Partnership

City of Brecksville
Jerry Hruby, Mayor

City Council/Senior Staff
Victoria McCauley
Carl Opatmy
Ron Weidig
Edwin Egut

Citizens
William Donohue
Jeff Kerr
Anthony Blanc
Neil Brennan
Paul Cevasco
Michael Harwood

City of Broadview Heights
Samuel J. Alai, Mayor

City Council/Senior Staff
George Stelmaschuk
Thomas Pavlica
Raymond E. Mack
Gene Esser
Dale Alexander

Citizens
Steve Benza
Patti Gregory
Dave Kaminski
Harold Scobie
Kris Snider
Rick Stalzer
Anthony Blanc

City of North Royalton
Robert A. Stefanik, Mayor

City Council/Senior Staff
Thomas Jordan
Larry Antoskiewicz
Victor Bull
Brenda Fashempour

Citizens
Ivan J. Hack, Jr.
James Jacobs
John E. Polonye
Barbara Soggs
Roland S. Gove

Rocky River UWB Watershed Planning Partnership

Medina Soil and Water Conservation District
Rocky River Watershed Council
Medina County Department of Planning Service
Medina County Economic Development Corporation
Medina County Emergency Management Agency
Medina County Highway Engineer
Medina County Home Builders Association
Medina County Park District
Medina County Sanitary Engineer
Western Reserve Land Conservancy
Northeast Ohio Areawide Coordinating Agency
Medina County Farm Bureau
Swan Creek Technical Committee

Kurt Erichsen, TMACOG, Vice-President of Environmental Planning (Lead)
Matt Horvat, TMACOG, Maumee River Coordinator
Jeff Grabarkiewicz, Lucas Soil & Water Conservation District (SWCD), Urban Stormwater Specialist
Marcus Ricci, Lucas SWCD, Urban Conservation Specialist
Marcus Ricci, Lucas SWCD, Urban Conservation Specialist
Members
Commissioner Pete Gerken, Lucas County (Chair)
Steve Brown, Fulton County Planning Commission Director (Vice-Chair)
Peter Bick & Lara Kurtz, URS
Anne Cooke, Regulatory Compliance Administrator, Andersons, Inc.
Les Disher, Waterville Township Trustee
Pete Emerson, citizen
Richard Bryan, Green Ribbon Initiative & Lucas SWCD Supervisor
William Burket, Hull & Associates
Regina Collins & Beatrice Miringu, City of Toledo, Dept. of Public Utilities, Division of Environmental Services
Keith Earley, Lucas County Engineer
Don Feller, Feller-Finch & Associates
Charlie Griffith, Washington Township Trustee
Gary Haase & Kelli Paige, The Nature Conservancy
Jim Irmen, Swanton Township Trustee
John Jaeger, Tim Schetter & Emily Zeigler, Metropolitan Park District of the Toledo Area
Leslie Kohli, Springfield Township Administrator
John Kusnier & Tim Walters, Mannik & Smith Group
Mike Ligibel, Ohio Department of Transportation, District Two
Molly Maguire, Toledo-Lucas County Planning Commission
Joel Mazur, City of Toledo, Department of Public Utilities, Division of Environmental Services
Brian Miller, Lucas County Engineer’s Office
Ken Pheils, Spencer Township Zoning Inspector
Dennis Recker & Steve Pilcher, Village of Whitehouse Administrator & Public Works Director

Nick Rettig, Henry County Planning Commission Director
Cheryl Rice, USDA NRCS Urban Resource Conservationist
Chris Riddle, Ohio Lake Erie Commission
Leitha Sackmann, Fulton County Planner
Don Schmenk, ODNR Division of Forestry
Scott Sibley, City of Toledo, Department of Public Utilities, Division of Engineering Services
Paul Toth, Toledo-Lucas County Port Authority
Eric Wagner, Monclova Township Zoning Inspector
Sally Wylie, Toledo Board of Realtors

Chagrin River Watershed Partnership

Chagrin River Watershed Partners, Inc.
<table>
<thead>
<tr>
<th>Roadblocks /Conflicts</th>
<th>Pilot Project Characteristics</th>
<th>Size of Watershed (sq. miles)</th>
<th>Characterization of Land Use</th>
<th>Number of Political Jurisdictions Supporting*</th>
<th>Number of Political Jurisdictions</th>
<th>Cities</th>
<th>Townships</th>
<th>Villages</th>
<th>Counties</th>
<th>Type of Agency</th>
<th>Formation date of watershed partnership agency</th>
<th>Historic role of watershed partnership agency</th>
<th>Focus on land planning as watershed management technique prior to Balanced Growth program</th>
<th>Trust in Agency</th>
<th>Level of Local Government Participation in Plan Development</th>
<th>Severe Environmental Problems</th>
<th>Do local governments perceive a benefit to their communities?</th>
<th>Social Values in Support of Conservation?</th>
<th>Social capital &amp; trust among neighboring governments</th>
<th>Shared Vision and Interdependence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>17</td>
<td>Urbanizing</td>
<td>3</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td></td>
<td></td>
<td>CRCPO: Non-profit community-based watershed group established by DEPA for the entire Cuyahoga River Watershed</td>
<td>1988</td>
<td>Operates the Cuyahoga River Remedial Action Plan (RAP)</td>
<td>High: Had been talking about it with member communities for a couple of years</td>
<td>Yes</td>
<td>Partner</td>
<td>Yes: Recent Flooding</td>
<td>Yes: Prevent Flood Risk</td>
<td>Yes: Fear of future flooding; Concern for protection of natural beauty; Concern for stewardship of creek, which flows into a national park</td>
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Table B. Rocky River UWB Balanced Growth Plan Analysis
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<tr>
<th>Roadblocks/Conflicts</th>
<th>Pilot Project Characteristics</th>
<th>Size of Watershed (sq. miles)</th>
<th>Characterization of Land Use</th>
<th>Number of Political Jurisdictions</th>
<th>Number of Jurisdictions Supporting Environmental Problems</th>
<th>Type of Political Jurisdictions as Percentages of the Total Number</th>
<th>Relationship of watershed partnership agency to community</th>
<th>Local Government Perspective</th>
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<tbody>
<tr>
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<td>No</td>
<td>205</td>
<td>Even mixture of urban, rural, open space and agricultural</td>
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<td>20</td>
<td>9%</td>
<td>57%</td>
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<tr>
<td>Governmental Fragmentation</td>
<td>Yes</td>
<td>--</td>
<td>°</td>
<td>--</td>
<td>°</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Limited Political Support</td>
<td>No</td>
<td>N/A</td>
<td>°</td>
<td>--</td>
<td>°</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Mistrust/Fear</td>
<td>No</td>
<td>N/A</td>
<td>°</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Lack of Watershed-level participation by local governments</td>
<td>Yes</td>
<td>--</td>
<td>N/A</td>
<td>--</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Uncertainty Surrounding Implementation</td>
<td>No</td>
<td>--</td>
<td>N/A</td>
<td>--</td>
<td>°</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>
Appendix E
Excerpt of Chippewa Creek Plan
Large tract #13 is the fourth-largest undeveloped area with 169 acres.

This undeveloped land is wholly located in the city of Broadview Heights, situated near the western border.

This area is importantly situated along a tributary stream that feeds into the main-stem of Chippewa Creek.

The area contains a large amount of important forest canopy, critical soils, wetlands, primary headwater streams and is located close to other identified large tracts.

Of the 169 acres, there are approximately 88 acres (52%) that do not contain critical watershed features, therefore making those areas suitable for development (*calculation does not include forest cover).

This area is zoned single family housing. With regard to environmental land use zoning, specific attention should be given to conserving the primary headwater streams, wetlands and steep slopes with appropriate setbacks and conservation development. Areas of a site with critical soils should be conserved as much as possible and these areas should ideally be incorporated into undisturbed natural or open space areas. Canopy cover should be conserved by minimizing clearing and setting a desired overall canopy target for the jurisdiction and/or land use.

<table>
<thead>
<tr>
<th>Large Tract</th>
<th>T13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total CCBT Acres</td>
<td>169.8</td>
</tr>
<tr>
<td>Number of Parcels</td>
<td>103</td>
</tr>
<tr>
<td>Critical Soils</td>
<td>72.7</td>
</tr>
<tr>
<td>Steep Slopes</td>
<td>31.2</td>
</tr>
<tr>
<td>Flood Zones</td>
<td>0</td>
</tr>
<tr>
<td>Streams</td>
<td>0</td>
</tr>
<tr>
<td>Headwater Stream</td>
<td>4.5</td>
</tr>
<tr>
<td>Forest</td>
<td>139.2</td>
</tr>
<tr>
<td>Wetlands</td>
<td>11.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>258.8</strong></td>
</tr>
</tbody>
</table>
Large tract #14 is the fifth-largest undeveloped area in the watershed with 136 acres.

This undeveloped land straddles the boundary between North Royalton and Broadview Heights.

It is importantly situated in the headwaters of the watershed helping trap rainwater near its source. The area contains large amounts of forest, primary headwater streams, wetlands and critical soils.

Of the 136 acres, approximately 79 acres (58%) do not contain critical watershed features, therefore making those areas suitable for development (*calculation does not include forest cover).

The area is zoned for single family housing. With regard to environmental land use zoning, specific attention should be given to conserving the primary headwater streams, wetlands with appropriate setbacks and conservation development.

Areas of a site with critical soils should be conserved as much as possible and these areas should ideally be incorporated into undisturbed natural or open space areas. Canopy cover should be conserved by minimizing clearing and setting a desired overall canopy target for the jurisdiction and/or land use.

<table>
<thead>
<tr>
<th>Large Tract</th>
<th>T14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total CCBT Acres</td>
<td>136.0</td>
</tr>
<tr>
<td>Number of Parcels</td>
<td>93</td>
</tr>
<tr>
<td>Critical Soils</td>
<td>27.1</td>
</tr>
<tr>
<td>Steep Slopes</td>
<td>1.7</td>
</tr>
<tr>
<td>Flood Zones</td>
<td>0.0</td>
</tr>
<tr>
<td>Streams</td>
<td>0.0</td>
</tr>
<tr>
<td>Headwater Stream</td>
<td>4.7</td>
</tr>
<tr>
<td>Forest</td>
<td>117.5</td>
</tr>
<tr>
<td>Wetlands</td>
<td>15.9</td>
</tr>
<tr>
<td>Total</td>
<td>166.8</td>
</tr>
</tbody>
</table>
Tools & Practices

WOODLAND/TREE CANOPY PROTECTION

A Tree Canopy Program helps communities preserve existing canopy (or restore) to maintain a certain percent coverage. The percent coverage often depends on the underlying zoning (i.e. residential, commercial) of the community.

Key Benefits
• Stabilizes soils
• Cleanses stormwater helping to improve water quality
• Reduces flooding problems by managing stormwater
• Conserves household energy costs
• Provide wildlife habitat

Trees help support a community’s quality of life by maintaining the proper functions of watersheds. A healthy forest system can reduce stormwater infrastructure costs by intercepting rain, increasing ground absorption and slowing the rate of runoff. Other community benefits include: protecting drinking water supplies, enhancing property values and reducing household energy costs.

RECOMMENDATIONS:
• Communities should protect woodlands and valuable canopy cover by adopting measures in their codified ordinances. In the ordinances, woodland areas of likely high value to the community should be identified for further attention at the site design level.
• A minimum % coverage of forest cover should be determined for post construction goals for residential, nonresidential and varying densities. Example: The City of Roanoke, Virginia has recently adopted a 40% canopy goal with targets of 20% for commercial and industrial areas, and 50% for residential areas. Urban areas in Maryland have a target of 40% overall coverage.
• Require professional evaluation of blocks of woodland at the preliminary design stage (avoid the requirement for every tree on a site to be identified). The code should require a tree protection plan and its approval prior to permit, and assure that the plan is implemented and monitored during construction. Provisions for monitoring for at least a year after construction should be included.
• Allow applicants to seek variance to reduce lot sizes in order to preserve more natural features (i.e. forest cover, riparian zones etc.)

Brecksville has a provision (Chapter 1117.02) to incorporate natural features into the development design. It lists trees, topsoil and other natural resources should be preserved and used within the layout. Large specimen trees (>18” DBH or larger) are to be preserved in the design of parking lot. Brecksville also has a city arborist which assists in the development review process.

Broadview Heights has a Shade Tree Commission which oversees the planting, maintenance and removal of street trees and all trees growing in any public area of the City.

North Royalton has a street tree “Master Shade Tree Program”.

Parma has a simple tree protection provision which states, “In the erection, alteration or repair of any building, structure or other work, the owner, his agent or individual contractor shall take all measures necessary to prevent injury to public, commercial, multi-family and single family residential trees.” Ordinance also mentions relying on ODNR City Forester for technical assistance.

Seven Hills has a Master Street Tree Program and a city arborist.
In order to establish canopy cover goals for a community, a community must first assess existing tree cover. There is an array of technology to accomplish this including GIS, aerial photographs, satellite images, and/or ground surveys. Using this benchmark data, the community must then decide, “What is a reasonable canopy goal for them to try to attain in a given period of time”? These goals should reflect both conservation efforts and planned restoration activities on public and private lands. Goals may be set for an overall canopy target for the jurisdiction or they may vary by land use—such as residential, industrial/commercial, streets, and/or parks and open spaces. American Forests recommends that urban areas strive for 40% canopy overall, 50% canopy in suburban residential areas, 25% canopy in urban residential areas, and 15% canopy in commercial areas.

There are four stages in the development process at which tree protection provisions can be applied:

1. Preliminary design – identifying woodland areas on a site or in a community which are of high value for preservation
2. Specific design – identifying specific trees on the site which will be preserved and those which will be removed, and specifying methods for protection of those to remain
3. Construction protection – implementation of the specifications for protection of trees during the construction process;
4. Post construction monitoring – ongoing evaluation of tree health after construction and implementation of recommendations for remedial care if necessary

Example:
1. Maryland Forest Conservation Act- Areas that are deforested by development must be partially reforested to:
   - 25% of the pre-development forest for medium density residential development;
   - 20% for high-density residential;
   - 15% for commercial, industrial, or mixed use and
   - 50% for agricultural and resource areas.

2. Olmstead Falls’ Tree Preservation & Management (Chapter 1218) ordinance helps preserve and replant trees. The ordinance organizes tree management into A. Natural Undisturbed Areas; B. Buffer Zones or Screening Areas and C. Wooded Areas within Buildable Property. All new development must be designed to preserve healthy trees and woodlands. Minimum standards-
   - minimum of 40 caliper inches /acre (not including the natural undisturbed, buffer zones or wooded area within buildable property
   - Newly planted trees have a minimum size of 2 caliper and maximum size of 6 caliper.

3. Springfield Township’s Tree Preservation Ordinance (Chapter 550.5) states existing woodlands shall be maintained and preserved. On residential and nonresidential development:
   - A minimum of 50% of mature woodlands shall be preserved
   - A minimum of 25% of young woodlands shall be preserved and
   - Large, solitary trees (of a certain caliper), not in conflict with structures, shall be preserved to the extent practicable.

### Community Forest/Tree Canopy Protection

<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>Woodland Protection Ordinance</th>
<th>Provision to Protect Trees During Construction</th>
<th>Required # or % of Canopy Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brecksville</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Broadview Heights</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>North Royalton</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Parma</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Seven Hills</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Caliper Inches is the diameter in inches of the tree trunk twelve (12) inches above the base of the tree
<table>
<thead>
<tr>
<th>KEY ROLES</th>
<th>KEY ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislators, Planning Commissions</td>
<td>• Establish forest cover goals for your community. American Forests recommends that urban areas strive for 40% canopy overall, 50% canopy in suburban residential areas, 25% canopy in urban residential areas, and 15% canopy in commercial areas.</td>
</tr>
<tr>
<td></td>
<td>• Goals should reflect both conservation efforts and planned restoration activities on public and private lands.</td>
</tr>
<tr>
<td></td>
<td>• Apply forest protection provisions at various stages in development:</td>
</tr>
<tr>
<td></td>
<td>• Preliminary Site Design – Identify high value woodland areas for preservation</td>
</tr>
<tr>
<td></td>
<td>• Identify specific trees to be preserved and specify protection methods. Measure canopy cover and/or caliper inches of trees to be removed and determine the method of replacing a comparable volume of forest cover on site or in a forest mitigation bank.</td>
</tr>
<tr>
<td></td>
<td>• Mandate protection of trees and avoidance of soil compaction during construction</td>
</tr>
<tr>
<td></td>
<td>• Monitor tree/forest health and require maintenance on an ongoing basis post-construction</td>
</tr>
<tr>
<td></td>
<td>• View forest cover as infrastructure, and provide funds to maintain and improve your urban forest</td>
</tr>
<tr>
<td></td>
<td>• Require developers to follow forest cover goals and integrate planting areas into parking lots to reduce runoff.</td>
</tr>
<tr>
<td>Zoning Appeals Boards</td>
<td>• Enforce codes that support preservation</td>
</tr>
<tr>
<td></td>
<td>• If variances are allowed that remove forest cover, require mitigation</td>
</tr>
<tr>
<td>Administration, Economic Development,</td>
<td>• Work with private landowners to establish forest mitigation banks of land to accommodate replacement of lost canopy cover</td>
</tr>
<tr>
<td>Community Development</td>
<td>• Recognize the infrastructure value of woodlands and factor into the equation as assets</td>
</tr>
<tr>
<td>Tree Commissions</td>
<td>• Educate and encourage landowners to preserve, restore or increase tree and forest cover on private land</td>
</tr>
<tr>
<td></td>
<td>• Create a forest mitigation fund where developers or landowners who remove trees, but whose site cannot accommodate replanting, can contribute payments in lieu of planting, and use those funds to plant, improve or maintain tree canopy and forest cover on public lands and rights-of-way.</td>
</tr>
</tbody>
</table>
### Tools & Practices

#### Woodland/Tree Canopy Protection

<table>
<thead>
<tr>
<th>KEY ROLES</th>
<th>KEY ACTIONS</th>
</tr>
</thead>
</table>
| **Stewardship Groups**                         | • Support forest preservation, and especially increased planting, throughout the community  
• Sponsor tree planting events, seedling giveaways, and adopt-a-forest programs  
• Work with governments and private landowners to designate planting sites.  
• Educate landowners, especially in commercial and residential areas, about the importance of letting forested areas “go natural”, letting volunteer understory trees, shrubs and vegetation take hold, and allowing leaves to remain to form new soil. Discourage the practice of removing fallen leaves and replacing with store-bought mulch. Let the trees mulch themselves. |
| **Residents, Property Owners and Property Managers** | • Retain and maintain forested areas, including tree canopy, understory and ground level vegetation.  
• Restore forested connections between segments of woodland to support wildlife habitat, establish greenways and improve forest function.  
• Do not rake leaves from woodlands.  
• Allow “volunteer” seedlings to grow.  
• Aim for at least 40% of property to be planted, to to naturally revert to woodland.  
• Plant native trees and understory vegetation. |
| **Developers**                                  | • Design sites to include ample forest cover, preferably in areas where they can reduce surface water runoff.  
• Incorporate trees throughout parking areas to absorb forest water and shade vehicles. Surround “tree boxes” with pervious paving strips and fashion the boxes or curbs with ground-level holes to allow runoff from paved areas to enter the root system.  
• Resist the temptation to rake and mulch under trees – use lower level plantings and ground cover that requires minimal maintenance and reduces root disturbance |

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Data from Watershed Plan, 105
The Watershed Partnership was asked to prioritize management tools and strategies that they would like implemented throughout the watershed. These management tools would help address a wide range of issues through planning measures, design standards, regulations, inter-community cooperation, funding etc.

Overall, on-site stormwater design practices was the most important, followed by protecting the riparian corridor, adopting the critical watershed features map for community guidance, and protecting flood zones.

This prioritization helped guide and focus recommendations to the communities.

<table>
<thead>
<tr>
<th>TOOLS &amp; PRACTICES</th>
<th>TYPE</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-site storm water retention practices</td>
<td>Design Standard</td>
<td>70</td>
<td>97%</td>
</tr>
<tr>
<td>Protect canopy in Riparian Corridor</td>
<td>Plan &amp; Regulation</td>
<td>70</td>
<td>97%</td>
</tr>
<tr>
<td>Adopt Critical Watershed Features Map as Guidance for Community Conservation</td>
<td>Plan &amp; Regulation</td>
<td>67</td>
<td>93%</td>
</tr>
<tr>
<td>Setback- Flood zones to protect function</td>
<td>Regulation</td>
<td>67</td>
<td>93%</td>
</tr>
<tr>
<td>Setback Flood zones to eliminate encroachment</td>
<td>Regulation</td>
<td>65</td>
<td>90%</td>
</tr>
<tr>
<td>Preserve intact mature canopy</td>
<td>Plan &amp; Regulation</td>
<td>65</td>
<td>90%</td>
</tr>
<tr>
<td>Setbacks- Wetlands</td>
<td>Regulation</td>
<td>64</td>
<td>89%</td>
</tr>
<tr>
<td>Mandatory Conservation Development- 40% OS</td>
<td>Design Standard</td>
<td>64</td>
<td>89%</td>
</tr>
<tr>
<td>Setbacks on Critical Soils</td>
<td>Regulation</td>
<td>63</td>
<td>88%</td>
</tr>
<tr>
<td>Setback- Steep Slopes</td>
<td>Regulation</td>
<td>62</td>
<td>86%</td>
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<tr>
<td>Permanent establishment of Chippewa Group</td>
<td>Inter-Community Cooperation</td>
<td>62</td>
<td>86%</td>
</tr>
<tr>
<td>Regulatory consistency in communities</td>
<td>Inter-Community Cooperation</td>
<td>62</td>
<td>86%</td>
</tr>
<tr>
<td>Promote conservation easements</td>
<td>Individual Behavior</td>
<td>62</td>
<td>86%</td>
</tr>
<tr>
<td>Minimize paving- promote filter strips</td>
<td>Design Standard</td>
<td>61</td>
<td>85%</td>
</tr>
<tr>
<td>Seek grants for funding projects</td>
<td>Funding</td>
<td>61</td>
<td>85%</td>
</tr>
<tr>
<td>Cooperative planning and funding</td>
<td>Inter-Community Cooperation</td>
<td>60</td>
<td>83%</td>
</tr>
<tr>
<td>Develop on going monitoring and reporting and feedback</td>
<td>Measurable Outcomes</td>
<td>60</td>
<td>83%</td>
</tr>
<tr>
<td>Setbacks- Riparian Corridor</td>
<td>Regulation</td>
<td>58</td>
<td>81%</td>
</tr>
<tr>
<td>Cooperative code enforcement- shared resources</td>
<td>Inter-Community Cooperation</td>
<td>58</td>
<td>81%</td>
</tr>
<tr>
<td>Link education and outreach to Phase II PIPE</td>
<td>Individual Behavior</td>
<td>58</td>
<td>81%</td>
</tr>
<tr>
<td>Include watershed education in Community Newsletters</td>
<td>Individual Behavior</td>
<td>58</td>
<td>81%</td>
</tr>
<tr>
<td>Develop list of restoration/preservation projects</td>
<td>Restoration / Preservation</td>
<td>58</td>
<td>81%</td>
</tr>
<tr>
<td>Link riparian corridors to park connections</td>
<td>Restoration / Preservation</td>
<td>56</td>
<td>78%</td>
</tr>
<tr>
<td>Direct acquisition of critical watershed features</td>
<td>Restoration / Preservation</td>
<td>55</td>
<td>76%</td>
</tr>
<tr>
<td>Mitigation bank and credits in the watershed</td>
<td>Financial Incentives</td>
<td>52</td>
<td>72%</td>
</tr>
<tr>
<td>Develop annual grant match sinking fund</td>
<td>Funding</td>
<td>52</td>
<td>72%</td>
</tr>
<tr>
<td>Restore native species</td>
<td>Restoration / Preservation</td>
<td>47</td>
<td>65%</td>
</tr>
<tr>
<td>Allow &amp; promote smaller, native lawns</td>
<td>Design Standard</td>
<td>46</td>
<td>64%</td>
</tr>
<tr>
<td>Seek SEPs for funding projects</td>
<td>Funding</td>
<td>42</td>
<td>58%</td>
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<tr>
<td>Offer riparian plant packages</td>
<td>Plan &amp; Regulation</td>
<td>36</td>
<td>50%</td>
</tr>
<tr>
<td>Tax based incentives to land owners</td>
<td>Financial Incentives</td>
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<td>43%</td>
</tr>
<tr>
<td>Cooperative funding model to implement measures</td>
<td>Inter-Community Cooperation</td>
<td>27</td>
<td>38%</td>
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</table>