

TEAM WATERSHED

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EXECUTIVE SUMMARY

Team Watershed is an interagency task force comprised of New York watershed management agencies; requested to examine the State of New York's Public Surface Water Supply Protection Act and develop a program for its implementation.

In New York State, ninety-five percent of the drinking water originates from within the state itself, and much of this supply is from surface water systems. The 2003 Public Surface Water Supply Protection Act is designed to create protected areas around New York State's surface waters through the establishment and regulation of buffer zones. A buffer zone is a marked off area of land usually surrounding a water system, the purpose is to protect this area from human activity. Buffer zones offer watershed protection by preserving the riparian areas along watersheds, including vegetation and soil that naturally filter surface waters and remove contaminants and pathogens that enter the water supply. They provide an important defense against runoff from impervious cover created through development from residential and commercial use and from fecal matter runoff associated with agricultural use. A typical design consists of three zones that have a total minimum width of 100 feet.

A prime example of an area of New York that is greatly affected by the contamination of their water supply from development, and would benefit from the implementation of The Public Surface Water Supply act is New York City. New York City's nine million residents receive ninety-percent of their drinking water from the unfiltered Catskill Delaware watershed located approximately one hundred miles north of New York City. The 1997 agreement between New York City (NYC) and the Environmental Protection Agency (EPA) granted New York City a Filtration Avoidance Determination (FAD). This allows NYC to use the Catskill Delaware as an unfiltered source as long as the water is in compliance with EPA's drinking water quality standards.

The Public Surface Water Supply Protection Act will help New York City protect its unique source for drinking water through its buffer zone program. The legislation mandates 300-foot buffer zones around primary streams and 200-foot buffer zones around secondary streams. These widths differ from the standard width mentioned above, because of New York State's unique topography that consists of steep slopes in the upstate region. In addition the legislation mandates the prohibition of all harmful activities in the buffer zone, requires permits for all approved activities, and defines an exemption clause for any permitted development approved prior to the legislation.

Team Watershed has created an integrated program design for implementing the Public Surface Water Supply Protection Act. This design will utilize organizations involved with watershed protection in New York State, namely the State Department of Environmental Conservation (DEC) and local departments of environmental protection. In this report, we focused on how the program would be implemented in New York City because of its significant source of unfiltered drinking water coming from the Catskill Delaware watershed. We developed a program design that allows for uniformity and flexibility for feasible implementation; it will utilize existing organizational structures, re-allocate

preexisting employee resources, and will use organizations in a geographically efficient manner. The four key objectives for implementation include: establishing buffer zones, creating a permitting process, monitoring the watershed, and enforcement of regulation. Implementation will be carried out within NYC's local environmental government, The Department of Environmental Protection, specifically within the Bureau of Water Supply.

First year program goals include hiring employees to lead program divisions, a task projected to be accomplished within the first six months. The second major goal focuses on prioritizing and marking out buffer zones within the 25,000 miles of priority area primary streams within the first year.

With the four key objectives for implementation (buffer zones, permitting, monitoring, and enforcement) in mind, the budget estimation for the first fiscal year is slightly over \$500,000. A majority of this is allocated to personnel services expenditures, salaries for the newly created positions. This budget estimate is approximately 0.2 percent of the total operating budget for the DEP's Bureau of Water Supply, making first year implementation of this program financially feasible.

Performance management techniques will be used as justification that the first fiscal year program goals are being attained. The four specified objectives will be used as indicators of overall program success for implementation of the Public Surface Water Supply Protection Act. Further, success can be judged as NYC's monitored drinking water supply continues to meet EPA's water quality standards and as the city maintains the Filtration Avoidance Determination the EPA has granted it.

Protecting the state's watersheds, and maintaining New York City's source of unfiltered water in particular, will be a challenge as encroaching development in upstate New York continues over the coming decades. Team Watershed has developed a program design that implements this important policy in a cost effective and feasible manner. Because of these two attributes, this program design offers a viable option for implementation of The State of New York's Public Surface Water Supply Protection Act.

INTRODUCTION

Team Watershed

Team Watershed is an interagency task force comprised of New York watershed management agencies; requested to examine the State of New York's Public Surface Water Supply Protection Act and develop a program for its implementation.

Watershed Protection in New York State

New York State is fortunate to not have to purchase drinking water from neighboring states. In fact, ninety-five percent of New York State's drinking water comes from within the state itself. Much of this water comes directly from surface waters (i.e. a lake, river or stream). Surface waters are fragile systems because of their susceptibility to pollution from human activity. Development is the main threat to surface water systems and their surrounding watershed. Urban development can lead to an increase in impervious cover, which impedes a watershed's ability to naturally filter the water. Agricultural development can lead to an increase in the concentration of chemicals and fecal matter leaking into the water supply. Development impedes a watershed's ability to filter water as it flows through the land into the surface system. This lack of filtration from the surrounding environment increases the concentration of contaminants that leak into the water supply. Thus, protecting surface water systems and their surrounding watershed from development is vital.

The Public Surface Water Supply Protection Act takes measures to protecting New York State's watersheds and surface water supplies by restricting development in all watershed management areas in the state through the establishment of buffer zones surrounding all state surface water systems. Given the threat of development to the undeveloped areas in up-state New York, such protection is considered crucial.

Numerous buffer zone designs and techniques have been tested. The most widely used models available incorporate a variety of factors to determine a width, such as slope, vegetation, and proximity to development; and then develop zones within that set width. The minimum width for a buffer zone is 100 feet (<http://www.stormwatercenter.net>). However, this legislation mandates 200-300 foot buffer zones due to the steep slopes in New York State. The steeper the slope, the faster the rate of runoff is into a water supply. The buffer zone are broken into three zones, outer, middle, and streamside, and allow for differing types of activities to occur inside them. Appendix A is an example of the typical design of buffer zones. The most important is the streamside zone; activities in this zone need to be as limited as possible because of its proximity to the water system. (<http://www.stormwatercenter.net>). Restricting development around the water through buffer zones will prevent damage in these sensitive areas, and ensure that the watershed is healthy enough to perform its natural processes.

The Importance of Watershed Protection for New York City

A prime example of an area in New York State that would be greatly affected by this bill is New York City. New York City is unique because the majority of its surface water supply comes from the Catskill-Delaware watershed unfiltered. Appendix B is a map depicting the Catskill Delaware Watershed in relation to New York City. This clean water source does not need to be filtered before human use, because of the natural filtration processes of the watershed. Natural filtration occurs from the vegetation, soil, and microbial bacteria living in the surrounding watershed. As the water flows through the watershed as ground water the above organisms filter it by picking up contaminants such as nitrogen and oil to be broken-down and used. When the water is released into the surface water system it is now clean and pure due to the filtration by the organisms in the watershed. This natural filtration provides New York City residents with an inexpensive “cleaning” service, making for a cost efficient water supply.

It is a special agreement with the Environmental Protection Agency (EPA) that enables New York City to use this unfiltered source. Under this agreement the city must guarantee that it will continually meet federal water quality standards. The EPA in accordance with the 1986 Safe Drinking Water Act (SDWA) establishes these standards. The 1989 Surface Water Treatment Rule, an amendment to SDWA, took quality control one step further by requiring “filtration of surface water supplies unless specific filtration avoidance criteria are met” (EPA, 2004). Cost estimates of filtering water from the Catskill/Delaware watershed range from \$4-\$6 billion. This filtration cost would more than double the City’s current water rates (Catskill Watershed Corporation, 2004). The Catskill/Delaware Watershed was one of the few watersheds in the nation able to comply with the “stringent source water quality criteria, meet the inactivation (contact time) requirements, and maintain an effective watershed control program” (Hitchcock, 2004)

The EPA issued New York City a Filtration Avoidance Determination (FAD) in 1993. Under the FAD, New York City had to increase protection of the watershed management area and maintain water quality standards (EPA, 1996). These preliminary conditions were met and EPA renewed the FAD in December 1993. This renewed FAD required the City to update their watershed regulations and commit to a land acquisition program that would result in acquiring at least 80,000 acres of land by December 31, 1999 (Catskill Watershed Corporation, 2004). In 1997, after extensive discussions with the EPA, New York City Department of Environmental Protection (DEP) and New York State Department of Environmental Conservation (DEC) successfully negotiated the Watershed Memorandum of Agreement (MOA) with the EPA Region II to ensure long-term watershed protection. Under this agreement, New York State pledged to enhance watershed protection in lieu of constructing the \$6 billion filtration plant.

Unfortunately, the Catskill Delaware Watershed’s pristine nature is threatened by encroaching development prompting a heightened desire from the NYC’s government to protect it. One way NYC has tried to restrict development in the watershed is through the aggressive land acquisition program, mentioned above. This program however, has created conflict between the communities in the watershed and the NYC government,

because the communities of the watershed feel that NYC is infringing on their rights to own and develop their land.

The Policy Response

The Public Surface Water Supply Protection Act addresses the issue of stopping development to help protect surface water supplies in New York State. Senator Carl Marcellino introduced The Public Surface Water Supply Protection Act to the New York State Senate in 2003 with the hope of securing stricter protections for all New York State Watersheds.¹ The Public Surface Water Supply Protection Act enables New York City and other local governments to more effectively police activities and development within watershed management area. Unlike the MOA of 1997, the Public Surface Water Supply Protection Act seeks to regulate certain development and recreational activities within the Watershed Management Area through the establishment of buffer zones and “use/development” permits.

¹ Public surface water supply is defined as: “any public water supply reservoir or any other surface water body with a water supply intake that is constructed, owned, operated, or maintained in whole or in part for the purpose of providing water for human consumption and which is identified by the [D]epartment” (Public Water Supply Protection Act, 2003).

THE LEGISLATIVE DIRECTIVES FOR THE PUBLIC SURFACE WATER SUPPLY PROTECTION ACT

This section outlines the legislative directives for The Public Surface Water Supply Protection Act. It is important to understand the background and details of the bill in order to design a program to enact it. Proper implementation can only be achieved if there is a complete understanding of the objectives and goals of this bill.

The Legislation

This legislation aims to protect the lands around the watershed by ensuring that undeveloped areas are established and maintained around all public surface water supplies. The key component of the legislation is the establishment of buffer zones around the water systems (i.e. lakes, rivers, streams) in the watershed. As stated in the introduction, the legislation mandates 300-foot buffer zones around all primary feeder streams, and 200 foot around all secondary feeder streams. Additionally, the legislation states that all activities performed within the buffer zones of a watershed management area, must be approved through a permitting process prior to initiation. All acts performed in the watershed must “minimize the environmental impact to the maximum extent feasible” (§3, lines 51-52).

The permit application for all activities must clearly state why the activity is “essential to the operation and maintenance of the area in which such activity is to be performed”; and why the prohibition of the activity would result in “practical difficulties or significant economic injury” (§4, lines 10-11). Before granting activity approval, the applicant must show how he intends to “minimize to the maximum extent feasible the environmental impact of the activity” through a detailed environmental management plan (§3, lines 51-52). Development existing within buffer zone and that for which all required preliminary permits were obtained prior to the date of the Public Surface Water Supply Protection Act’s enactment, are exempt from the provisions of this act (§5, lines 1-6).

Every county, municipality, or local agency located within the watershed management area must amend its development regulations to incorporate provisions of the Bill within 120 days of its enactment (§4, lines 43-49). Any violation of these provisions shall be enforceable by the county, municipality, or local agency in cooperation with the Department.²

Penalties will be given out to any entity engaging in an activity that disturbs the level of water or the water table in a watershed. Potential penalties are described in §12 of the Bill. Local municipalities that opt to enact stricter regulations and enforcement actions may do so. Counties or municipalities with more stringent development regulations or enforcement actions may use their policies instead of those set forth in this Bill (§5, lines 46-55; §6, lines 39-45).

² The *Department* refers to the Department of Environmental Conservation (DEC). It’s referred to only as the Department here in order to keep with the original wording of the Act

Implementation

Section 13 of the Act authorizes and directs the Department of Environmental Conservation (DEC), in consultation with State, local agencies, municipalities, soil and water conservation districts and/or planning boards; to promulgate any rules or regulations necessary for implementation of the Legislation.

Section 10 of the Act states that the Department of Environmental Conservation shall develop and make available for distribution to local governments and other interested parties a general guidance manual for buffer zones to help interested parties interpret and implement provisions set forth in the Legislation.

Whenever the Commissioner of the Department of Environmental Conservation finds a person in violation of any adopted rule or regulation, the commissioner may “issue an order requiring any such person to comply with this section; bring a civil action; levy a civil administrative penalty; or bring an action for a civil penalty” (§6, lines 13-19). The commissioner may also institute a temporary or permanent injunction and require the violator to pay several costs including: the cost of the investigation that led to the establishment of the violation, the cost of correcting the adverse effects upon the public surface water supply area, and the cost of damages resultant in any loss or destruction of water quality, vegetation, habitat, or wildlife (this third cost being paid to the Environmental Protection Fund). The violator is also required to restore the disturbed area.

Areas of discretion in the legislation

The bill leaves some discretion in the areas of enforcement, monitoring and which organizations will be responsible for implementation. Its also does not explain how this bill will address implementation of the buffer zones on private property. In the proceeding sections we explicitly identify how to implement both the mandated and discretionary details of this legislation. We provide the rationale for the implementation program developed and specify how and which organizations will be involved.

PROGRAM DESIGN: CRITERIA AND JUSTIFICATION

Program Design Rationale

Team Watershed designed a program focused on implementing the legislative directives outlined in the bill. The program used any pre-existing New York State agencies organizational structures, re-allocated pre-existing resources, utilized organizations in a geographically efficient manner, and created a balance of uniform standards across the state while allowing for flexibility. Most importantly, the program design is feasible to implement in every New York State County. However, for the program design examined in this report, Team Watershed looked specifically at implementation for New York City, because of its unique situation with the Filtration Avoidance Determination, which allows it to use the Catskill Delaware Watershed's public surface waters unfiltered. Team Watershed felt the best way to implement the objectives outlined in the bill was through a program design that integrated the departments of the state and local agencies into one interconnected cohesive unit. The agencies involved for implementation in NYC's Catskill Delaware watershed include, the State Department of Environmental Conservation (DEC) with NYC's Department of Environmental Protection.

Program Design Objectives

The program design structure outlines procedures for the four key objectives vital to proper implementation of the bill, as mandated by the legislation. These four key objectives include: (1) establishing the buffer zones, (2) creating a permit application process, (3) enforcing the guidelines, and (4) monitoring the watershed and water quality. Appendix C is a diagram of how the two departments (DEC and DEP) were integrated using the four key objectives as a guideline. Below is the procedure for each objective in the program design:

1. Buffer Zones:

New York State Department of Conservation (DEC) Division of Water will first determine priority areas throughout the state. Then, New York City's Department of Environmental Protection (DEP) Watershed Lands and Community Planning Division will prioritize specific areas in the Catskill/Delaware watershed high-risk priority maps. DEP Operations and Engineering Division will mark buffer zone areas 300 feet from primary feeder streams and 200 feet from secondary streams using bold signs. The majority of the land is owned by New York City, which allows for easy access. The Watershed Lands and Community Planning Division will work with the small number of private property owners to determine the best method of posting signs on their land. Finally, DEC Regional Manager in the Catskill/Delaware district will have staff visually check to ensure buffer zones are properly marked.

2. Permit Process:

The DEC Division of Environmental Permits has a systematic permitting process for New York State. They will create a "Buffer Zone Activity" permit detailing the

requirements for an applicant seeking permission to encroach on a buffer zone area. The DEC Legal Affairs Division will handle any buffer zone appeals resulting from denied applications. Additionally, the DEP Regulatory Compliance and Facilities Remediation Division will create a list of acceptable activities maintenance and recreational activities for which the public does not need to file an application. This list will then be approved by the DEC Division of Environmental Permits to ensure statewide cohesion.

3. Enforcement:

The DEP Enforcement Division will perform organized quarterly inspections to look for activities, which violate the Public Surface Water Supply Protection Act. The Enforcement Department will also establish fines and subsequently collect them if they discover a violation. The DEC Division of Law Enforcement will approve the local DEP guidelines.

4. Monitoring:

The DEP Drinking Water Quality Control Division has an extensive monitoring program in place. They will establish baseline measurements, which will be used to gauge the success of buffer zones protection. The Drinking Water Quality Control Division will also direct the actual water monitoring. The Drinking Water Quality Control Division will send the monitoring quality results to both the DEC Division of Water and the Department of Health's Bureau of Public Water Protection who will keep the records on file and ensure that federal Environmental Protection standards are adhered to.

Strengths of Program Design

Integrating the DEC and the DEP will maintain general uniformity across the state while allowing some degree of flexibility at the local level. Furthermore, by giving the DEC and the DEP important and complementary roles, the plan will minimize tension, which currently exists in the Catskill/Delaware region. The design utilizes the current structure and efficiently allocates available resources, which will minimize cost. For example, instead of creating a whole new "Buffer Zone Enforcement Unit" the program will draw from the enforcement units already in place.

Weaknesses of Program Design

The current tension between the DEC and DEP could be heightened due to certain checks and balances the design puts in place. However, the check and balance process will promote the program's success. Second, private landowners might not want signs on their property; yet the state has the authority to step in and post them if the need arises. This may create tension with landowners and the DEP. To resolve this strained relationship, the DEP Community Planning Division will work with the landowners, by helping them financially, and aid in the posting of signs on their property. Working with the landowners will help ensure that this process flows smoothly.

PROGRAM DESIGN: ORGANIZATION AND STAFFING

With the overall idea of an integrated approach to implement the bill, it is important to assess how the two organizations will be reorganized and staffed to meet the needs of this program design. Developing an organization and staffing plan allowed for an outline of the human resources needed to carry out the four key objectives mentioned in the previous section. Team Watershed's focus on the Catskill Delaware Watershed called for reorganization and staffing of the Department of Environmental Protection's (DEP), Bureau of Water Supply. For the organization the bureau was divided into the four key objectives using its divisional structure. The bureau has six divisions and dividing those six divisions helped highlight what new positions would be needed. When designing the staffing plan, we realized that the Bureau of Water Supply already had staff that we could allocate to our program. Therefore, our main issue with staffing was to develop administration positions to oversee each of the four parameters set by the program design (See Appendix 1 and 2). Tasks were then allocated depending on the purpose of each division in the Bureau and are outlined graphically in appendix 2. Below is the breakdown of administrative positions for each of the four parameters with job title, wage, and required experience.

Executive Watershed Protection Manager:

The Executive Watershed Protection Manager will oversee the entire surface water supply protection act project. The Executive Watershed Protection Manager will serve as the liaison between the local DEP and the state DEC. The Executive Manager will supervise all five administrators listed below. Finally, the Executive Watershed Protection Manager will have a personal assistant to assist in coordination of reports from the four administrators.

Buffer Zones:

1. The Buffer Zone Point Administrator is responsible for allocating labor and resources for the Buffer Zones project. To oversee the departments which operate under this parameter and to create a quarterly report of accomplishments for this section of the program (See Appendix 2).

2. A Community Planning Administrator will be hired to work with the Watershed Lands and Community Planning Department. The Community Planning Administrator will be responsible for coordinating community activities and educational outreach programs regarding watershed protection. Therefore, this Administrator will be responsible for obtaining and writing grants for community projects to educate the public about watershed protection.

Watershed Monitoring:

3. The Watershed Monitoring Point Administrator is responsible for coordinating the data received from the five watershed labs in the Catskill/Delaware region. He/she will compile this information into a report that will be given to the Department of Environmental Conservation and the Department of Health (See Appendix 1).

Permitting Process:

4. The Permitting Process Point Administrator will coordinate the actions of the Regulatory Compliance and Facilities Remediation (See Appendix 1).

Enforcement:

5. The Enforcement Point Administrator will be in charge of organizing part of the environmental police force to monitor strictly the buffer zone regions (See Appendix 2).

Qualification Requirements and Wage Breakdown:

For each new position, the following addresses the qualification requirements necessary and the wage breakdown depending on expertise or experience. The experience requirements and wage breakdown were determined by DEP requirements and wage brackets already assigned to similar positions.

Executive Watershed Protection Manager:

- PhD in environmental science or any other field related to this project, or MBA
- 10+ years experience
- Computer Proficiency (MS Word, Excel, Access, Equis, and GIS Applications)
- \$80,000-\$100,000

Point Administrators and Community Planning Administrator

- Masters in science related field or management
- 3-4 years experience
- Computer Proficiency
- \$40,000-\$60,000

Personal Assistant: for the Executive Watershed Protection Manager

- Bachelors degree in a related field
- Computer Proficiency
- \$20,000-\$30,000

PROGRAM DESIGN: **FIRST YEAR GOALS AND PERFORMANCE MANAGEMENT**

Based on our program design, we have outlined our first-year goals to implement this program. (See Appendix G for the first year Master Calendar.) We have also established a comprehensive Performance Management System in order to determine if we are meeting our first year goals and to help us measure the overall success of the implementation the Public Surface Water Supply Protection Act in the Catskill/Delaware Watershed by New York City Department of Environmental Protection (DEP) Bureau of Water Supply.

The performance management will be accomplished using the guidelines set up in our program design calling for a year-long continual evaluation of the four key programs, *buffer zones, permitting, monitoring, and enforcement*. The two main evaluation periods will occur at six months and at one year after the initial program start date. After the first year, all performance measures will be shifted from a short-term time frame into a long-term time frame, specifically; the performance measurements will be expanded to address objectives for the next 5 to 10 years. Appendix F illustrates the main objectives of the performance management system. The details of each program area are as follows:

Buffer Zones

The goal in the first year is to delineate all buffer zones along the primary streams of the priority areas in the watershed at a rate of one sign per mile of stream. DEP's Bureau of Water Supply project staff will keep track of the number of signs posted; this number will be verified by the state Department of Environmental Conservation (DEC).

The project staff and state DEC will submit monthly reports to the newly hired project Executive Manager for review. The GIS data specialist will also receive a copy of the report and display this information as a data layer in an updated GIS map. Six month and year reviews will be held between the Buffer Zone Point Administrator (PA) and the Executive Manager to determine changes in staffing, hours, or material needs based on state DEC and New York City DEP staff reports.

Permitting

The goal in the first year of the permitting program is to establish a streamlined application process for development in buffer zones; this includes setting goals for the number of applications that will be reviewed and processed in the first year.

The state DEC will produce a report with a list of general activities allowed in buffer zone areas as specified in the Bill. Staff involved in the Regulatory Compliance section of Bureau of Water Supply will conduct an initial review of the submitted applications for development. If approved, copies of the applications will be sent to the DEC's Division of Environmental Permits, the project permitting point administrator, and the project executive manager. In addition to DEP's monthly, comment cards and sample surveys will be used during the six month and year review periods to include DEP staff opinion when making adjustments in staffing and in the permitting procedure.

Monitoring

In the first fiscal year, the goal of the monitoring program is to establish the baseline measurement of chemicals and pathogens in the Catskill Delaware watershed. This baseline will be used to compare all future water quality evaluations after buffer zones have been established.

To ensure proper monitoring operating procedures in the first year, a DEC Division of Water employee will conduct two audits at undisclosed times during the year, once before the six-month review, and once between the six month and year review. The auditor will compare DEP generated water quality documentation within DEP files with the copies kept in state DEC and Department of Health (DOH) filing systems. Scientists will also be consulted during the first year for an equipment calibration and testing-method check.

Reports on the findings of these audits will be produced for the 6-month and year review and will be sent to the program Executive Manager, the Monitoring Point Administrator, and to the DOH. All documentation and filing inaccuracies will be corrected and any operating procedure modifications suggested in the auditor's reports will be updated. Based on these modifications, the Executive Manager and the Monitoring Point Administrator will develop a Standard Operating Procedure (SOP) to guide long-term monitoring of the watershed. This SOP for program activities in subsequent years will reduce the frequency of auditing of documentation, testing procedure reporting, and laboratory calibration checks, to once a year.

Enforcement

The enforcement point administrator will spend the first year compiling a database of previously "grandfathered" development in the buffer zone and creating a template for future entries describing development in these protected areas. The enforcement point administrator will specify goals for the number of buffer zone acres they will inspect and the number of properties they will file in the development database.

Program staff will mail letters to private landowners explaining the Public Surface Water Supply Protection Act's requirements. Landowners will have 90 days after receiving the letter to declare preexisting structures and/or development that exist within buffer zone area located on their land (to qualify under the grandfather clause). Landowners will be required to describe the type of development and the acreage affected.

Staff will create a database documenting the information gathered in these letter responses. While enforcement program officials will have complete jurisdiction when conducting routine inspections of buffer zone areas on public lands, they will be required to provide a mailed notice to landowners at least a month in advance of a property inspection. This notice will be followed by a phone call to confirm an inspection date.

Enforcement program staff will send monthly reports listing registrants to the grandfathered development database to the enforcement point administrator. The enforcement point administrator and the Executive Manager will decide if staffing or

work hour adjustments need to be made at the six-month and a year reviews. During the one-year review, the enforcement point administrator will work with the permitting point administrator to track development applications and ensure their entry into the development database.

These performance management techniques will be used as justification that the first fiscal year program goals are being attained. These goals are; buffer zone delineation, pre-approved activities permitting, past data compilation for baseline measurements, and for creating enforcement guidelines.

The program's success in attaining the four specified goals above can be used as an indicator of overall program success for implementation of the Public Surface Water Supply Protection Act. This successful program design and implementation can be judged based on the critical broader goals of protecting the Catskill Delaware Watershed and the quality standard of New York City's drinking water supply. These successes can be further measured by New York City's ability to meet the Environmental Protection Agency (EPA) standards for drinking water and to maintain the Filtration Avoidance Determination (FAD) the city has been granted by the EPA.

PROGRAM DESIGN:
FIRST YEAR FISCAL BUDGET

With the allocation of tasks to each division of the bureau, and the first year goals and performance management outlined, Team Watershed calculated the first year fiscal budget to implement the program. Financing for this program will need to be funded by the department of Environmental Protection's Bureau of Water Supplies operational budget. The DEP executive budget for fiscal year 2005 is \$765 Million. Based on data from 2002, DEP allocated \$255 million to the Bureau of Water Supply Operating Budget. The Bureau spent \$175 million of this operating budget on upstate watershed protection. This new program to implement the PSWSPA will require only 0.2 percent of the Bureau of Water Supply budget at a cost of \$500,680 for the first fiscal year.

Team Watershed's program budget has five major objectives for the first fiscal year: delineate and mark out buffer zones around primary streams in priority areas (2,500 miles), establish the buffer zone pre-approved recreational and maintenance activities permit, create enforcement guidelines, to compile data from past water quality monitoring to define baseline measurements, and to establish strong community relations in the Catskill Delaware Community. In addition to the four main program objectives, the budget also allocates funds towards building better cooperation with the residents in that area.

The program budget includes funding for personnel services as well as for other than personal services (OTPS) within the already existing Bureau of Water Supply. This new program will be set up within an existing bureau; therefore, many large costs such as office facility rent, a fleet of vehicles, and full field staff will not be addressed in this new budget. The program budget and line item budget are attached (Appendix E respectively).

Program Budget

The program will be a total expenditure of \$505,680 in the first year. Executive management is 27 percent of the program budget; this division includes two employee salaries, an executive administrator at \$100,000 per year and a personal assistant to the executive manager at a \$30,000 annual salary. The buffer zone delineation division is 22 percent of the budget and the main expenses are the \$60,000 salary of the point administrator and the materials for the 3,000 signs and posts purchased to mark out the 2,500 miles of primary streams by at least one sign per mile (\$53,000 for signs and posts). The remaining four divisions are each between 12 to 14 percent of the total budget. The main expense per division is the \$60,000 point administrator salary. Major other than personnel expenses include software (MS Office Suite and GIS) expenses in the Water Quality Monitoring Division and informational pamphlet design, printing, and distribution in the Education/Community Outreach Division (total of \$10,550 for 5,000 pamphlets).

Line Item Budget

The line item budget operationalizes the program budget by clearly laying program costs out by aggregate expenditure and by total program purchasing requirements. Personnel and OTPS are included; personnel services are 85 percent of the total funds allocated and OTPS include the remaining 15 percent of the operating budget. Personnel services expenses are directly due to the seven new employees hired while OTPS expenses are determined by materials, services, communication, travel, and miscellaneous expenses to support new and existing Bureau of Water Supply employees for program implementation (See Appendix E).

Reassessment

The first year implementation budget will call for reassessment after the first year of implementation to determine if money has been properly allocated. In addition, the first fiscal year's goal is to delineate the primary streams in priority areas; the second year may objective may include delineation of secondary streams. There would be a greater mileage of these streams and an updated budget would need to reflect this, especially in the amount of signs and posts purchased.

CONCLUSION

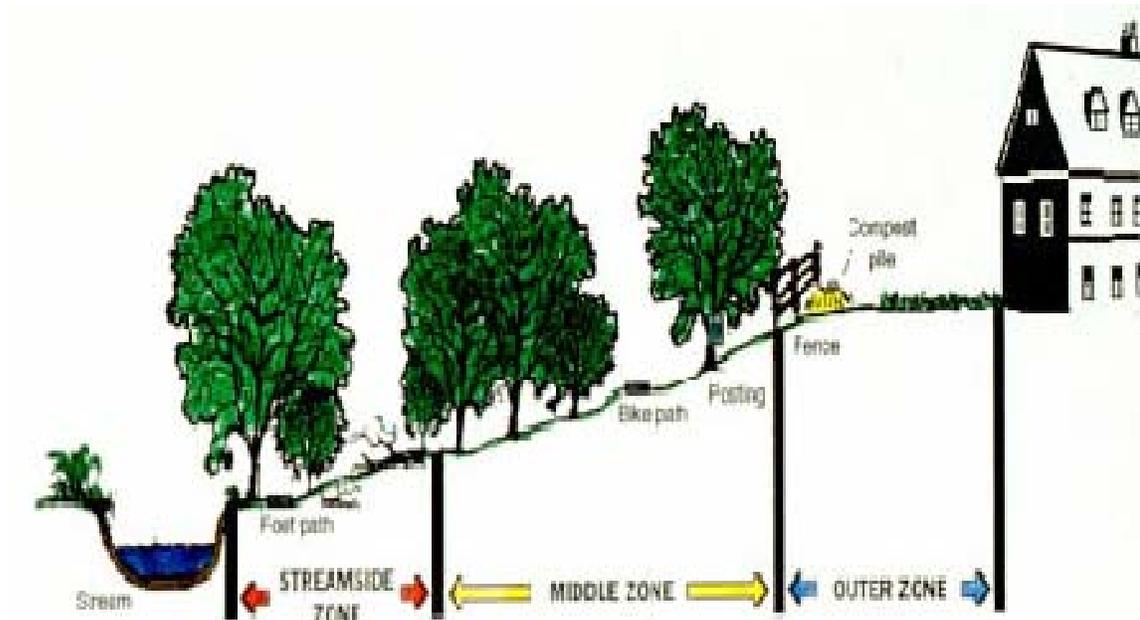
Team Watershed's integrated program design focuses specifically on implementation in New York City's Catskill/Delaware watershed because of its unique situation with the Filtration Avoidance Determination (FAD). The design utilizes organizations currently involved with watershed protection in New York City, namely the State Department of Environmental Conservation (DEC) and the local New York City Department of Environmental Protection (DEP); in particular DEP's Bureau of Water Supply office located in the Catskill Delaware area. The integrated program design is rooted in a uniform yet flexible design for feasible implementation with the four key objectives: establishing buffer zones, creating a permitting process, monitoring the watershed, and enforcing regulations. These crucial objectives will aid in watershed protection and the maintenance of New York City's ability to maintain its clean source of water in the Catskill/Delaware Watershed.

In order to meet the four key objectives of buffer zone establishment, permitting, monitoring, and enforcement, Team Watershed developed a cost-effective and comprehensive plan that integrates state and local agencies. This will ensure protection of the watershed at a reasonable price: budget estimations for the first fiscal year are approximately \$500,000. This sum for program implementation is roughly 0.2 percent of the total operating budget for the Department of Environmental Protection's Bureau of Water Supply, allowing the first year implementation of this program to be financially feasible.

Team Watershed's integrated program incorporates the focal points of the Public Surface Water Supply Protection Act, allows for economic feasibility, and maintains the protection of the watershed as the overarching priority. This will allow New York City's nine million residents to continue to receive their water from an unfiltered source. With proactive planning and protection of the Catskill/Delaware Watershed, the city can maintain this critical resource rather than disturbing the watershed's natural process of filtering water. If this bill is not properly implemented, the city runs the risk of having to construct a six billion dollar filtration plant. Team Watershed's program to enforce riparian protection works with the existing natural system and provides additional methods of watershed management. This will allow future generations to enjoy New York City's pristine unfiltered drinking water for many years to come.

However, the Public Surface Water Supply Protection Act is a statewide bill and this program design is applicable to all of New York State's watershed management areas. The legislation restricts development in the watershed management areas and is focused on protecting all of New York State surface drinking water supplies. With rapid population growth and constant expansion projected for the upcoming years, it is imperative that proactive steps are taken to protect the New York State's watersheds thus ensuring safe drinking water for future generations of New Yorkers.

APPENDIX A: BUFFER ZONE MODEL



Source: <http://www.stormwatercenter.net>

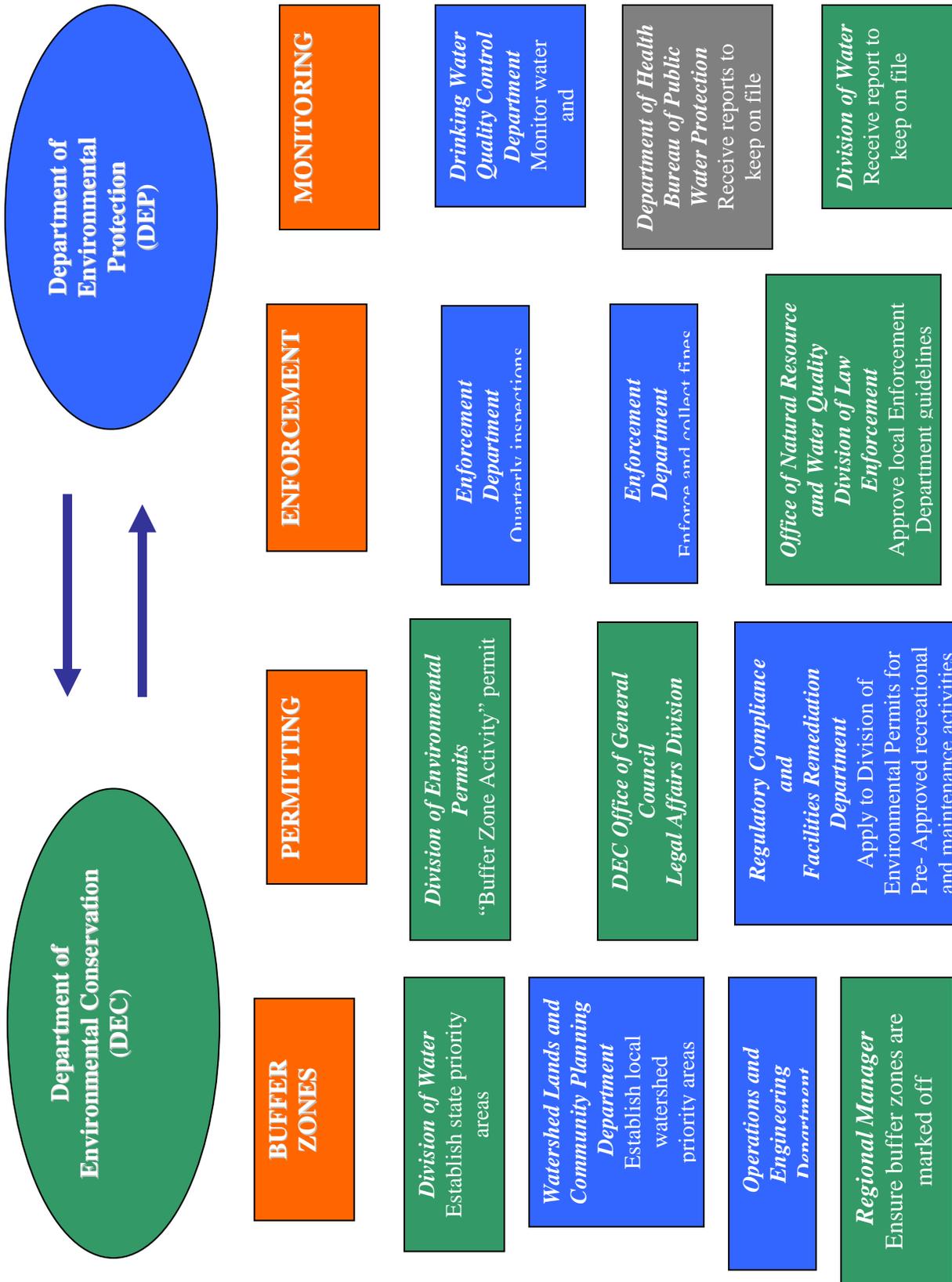
This is a typical model of a buffer zone, showing the divisions into three sections. The minimum total width is 100 ft. This legislation mandates 200/300 ft. buffer zones for New York State water management areas.

APPENDIX B: MAP OF THE CATSKILL DELEWARE WATERSHED

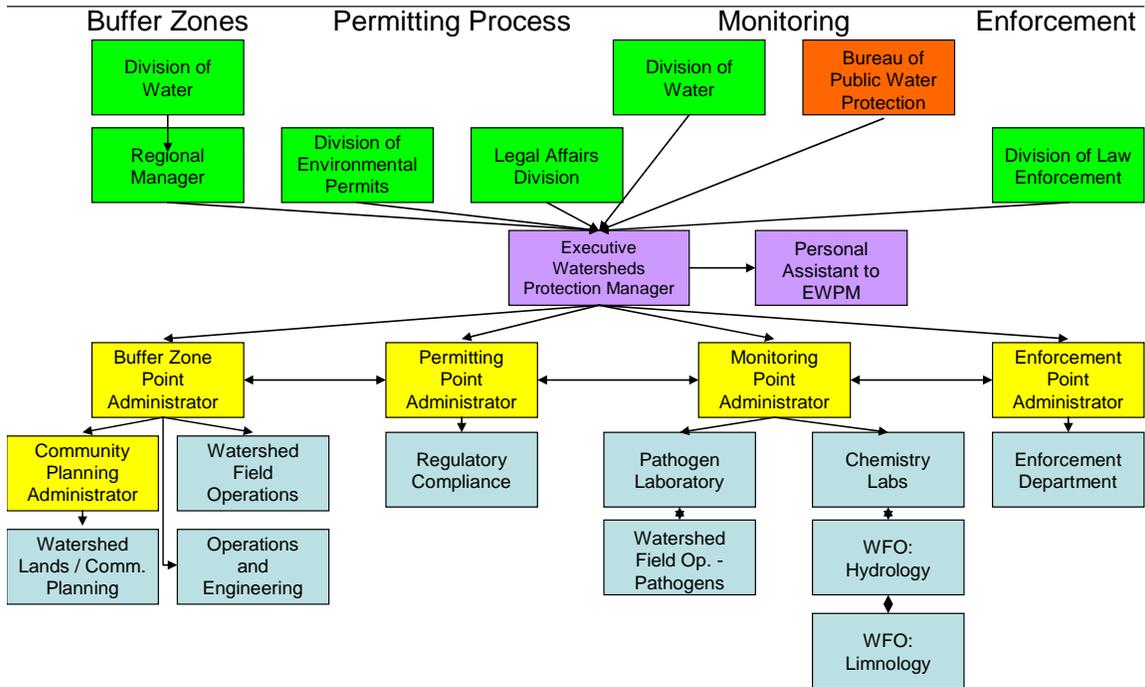


Source: www.nyc.gov/dep

APPENDIX C: PROGRAM DESIGN CHART



APPENDIX D: ORGANIZATIONAL CHART



APPENDIX E: PROGRAM AND LINE ITEM BUDGET CHARTS

Buffer Zone Delineation		
Personnel:		(\$/year)
	Buffer Zone Point Administrator	\$ 60,000
	Total Salary Cost	\$ 60,000
OTPS ^a:		
	Laptop Computer	\$ 1,100
	Cell Phone	\$ 150
	Office Supplies	\$ 200
	Travel Expenses	\$ 300
	Signs (3000 @ \$8.43)	\$ 25,020
	Posts (3000 @ \$9.00)	\$ 27,000
	Total OTPS Cost	\$ 53,770
	Total Buffer Zone Delineation	\$ 113,770

Buffer Zone Executive Management		
Personnel:		(\$/year)
	Buffer Zone Programs Executive Manager	\$ 100,000
	Secretary to Executive Manager	\$ 30,000
	Total Salary Cost	\$ 130,000
OTPS ^a:		
	Laptop computer (2 @ \$1100.00)	\$ 2,200
	Cell Phone	\$ 150
	BlackBerry	\$ 350
	Office Supplies	\$ 200
	Travel Expenses	\$ 300
	Total OPTS Cost	\$ 3,200
	Total Executive Management	\$ 133,200

Buffer Zone Permitting		
Personnel:		(\$/year)
	Permitting Point Administrator	\$ 60,000
	Total Salary Cost	\$ 60,000
OTPS ^a:		
	Laptop Computer	\$ 1,100
	Cell	
	Phone	\$ 150
	Office	
	Supplies	\$ 200
	Total OTPS Cost	\$ 1,450
	Total Buffer Zone Permitting	\$ 61,450

Water Quality Monitoring		
Personnel:		(\$/year)
	Monitoring Point Administrator	\$ 60,000
	Total Salary Cost	\$ 60,000
OTPS ^a:		
	Laptop Computer	\$ 1,100
	Cell	
	Phone	\$ 150
	Office	
	Supplies	\$ 200
	Travel Expenses	\$ 100
	GIS software license	\$ 1,500
	Microsoft Professional Office Suite	\$ 460
	Total OTPS Cost	\$ 3,510
	Total Water Quality Monitoring	\$ 63,510

Enforcement of Permitted Activities		
Personnel:		(\$/year)
	Enforcement Point Administrator	\$ 60,000
	Total Salary Cost	\$ 60,000
OTPS^a:		
	Laptop Computer	\$ 1,100
	Cell Phone	\$ 150
	Office Supplies	\$ 200
	Total OTPS Cost	\$ 1,450
	Total Enforcement	\$ 61,450
Education and Community Outreach		
Personnel:		(\$/year)
	Education/Community Point Administrator	\$ 60,000
	Total Salary Cost	\$ 60,000

OTPS^a		
:		
	Laptop Computer	\$ 1,100
	Cell Phone	\$ 150
	Office Supplies	\$ 200
	Travel Expenses	\$ 300
	Graphic Design Template	\$ 5,000
	Printing (5000 educational pamphlets)	\$ 3,700
	Postage	\$ 1,850
	Total OTPS Cost	\$ 12,300
	Total Pamphlet	\$ 72,300
	Total Program Cost	\$ 505,680

Line Item Budget		
Line #	Category	(dollars/year)
	<u>Personnel Services</u>	
1	Salaries	\$ 430,000
	Total Personnel Costs	\$ 430,000
	<u>Other Than Personnel Services (OTPS)</u>	
1	Materials (Signs, Posts...)	\$ 52,020
2	Services (Graphic design template)	\$ 5,000
3	Printing	\$ 3,700
4	Postage	\$ 1,850
5	Computers	\$ 7,700
6	Software	\$ 1,960
7	Communication (cell phones, BlackBerry)	\$ 1,250
8	Office Supplies	\$ 1,200
9	Travel Expenses	\$ 1,000
	Total OTPS Costs	\$ 75,680
	Total Program Costs	\$ 505,680

APPENDIX F: PERFORMANCE MANAGEMENT

Buffer Zone Performance Management

Goal	Data Needed	Reporting Party	Analyzing Party
<i>Delineate Buffer Zones along priority areas (1 sign per mile)</i>	IN: number of signs constructed; number of staff; staffing hours OUT: number of signs posted per mile of stream	Buffer zone support staff; State Department of Environmental Conservation	GIS Analyst; Executive Watersheds Protection Manager; Buffer Zone Point Administrator

Permitting Performance Management

Goal	Data Needed	Reporting Party	Analyzing Party
<i>Establish and streamline application process, set application goals</i>	IN: number of staff, Number of staff hours OUT: number of applications reviewed, number approved, number disapproved EXTERNAL: comment cards and surveys	Permitting support staff – regulatory compliance	Executive Watersheds Protection Manager; Permitting Point Administrator

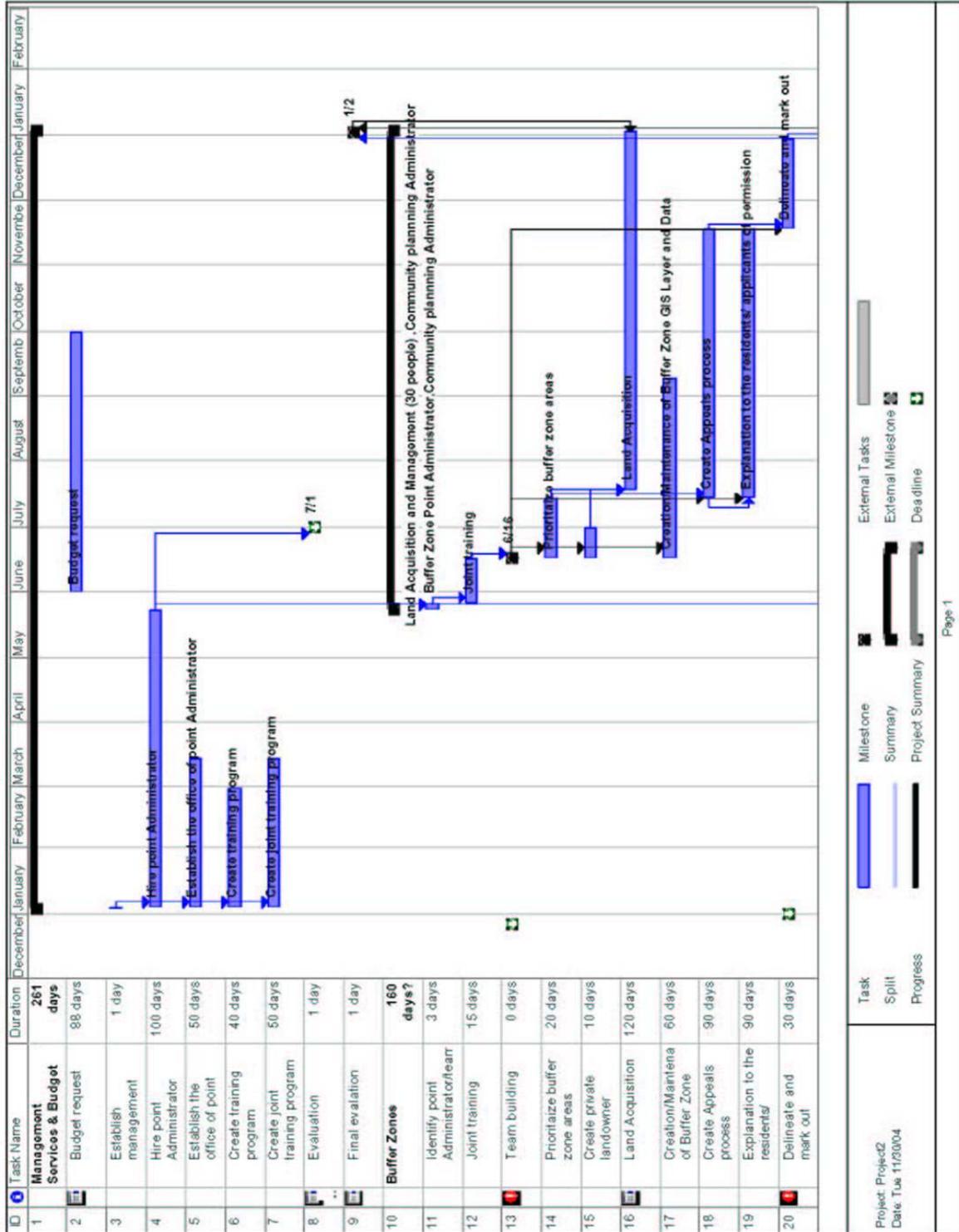
Monitoring Performance Management

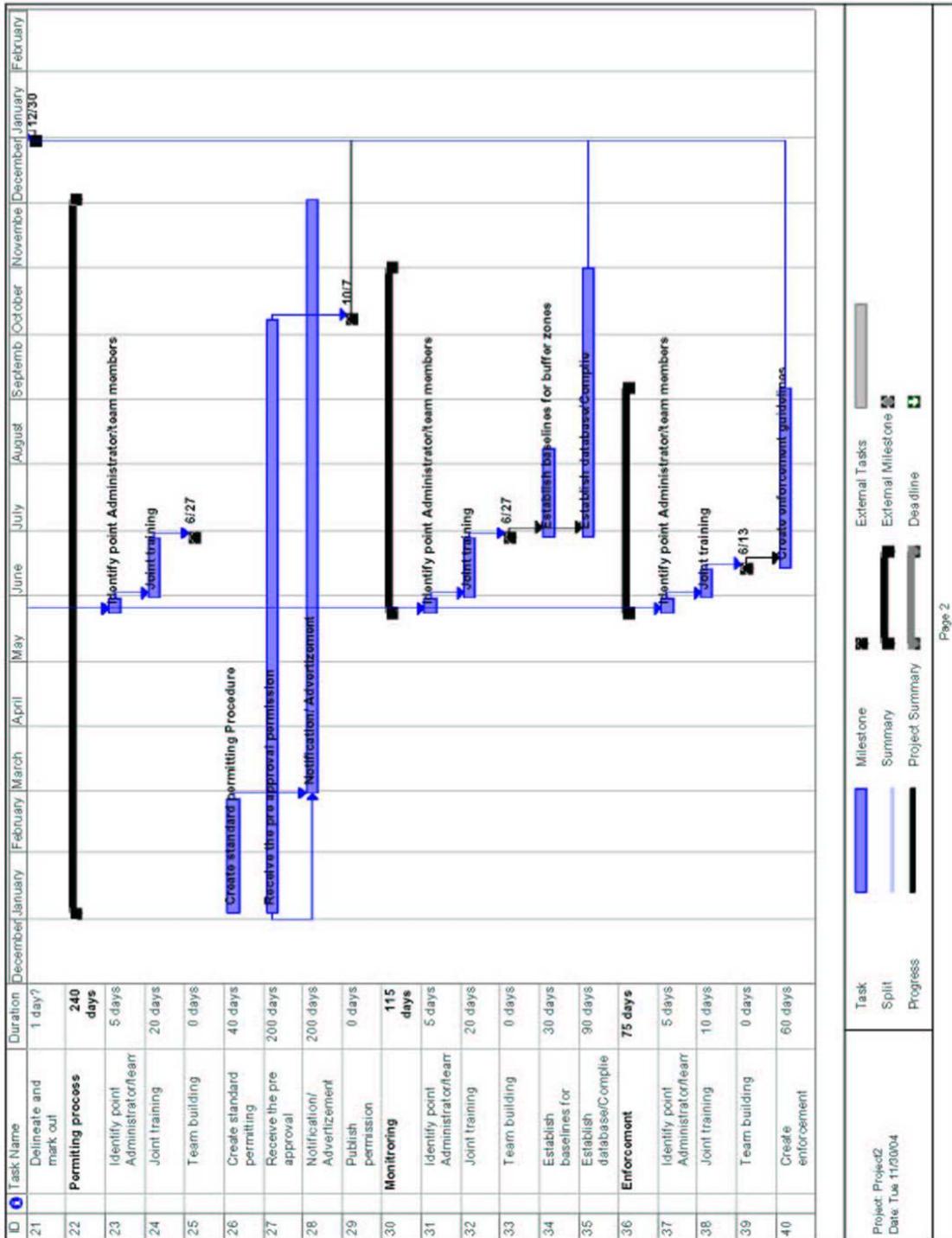
Goal	Data Needed	Reporting Party	Analyzing Party
<i>Baseline measurement setup, setup of long-term evaluation processes</i>	IN: Laboratories and equipment (EPA/USGS) data, number of staff, staff hours OUT: Standardized water quality data, Long-term Standard Operating Procedure; continued FAD compliance	Monitoring support staff; Pathogen/Chemical Labs; State Department of Environmental Conservation – Auditor Reports	Executive Watersheds Protection Manager; Monitoring Point Administrator

Enforcement Performance Management

Goal	Data Needed	Reporting Party	Analyzing Party
<i>Institute Development Database</i>	IN: number of staff, staff hours OUT: acreage grandfathered in 90 days, number of properties inspected out of number possible	Enforcement support staff, inspectors	Executive Watersheds Protection Manager; Enforcement Point Administrator

APPENDIX G: MASTER CALENDAR





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APPENDIX H: BIBLIOGRAPHY

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