

**New York City Department of Environmental Protection
Bureau of Water Supply**

**Watershed Forestry Program Evaluation Report
Five-Year Implementation Status of Forest Management Plans**

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*Prepared in accordance with Section 4.5 of the NYSDOH
Revised 2007 Filtration Avoidance Determination*



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1. Introduction

The Revised 2007 FAD requires DEP to evaluate the implementation status of five-year old forest management plans that are adopted by landowners who voluntarily participate in the Watershed Agricultural Council (WAC) Forestry Program. The evaluation includes surveys mailed to all landowners following completion of their plans (Year-1 Surveys); surveys mailed annually to those landowners having five-year old plans (Year-5 Surveys); and a comprehensive assessment of landowner participation in various forest stewardship programs.

This report evaluates the five-year implementation status of 76 WAC plans that were completed during 2010 and reached their five-year status in 2015. Including these plans, a total of 916 WAC plans have been evaluated to date over the past thirteen years. One theme to be addressed in this report involves the growing challenge of tracking and reporting on cumulative planning accomplishments after 18 years of WAC plan development on overlapping properties subject to periodic ownership changes, not to mention the increasing number of landowners who update their plans multiple times over the years; this greatly affects the ability to accurately evaluate plan implementation because an increasing number of plans being evaluated are actually updates to older plans that were previously evaluated, which in turn has an effect on the quality of landowner survey responses. This report will enumerate several reasons for discontinuing the FAD requirement to evaluate WAC forest management plans moving forward.

2. Forest Management Planning Program Summary

The WAC Forestry Program began funding the development of forest management plans in 1997, with the first plans being completed in 1998. Initially, the WAC only funded plans for privately-held watershed properties having at least 10 acres of forest and not already covered by existing stewardship plans, such as those developed through the New York State Forest Tax Law (480-a program) or a federal incentive program. In 2001, the WAC expanded its program to begin upgrading non-WAC stewardship plans to meet WAC specifications and to also begin funding the delineation of riparian areas within forest management plans. The program was expanded again in 2003 to begin funding the updates of five-year old WAC plans to meet newer specifications, including enhanced specifications for riparian management; this was also the year that DEP began to evaluate the implementation status of five-year old plans. In 2004, participant eligibility in the program was expanded beyond private landowners to include towns, villages and schools. In 2005, based on results from the evaluation of five-year old plans to date, the Management Assistance Program (MAP) was developed to assist landowners with implementing specific stewardship practices that were recommended in their WAC plans. In 2008, the WAC began funding 10-year updates to existing WAC plans.

During 2009-2011, the WAC Forestry Program collaborated with SUNY College of Environmental Sciences and Forestry to conduct in-depth property site visits and field research to better understand and assess forest management plan implementation; the results indicated that WAC plans do not necessarily translate into sustainable forest management or implementation of best management practices (BMPs) when compared to plans that are enrolled in the New York State Forest Tax Law (480-a program). Therefore, in 2012 the WAC initiated a multi-year

assessment of its forest management planning program that resulted in two complimentary planning options being developed. First, beginning in July 2014, the WAC discontinued funding traditional plans for landowners having fewer than 50 acres of forest while requiring that all new WAC plans must be enrolled in the 480-a program; to be eligible for the 480-a program, landowners must have at least 50 acres of forest and commit to a rolling 10-year management schedule that is enforceable. A second planning option was developed for all forest landowners regardless of their acreage, and it consists of a new interactive website called MyWoodlot (mywoodlot.com) that was launched near the end of 2015; the intent of this website is to educate landowners about all aspects of their forest while directing them through a series of interactive modules that allows them to develop management goals and create a customized plan for stewarding their forest and potentially engaging with a forester for specific activities.

After 18 years of continuous evaluation and evolution, the WAC forest management planning program is now entering a new phase that warrants a review and potential reset of how program accomplishments are tracked and reported. Initially, all WAC plans were completed by single unique landowners, so there was no overlap between acreages or tax parcels. As the years progressed, some landowners sold their properties which resulted in new plans being developed by different landowners on acreages that were previously enrolled by someone else. Similarly, other landowners updated their WAC plans multiple times over the years because they harvested timber and required a new forest management schedule, or else they enrolled their properties in the 480-a program which requires plan updates every five years. In addition, some landowners developed new WAC plans altogether because they subdivided their original parcels, purchased new parcels, or aggregated separate parcels that were previously covered by multiple plans.

The nuances described above make it difficult to characterize cumulative WAC plan accomplishments with accuracy. For example, while it's correct to report the WAC Forestry Program has funded 1,300 forest management plans covering more than 242,500 acres, of which nearly 190,000 acres are forested, these statistics over-represent accomplishments because they include numerous landowners having multiple plans covering duplicate acreages. Through a comprehensive database analysis (which by itself is not a straightforward exercise because some landowners developed multiple plans on separate properties that truly qualify as unique plans), DEP estimates that approximately 1,070 different landowners developed unique WAC plans on approximately 185,000 acres, of which an estimated 145,000 acres are forested. When a GIS analysis of property tax parcels is conducted to further eliminate redundancy caused by multiple landowner plans on overlapping acreages, this produces a more conservative (and probably more realistic) statistic of approximately 171,800 cumulative acres enrolled in WAC plans to date.

Two other nuances are worth noting that further complicate the tracking and reporting of cumulative planning accomplishments. First, at least 58 landowners who developed WAC plans have subsequently sold or are in process of selling their land to either New York State or New York City (totaling about 7,820 acres). Second, approximately 225 landowners (representing about 24,300 acres) developed WAC plans at least ten years ago and never once updated their plans or engaged with the WAC Forestry Program in some type of stewardship activity after all these years. Collectively, these two scenarios represent more than 32,000 acres that were originally enrolled under a WAC forest management plan; this raises a question about whether these plans and their acreages should still be counted as a current program accomplishment.

3. Evaluation Results

This report evaluates the five-year implementation status of 76 WAC plans that were completed during 2010 and reached their five-year status in 2015; these 76 plans cover 13,639 acres, of which an estimated 10,636 acres are forested. Fifty-one plans (67%) delineated 1,673 riparian acres. Fifteen foresters wrote the 76 plans, with two foresters writing more than half of all plans (59%). The average completion time for all 76 plans was six months.

To reinforce the complexity of evaluating forest management plans when multiple landowners have multiple plans, it is worth noting that 73 different landowners developed the 76 plans in 2010, with three landowners each developing two plans on two separate properties. In addition, 21 of these plans (28%) represent updated plans from previous years, which means they were already evaluated once before; two of these plans are second-time updates and were thus evaluated twice before. It is also worth noting that 37 landowners who completed WAC plans in 2010 are responsible for completing a total of 95 original or updated plans to date, with 19 landowners completing more than three plans each and one landowner actually having seven plans (including multiple plan updates but also separate original plans on separate properties). These statistics highlight the challenge of evaluating plans every year when there is a growing disconnect between the number of original plans and the number of landowners holding them.

Seventy-three percent of the WAC plans completed in 2010 were on Delaware County properties, 11% were in Greene, and 5% or less were in Putnam, Schoharie, Sullivan, Ulster and Westchester apiece; one plan spanned two counties. On a cumulative basis, the 916 WAC plans evaluated to date were on properties located in the following counties: Delaware (62%), Greene (15%), Ulster (10%), Schoharie (5%), Westchester (4%), Putnam and Sullivan (3% each), and Dutchess (1%). Sixteen plans evaluated to date spanned multiple counties; all of these statistics are consistent with the cumulative results from prior year evaluations.

Ninety-five percent of the WAC plans completed during 2010 contain some type of silvicultural prescription in their 15-year management schedules, with commercial thinning, timber stand improvement, and pre-commercial thinning representing the most common prescriptions; these statistics are also consistent with prior year evaluations.

Approximately 80% of the WAC plans completed during 2010 had streams located on the properties, of which approximately 34% had stream crossings already in place (mostly fords and culverts) and 59% recommended that a new crossing would be needed during a future timber harvest. Sixty-nine percent of the stream crossing recommendations focused on a permit from the New York State Department of Environmental Conservation (DEC), followed by portable bridges (58%) and culverts (25%); all of these statistics reinforce cumulative evaluation trends.

Approximately 95% of the WAC plans completed during 2010 had existing forest roads on the properties, of which at least one-third were described as having erosion problems or needing BMPs. Approximately 59% of the plans recommended that new roads be installed during future timber harvests; all of these statistics are generally consistent with prior year evaluations, although it continues to be difficult to ascertain current road conditions or future road recommendations due to different foresters writing these plans in various styles.

Twenty-seven landowners returned Year-1 Surveys upon completion of their WAC plans in 2010, representing a 36% response rate based on 76 plans or a 37% response rate based on 73 landowners; this statistic is slightly lower than the 46% cumulative response rate for all plans evaluated to date and is possibly a result of landowner fatigue with completing surveys given the unusually high number of plan updates completed in 2010 (28% of all plans) compared to previous years (17% in 2009 and 10% in 2008), which means that many landowners received multiple surveys over time. One hundred percent of respondents indicated their satisfaction with both their plans and their foresters, while 96% felt that having a plan would improve their stewardship. Eighty-nine percent of respondents indicated they would retain the services of their forester for future activities while 81% indicated they would use a certified logger for a future timber sale. Seventy-seven percent of respondents expressed interest in other forestry programs, of which 81% indicated roads/trails improvements, 38% indicated education workshops, and 29% indicated conservation easements. These statistics are all generally consistent with prior year evaluations.

Forty-three landowners returned Year-5 Surveys in 2015, representing a 57% response rate based on 76 plans or a 59% response rate based on 73 landowners; four surveys were returned as undeliverable and two of the respondents sold their land. For the 41 respondents who still own their land, 68% indicated they consulted their plans during the past five years, 61% indicated they retained the services of their foresters, 78% indicated that having their plans has improved their stewardship, and 20% indicated they participated in workshops or other events. Twenty-five respondents indicated their plans recommended forestry activities during the past five years, of which 80% indicated they completed these recommendations. Nine respondents indicated they conducted a timber sale during the past five years, of which all nine claimed to have hired a professional forester while eight (89%) claimed to have hired a certified logger. These statistics are all generally consistent with prior year evaluations.

Finally, watershed landowners who adopt WAC forest management plans may choose to participate in several voluntary stewardship programs. These include the WAC Management Assistance Program (MAP) and Road BMP Program, New York State Forest Tax Law, WAC Agricultural Easement Program, DEP Land Acquisition Program, and DEP Conservation Easement Program. A total of 49 landowners (67%) who completed WAC plans during 2010 took advantage of at least one or more of these opportunities as described below:

- Thirty-four out of 62 eligible landowners (55%) enrolled all or part of their WAC plan tax parcels in the New York State Forest Tax Law, which is consistent with Year-5 Survey results in which 59% of respondents claimed to have enrolled;
- Nineteen landowners updated their original WAC plans since 2010, while twelve others are currently in the process of updating their plans;
- Sixteen landowners implemented 21 road BMP projects after completing their WAC plans in 2010, with one landowner also completing a road BMP project prior to completing his WAC plan;

- Twenty-eight landowners completed 71 MAP projects, whereas three MAP projects that were approved by the WAC were subsequently cancelled by three different landowners;
- Two landowners sold 413 acres that were originally enrolled in their WAC plans to the DEP Land Acquisition Program in fee simple;
- Three landowners enrolled 429 acres covered by their WAC plans in a DEP conservation easement;
- Five landowners enrolled 968 acres covered by their WAC plans in a WAC agricultural easement.

4. Discussion and Summary

This report evaluated 76 WAC plans completed during 2010. Pursuant to the FAD, next year DEP is supposed to evaluate 82 plans that were completed during 2011. It is worth pointing out that these 82 plans were completed by 77 landowners (five landowners completed two separate plans). It is also worth noting that 31 plans (38%) represent updated plans that were previously evaluated at least once before; these statistics continue the trends that DEP already described as posing a challenge to ongoing evaluations. For the reasons summarized below, but due largely to the fact that evaluating WAC plans no longer seems meaningful given the new WAC requirement that all future plans must be enrolled in the New York State Forest Tax Law (thereby ensuring a long-term commitment to good forest management), DEP suggests that next year's evaluation report mark the end of this FAD requirement.

First, when DEP began evaluating the implementation of five-year old WAC plans in 2003, only 335 plans had been developed up to that point and all of those plans were original first-time enrollments. In addition, with the exception of funding road BMP projects and directing landowners to apply for funding through the federal Forest Land Enhancement Program (a fledgling stewardship incentive program that attracted only a handful of landowners during its short-lived existence), the WAC Forestry Program had not yet developed its own implementation programs. Therefore, one of the initial goals for evaluating WAC plans was to assess the management practices being recommended, which of these practices were being implemented, and the reasons why landowners made certain management decisions; the most useful benefit of the initial evaluation was that it provided DEP and the WAC Forestry Program with a better understanding of forest landowner needs, interests, motivations and behaviors.

Second, concurrent with evaluating the first set of plans in 2003, the WAC Forestry Program also began funding the update of five-year old plans that same year in part to remind landowners about the long-term nature and importance of forest management. Although plan updates represent only 7% of the 916 WAC plans evaluated to date (those plans completed 1998-2010), this statistic jumps to 17% of all 1,300 WAC plans completed to date (through 2015); this indicates that greater numbers of plans to be evaluated in the future have already been evaluated at least once, and that ongoing evaluations will increasingly become redundant.

Third, it is important to recognize that initial plan evaluation results have already been used to develop and refine the WAC Management Assistance Program (MAP), which was launched in 2005 on a pilot basis, evaluated in 2008 using three more years of evaluation results, and expanded in 2009 to all landowners having a WAC plan. In many respects, the creation of the MAP can be viewed as the ultimate culmination of evaluating WAC plans because all of the practices funded by the MAP are directly related to either specific plan recommendations (timber stand improvement) or specific reasons landowners have plans (recreation and wildlife).

Finally, after thirteen years of evaluating 916 WAC plans, DEP has noticed that annual results do not vary significantly from one year to the next, which calls into question the necessity of continuing the evaluation when the majority of unique plans have already been analyzed and assessed. Landowner response rates to both the Year-1 and Year-5 Surveys are declining and surveys are now being returned for updated plans that were previously evaluated. The evaluation results gathered to date have already been put to excellent use as demonstrated by the numerous modifications made to the WAC forest management planning program over the years not to mention the expanded opportunities for plan implementation. With all future WAC plans now being enrolled in the New York State Forest Tax Law, this essentially guarantees some degree of forest management or stewardship given that landowners must comply with their plans.

In summary, DEP recommends that next year's evaluation report mark the end of this particular FAD requirement. When the 82 WAC plans to be evaluated in 2016 are added to the 916 WAC plans evaluated to date, that will result in a total of 998 plans having their five-year implementation status evaluated over a fourteen year period; by any measure, that represents an impressive accomplishment. To commemorate this milestone and ensure that next year's report provides a meaningful conclusion to this longstanding deliverable, DEP is willing to analyze and submit in that final report cumulative statistics for all WAC plans evaluated to date along with a comprehensive implementation summary for all WAC plans completed to date.