



Riverkeeper Letters for New York State Joint Hearing on Water Quality and Contamination September 7, 2016

Contents

1. Riverkeeper Comments on Proposed Renewal of SPDES Permit NY-00250457 for Stewart Air National Guard Base (02.05.2015)
2. Riverkeeper Letter to Port Authority of New York and New Jersey and Stewart Air National Guard re: Demand to Cease and Desist All Discharges of PFOS at Stewart Air National Guard Base and/or Stewart International Airport (05.12.2016)
3. Riverkeeper Letter to NYS Commissioners re: Need to Immediately Address Contamination of the City of Newburgh Drinking Water Supply and Water Quality Issues (06.17.2016)
4. Riverkeeper Response to NYS Commissioners (06.20.2016)
5. Riverkeeper Letter to EPA Region 2 Administrator Judith Enck re: Newburgh Drinking Water and Water Quality Crisis Need to Effectively Address PFOS Contamination (07.01.2016)
6. Riverkeeper White Paper on Contamination of the Drinking Water Reservoir and Watershed of the City of Newburgh: A Case Study and a Call for Comprehensive Source Water Protection (07.2016)



RIVERKEEPER.

Testimony

of

Dan Shapley

Manager, Water Quality Program

and

John Parker

Director of Legal Programs

Riverkeeper, Inc.

20 Secor Road

Ossining, NY 10562

Before the

New York State Legislature Hearing on

Water Quality and Contamination in New York

Wednesday, September 7, 2016

Hearing Room B, 2nd Floor

Legislative Office Building

On behalf of Riverkeeper, Inc., its more than 3,000 dues paying members and its nearly 63,500 constituents, we thank you for calling attention to the very critical issues of Water Quality and Contamination in New York State.

We especially thank Chairman Hannon, Chairman O'Mara of the State Senate and Chairman Englebright and Chairman Gottfried of the State Assembly for holding these Joint Hearings. We also thank Assembly Speaker Heastie and Senate President Pro Tempore John Flanagan and Senate Coalition Co-Leaders Klein and Stewart-Cousins for bringing these issues forward.

We offer our testimony to the Legislature and ask that our Legislature leaders work together to review our testimony, our White Paper, "Contamination of the Drinking Water Reservoir and Watershed of the City of Newburgh: A Case Study and a Call for Comprehensive Source Water Protection," and related correspondence between Riverkeeper and various state and federal officials, to ensure that the necessary funding, staffing and direction be provided to respond to the crisis in Newburgh, and to proactively protect drinking water supplies across New York State.

What is clear is that a successful strategy must be well funded, must take the long view, and emergency environmental health concerns must be effectively addressed as they are discovered.

* ----- *

When we turn on the tap, we trust that the water flowing from it is safe. Simple acts like a mother mixing formula for a young child, or a pregnant woman pouring herself a glass of water, should never endanger the health of a child.

Ensuring the quality of that tap water takes a sustained commitment.

Clean Water - one of New York's most important environmental and economic resources - can no longer be taken for granted, as thousands of impacted residents in a number of communities in New York State can attest.

Folks here have attested to the challenges facing their families when they discovered they lacked the clean water needed to survive and thrive.

Our testimony today will focus on a comprehensive approach to responding to contamination and -- importantly -- preventing future contamination. Our suggestions are based entirely on existing legal authorities and precedents in New York State. The water crises in the City of Newburgh, and of Hoosick Falls and Petersburg, will not be the last ones in this State.

THE CITY OF NEWBURGH: ANOTHER CASE STUDY WITH IMPORTANT LESSONS

We, of all states, know how to protect drinking water supplies. The example of New York City is held up around the world. And yet, as our analysis of the crisis in the City of Newburgh plainly shows, we have not applied the lessons learned by preserving New York City's drinking water uniformly across our state.

The City of Newburgh is an important case study in what can happen when we fail to use the tools available to protect drinking water. Instead of high quality water provided naturally by a well-managed water supply, there is a toxic chemical in its reservoir and numerous additional threats to its watershed.

Preventing the next crisis in Newburgh will take long-term sustained attention to watershed restoration, even as we focus rightly on emergency response -- investigating and removing pollution, and responding comprehensively to the health needs of the city. These efforts involve different divisions and agencies of state government, and should happen in parallel.

Preventing the next crisis in the next community will take widespread enforcement of our clean water laws, and support for the agencies tasked with implementing them. It will take making politically courageous decisions that focus on the future health and sustainability of communities, sometimes over short-term economic or political gain. It will take a commitment by the Governor and Legislature to funding the effort.

In Newburgh, the presence of a toxic chemical, PFOS, a sister chemical of the PFOA that impacted Hoosick Falls, has been found at high levels in the city's primary reservoir, Lake Washington, and in the streams that feed it. For years, and possibly decades, 29,000 city residents were exposed to this chemical, including those most acutely at risk: developing fetuses and newborn babies. Its presence became widely known in May 2016 when the city manager declared a state of emergency in response to test results taken by the state.

What is Known?

The chemical is present in the drinking water supply, Lake Washington, at levels in excess of the EPA drinking water health advisory.

The source identified by New York officials is the Stewart Air National Guard Base, and possibly the Stewart International Airport, because of the use of firefighting foam containing the chemical. It reached the reservoir through discharges of stormwater to streams that lie just upstream of the reservoir, and possibly through other routes.

What is Not Known?

The actual exposure levels of city residents. Comprehensive health screening, consisting of blood testing, and bio-monitoring, has not been made available to city residents. This is not how the crises in Hoosick Falls and in Petersburg have been handled. *It is unconscionable and unjustifiable to treat these impacted communities differently.*

The city residents need to be given the testing necessary to make the proper health decisions for their families. The Department of Health has not responded to numerous requests for blood testing by elected officials, local residents, and by advocates, including Riverkeeper. Blood testing alone is not a sufficient health response, but it is an essential component of any long-term response to real health concerns that this exposed community has and will have.

What has Been Done?

Department of Environmental Conservation emergency action resulted in the temporary substitution of the source of the city's drinking water to its backup reservoir, Browns Pond, and -- at significant cost -- to the New York City reservoir system. Thus, PFOS, is no longer reaching taps. The state has also committed to filtering the city's drinking water. But filtration of drinking water supply, and remediation of contamination will come at great expense, and the city's primary reservoir remains contaminated. In August, DEC declared the site an imminent threat to public health and listed the site for New York's Superfund program. The use of the State's program of last resort - Superfund - is essential in this case, but it is not a way to deal with drinking water or source water protection. Simply, it is too expensive, too slow, and addresses environmental and public health after people have been exposed to dangerous levels of chemical contamination.

While the focus has been on providing residents with clean drinking water, the PFOS-contaminated stormwater continues to pollute streams and creeks in the Hudson River

watershed, which could put both wildlife and people who consume fish at risk of toxic exposure, now or in the future. Riverkeeper has called on the Department of Environmental Conservation to implement an interim remedial measure to filter the largest source of polluted stormwater emanating from Stewart Air National Guard Base.

What Has Not Been Done?

The long-term protection of drinking water quality requires a long-term commitment to protecting source waters – rivers, streams, reservoirs and groundwater. Protection of water supplies has wide public support, and can typically be achieved at a cost far less than the cost of remediation of contaminated supplies.

In Newburgh, water protection laws have not been effectively enforced or implemented, and the lands and waters that supply Lake Washington and Brown's Pond in the Quassaick and Moodna Creek watersheds have not been adequately protected. The present contamination is the result.

THE PATH FORWARD

A comprehensive approach to Newburgh points the way to a comprehensive approach to protecting drinking water supplies across the state. The following actions are key to such an approach:

1. Emergency Response in Newburgh

While the Department of Environmental Conservation's response to the PFOS contamination has been largely exemplary, there are two outstanding issues associated with the state's response that are of most concern, and that require immediate attention: Blood testing, as part of a comprehensive medical monitoring program; and the treating of polluted discharges from the Stewart Air National Guard Base that have been identified as the major source of contamination - a so-called interim remedial action.

Blood testing by the Department of Health is a critical first step in the comprehensive medical monitoring that is needed to adequately respond to the

exposure of thousands of New York State residents to levels of a toxic chemical in excess of thresholds identified as cause for concern.

2. **Source Water Protection**

With our testimony today, we are including a copy of our July 2016 report, “Contamination of the Drinking Water Reservoir and Watershed of the City of Newburgh: A Case Study and a Call for Comprehensive Source Water Protection.” This document demonstrates that New York State has a comprehensive legal framework for protecting source waters, but its implementation is both incomplete and uncoordinated. While additional legal authorities may be needed, there are many tools available now that should be utilized immediately to protect and restore source waters, even while emergency response measures are in effect.

Key elements of comprehensive source water protection include:

Safe Drinking Water Act - We must ensure that communities have accurate maps and Source Water Assessments of potential risks, under the Safe Drinking Water Act, to watersheds that naturally filter and supply drinking water. Where assessments are inadequate, they must be updated. Where accurate and complete assessments identify risks, Source Water Protection Programs must be developed, funded and implemented to alleviate those risks.

Clean Water Act - Streams in the watersheds that naturally supply and filter drinking water supplies -- source waters -- must be accurately classified (“Class A”) and permits allowing discharges of pollution must be written and enforced to maintain the highest of water quality standards. Where classifications or permits are not adequately protecting water quality to drinking water standards, they must be comprehensively updated and enforced.

Environmental Conservation Law - Preservation of natural infrastructure -- wetlands, forests and other open spaces -- is provided for in state law, with special provision for drinking water supplies. These provisions must be implemented fully as part of freshwater wetlands and open space protection programs.

Public Health Law - Source Water Protection Rules provide a framework for protecting drinking water supplies, including the ability for communities to take certain actions outside of their municipal boundaries in order to preserve drinking water supplies. Few communities outside of New York City benefit from this provision in state law, however.

Coordination and Oversight - Environmental Conservation Law mandates the creation of a Water Resources Planning Council that could coordinate and

prioritize efforts to protect drinking water supplies and other water resources. The precedent of a watershed inspector general for New York City's drinking water, established by Executive Order, could be used to fill a vacuum in third-party oversight elsewhere in the state.

3. Water Resources Management

New York State's water management policy needs to catch up to its energy policy, which is going through a fundamental reinvention known as "REV: Reforming the Energy Vision". We need the same sort of fundamental reform, when it comes to water resources management.

In an era of increasing stress on New York's drinking water reservoirs, lakes, aquifers and rivers, any truly sustainable strategy for water resources management must maximize the use of cost-effective water conservation and efficiency projects, reduce water losses, and employ pricing policies that create incentives for water conservation.

In addition to conservation, efficiency and pricing reform, we need to make the efficient use of water central to our policies for economic advancement, land use, ecological integrity, etc.

The Public Service Commission can do its part by ensuring that municipalities and other water suppliers regulated by the Commission are fully incorporating water sustainability considerations in partnership with local water advocacy groups and community representatives. DEC can use its own water withdrawal permitting jurisdiction to assure the same result on a much broader level.

4. Water Infrastructure Investment

The New York State Water Infrastructure Improvement Act of 2015 established a new and valuable grants program that has effectively leveraged roughly five times its value in investments in drinking water and wastewater projects. This essential program must be renewed past its legislative expiration in 2017, and its funding increased -- to \$800 million -- to clear the backlog in projects that had built up over decades. The successful program is essential to providing clean drinking water, as well as high quality water for wildlife, recreation and business.

5. Budget and Staffing

Implementing a coordinated approach to source water protection and water resources management will require adequate funding and staffing for key state agencies, particularly the Department of Environmental Conservation. The DEC,

and particularly its Division of Water, has suffered disproportionate cuts over many years, relative to other parts of state government, even as the demands on the agency, and the state's population, have increased. No response to the drinking water crises in New York State can be considered adequate without a new and sustained commitment to budget and staffing necessary for state agencies to implement key programs outlined here.



Lindy Sue Czubernat
Environmental Program Specialist
Division of Environmental Permits
New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233-1750

February 5, 2015

Dear Ms. Czubernat,

Please accept these comments on behalf of Riverkeeper, Inc. about the proposed renewal of SPDES permit NY-00250457 for the Stewart Air National Guard Base in the Town of Newburgh.

The SPDES permit has significant inaccuracies that should at a minimum be corrected prior to renewing this permit. We believe the errors, as well as water quality information about the receiving waters, should prompt a full technical review of the permit to ensure effluent limits, monitoring and best practices plans are sufficient to protect receiving waters and downstream uses, particularly the drinking water supply of the City of Newburgh.

Correct Receiving Waters Classifications

The SPDES permit states that the Class D receiving waters are tributaries of the Quassaick Creek or Silver Stream. In some places the permit states that certain of these same receiving waters are also classified as Class C.

In fact, many if not all outfalls discharge to Class A tributaries of the Washington Lake and Silver Stream (also known as Brown's Pond) Reservoirs, which make up the drinking water supply for the City of Newburgh, which serves approximately 29,000 people.¹ (While Silver

¹ Newburgh Water Quality Reports,
<http://www.cityofnewburgh-ny.gov/water-department/pages/water-quality-reports>



Stream is part of the Moodna Creek watershed, diversions carry water from its reservoir, via a diversion, to Washington Lake, part of the Quassaick Creek Watershed.)

Two specific examples include:

- Outfall No. 001 discharges to a Patton Brook, a primary tributary of Washington Lake. The permit labels this receiving water as a Class D drainage ditch tributary to Quassaick Creek.
- Outfall No. 010 discharges into Class A Silver Stream, a tributary of Washington Lake. The permit labels this receiving water as a Class D stream.

Riverkeeper has not exhaustively analyzed the permit's outfalls, discharge limits and receiving waters. By identifying these errors, we expect the Department will be compelled to thoroughly analyze and map the outfalls and receiving waters and revise the permit accordingly for all outfalls from this facility.

Revise Effluent Limits

Since the discharges are to Class A waters currently being used as drinking water supply for a city of 29,000, all effluent limits and permit conditions should be reviewed to ensure that the drinking water supply is protected.

Specifically, but not exhaustively, the Department should set limits for acetone and glycol, and tighten any other limits, consistent with state Water Quality Standards² for Class A waters.

Consider Available Data About Existing Impacts to Receiving Waters

The Department should consider the available information about water quality in the receiving waters, as documented in the Quassaick Creek Watershed Plan,³ published in June 2014, which labeled as a "priority action" encouraging "local regulatory measures for water resource

² ECL Part 703, <http://www.dec.ny.gov/regs/4590.html>

³ Quassaick Creek Watershed Plan, http://waterauthority.orangecountygov.com/quassaick_watershed.html



protection, especially for drinking water, (and) stormwater reductions.”⁴ The three subwatersheds of the Quassaick Creek that are part of the drinking water supply – Patton Brook, Upper Silver Stream and Washington Lake – are receiving waters for this permit holder’s discharges, and there is evidence that portions of the watershed are already significantly stressed. Consider some facts from the plan:

- land use analysis shows that each of these subwatershed has greater than 10% impervious surface;
- both reservoirs have documented impacts from watershed pollutants, described in this way: “While the City of Newburgh owns substantial tracts of land around the borders of the (Washington Lake) reservoir, most of the watershed is unprotected and thus vulnerable to development, examples of which have recently added significant amounts of sediment to Silver Stream... Brown’s Pond also experiences elevated levels of algal growth during the growing season and as such it too is considered eutrophic”⁵;
- biomonitoring data for Patton Brook, which is a receiving water for discharge outfall No. 001 and upstream of the Silver Stream (Brown’s Pond) Reservoir, received a Biological Assessment Profile (BAP) of 4.6, corresponding to a “moderate impact” classification, and an Impact Source Determination (ISD) indicating “toxic inputs”;
- two biomonitoring sampling points on Silver Stream, which is also downstream of receiving waters for permitted discharges from this facility and part of the drinking water supply system, received BAPs of 4.2 and 3.8, corresponding to a “moderate impact” classification. The ISDs were “organic and complex inputs” and “organic and toxic inputs,” respectively⁶; and,
- the Quassaick Creek Watershed Management Plan identified as “areas for improvement” developing Total Maximum Daily Loads for Washington Lake, Patton Brook and Upper Silver Stream.⁷

⁴ Quassaick Creek Watershed Plan, Appendix E, Recommendation 2-7

⁵ Quassaick Creek Watershed Management Plan, Page II-18

⁶ Quassaick Creek Watershed Management Plan, Page II-29

⁷ Quassaick Creek Watershed Management Plan, Page II-73



Also potentially relevant to the health of the receiving waters, if not this particular discharge, is ongoing monitoring for Enterococcus, an Environmental Protection Agency-recommended fecal indicator.⁸ No site designated for primary contact recreation should exceed a geometric mean of 35 on a rolling monthly, according to the EPA's recommended water quality criteria⁹. Based on preliminary analysis of data gathered between August and October, 2014, at 13 points in the Quassaick Creek watershed, the geometric mean of six samples taken at each site biweekly ranged from 117 to 912. The geometric mean of six samples at a point in Patton Brook between the permit holder's discharge points and the Reservoir was 182. The geometric mean of six samples in Silver Stream between the discharge points and Washington Reservoir was 577.

These past and ongoing monitoring efforts suggest water quality in the receiving waters are likely not meeting Class A uses and standards, and that permits discharging to these waters should at a minimum be written with Water Quality Based Effluent Limits (WQBELs), which are necessary to control pollutants which "are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard."¹⁰ Particular attention should be paid to toxic discharges, such as benzene and xylene, given the suspected toxic impacts on macroinvertebrates documented by biomonitoring in Patton Brook and Silver Stream, and the downstream use for drinking water.

Increase Monitoring Requirements

The frequency of sampling required, particularly of toxic constituents such as benzene, toluene and xylene, should be increased from quarterly to monthly, if not daily, to ensure that these constituents are not discharged at levels that could endanger the receiving waters or the Newburgh drinking water supply. Whether or not frequency of regular monitoring is increased, or increased to the degree recommended here, event-based monitoring requirements should be

⁸ Enterococcus monitoring data for the Quassaick Creek watershed, <http://www.riverkeeper.org/water-quality/citizen-data/quassaick-creek/>

⁹ 2012 Recreational Water Criteria, <http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/>

¹⁰ 40 C.F.R. § 122.44(d)(1)(i), http://cfr.regstoday.com/40cfr122.aspx#40_CFR_122p44



added to the frequency-based requirements. Specifically, because the highest concentration of stormwater contaminants enters receiving waters during the first flush, sampling should occur within the first hour of discharge during at least a 1-year, 24-hour storm event, or any storm event following a spill event, whenever practicable.

Additionally, monitoring requirements should be imposed on all outfalls, including 005, 006, 007, 008, 009A and 009B, if they are found to be upstream of Newburgh's drinking water supply.

Amend Management Plan to Include Downstream Notification and On-Site Education

Finally, Riverkeeper urges the Department to place conditions on the permit, as part of the condition to develop and use a Best Practices Management Plan, requiring the permit holder to develop a spills notification plan for the City of Newburgh, and to engage in an ongoing education program for facility staff and visitors.

There appear to have been at least five spills from this facility recorded in the NYS Spill Incidents Database¹¹:

- 75 pounds of jet fuel (11/04/2009; Spill No. 090877)
- 0.10 gallon of an unnamed substance (05/07/2010; Spill No. 1001481)
- 100 gallons of jet fuel (01/31/2011; Spill No. 1011070)
- 25 gallons of hydraulic oil (11/28/2012; Spill No. 1212675)
- 16 gallons of jet fuel (07/22/2014; Spill No. 1404350)

A spill notification protocol and on-site training and education would help ensure that Newburgh officials can take any timely action necessary to protect their drinking water supply source, and that all on-site personnel are aware that stormwater runoff and other pollutants spilled or discharged from the facility may affect drinking water for 29,000 people downstream. It is our understanding that the city is working toward an overdue watershed

¹¹ Spill Incident Database, <http://www.dec.ny.gov/cfm/external/index.cfm?pageid=2>



protection and education effort for its drinking water supply, and the Department can assist meaningfully in this effort with permit conditions on this facility.

Thank you for the opportunity to comment on this proposed SPDES permit renewal. If you would like to discuss any of the points raised in this letter, please contact me at 914-478-4501 x226 or by email at dshapley@riverkeeper.org.

Sincerely,

A handwritten signature in black ink that reads "Dan Shapley". The signature is written in a cursive style.

Dan Shapley

Water Quality Program Manager



May 12, 2016

Chairman John J. Degnan
Port Authority of New York and New Jersey
4 World Trade Center
150 Greenwich Street
New York, NY 10007

Col. Howard Wagner
Commander
Stewart Air National Guard Base
1 Maguire Way
Newburgh, NY 12550

**Re: Demand to CEASE AND DESIST All
Discharges of Per-fluorooctane sulfoate (PFOS)
Stewart Air National Guard Base
Stewart International Airport**

Dear Chairman Degnan and Col. Wagner:

On behalf of Riverkeeper, Inc., we are writing today to demand that all discharges from outfalls located at the Stewart Air National Guard Base and/or Stewart International Airport that have tested positive for levels of perfluorooctane sulfonate (PFOS) cease and desist, permanently. We urge you to take the opportunity in this crisis to be leaders in a comprehensive effort to prevent pollution of the City of Newburgh's drinking water supply.

On May 9, 2016, New York State Departments of Health and Environmental Conservation sent a letter to the City of Newburgh identifying results of sampling for PFOS at elevated levels from outfalls discharging stormwater originating at the Stewart Air National Guard Base, and likely from Stewart International Airport. Elevated levels of PFOS were found at all outfalls discharging to Recreation Pond, identified by the state as Outfall-2, Outfall-3, Outfall-A and Outfall-17K, as well as at the outlet of Recreation Pond, identified as Outfall-10.



The Stewart Air National Guard is covered by State Pollution Discharge Elimination System (SPDES) permit (NY0250457). It is our understanding that Outfalls 2, 3 and 10 correspond to Outfalls 002, 003 and 010 identified in the SPDES permit. On March 16, 2016, sampling measured levels of PFOS in parts per trillion (ppt) at these outfalls of 560, 5,900 and 660, respectively. On March 16, 2016, sampling measured measured PFOS at levels of 790 at Outfall A and 480 at Outfall-17K. SPDES permit NY0250457 identifies an outfall in Recreation Pond originating at Stewart International Airport, and it is our understanding that at least one other outfall in the pond originates from stormwater detention ponds at an industrial park on or near Corporate Drive and Route 17K in the Town of Newburgh, and that stormwater is conveyed via a pipe to Recreation Pond.

These results were the highest reported measures of PFOS in surface waters sampled by the state on March 16 and March 31, and point to the outfalls discharging to Recreation Pond as important sources of PFOS in Washington Lake. This lake is the primary drinking water reservoir for the City of Newburgh and the approximately 29,000 residents who rely on this source of drinking water.

Immediate Action to Protect the Water Supply is Needed

As a result of this testing, Riverkeeper is calling on Stewart Air National Guard (ANG) Base and the Port Authority of New York and New Jersey to:

- 1. Immediately and permanently prevent discharge from the outfall at Recreation pond (described as Outfall-10 and Outfall 010).**

With the public health implications clear, it is your responsibility to immediately devise and implement a system for stopping the flow of water from the pond to the stream that, through Silver Stream and the city's reservoir system, feeds Washington Lake. Put simply, the chemical contaminant pathways to the drinking water supply need to be properly contained and discharges through this outfall or others should not be permitted in Newburgh's drinking water supply watershed.

PFOS is only one contaminant of concern likely to emanate from this pond, and as Riverkeeper wrote in a letter to Department of Environmental Conservation dated Feb. 5, 2015, regarding the proposed renewal of the ANG SPDES permit: "Outfall No. 010 discharges into Class A Silver Stream, a tributary of Washington Lake. The permit labels this receiving water as a Class D stream...Since the discharges are to Class A waters currently being used as drinking water supply for a city of 29,000, all effluent limits and permit conditions should be reviewed to ensure that the drinking water supply is protected. Specifically, but not exhaustively, the Department should set limits for acetone and glycol, and tighten any other limits, consistent with state Water Quality Standards for Class A waters."

- 2. Investigate and monitor the source(s) of the contamination.**

The investigation, including thorough monitoring, must address all other stormwater outfalls on your properties, as well as off-site properties that discharge through Recreation Pond. The ANG

SPDES permit identifies Outfalls 01, 01A, 4, 5, 6, 7, 8, 9A and 9B, and two lagoons as part of the stormwater-related infrastructure on the property. At a minimum, each of these must be investigated, and monitoring results reported publicly. All of these outfalls discharge to Newburgh's drinking water supply watershed, either through connections to Patton Brook or Silver Stream. In addition, stormwater ponds on properties to the north of Stewart Air National Guard Base or Stewart International Airport, on Corporate Drive and Route 17K, are believed to discharge via a pipe to Recreation Pond. These, and any others like them, must also be investigated, and results of monitoring reported publicly.

3. Ensure any contaminated water undergoes full remedial treatment before its discharge.

Chemical contaminants and PFOS concentrations have been found in detention ponds and other waters entering the drinking water reservoirs. These chemicals and contaminants must be fully removed from these waters, prior to its ultimate discharge to surface or ground waters, whether on-site or off-site, or to municipal wastewater treatment plants. Industrial treatment and remedial water treatment technologies are available to achieve these results.

4. Ensure that any ongoing discharges from your properties to the drinking water supply of the City of Newburgh are treated to, at minimum, standards consistent with Class A drinking water.

On Feb. 5, 2015, Riverkeeper identified that the receiving waters of discharges from the Air National Guard Base should be Class A, as streams that feed Washington Lake, Newburgh's primary source of drinking water. We call on you to study the feasibility of eliminating all stormwater discharges to this drinking water supply. We also call on you to work with the DEC to revise all permits for Stewart Air National Guard Base and Stewart International Airport, and make necessary upgrades to treatment and stormwater systems, to ensure that any ongoing permitted discharge meets Water Quality Standards for Class A waters. In addition, recognizing that state standards may not yet be in place for emerging contaminants such as PFOS, that you proactively identify and control emerging contaminants that may be associated with current or past operations of the airport properties.

5. Institutionalize a spill reporting system with the City of Newburgh to assist in the protection of its drinking water.

On February 5, 2015, Riverkeeper noted that there had been at least five spills reported by the ANG to the DEC but that these spills had not been reported to the City of Newburgh. These spills may have introduced jet fuel, hydraulic oil and other substances into the city's drinking water. Timely notification directly to the City would have allowed it to take action to close diversion gates and to protect its reservoirs from known contamination. Riverkeeper calls on you to institutionalize a spill reporting system with the City of Newburgh in revised SPDES permits and/or other legally enforceable mechanisms.

6. Fund a comprehensive planning and implementation effort to map and protect the City of Newburgh's drinking water supply.

Unfortunately, discharges from the Air National Guard Base and Stewart International Airport are not the only threat to Newburgh's drinking water supply. As then-City Manager Jean-Ann McGrane wrote to county and state officials in 2008, Newburgh has long had concerns about "threats to its own drinking water reservoir posed by intensive development in the reservoir watershed, poor stormwater management and lax enforcement." A comprehensive effort to restore and protect the watershed that 29,000 people rely on for drinking water is overdue. In addition, Washington Lake is identified in the Northeast Orange County Regional Water Supply Project Facility Plan as a key component of an interconnected water system serving the city as well as the Towns of Newburgh and New Windsor. In recognition that the properties you control have contributed to water quality degradation of this drinking water supply watershed, we call on you to fund the effort. This planning and implementation strategy should, at a minimum but not exhaustively include:

- a. Review and reclassification of all streams in the watershed as Class A, and revision of SPDES permits accordingly.
- b. Correction and revision of NYS DOH's Source Water Assessment, which fails to include significant lands that are part of the watershed, or identify significant threats to water quality.
- c. Promulgation of source water protection rules under Public Health Law Article 11 1101 to ensure that land use decisions affecting the city's drinking water are protective.
- d. Reconstitution of the Water Resources Planning Council under ECL § 15-2901, and updating of the regional water resources management strategy that includes this watershed.
- e. Comprehensive mapping of wetlands and watercourses within the watershed, to ensure all wetlands that should be regulated due to their size or importance are protected under Article 24.
- f. Implementation of an aggressive green infrastructure retrofit program for stormwater discharges in the watershed.
- g. Full implementation of relevant strategies recommended in the Quassaick Creek and Moodna Creek Watershed Management Plans.

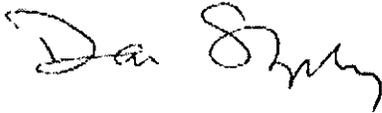
Conclusion

The public health of the 29,000 people - families and their children - that rely upon the City of Newburgh's drinking water are put at risk when contaminants are not stopped from entering Brown's Pond and Washington Lake. The problems with the drinking water for these residents are not new, but have reached a crisis point. There has been a failure at multiple levels of government to protect Newburgh's drinking water, and as a result, degraded water quality has been the norm for a generation.

These conditions must not be allowed to continue. We urge each of you to take this opportunity to set a course starting today that will lead to improved water quality over the next generation.

We welcome the opportunity to discuss these issues with you. Please let us know if you have any questions and when you would like to schedule a meeting. Please contact John Parker at (914) 478-4501, Ext. 251.

Respectfully submitted,



Dan Shapley
Water Quality Program Manager



John Parker
Director of Legal Programs

Encl. February 5, 2015 Riverkeeper Letter to Department of Environmental Conservation

cc: Robert Schick, Director, Division of Environmental Remediation,
NYS Department of Environmental Conservation
Martin Brand, Regional Director, DEC Region 3
Shohreh Karimipour, Regional Water Engineer, DEC Region 3
Nathan Graber, Director, Center for Environmental Health, NYS Department of Health
Judy Kennedy, Mayor, City of Newburgh
Genie Abrams, Regina Angelo, Torrance Harvey, Cindy Holmes, Karen Mejia and Hillary
Rayford, council members, City of Newburgh
Michael Ciaravino, City Manager, City of Newburgh
Steven M. Neuhaus, Executive, Orange County
Eli N. Avila, Commissioner, Orange County Department of Health
David Church, Executive Director, Orange County Water Authority



RIVERKEEPER

June 17, 2016

Hon. Matthew Driscoll
Commissioner
Department of Transportation
50 Wolf Road
Albany, NY 12232

Hon. Basil Seggos
Commissioner
Department of Environmental Conservation
625 Broadway
Albany, NY 12207-2942

Hon. Howard Zucker
Commissioner
Department of Health
Corning Tower
Empire State Plaza,
Albany, NY 12237

**RE: *NEED TO IMMEDIATELY ADDRESS CONTAMINATION OF THE CITY OF NEWBURGH
DRINKING WATER SUPPLY AND WATER QUALITY ISSUES***

Dear Commissioners:

We write to raise your attention to a number of water quality challenges facing the City of Newburgh, and the actions that your departments should take to address them.

While the City recently withdrew its drinking water State of Emergency declaration after switching to a back-up drinking water supply, its primary reservoir remains contaminated with Perfluorooctane sulfonate (PFOS). There are significant health

concerns that result from very low levels of exposure to this industrial chemical. It, however, is not the only threat to Newburgh's drinking water and its watershed.

The record shows that the Departments have had the opportunity and authority to address, prior to the emergency declaration, the underlying causes of and the threats to the drinking water supply for the City. Our letter to each of you adds to our call to action to address the drinking water crisis that we submitted on May 12, 2016 to the Chairman of the Port Authority of New York and New Jersey and to the Commander of the Stewart Air National Guard Base, and to our call to address fundamental problems with the Stewart Air National Guard Base's pollution discharge permit that we submitted to the Department of Environmental Conservation on February 5, 2015.

The press has reported on verbal commitments made by various agencies to investigate contamination sources, pay for alternate water sources or filtration, and other aspects of emergency response. The actual commitment to these actions and their timeline for completion remains unclear and should be communicated clearly to the public.

In the meantime, we urge each of your Departments to take all necessary steps to immediately and comprehensively address Newburgh's pressing water quality and drinking water problems, including the following actions and timelines.

1. IMMEDIATELY: Eliminate the Environmental and Public Health Threat of PFOS-contaminated drinking water.

The current contamination of Newburgh's drinking water was identified by an EPA program studying emerging contaminants, and May 2016 water testing by the New York State Departments of Environmental Conservation and Health. On May 25, 2016, EPA issued a health advisory for PFOS exposure recommending that levels do not exceed 70 ppt in drinking water. Water sampling of levels of PFOS contamination in the water supply dramatically exceed the health advisory. Thus, we call on you to take the 5 following actions:

- A. Prohibit discharges of PFOS from Recreation Pond at the Stewart Air National Guard Base;
- B. Comprehensively sample Stewart Airport and Stewart Air National Guard Base stormwater outfalls, and determine the full scope and extent of contamination;

- C. Conduct comprehensive blood testing as part of a health screening of City of Newburgh residents;
- D. Fund or compel the funding of safe temporary alternate water supplies for the City of Newburgh, including effective filtration and treatment of existing supplies or interconnection to the City of New York aqueduct; and,
- E. Address the threat to Lake Washington's dam and eliminate contaminated water releases from the Lake to the other waters including significant coastal fish and wildlife habitats of the Moodna Creek watershed and the Hudson River estuary; and conduct comprehensive testing of fish for PFOS contamination.

2. SHORT-TERM ACTIONS: Address longstanding failures to accurately and completely implement and enforce the Clean Water Act.

The Department of Environmental Conservation issued Clean Water Act permits prohibiting discharge of firefighting foam, a likely source of the PFOS contamination, but the water quality protection program has not been properly implemented or enforced. Riverkeeper raised many of these concerns to the agency in February 2015. The Department has the authority and legal obligation to immediately implement and enforce provisions of the Clean Water Act and other federal and state laws and regulations to protect the City's drinking water. Thus, we call on you to take the following 8 actions:

- A. Suspend, pursuant to ECL § 17-0817(5), the Stewart Airport and Air National Guard Base State Pollutant Discharge Elimination System, or SPDES, permits because documented PFOS contamination violates permit conditions prohibiting discharge of firefighting foam, New York State water quality standards, and exceeds EPA's 70 ppt guidance - comprising "newly discovered, material information" requiring assessment of PFOS discharge points and immediate cessation of those discharge points;
- B. Revise, re-issue, and re-notice for public comment the Stewart Airport and the Air National Guard Base SPDES permits;
- C. Draft the required multi-sector industrial stormwater permits that are lacking for Stewart Airport and the Air National Guard;

- D. Accurately map the City's watershed, including stormwater outfalls and other risks to water quality, as part of an updated Source Water Assessment;
- E. Implement water quality standards;
- F. Assign Newburgh's source waters a "discharge restriction category" and designate them for "no new discharge";
- G. Correct stream classifications so that all streams that supply Newburgh's reservoirs are recognized as Class A or AA; and
- H. Study and update Article 24 Freshwater Wetlands maps in order to protect all existing wetlands within the City's watershed as "wetlands of unusual local importance;" pursuant to 6 NYCRR §§ 662, 663, 664.

3. LONG-TERM ACTIONS: Institute a Comprehensive Strategy for Protecting the Source Waters of Newburgh's Drinking Water Supply.

Federal and State Law authorize and encourage a comprehensive approach to protecting source waters for drinking water supplies and they must be actively put into place. The Departments of Environmental Conservation and Health, respectively, can authorize and regulate actions in the watershed and bring other long-term pollution prevention approaches to provide the necessary level of oversight and land protections. Thus, we call on you to take the following 5 actions:

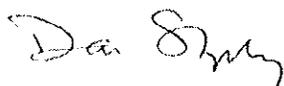
- A. Promulgate source water protection rules under NY Public Health Law § 1100;
- B. Update the state's Open Space Conservation Plan to identify open areas within Newburgh's drinking water supply as priorities for conservation;
- C. Reconstitute the Water Resources Planning Council under ECL § 15-2901 and update the regional water resources planning strategy with these and other tools for protecting this drinking water supply;
- D. Fund the full implementation of recommendations in the Moodna Creek and Quassaick Creek Watershed Management Plans; and,

- E. Fund a full-time watershed inspector general for Newburgh, or other personnel with the authority to coordinate programs, enforce laws, act as an independent watchdog and speak publicly about threats and opportunities related to the city's drinking water supply.

Each of the issues we raise here, alone, warrant immediate attention. Taken together, however, these issues and problems have led directly to the damaging and negative impacts on the reservoirs that supply water to local residents. The Departments are legally required to take a number of actions. In addition, there are a number of actions that the Departments can and should take, under existing authorities, to protect the source waters of the City's drinking water. Most importantly, however, are the systemic failures to enforce and implement the Clean Water Act and other federal and state laws. The issues must be addressed to prevent future degradation of the city's drinking water supply, and instead institute an era of watershed restoration.

It is imperative that you seize this opportunity - as State and Federal law mandate - to effectively address a substantial crisis. The time is now and the need is clear to take a comprehensive approach to protecting and restoring this drinking water supply for the thousands of families affected.

Respectfully Submitted,



Dan Shapley
Water Quality Program Manager



John Parker
Director of Legal Programs

Encls.

cc: Judith Enck
Regional Administrator
US EPA, Region 2
enck.judith@epa.gov

Col. Howard Wagner
Commander
Stewart Air National Guard Base
howard.n.wagner.mil@mail.mil

Hon. Kirsten Gillibrand
United States Senate
senator@gillibrand.senate.gov

Hon. Charles Schumer
United States Senate
senator@schumer.senate.gov

Hon. Sean Patrick Maloney
US House of Representatives, NY District
sean.maloney@mail.house.gov

Hon. John J. Degnan
Chairman
Port Authority of New York
jdegnan@panynj.gov

Martin Brand
Regional Director
NYSDEC, Region 3
martin.brand@dec.ny.gov

Todd Westhuis
Acting Regional Director
NYSDOT, Region 8
todd.westhuis@dot.ny.gov

Bill Finch
Acting Executive Director
NYS Thruway Authority
bill.finch@thruway.ny.gov

Hon. Frank Skartados
New York State Assembly
104th Assembly District
skartadosf@assembly.state.ny.us

Hon. William J. Larkin, Jr.
New York State Senate
39th Senate District
larkin@senate.state.ny.us

Hon. Steven M. Neuhaus
County Executive
Orange County
ceoffice@orangecountygov.com

Hon. Judy Kennedy
Mayor
City of Newburgh
jkennedy@cityofnewburgh-ny.gov

Michael G. Ciaravino
City Manager
City of Newburgh
mciaravino@cityofnewburgh-ny.gov



RIVERKEEPER

June 20, 2016

Hon. Matthew Driscoll
Commissioner
Department of Transportation
50 Wolf Road
Albany, NY 12232

Hon. Basil Seggos
Commissioner
Department of Environmental Conservation
625 Broadway
Albany, NY 12207-2942

Hon. Howard Zucker
Commissioner
Department of Health
Corning Tower
Empire State Plaza,
Albany, NY 12237

Dear Commissioners Driscoll, Seggos and Zucker:

Thank you for the prompt response from Commissioners Seggos and Zucker to our letter regarding water issues in the City of Newburgh of June 17, 2016. We note with some concern that the reply did not include Commissioner Driscoll, whose agency is also essential to the resolution of this water crisis. As you know, we also called for immediate action to investigate and eliminate the source of downstream contamination in a letter to the Port Authority of NY and NJ and to the Stewart Air National Guard Base on May 12, 2016. We await responses from these agencies, and will call upon the U.S.

Environmental Protection Agency and Department of Defense to facilitate an effective federal response as well. The residents of Newburgh need and demand a comprehensive response from their governments at all levels to address drinking water contamination.

In this letter, we address several points in your response that are immediately relevant as we prepare for the public meeting on this subject in Newburgh tonight.

The Departments of Environmental Conservation and Health's attention to providing Newburgh's 29,000 residents with safe alternate and/or filtered drinking water supplies is an important and necessary step to address the crisis. We appreciate the State's apparent decision to fund the interconnection to New York City supplies, including the upgrade needed to ensure reliability, and the filtration system for the city's primary reservoir. We ask you to provide to the public documents setting forth the State's commitments to Newburgh, and timetables for their implementation. The public deserves to know that these efforts are enforceable, and that they meet the significant needs of Newburgh as a cash-strapped municipality.

We also appreciate the steps that DEC and DOH have taken since March 2016 to investigate sources of contamination. We request, however, that you make public:

- all sampling data taken to date, including specific locations, times, and all results of all samples taken; and,
- future sampling plans to ensure that they are indeed "comprehensive."

Particularly, we are seeking assurances that the investigation has or will include a number of potential sources of contamination in addition to Recreation Pond and the outfalls discharging to it. Neither Silver Stream at Weather Oak Hill nor "Murphy's Ditch," which diverts water from Patton's Brook to Washington Lake, has an upstream connection to Recreation Pond. Yet data from testing March 16, 2016, show that each had evidence of PFOS contamination. At a minimum, the following should be sampled:

- Stewart Airport, Outfalls 009, 010 and 011;
- Stewart Air National Guard Base, Outfalls 001, 01A, 004, 005, 006, 007, 008, 009 and 009A; and,
- landfills in the city's drinking watershed, including the Air National Guard Base landfill, and New Windsor landfill - *State Superfund Site 336019*.

Discussions with select city and other government officials about these crucial data and plans are insufficient. In short, we urge you to aim for a higher level of transparency demanded by urgency and severity of this contamination.

We note that your letter addressed all points we raised about emergency response but one: the need for blood testing of water users as part of a comprehensive public health assessment. As in the similar situation in Hoosick Falls, residents in Newburgh should have information about their level of exposure to PFOS so they can make informed health decisions in consultation with their physicians.

We also appreciate that there may be potential future fish testing, but urge that such efforts begin immediately because PFOS contamination is making its way to the Hudson River estuary, and has already contaminated portions of the Moodna and Quassaick Creek watersheds.

We hope we hear a commitment from your agencies to take these steps at tonight's meeting. We will continue working with State and Federal agencies and elected leaders to ensure resources are available to do so.

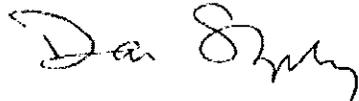
We find insufficient your response to our call to immediately compel the cessation of discharges from Recreation Pond, which has been identified by your sampling so far as a major source of PFOS to the city's drinking water supply. We continue to believe that this emergency action, to eliminate discharges that have been prohibited by state permit, is essential. We believe the U.S. Military, as operator of Stewart Air National Guard Base, and the Governor of New York, with authority to call on the New York Air National Guard for assistance in times of crisis, have the power, resources and creativity to fast track a solution. In fact, we are confident that this known source of PFOS contamination can be addressed immediately. The failure to do so has led, with DEC permission, to the City of Newburgh diverting PFOS contaminated waters from Silver Stream and Washington Lake into the Moodna Creek watershed, with the potential not only to pollute our waters, but to extend the public health risk associated with contaminated drinking water into a public health risk associated with contaminated fish. These facts also contradict your statement that the Departments have acted to "minimize" the impacts on surrounding watersheds. If there have been actions taken to prevent impacts to Moodna Creek watershed or other waters from these actions, we are unaware of them.

Last, we are available to meet with you us to discuss, transparently, the short- and long-term source water protection strategies identified in our June 17 letter. These are

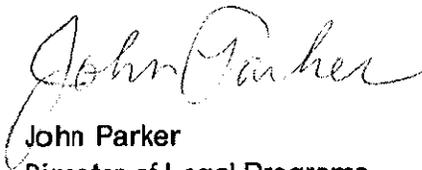
strategies authorized or required under existing federal and state law and regulation. Full implementation in the past could have averted or minimized this crisis and certainly would have averted many of the other significant threats to Newburgh's drinking water supply. We ask Commissioners Seggos and Zucker, as co-chairs of the Water Quality Rapid Response Team, to adopt these strategies to fulfill the Governor's directive to "strengthen the state's existing drinking water, groundwater and surface water protection programs," including by "enhancing testing and oversight of drinking water systems."

We look forward to working with you to see these strategies implemented, and we will continue to press for these actions.

Respectfully Submitted,



Dan Shapley
Water Quality Program Manager



John Parker
Director of Legal Programs

cc: Judith Enck
Regional Administrator
US EPA, Region 2
enck.judith@epa.gov

Col. Howard Wagner
Commander
Stewart Air National Guard Base
howard.n.wagner.mil@mail.mil

Hon. Kirsten Gillibrand
United States Senate
senator@gillibrand.senate.gov

Hon. Charles Schumer
United States Senate
senator@schumer.senate.gov

Hon. Sean Patrick Maloney
US House of Representatives, NY District
sean.maloney@mail.house.gov

Hon. John J. Degnan
Chairman
Port Authority of New York
jdegan@panynj.gov

Martin Brand
Regional Director
NYSDEC, Region 3
martin.brand@dec.ny.gov

Todd Westhuis
Acting Regional Director
NYSDOT, Region 8
todd.westhuis@dot.ny.gov

Bill Finch
Acting Executive Director

NYS Thruway Authority
bill.finch@thruway.ny.gov

Hon. Frank Skartados
New York State Assembly
104th Assembly District
skartadosf@assembly.state.ny.us

Hon. William J. Larkin, Jr.
New York State Senate
39th Senate District
larkin@senate.state.ny.us

Hon. Steven M. Neuhaus
County Executive
Orange County
ceoffice@orangecountygov.com

Hon. Judy Kennedy
Mayor
City of Newburgh
jkennedy@cityofnewburgh-ny.gov

Michael G. Ciaravino
City Manager
City of Newburgh
mciaravino@cityofnewburgh-ny.gov



RIVERKEEPER

July 1, 2016

Judith Enck
Regional Administrator
United States Environmental Protection Agency, Region 2
290 Broadway
New York, NY 10007

**Re: *Newburgh Drinking Water and Water Quality Crisis
Need to Effectively Address PFOS Contamination***

Dear Regional Administrator Enck:

We write to follow up to the Public Meeting in the City of Newburgh of Monday, June 20, 2016, addressing the issues related to perfluorooctane sulfonate (PFOS) contamination of Newburgh's primary drinking water supply reservoir, groundwater, and several surface waterbodies. *While the extent of the PFOS contamination and its environmental and public health impacts are significant, if not fully understood, it is clear that the vast majority of residents do not know what PFOS is or the fact that Newburgh faces a drinking water crisis.*

New York State has taken a number of steps to provide clean drinking water on an interim basis to City residents, and to investigate the sources of PFOS contamination, but much more needs to be done. The community now needs the EPA to fully consider what it can do to effectively assist in resolving the crisis. The EPA ample legal and oversight authority for the agency to take action under the Safe Drinking Water Act; Clean Water Act; Comprehensive Environmental Response, Compensation, and Liability Act, and/or other federal statutes provide. Further, Newburgh is an environmental justice community, as identified both by EPA and the NYS Department of Environmental Conservation. EPA should strive to achieve the goals set forth in the

agency's Environmental Justice 2020 Action Agenda and the Making a Visible Difference in Communities strategy. Further, EPA should build upon its important work in Newburgh and Orange County in 2014/15 that included blood screening for lead contamination – an initiative that we ask EPA to continue.

We thank you for asking EPA Regional staff professionals to attend the meeting, and for your assurances that they will continue to bring their expertise to help solve the considerable contamination problems impacting water quality for City residents. There are a number of ways EPA could assist the City that would produce immediate and long-term benefits. Specifically, we ask EPA to take the following 6 actions:

1. Support Health Screening and Education of the Medical Community

As you know, exposure to PFOS has been linked to a number of significant health concerns, including effects on development in utero, and several cancers. It is these health concerns that prompted the EPA to significantly lower the lifetime exposure limit to 70 parts per trillion for drinking water in May. City residents have been exposed to levels several times as great, and for an unknown amount of time - likely years and quite possibly decades. Blood testing would not only provide information relevant to people and to Doctors making choices about healthcare options, but also may help approximate the duration of exposure - a key unknown fact.

Riverkeeper is calling on the NYS Department of Health to conduct blood testing as part of a comprehensive health response. The agency will require assistance from EPA, and we ask you to provide any and all assistance. At a minimum, we urge you and/or the sister federal Agency for Toxic Substances and Disease Registry to provide effective training and support for the medical community of the greater Newburgh area, so that doctors and other health professionals are prepared to advise patients, whether or not those patients know the level of current PFOS in their blood, or the duration of their exposure through contaminated drinking water. We urge you to ensure that this support is given in such a way that addresses the concern expressed at the public meeting, that many residents lack health insurance, primary care doctors or the resources to pay for advanced health care, including blood screening.

2. Support Effective Communications and Community Engagement

It must be noted that EPA, to your great credit, supported the City of Newburgh in hosting the June 20 meeting, and that support included, among other things, provision of translation services. We urge you to continue this type of support, recognizing that residents expressed, and the relatively small attendance clearly demonstrated, the failure so far to meet the challenge of effectively communicating to many segments of the city population. Among the challenges identified was the city's lack of budget for mailing to city residents about public meetings, and the presence in the community not only of English and Spanish speakers, but also French Creole speakers. We urge you to assist in every way possible in these and related matters.

Forming and funding a group with similar structure and funding to a Community Advisory Group should be a goal here, regardless of the timing of New York State's Superfund response.

3. Support Efforts to Identify Other Environmental and Human Health Risks Posed by the PFOS Contamination

The NYS Department of Environmental Conservation's presentation discussed the amount of effort that the agency's environmental remediation staff have put into investigating and characterizing the levels of contamination. The DEC has identified key source areas, and a groundwater plume under the Stewart Airport and/or Air National Guard Base. There is a sufficient basis to conclude that the site poses a potentially significant threat to public health and the environment and should be listed under the New York Superfund program.

Riverkeeper remains concerned about the migration and discharge of contaminated water not only from Recreation Pond at the Stewart Air National Guard Base, a Department of Defense facility, to Lake Washington, the city's primary reservoir, but also to portions of the Moodna and Quassaick Creek watersheds, where fish and other wildlife, and people who consume them, may be exposed. As you know, PFOS can bio-accumulate in fish and wildlife. Further, we are also concerned about PFOS contaminated waters that may be emanating from portions of Stewart Airport or Air National Guard Base that have not yet been sampled or that have been diverted to the Moodna Creek watershed in order to avert potential problems with Lake Washington's aging dam infrastructure. The pollution of the environment may well be more extensive than Lake Washington, the focus of attention to date, and may include other drinking

water supplies reliant on groundwater influenced by surface waters in the Moodna Creek watershed.

4. Provide Technical Advice Regarding Treatment Technology Alternatives

NYS Department of Environmental Conservation has committed to design and installation of a granulated activated carbon (GAC) filtration system for Washington Lake, without any public discussion of alternative technologies, such as reverse osmosis. EPA is in a position to provide information to the city, the community, and the New York State agencies based on its studies to date of PFOS in drinking water, to advise about the options available *before* decisions are made about treatment technologies. EPA's efforts in environmental remediation clean-ups around the country can provide critical information about the many lessons learned in treating PFOS or similarly contaminated sites, and should be provided to New York State as soon as possible.

5. Evaluate Other Emerging Contaminants in Newburgh's Drinking Water

PFOS was first detected in the City of Newburgh's drinking water in December 2013 as part of monitoring required by the EPA's Unregulated Contaminant Monitoring Rule. Other emerging contaminants were also detected, including chlorate, chromium hexavalent, perfluoroheptanoic acid, perfluorooctanoic acid and strontium.¹ We call on EPA to evaluate each contaminant, relative to current and/or pending EPA drinking water health advisories or guidance, both each on its own and in mixture. EPA should advise the City, State and the public about potential health risks, treatment technologies and typical sources associated with these chemicals. Understanding these chemicals, and their potential sources, could inform remedial measures and treatment technologies, should some technologies be more or less effective for some or all contaminants; and for health screening, should the cocktail of contaminants pose particular known or potential risks.

6. Support a New Source Water Assessment for Newburgh

¹ City of Newburgh, Annual Water Quality Report, 2015.

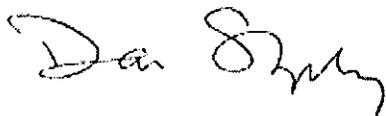
We ask EPA to call upon the State of New York to perform another Source Water Assessment under the Safe Drinking Water Act's Assessment Program. The efforts thus far in Newburgh have not been effective and as a result, we now face this crisis. The intent of the program was to identify threats to source waters, so that programs could be implemented to protect vulnerable water supplies. In the case of Newburgh, the state Department of Health's 2005 Source Water Assessment failed to accurately map the drinking water supply watershed, failed to identify risks (including Stewart Airport and Air National Guard Base), and failed to recommend strategies for protecting the watershed. Significant degradation of the watershed has resulted, and will continue to result, if the agencies with the authority and obligation to help do not set a new paradigm for watershed protection. While this is not the only tool that should be applied to this problem, it is an important one. EPA should evaluate its authorities to order and fund a new source water assessment for Newburgh, utilizing the significant resources that have already been devoted to the study of this watershed, as evidenced by the Quassaick Creek Watershed Management Plan, the Moodna Creek Watershed Conservation and Management Plan and others.

The protection of the source water - rivers, streams, reservoirs, and groundwater, and their watersheds - is a key to keeping drinking water safe. The drinking water crisis in the City of Newburgh illustrates this clearly. Riverkeeper has advocated for enforcement of the Clean Water Act in the drinking watershed of the City for some time, and most recently in response to the water crisis. We have urged numerous New York State agencies, the Port Authority of New York and New Jersey, and the Department of Defense to implement a series of immediate emergency response measures. We are also urging these agencies to undertake a comprehensive approach to City's watershed and protection of water quality.

The EPA has already played a significant role in bringing this water quality problem to light, and to addressing it. Thank you in advance for your consideration of our request to bring additional resources and expertise to address this crisis.

Please let us know if you have any questions or would like additional information. We welcome the opportunity to speak or meet on this topic.

Respectfully submitted,



Dan Shapley
Water Quality Program Manager



John Parker
Director of Legal Programs

cc:

Col. Howard Wagner
Commander
Stewart Air National Guard Base
howard.n.wagner.mil@mail.mil

Hon. Kirsten Gillibrand
United States Senate
senator@gillibrand.senate.gov

Hon. Charles Schumer
United States Senate
senator@schumer.senator.gov

Hon. Sean Patrick Maloney
US House of Representatives, NY District
sean.maloney@mail.house.gov

Hon. John J. Degnan
Chairman
Port Authority of New York
jdegan@panynj.gov

Kelly Turturro
Acting Regional Director
NYSDEC, Region 3
kelly.turturro@dec.ny.gov

Todd Westhuis
Acting Regional Director
NYSDOT, Region 8
todd.westhuis@dot.ny.gov

Bill Finch
Acting Executive Director
NYS Thruway Authority
bill.finch@thruway.ny.gov

Hon. Frank Skartados

New York State Assembly
104th Assembly District
skartadosf@assembly.state.ny.us

Hon. William J. Larkin, Jr.
New York State Senate
39th Senate District
larkin@senate.state.ny.us

Hon. Steven M. Neuhaus
County Executive
Orange County
ceoffice@orangecountygov.com

Hon. Judy Kennedy
Mayor
City of Newburgh
jkennedy@cityofnewburgh-ny.gov

Michael G. Ciaravino
City Manager
City of Newburgh
mciaravino@cityofnewburgh-ny.gov



**CONTAMINATION OF THE DRINKING WATER RESERVOIR
AND WATERSHED OF THE CITY OF NEWBURGH:
A CASE STUDY AND
A CALL FOR COMPREHENSIVE SOURCE WATER PROTECTION**

JULY 2016



TABLE OF CONTENTS

Executive Summary

- 1. Perfluorooctane sulfonate and its presence in the City of Newburgh's drinking water supply**
 - A. Background and regulatory context - *Page 7*
 - B. PFOS in City of Newburgh's drinking water supply and surrounding watersheds - *Page 10*
 - C. Timeline - *Page 12*

- 2. State laws and authorities related to the protection of drinking water quality**
 - A. Clean Water Act and Environmental Conservation Law - *Page 14*
 - B. Safe Drinking Water Act and Public Health Law - *Page 17*

- 3. Emergency response actions to eliminate the environmental and public health threat of PFOS-contaminated drinking water**
 - A. Prohibit discharges of PFOS from Recreation Pond at the Stewart Air National Guard Base, and sample fish for PFOS exposure – *Page 18*
 - B. Comprehensively sample and test surface water, groundwater, sediment and fish – *Page 21*
 - C. Conduct comprehensive blood testing as part of a health screening of City of Newburgh residents – *Page 23*
 - D. Clearly state commitments to fund safe alternative water supplies, and ensure decision-making is open and inclusive – *Page 24*

- 4. Short-term actions to address longstanding issues regarding the complete, accurate and effective implementation of state and federal source protection laws**
 - A. Accurately map the City's source waters as part of an updated Source Water Assessment – *Page 25*
 - B. Suspend, revise, re-issue and re-notice the Stewart Airport and Air National Guard Base SPDES permits – *Page 29*
 - C. Correct classifications so that all streams that supply Newburgh's reservoirs are recognized as Class A or AA sources of drinking water – *Page 31*
 - D. Implement New York State Water Quality Standards – *Page 32*
 - E. Protect all existing wetlands within the City's watershed – *Page 33*
 - F. Reduce and eliminate discharges to Newburgh's source waters – *Page 34*

5. Long-term actions to institute a comprehensive strategy for protecting the source waters of Newburgh's drinking water supply

- A. Promulgate source water protection rules - *Page 37*
- B. Update New York's Open Space Conservation Plan to prioritize source water protection - *Page 38*
- C. Reconstitute the Water Resources Planning Council to coordinate source water protection efforts - *Page 40*
- D. Fund the full implementation of recommendations in regional watershed protection plans - *Page 41*
- E. Establish a full-time watershed inspector general - *Page 42*

Conclusion

EXECUTIVE SUMMARY

When we turn on the tap, we trust that the water flowing from it is safe.

In the City of Newburgh, the presence of a toxic chemical in the city's primary reservoir is a breach of that trust. For years, and possibly decades, 29,000 people were exposed, including those most acutely at risk: developing fetuses and newborn babies.

Imagine the mother of a young child mixing formula, or a pregnant woman pouring herself a glass of water. These simple acts should never endanger the health of a child.

Emergency response to date has ensured that the chemical, perfluorooctane sulfonate, or PFOS, is no longer reaching taps. But filtration of drinking water supply, and remediation of contamination will come at great expense, and the city's primary reservoir remains contaminated.

The long-term protection of drinking water quality requires a long-term commitment to protecting source waters – rivers, streams, reservoirs and groundwater. Protection of water supplies has wide public support, and can be typically achieved at a cost far less than the cost of remediation of contaminated supplies.

In Newburgh, water protection laws have not been effectively enforced or implemented, and the lands and waters that supply Lake Washington and Brown's Pond in the Quassaick and Moodna Creek watersheds have not been adequately protected. The present contamination is the result.

This document demonstrates that New York State has a comprehensive legal framework for protecting source waters, but its implementation is both incomplete and uncoordinated. While additional legal authorities may be needed, there are many tools available now that should be utilized immediately to protect and restore source waters, even while emergency response measures are in effect.

To protect drinking water supplies and prevent crises such as Newburgh is facing, we must:

- Enforce the Clean Water Act and Environmental Conservation Law in order to protect waters from degradation from pollution, and to preserve the natural filtration provided by forests, wetlands and other natural infrastructure;

- Enforce the Safe Drinking Water Act and Public Health Law in order to assess and prevent risks to source waters, and to empower communities to protect their water supplies;
- Coordinate protection efforts across multiple layers of government, each with significant authorities and responsibilities for source water protection; and,
- Provide the leadership, funding and staffing necessary to implement comprehensive source water protection programs.

The need to coordinate actions to protect source waters in Newburgh is particularly acute, both because the city's source watershed has been badly degraded, threatening public health, and because the city is an Environmental Justice community, facing disproportionate socioeconomic and environmental challenges. The case of Newburgh demonstrates that achieving Environmental Justice in drinking water quality should be a priority for implementation statewide.

Many of the recommendations contained in this document have previously been identified, studied, or recommended by numerous agencies and organizations, including City of Newburgh, Hudson River Estuary Program, Hudson River Watershed Alliance, Hudson Valley Regional Council, Moodna Creek Watershed Intermunicipal Council, Orange County Water Authority and Quassaick Creek Watershed Alliance. In several cases, the NYS Environmental Protection Fund has provided funding for reports cited in this document.

The Departments of Environmental Conservation and Health have faced often crippling budget and staffing cuts over the course of decades. While this report demonstrates that the tools necessary to achieve comprehensive source water protection are available, their effective implementation will require significant resources. The Governor and Legislature need to provide the necessary funding, staffing and direction to proactively protect drinking water supplies in Newburgh and across New York State.

1. PERFLUOROOCTANE SULFONATE AND ITS PRESENCE IN THE CITY OF NEWBURGH'S DRINKING WATER SUPPLY

A. PFOS: Background and Regulatory Context

Perfluorooctane sulfonate, or PFOS, is a man-made chemical used in consumer and industrial products.

It is well known that airports and military bases used large amounts of firefighting foams with PFOS for training purposes. As of 2011, there remained 10,000 tons of PFOS-based firefighting foam in stock or in service in the U.S.¹

Exposure to PFOS can be dangerous because of its high persistence in the environment and human bodies. The health concerns occur at very low levels of exposure to this industrial chemical. A short-term exposure to PFOS can persist for years and accumulate with additional exposures.² As of 2000, EPA knew that PFOS was toxic and a threat to human health.³ In 2009, EPA issued an action plan to ban the substance.⁴ In May 2016, EPA made the Health Advisory for PFOS and PFOA available on the Federal Register to explain health concerns with PFOS and PFOA.⁵ At that time, EPA revised its lifetime

¹ Dr. Jimmy Seow, *Fire Fighting Foams with Perfluorochemicals – Environmental Review*, *Industrial Fire Journal* available at [Seow_WA-DEC_PFCs_Firefighting_Foam_final_version_7June2013.pdf](#).

² EPA, *Drinking Water Health Advisory for Perfluorooctane Sulfate (PFOS) at 50* (May 2016), available at https://www.epa.gov/sites/production/files/2016-05/documents/pfos_health_advisory_final_508.pdf.

³ “PFOS is of significant concern on the basis of evidence of widespread human exposure and indications of toxicity. ... These chemicals ‘combine persistence, bioaccumulation, and toxicity properties to an extraordinary degree.’” EPA internal memorandum, May 16, 2000 available at <http://www.chemicalindustryarchives.org/dirtysecrets/scotchgard/1.asp>.

⁴ See EPA's *Long-Chain Perfluorinated Chemicals (PFCs) Action Plan* dated December 30, 2009.

⁵ EPA, *Lifetime Health Advisories and Health Effects Support Documents for Perfluorooctanoic Acid and Perfluorooctane Sulfonate*, 81 Fed. Reg. 33250 (May 25, 2016).

health advisory for PFOS in drinking water, from the exposure level of 200 parts per trillion (200 micrograms per liter) to 70 parts per trillion (ppt).⁶

There are many significant health concerns related to exposure to this chemical. Studies show that newborns and developing fetuses are particularly sensitive to PFOS induced toxicity.⁷ Other data shows “associations between PFOS exposure and high cholesterol, thyroid disease, immune suppression, and some reproductive and developmental parameters, including reduced fertility and fecundity.”⁸ Several human epidemiology studies have researched the link between PFOS and cancers including bladder, colon, and prostate.⁹ Evidence also shows that PFOS is distributed within the body and can be transferred maternally from mother to offspring.¹⁰ PFOS can affect humans through dietary exposures from eating fish and other organisms that bio-accumulate the chemical.¹¹ Thus, exposure to PFOS contamination is a concern to the population at large, but particularly to pregnant women, women of child bearing age and children.

The Centers for Disease Control and Prevention tested for PFOS in the blood of the general U.S. population aged 12 years of age and older¹² in a 2012 study. The results showed that the average blood levels in adolescents and adults for PFOS were 6.3 parts per billion (ppb), with 95% of the general population at or below 21.7 ppb.¹³

In response to the water crises in Hoosick Falls and Petersburgh, and upon the recommendation of the DOH, the DEC has instituted an Emergency Rulemaking officially

⁶ *Id.*

⁷ Drinking Water Health Advisory for Perfluorooctane Sulfate at 10.

⁸ *Id.*

⁹ *Id.* at 42.

¹⁰ *Id.* at 27.

¹¹ *Id.* at 21.

¹² CDC, National Health and Nutrition Examination Survey, 2012, *available at* http://www.cdc.gov/nchs/nhanes/search/nhanes11_12.aspx.

¹³ New Hampshire Dep’t of Health and Human Services, Frequently Asked Questions: Perfluorochemicals (PFCs) Detected in the Pease Tradeport Water System, at 11 (Feb. 3, 2016) *available at* <http://www.dhhs.nh.gov/dphs/documents/pfc-faqs-02032016.pdf>.

declaring that PFOS is a hazardous substance. The change in state law, which took effect on April 25, 2016, allows the DEC to regulate the handling and storage of PFOS and it also allows the state to remediate contaminated sites under NY superfund law. In the Regulatory Impact Statement of the emergency rule-making by DEC on PFOS, DEC highlights the risks to human health from exposure to PFOS. Human studies show, among other adverse health effects, increases in cholesterol, tryglycerides, and uric acid in the general population, and increases in the risk for low birth weight babies. ¹⁴ The DOH stated that comprehensive evaluations of human health effects from various states and agencies “show statistical associations between PFOS exposure and an increased risk for several adverse health effects in humans.”¹⁵

Human exposure to PFOS also results from food we consume. As a bio-accumulative compound, it can contaminate the food chain, leading to ever greater concentrations of PFOS in predators that consume PFOS-contaminated prey. This affects fish, birds and mammals, including humans. EPA has documented several states that monitor fish for levels of PFOS, and EPA has set a reference dose for calculating the allowable limit of PFOS in fish tissue.¹⁶ Fish consumption advisories exist in at least two states, Minnesota and Alabama.¹⁷

In Minnesota, the Department of Health produced a contaminant-based and site-specific fish consumption advisory in 2008 that sets forth meal advice. Since humans cannot see, smell, or taste PFOS in fish, the advisory is critically important for protecting public health. There are four meal advice categories for PFOS in fish, ranging from unrestricted eating to a “do not consume” warning. The Minnesota Department of Health recommends no consumption restrictions when PFOS levels in fish are less than or equal to 40 ppb, no

¹⁴ DEC, Regulatory Impact Statement Emergency Rule and Proposed Rule Amendments to 6 NYCRR Part 597 Hazardous Substances Identification, Release Prohibition, and Release Reporting (proposed Apr. 25, 2016).

¹⁵ Letter from Howard A. Zucker, Commissioner of Health, DOH, to Basil Seggos, Acting Commissioner, DEC, (Apr. 20, 2016) *available at* http://www.dec.ny.gov/docs/remediation_hudson_pdf/part597erriswdoh.pdf.

¹⁶ EPA, National Listing of Fish Advisories, (Dec. 2013), *available at* <https://www.epa.gov/sites/production/files/2015-06/documents/technical-factsheet-2011.pdf>.

¹⁷ Alabama Department of Public Health, Alabama Fish Consumption Advisories (June 2015), *available at* https://www.adph.org/tox/assets/2015_Advisory_small.pdf.

more than one meal per week at 40 - 200 ppb, no more than one meal per month at 200 - 800 ppb and no meals at greater than 800 ppb.¹⁸

B. PFOS in City of Newburgh's water supply, and surrounding watersheds

Lake Washington is Newburgh's primary reservoir. It lies within the Quassaick Creek Watershed, with a diversion from Patton Brook called Murphy's Ditch channeling water to the reservoir; additionally, Silver Stream, part of the Moodna Creek Watershed, flows from Brown's Pond, and is diverted to flow into Lake Washington. Both reservoirs and their watersheds are located largely outside of the City of Newburgh's municipal boundaries, in the Towns of Newburgh and New Windsor.

The current PFOS contamination in Newburgh's drinking water was identified because of testing required by an EPA program studying emerging contaminants in 2013 and 2014,¹⁹ and made public with Newburgh's 2014 annual drinking water quality report in May 2015, showing PFOS levels of 150 ppt in its drinking water, based on a single sample. The 2015 annual drinking water quality report shows several emerging contaminants were detected in Newburgh's drinking water²⁰, including five sample results at levels ranging from 140-170 ppt.²¹

At that time EPA's national recommended limit on PFOS in drinking water was 200 ppt. Despite the finding of significant levels of PFOS, neither EPA, the City, DEC nor DOH, appears to have investigated the source of the PFOS in order to eliminate potential health threats until March 2016. State agency involvement with the PFOS contamination²² in the

¹⁸ Minnesota Department of Health, Site Specific Meal Advice (Apr. 2008), *available at* <http://www.health.state.mn.us/divs/eh/fish/eating/mealadvicetables.pdf>.

¹⁹ EPA, Third Unregulated Contaminant Monitoring Rule, (May 2, 2012), *available at* <https://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule>.

²⁰ On July 1, Riverkeeper requested EPA assistance in evaluating and advising the state and city of the risks, alone and in mixture, of each contaminant detected: chlorate, chromium hexavalent, perfluoroheptanoic acid, perfluorooctanoic acid and strontium.

²¹ City of Newburgh, Annual Water Quality Report: Water Testing Performed in 2015, (2016) *available at* <http://www.cityofnewburgh-ny.gov/sites/newburghny/files/u98/cnny010652-1y16.pdf>.

²² Letter from Howard A. Zucker, Commissioner, NYSDOH, and Basil Seggos, Commissioner NYSDEC, to Riverkeeper (June 18, 2016).

drinking water supply can be characterized as emergency response and began following the Hoosick Falls water crisis and the formation in February 2016 of Gov. Andrew Cuomo's "Water Quality Rapid Response Team."²³

DEC and DOH sampling, begun in March 2016, has identified important sources, but probably not all sources, of PFOS to the City of Newburgh's drinking water supply.²⁴ According to statements by DEC staff, the major source of contamination is believed to be a groundwater plume infiltrating stormwater infrastructure. Specifically, the stormwater outfalls discharging near a base runway to Recreation Pond at Stewart Air National Guard Base, which include not only outfalls draining stormwater from the Base but also from Stewart Airport and a nearby industrial park, have to date shown the highest levels of PFOS contamination, according to data made publicly available. This pond discharges into a tributary of Silver Stream which in turn feeds Lake Washington, the principal water source for Newburgh's residents. Elevated levels of PFOS were found in all outfalls discharging to this pond, including one outfall with PFOS levels of 5,900 ppt.²⁵

The City of Newburgh declared a public emergency on May 2, 2016, and rescinded it when it temporarily replaced Lake Washington with Brown's Pond, an uncontaminated backup water supply. Subsequently, with state assistance, it has tapped New York City's Catskill Aqueduct.

On May 19, 2016, EPA issued a health advisory for the lifetime exposure to PFOS, reducing the recommended level in drinking water to 70 ppt.²⁶

²³ On April 25, 2016, DEC adopted an emergency rule to classify PFOS and related substances, (perfluorooctanoic acid, ammonium perfluorooctanoate, perfluorooctane sulfonic acid, and perfluorooctane sulfonate) as hazardous substances at the request of the New York State Department of Health (NYSDOH). *See*: <http://www.dec.ny.gov/regulations/104968.html>.

²⁴ Letter from Robert Schick, Department of Environmental Conservation, and Nathan Graber, MD, Department of Health to Mayor Judy Kennedy and City Council Members, City of Newburgh, at 4, (May 9, 2016).

²⁵ Letter from Robert Schick, Department of Environmental Conservation, to Mayor Judy Kennedy (June 17, 2016).

²⁶ EPA, Lifetime Health Advisories and Health Effects Support Documents for Perfluorooctanoic Acid and Perfluorooctane Sulfonate, 81 Fed. Reg. 33250 (May 25, 2016) *available at* <https://www.gpo.gov/fdsys/pkg/FR-2016-05-25/pdf/2016-12361.pdf>.

While the state has assured Newburgh residents that they are now drinking water that is uncontaminated by PFOS, the city's primary reservoir, its watershed, and other watersheds remain contaminated.

C. Timeline

This timeline identifies some key recent developments related to PFOS contamination in Newburgh's drinking water supply.

On February 5, 2015, Riverkeeper raised to the New York State Department of Environmental Conservation several water quality issues and Clean Water Act concerns regarding the watershed of the City of Newburgh.

In May 2015, the City of Newburgh released its annual Drinking Water Quality report for 2014, identifying PFOS as a contaminant identified through EPA's Unregulated Contaminant Monitoring Rule.

In February 2016, Gov. Andrew Cuomo formed the Water Quality Rapid Response Team.

In March 2016, testing by DEC and DOH began.

On April 25, 2016 the DEC issued a temporary emergency rule declaring that PFOS (and PFOA) related chemicals are hazardous substances under state law, allowing DEC to regulate and track the chemicals and to remediate sites contaminated with the chemicals.

On May 2, 2016, the City of Newburgh declared a State of Emergency for its drinking water supply for its 29,000 residents, and began transitioning its primary drinking water source from Lake Washington to Brown's Pond.

In a letter dated May 9, 2016, DEC and DOH reported results of water quality testing to City of Newburgh.

On May 12, 2016, Riverkeeper sent a letter addressed to the Port Authority of New York and New Jersey, operator of Stewart International Airport, and to the Stewart Air National

Guard, demanding immediate action in response to the underlying causes of the drinking water State of Emergency.²⁷

On May 19, 2016, U.S. EPA published "Drinking Water Health Advisory for Perfluorooctanoic Acid," setting a health advisory level of 70 ppt for PFOS in drinking water.

On June 7, 2016, City of Newburgh began utilizing drinking water from the New York City supply.

On June 17, 2016, Riverkeeper wrote to the Departments of Environmental Conservation, Health and Transportation, outlining a series of steps that should be taken not only in emergency response to the current situation, but to protect and restore drinking water quality in the long term. Responses followed on June 19 and 20.

On June 20, 2016, Newburgh held a public meeting and hosted a panel discussion that included EPA, DEC, DOH, Riverkeeper and city officials.

On July 1, 2016, Riverkeeper wrote to the EPA, outlining a series of steps that should be taken in response to the issues in Newburgh.

On July 7, 2016, Riverkeeper met with DEC and DOH staff.

²⁷ We have reviewed the publicly available record and have currently pending Freedom of Information Law (FOIL) and Freedom of Information Act (FOIA) requests for additional records in compiling this White Paper. Riverkeeper FOIL request to DEC dated May 13, 2016. DEC indicated it would respond by June 15, 2016. A Riverkeeper (FOIA) request was submitted to EPA on May 16, 2016. There has not yet been a response from EPA. We attended a public information meeting on June 20, 2016 where presenters included City officials, DEC, DOH, and US EPA. We also attended a meeting with DOH and DEC staff on July 8, 2016.

2. STATE LAWS AND AUTHORITIES RELATED TO THE PROTECTION OF DRINKING WATER QUALITY

A. Clean Water Act and Environmental Conservation Law

The Clean Water Act's primary objective is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" by eliminating the discharge of pollutants, by 1985, making all waters suitable for life and "fishable and swimmable," by 1983.²⁸

In New York, EPA has delegated to the Department of Environmental Conservation the authority to implement Clean Water Act programs subject to EPA's oversight and review. EPA retains oversight of DEC actions; DEC implements the Clean Water Act's goals by assigning waters and wetlands classifications that provide varying degrees of administrative protection. The Environmental Conservation Law authorizes DEC to assign discharge restriction categories to specifically protect "waters of particular public health concern" such as drinking water supplies.²⁹ Similarly, DEC is authorized to protect waters by designating waters for "no new discharge" and prohibiting "increase in any existing discharges."³⁰ Finally, the State Pollutant Discharge Elimination System (SPDES) permit program requires the DEC to oversee all surface wastewater and stormwater discharges, and many groundwater discharges, to avoid pollution of water bodies.

Drinking water bodies should be designated with the highest degree of protection and are thus classified as "AA" or "A."³¹ For Classes AA-S, A-S, AA, and A waters, "a source of water supply for drinking" is listed as a "best usage," whereas that usage is notably absent from the lists describing the best usages of Classes B, C, and D waters.³² Similarly,

²⁸ Clean Water Act of 1972 ("CWA"), Pub.L.No.92-500, 86 Stat. 816 (codified as amended at 33 U.S.C. §§ 1251-1376 (2006)). *See also* 33 USC §1251(a)(1)-(3).

²⁹ 6 NYCRR § 701.19, § 701.20.

³⁰ 6 NYCRR § 701.23.

³¹ 6 NYCRR §§ 701.

³² The best usages of Classes B, C, and D waters do not include use of water as a "source of water supply for drinking," (6 NYCRR §§ 701.7-701.9). For example, "the best usage of Class D waters is fishing. Due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery, or stream bed conditions, the waters will not support

wetlands³³ are classified from 1 to 4 with drinking water supply wetlands receiving a Class 1 designation.³⁴ For wetlands under 12.4 acres, DEC may gain jurisdiction and prevent negative impacts by designating such wetlands as “wetlands of unusual local importance.”³⁵

DEC’s “narrative” water quality standards prohibit discharge of categories of pollutants and all other deleterious substances. For example, no “oil and floating substances,” may be discharged to any waters of New York. And, “[n]o residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease” is permitted.³⁶

Water quality criteria necessarily “take into consideration the water quality standards of downstream waters” and “ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.”³⁷

Further, when issuing a SPDES permit, the Clean Water Act requires DEC to impose conditions to maximize pollution prevention.³⁸ In renewing SPDES permits, DEC is required to assess whether there has been a “material change in permit conditions.”³⁹ Where changes have occurred since the permit was last issued, DEC must subject the permit renewal to technical scrutiny and allow public review and comment.⁴⁰ Where

fish propagation. These waters shall be suitable for fish, shellfish and wildlife survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.” 6 NYCRR §§ 701.2-701.6; 6 NYCRR §§ 701.7-701.9.

³³ DEC’s general jurisdiction over wetlands extends to those exceeding 12.4 acres. There is an exception for those wetlands exhibiting special characteristics as set forth in the regulations.

³⁴ 6 NYCRR § 664.5(a)(6).

³⁵ ECL § 24-0301.

³⁶ 6 NYCRR § 703.2.

³⁷ 40 C.F.R. § 131.10[b]; see also *American Farm Bureau Federation v. United States EPA*, 984 F. Supp. 2d 289, 331[M.D. Pa. 2013], citing *Ark. v. Okla.*, 503 U.S. 91, 98-108 [1992].

³⁸ See DEC’s explanation of its SPDES program at <http://www.dec.ny.gov/permits/6054.html>.

³⁹ See ECL § 70-0115.

⁴⁰ *Id.* See also 6 NYCRR § 750-1.16.

“substantive and significant” issues are raised as to whether the project complies with the Clean Water Act or permit conditions, DEC may convene an adjudicatory proceeding. Then, an administrative judge is appointed and charged with issuing findings as to whether the permit should be issued or renewed following submission of evidence and sworn testimony in a trial-like setting.⁴¹

Even where a discharger is in full compliance with its SPDES permit, the Commissioner may require abatement action to be taken by the permittee and may prohibit the permittee’s operation until the SPDES permit has been modified.⁴² Thus, DEC has the authority to abate and prevent the pollution of waters of the state in accordance with both water quality standards and in connection with the SPDES program.⁴³ NYSDEC must use all known, available and reasonable methods to prevent and control pollution of the waters of the State.⁴⁴

Environmental Conservation Law also authorizes other actions relevant to drinking water source protection, including publication of the state’s Open Space Conservation Plan⁴⁵; and establishment of a Water Resources Planning Council.⁴⁶

⁴¹ See DEC’s Uniform Procedures at 6 NYCRR § 621.

⁴² See *Indian Point Water Quality Certification Denial Appeal, Ruling on Proposed Issues for Adjudication and Petitions for Party Status* [December 13, 2010] [“CWA § 401 Issues Ruling”], 2010 N.Y. ENV LEXIS 86 at *51-52, quoting 6 NYCRR § 750-2.1[b].

⁴³ ECL § 17-0303.

⁴⁴ See *Matter of Port of Oswego Auth. v Grannis*, 70 A.D.3d 1101, 1104 [3d Dep’t 2010], quoting ECL §17-0101 and citing ECL § 17-0501[17].

⁴⁵ See ECL § 49-2

⁴⁶ See ECL § 15-2901.

B. Safe Drinking Water Act and Public Health Law

The Safe Drinking Water Act (SDWA) was established to protect drinking water quality. Under the SDWA, EPA has established minimum drinking water standards and requires public water systems to comply with these health-related standards. Public drinking water systems must perform regular monitoring and reporting. These reports provide the water systems and regulators with the data they need to ensure that drinking water monitoring is ongoing and that drinking water standards are being met. When results indicate that a contaminant is present at a level that exceeds standards, states and EPA must work with public water systems to take steps to prevent or remove the contaminants and notify consumers.

Federal law and policy emphasize the protection of watershed source waters and the prevention of contamination as the best and most cost-effective way to protect public health. The EPA has set a goal that "by the year 2005, 60 percent of the population served by community water systems will receive their water from systems with source water protection programs in place."⁴⁷ To reach this goal, EPA has developed and provided state and local governments with several guidance documents, including guidance for structuring source water assessment and protection programs.⁴⁸ In this guidance document, EPA outlines options available to states for funding source water protection efforts from the Drinking Water State Revolving Fund. New York State conducted source water assessments according to a program developed in 1999.⁴⁹

The Public Health Law § 1100 empowers the New York State Department of Health to make rules protecting water supplies and empowers localities to take action beyond municipal borders to supplies.

⁴⁷ EPA, EPA Response to Major Issues for the National Guidance on State Source Water Assessment and Protection Programs (Mar. 12, 2003), *available at* <http://nepis.epa.gov/Exe/ZyPDF.cgi/P100NE9R.PDF?Dockey=P100NE9R.PDF>.

⁴⁸ EPA, State Source Water Assessment and Protection Programs Guidance: Final Guidance (Aug. 1997), *available at* <http://nepis.epa.gov/Exe/ZyPDF.cgi/200026V1.PDF?Dockey=200026V1.PDF>.

⁴⁹ DOH, New York State Source Water Assessment Program Plan (Nov. 1999) *available at* <https://www.health.ny.gov/environmental/water/drinking/swapp.pdf>.

3. EMERGENCY RESPONSE ACTIONS TO ELIMINATE THE ENVIRONMENTAL AND PUBLIC HEALTH THREAT OF PFOS-CONTAMINATED DRINKING WATER

DEC and DOH have to date taken many appropriate actions since emergency response began in March 2016, including the provision of safe drinking water, commitments to fund drinking water filtration, and investigation of contamination sources. Additional DEC and DOH emergency response actions should include the following:

A. Prohibit discharges of PFOS from Recreation Pond at the Stewart Air National Guard Base

Testing data made public to date has identified the importance of contamination emanating from Recreation Pond at the Stewart Air National Guard Base. PFOS discharges from Recreation Pond must be prevented from discharging via Outfall 010. Department of Environmental Conservation can achieve this via an interim remedial measure, under Environmental Conservation Law Article 27, which provides legal authority to address the remediation issues in this case. It can also act under its authority to abate and prevent the pollution of waters of the state in accordance with both water quality standards and in connection with the SPDES program of the Clean Water Act.

Discharges from Recreation Pond flow into a tributary of Silver Stream, which under typical conditions is diverted to Lake Washington, but which the city has now diverted to its original course in order to prevent risk to the reservoir's Class-C high-hazard earthen dam, and communities downstream.⁵⁰ With DEC authorization,⁵¹ PFOS is being discharged to the Moodna Creek Watershed, and could be reaching the Hudson River.⁵²

⁵⁰ "Lake Washington dam in Newburgh could be at risk," and "Newburgh stops diverting stream to unused lake due to dam threat," Times Herald Record, June 6, 2016 <http://www.recordonline.com/news/20160606/washington-lake-dam-in-newburgh-could-be-at-risk> and <http://www.recordonline.com/news/20160606/newburgh-stops-diverting-stream-to-unused-lake-due-to-dam-threat>.

⁵¹ Letter from Martin D. Brand, Regional Director, DEC Region 3, to Michael G. Ciaravino, City Manager, City of Newburgh (June 14, 2016).

⁵² Letter from Michael Ciaravino, City Manager, City of Newburgh to Martin Brand, Regional Director, NYSDEC Region 3 (June 2, 2016).

The polluter, not the city suffering from the pollution, should be responsible for stopping the pollution at its source and preventing downstream pollution.

The risk to the environment is real, and in fact, there may be an additional public health risk from exposure PFOS to those who consume contaminated fish. The fish should be sampled throughout the Quassaick and Moodna Creek watersheds to determine the significance of contamination in wildlife. Longstanding fish consumption advisories in the Hudson River, due to toxic pollution including PCBs, already have severely limited for a generation the public's enjoyment of one of the world's greatest estuaries. The source of PFOS contamination should be abated immediately to prevent adding PFOS as yet another chemical on the list of Hudson River contaminants.

Firefighting foam was used at Stewart Air National Guard Base for firefighting training exercises.⁵³ It is unclear if either Stewart Airport or the Air National Guard ever disclosed the use of the foam that clearly has drained into the discharges to Recreation Pond, or to surface waters via other stormwater outfalls. Though the Air National Guard SPDES permit required "sampling of waste stream segments for the purpose of pollutant 'hot spot' identification" DEC did not require the testing of Recreation Pond for PFOS contamination - even after Newburgh's 2014 Water Quality report showed significant PFOS levels in the drinking water. Residents likely drank and bathed in water contaminated with PFOS for years.

Perhaps recognizing the PFOS threat, the Air National Guard Base and Stewart Airport SPDES permits from 2010 and 2011, respectively, prohibit discharge of "contained firefighting runoff" or "fire training water contaminated by contact with pollutants or containing foam or fire retardant additives." Specifically, each SPDES permit at Section "F" states:

Prohibited Discharges - In all cases, any discharge which contains a visible sheen, foam, or odor, or may cause or contribute to a violation of water quality in the receiving water is prohibited. The following discharges are prohibited unless specifically authorized elsewhere in this SPDES permit: spills or leaks, tank bottoms, maintenance wastewaters, wash waters where detergents or other chemicals have been used, tank hydrotest and ballast waters, contained fire-fighting runoff, fire training water contaminated by contact with pollutants or containing

⁵³ New York Air National Guard 105th Civil Engineering Squadron firefighters practice emergency fire management techniques during exercise Fallen Angel at Stewart Air National Guard Base, Newburgh, N.Y., on Dec. 3, 2004. (U.S. Air Force PHOTO by STAFF SGT. Lee C. Guagenti) (Released)," available at [https:// dp.la/item/c9a6896164f30f8e7bb34bc3fa1283a1](https://dp.la/item/c9a6896164f30f8e7bb34bc3fa1283a1)

foam or fire retardant additives, and unnecessary discharges of water or wastewater into secondary containment systems.

Despite this clear prohibitive language in the Clean Water Act permit, elevated levels of PFOS were found in *all outfalls discharging from the stormwater system* to this pond - including the outfall registering PFOS levels of 5,900 ppt.

DEC and DOH's monitoring data show that Stewart Airport and Air National Guard Base are out of compliance with permit terms, specifically, the permit conditions prohibiting discharge of firefighting foam. These discharges constitute a violation of the Clean Water Act and Environmental Conservation Law. The DEC has clear authority under the current permits to enforce the terms and conditions of the permit. Further, due to the fact that these discharges enter source waters of a drinking water supply, the DEC is justified in acting aggressively to stop the discharges from Recreation Pond. Further, the significant penalties that are justified in this case could be offset with Environmental Benefits Projects to fund, in whole or in part, recommendations contained in this report.⁵⁴

Further, DEC has additional authority to execute an interim remedial measure that would stop discharges from Recreation Pond, under the authorities provided by the April 2016 emergency rule designating PFOS as a hazardous substance. Treatment systems to address the contamination in Recreation Pond have been used on numerous sites, including the Nepera hazardous waste site⁵⁵ in Harriman, Orange County, demonstrating that any discharges from Recreation Pond to the drinking water system (or to the tributaries of the Hudson River) can be effectively treated, the chemicals removed.

⁵⁴ DEC has many enforcement tools outlined in DEC's "TOGS 1.4.2 Compliance and Enforcement of SPDES Permits" which include penalties assessed under ECL 79-1929(1):

A person who violates any of the provisions of, or who fails to perform any duty imposed by titles 1 through 11 inclusive and title 19 of article 17, or the rules, regulations, orders or determinations of the commissioner promulgated thereto or the terms of any permit issued thereunder, shall be liable to a penalty of not to exceed thirty-seven thousand five hundred dollars per day for each violation, and, in addition thereto, such person may be enjoined from continuing such violation as hereinafter provided. Violation of a permit condition shall constitute grounds for revocation of such permit, which revocation may be accomplished either as provided in paragraph f of subdivision 4 of section 17-0303 or by order of judgment of the supreme court as an alternate or additional civil penalty in an action brought pursuant to subdivision 3 of this section.

⁵⁵ NYS State Superfund site No. 336006

In the case of Hoosick Falls, the DEC invoked the State Superfund law to compel private companies to investigate and remediate the contamination.⁵⁶ In this case, a variety of government agencies must take action: Department of Transportation as land owner; Port Authority of New York and New Jersey as operator of Stewart Airport; and the U.S. Air Force and/or NYS Division of Military and Naval Affairs and/or other state or federal military divisions, as operator of the Stewart Air National Guard Base. Further, the Governor of the State of New York has the authority to direct the Air National Guard to support the state in times of need.

B. Comprehensively sample and test surface water, groundwater, sediment and fish

Department of Environmental Conservation (DEC) testing to date has been extremely valuable in defining important source areas necessary to target for remedial measures. Additional results, including those taken under the direction of DEC by those potentially responsible for the contamination, are pending.

As previously noted, the publicly available testing data has identified several stormwater outfalls originating from Stewart Airport and Air National Guard Base as having elevated levels of PFOS. However, the two properties together have at least 20 outfalls discharging into the watershed for Newburgh's drinking water, and five of these have been tested, or the results reported publicly.

To identify additional likely sources of contamination reaching Newburgh's reservoirs, outfalls 009, 010 and 011 at Stewart Airport and outfalls 001, 01A, 004, 005, 006, 007, 008, 009 and 009A at Stewart Air National Guard Base should be tested immediately to determine if and to what degree these outfalls may be contributing to the pollution of Newburgh's drinking water. These outfalls discharge to tributaries of Silver Stream or Patton Brook, upstream of Lake Washington. Contamination reported in Silver Stream at Weather Oak Hill and in the drainage area near the Stewart Mall, above its confluence with the unnamed tributary that receives water from Recreation Pond, suggests additional outfalls from Stewart Airport and/or other sources may be contributing further contamination to Lake Washington. Contamination in Murphy's Ditch suggests that

⁵⁶ Press Release, NYSDEC, DEC Requires Companies to Fully Investigate and Clean Up Hoosick Falls PFOA Contamination (Feb. 11, 2016) *available at* <http://www.dec.ny.gov/press/105069.html>.

additional outfalls from Stewart Air National Guard Base, and/or landfills in the area and/or other sources, may be contributing additional contamination to Lake Washington.

In addition to the important impacts to drinking water, PFOS is likely contaminating fish and wildlife, and may be putting anglers at risk of exposure from consuming contaminated fish.

One source of known contamination to the Moodna Creek watershed is via Silver Stream, since Newburgh diverted its flow from Washington Lake on or about June 2, 2016.⁵⁷

To identify likely sources of contamination reaching Moodna Creek watershed from Stewart Airport, outfalls 001, 002, 003, 004, 005, 006 and 007 should be sampled. Not only is this important for assessing potential risk to fish, wildlife and humans who consume fish in the Moodna Creek Watershed, but there may be other drinking water supplies downstream, such as Town of New Windsor municipal wells and the Beaverdam Lake Water District, that may be vulnerable. To assess the extent of contamination, the planned monitoring project for the Moodna Creek⁵⁸ should be executed, and its results made public expeditiously. Fish sampling, which DEC and DOH indicated was under consideration,⁵⁹ should be prioritized to determine to what extent fish, wildlife and anglers may be affected.

We understand that many of the outfalls identified above have been sampled and results are pending, and sampling has been completed at several other public water supplies. As results become available, they should be made public. We are encouraged to learn of plans to develop a Website with information about this site.

Landfills in the area, including the Air National Guard Base and Town of New Windsor landfill⁶⁰, as well as other areas identified as potential dump sites on or near the airport

⁵⁷ Letter from Michael Ciarvino, Newburgh City Manager, to Martin Brand, Regional Director, DEC Region 3 (June 2, 2016).

⁵⁸ Letter from Martin Brand, Regional Director, DEC Region 3, to Michael Ciarvino, Newburgh City Manager (June 14, 2016).

⁵⁹ Letter from Basil Seggos, DEC Commissioner, and Howard Zucker, MD, DOH Commissioner, to Dan Shapley Riverkeeper Water Quality Program Manager, and John Parker, Riverkeeper Director of Legal Programs (June 18, 2016).

⁶⁰ State Superfund Site No. 336019.

properties, should be tested for potential leaching of PFOS. Testing data to date shows detectable levels in groundwater at the Town of New Windsor landfill.

Finally, private well owners in areas that may be affected by contamination of groundwater should be offered free testing immediately. We understand that planning is in place to sample private wells.

Any data available now or in the future related to testing locations, results and conditions under which samples were taken should be made public and communicated clearly and directly to the City of Newburgh, and to the public. We appreciate the attention paid to developing a comprehensive testing program, including consideration of our earlier suggestions for sampling, and look forward to continued dialog on this topic.

C. Conduct comprehensive blood testing as part of a comprehensive health screen of City of Newburgh residents

In the cases of Hoosick Falls, N.Y., the Department of Health (DOH) collected blood samples as part of a biomonitoring study to understand exposure to PFOA,⁶¹ and its potential health impacts. A similar initiative is planned for Petersburg, N.Y.⁶² The consumers of the City of Newburgh drinking water should, at a minimum, receive the same kind of health screening for PFOS, so residents and their doctors can make informed choices about health care, with knowledge of their exposure. Testing may provide clues as to the length of exposure, and contribute to the understanding of this nationally emergent issue.

There appears to be no clear framework for decision-making when it comes to conducting blood testing in cases such as this. Newburgh, as an Environmental Justice community, should receive no less a response than other communities in New York, facing similar contamination of drinking water. The data on the duration and extent of the contamination of local residents in Newburgh is as important as the data collected from residents of Hoosick Falls and Petersburg. Sampling of drinking water has shown that

⁶¹ DOH, Information Sheet PFOA Biomonitoring Group-Level Results, June 2, 2016, *available at* <https://www.health.ny.gov/environmental/investigations/hoosick/docs/infosheetshortgroupresults.pdf>.

⁶² DOH, PFOA Blood Testing in Petersburg, (July 2016) *available at* <http://www.villageofhoosickfalls.com/Water/Documents/July2016-BloodTestingPetersburgh.pdf>.

PFOS exceeded the EPA guidance values for lifetime exposure – further underscoring the need to measure exposure via blood testing.

Without education of the healthcare community, however, such testing will be not be fully useful, which is why Riverkeeper has called on the EPA, in our letter of July 1, to work with the Agency for Toxic Substances and Disease Registry, and/or other federal resources, to assist in providing the resources necessary for the healthcare community to interpret results and advise the community.

D. Clearly state commitments to fund safe alternative water supplies, and ensure decision-making is open and inclusive

The Departments of Health and Environmental Conservation have stated their commitment to fund temporary safe water supplies and install filtration for the Lake Washington supply. These temporary actions are necessary and welcome, and in some cases complex and expensive. The state deserves credit for taking actions to provide safe drinking water expeditiously. Commitments should be clear and in writing, and decisions about treatment technologies should be made in an open and inclusive manner, so that city officials and residents understand relevant costs and benefits of treatment technologies. Riverkeeper has asked EPA to provide technical advice regarding treatment technologies, particularly in light of the multiple emerging contaminants detected in Newburgh's drinking water supply.

4. SHORT-TERM ACTIONS TO ADDRESS LONGSTANDING ISSUES REGARDING COMPLETE, ACCURATE AND EFFECTIVE IMPLEMENTATION OF STATE AND FEDERAL LAWS

In Newburgh's source waters, water quality protection programs have not been effectively implemented or coordinated. The Departments of Environmental Conservation and Health have the authority and legal obligation to immediately implement and enforce provisions of the Clean Water Act, Safe Drinking Water Act and several state laws and regulations to protect and restore the City's drinking water. These actions can and should begin concurrently with the emergency response.

A. Accurately map the City's source waters as part of an updated Source Water Assessment

Congress intended to avert just the kind of crisis now facing Newburgh with the 1996 amendment to the Safe Drinking Water Act.⁶³ EPA required states to produce source water assessments. Congress expressed clearly its rationale for this requirement:

the House Commerce Committee Report language (House Report 104-632, Part 1), it states that, "the Committee recognizes that source water protection can be cost-effective strategy for ensuring safe drinking water supplies... To address source water protection, the bill creates a new program in which states with primacy will conduct an assessment, coordinated with existing information and programs, to determine the vulnerability of sources of drinking water within state boundaries... designed to protect source water from threats identified during the assessment." Furthermore, the Senate Committee report provides that, "the only options typically available to community water systems finding contaminants in their water supply have been treatment or the development of new water supplies... To remedy this problem, the bill adds a new section to the Safe Drinking Water Act that provides a means other than treatment for community water systems to address problems or emerging problems of contamination," that is, petition programs and source water protection efforts.⁶⁴

⁶³ See CWA § 1453(a)(3).

⁶⁴ See State Source Water Assessment and Protection Programs Guidance, 1997.

In the case of Newburgh, the resulting effort to map and assess vulnerabilities to the city's drinking water supply were incomplete and inaccurate.⁶⁵ The Source Water Assessment map delineating City of Newburgh's drinking water supply watershed is inaccurate and incomplete, focusing only on the Brown's Pond backup reservoir to the exclusion of the city's primary reservoir, Lake Washington. Relying on that flawed map, the assessment omits substantial and important portions of the watershed, including Stewart Airport and the Stewart Air National Guard Base, and areas around Patton Brook, which include areas vulnerable to development at the intersection of the NYS Thruway and I-84, where in fact much development has occurred, and is currently taking place.⁶⁶ Lacking an accurate map or assessment, numerous environmental impact statements under State Environmental Quality Review Act are likely to have been inadequate in the planning for these developments. Steps that might have prevented or mitigated impacts were not taken.

The assessment also failed to adequately assess risks to the watershed, including direct discharges from Stewart Airport and Air National Guard Base, the presence of landfills in the watershed, stormwater runoff from extensive impervious surface cover, and future development potential in the watershed. The source water assessment is summarized in the city's 2014 Annual Water Quality Report as follows, with emphasis added:

The analysis of available information for this source water assessment *did not find any significant sources of contamination in the watershed*. Statewide and local databases of permitted facilities were used to identify discrete potential sources of contamination. *No discrete sources were identified within the assessment area*. Land use within the watershed was evaluated by contaminant category to rate the likely prevalence of contamination associated with the land use. The contaminant category rating for land use types were determined to be medium for microbial contamination due to agricultural practices in the watershed. The overall susceptibility of this watershed to potential sources of contamination was found to be medium for microbial contamination. A copy of the assessment, including a map of the area, can be obtained by contacting us, as noted in this report.

As evidenced by the current drinking water contamination and the sources identified to date, there are both significant sources of contamination and discrete sources of

⁶⁵ See "2005 NYS DOH "SWAP" Report of Source Water Assessment Program" attached to letter from Lloyd Wilson, Ph.D., Section Chief, Source Water Protection Program, to Jean Ann McGrane, City Manager, City of Newburgh, dated April 5, 2005.

⁶⁶ See "Newburgh-area development decisions can boost risks for drinking-water safety," Times Herald Record, Leonard Sparks, June 5, 2016 *available at* <http://www.recordonline.com/article/20160605/NEWS/160609700>.

contamination that have already contaminated the drinking water supply for the City of Newburgh.

The assessment for Brown's Pond relied on outdated aerial photography. The risks to this watershed were not identified sufficiently, as evidenced in part by the presence of potentially Harmful Algal Blooms (HABs) on Brown's Pond documented in 2013 and 2015.⁶⁷ These algae blooms can produce cyanotoxins, and the EPA has found that "adverse health outcomes from exposure to cyanotoxins may range from a mild skin rash to serious illness or death."⁶⁸ Recognizing the threat to public health from HABs, EPA has published Health Advisories for cyanotoxins produced by HABs⁶⁹ and recommendations for managing public water supplies affected by them.⁷⁰ The first recommended management step in a system-specific surface water evaluation is identified as "effective source water protection strategies to limit excess nutrients in surface water." Excess nutrients can be associated with agricultural or urban land uses, and if "source water is vulnerable to nutrient rich runoff from agriculture or urban areas, the [Public Water System] may be vulnerable to cyanotoxins as well," according to the EPA's management recommendations. Urbanization in Newburgh's source watershed has been dramatic, and was not identified as a threat in the DOH's 2005 Source Water Assessment focused on Brown's Pond. Development is occurring or being considered today that would put the source waters at further risk.

The DOH should initiate the drafting of a new and comprehensive Source Water Assessment. Pursuant to the DOH's 1999 Source Water Protection Plan, the DOH, "may update the assessments (and make them available to the public) as necessary to meet the originally defined or evolving objectives of the assessment for each public water system

⁶⁷ See DEC Archived Blue Green Algae Bloom Notices for 2013 and 2015 *available at* http://www.dec.ny.gov/docs/water_pdf/habsarchive2013.pdf and http://www.dec.ny.gov/docs/water_pdf/2015habarchive.pdf.

⁶⁸ EPA, What health risks do humans face as a result of exposure to cyanotoxins? *available at* <https://www.epa.gov/nutrient-policy-data/health-and-ecological-effects#what1>

⁶⁹ EPA, What are the health-based standards and guidelines for cyanobacteria/cyanotoxins in drinking water? *available at* <https://www.epa.gov/nutrient-policy-data/guidelines-and-recommendations#what2>.

⁷⁰ EPA, Recommendations for Public Water Systems to Manage Cyanotoxins in Drinking Water (June 2015) *available at* <https://www.epa.gov/nutrient-policy-data/recommendations-public-water-systems-manage-cyanotoxins-drinking-water>.

source.”⁷¹ The originally defined objective was never met, as evidenced by the inaccurate map and failure to identify discrete and significant sources of contamination as evidence. Further, the objective has clearly evolved with the documentation of Harmful Algal Blooms in Brown’s Pond, and the identification of PFOS and other emerging contaminants in Lake Washington. As such, the threshold has clearly been met for the development of a new Source Water Assessment.

As recommended by EPA, the new assessment should be developed in collaboration with “credible groups” in each source water area, which in this case should include the City of Newburgh and multiple DEC divisions, as well as the Hudson River Estuary Program; Orange County Water Authority; Quassaick Creek Watershed Alliance; Riverkeeper and others. This assessment can draw on existing data and recommendations included in the Quassaick Creek and Moodna Creek watershed management plans, and it should form the basis for an actionable plan to execute such strategies as the preservation of natural infrastructure, including wetlands and forests; investment in green infrastructure retrofits to treat stormwater runoff; and elimination of present and future risks to the city’s reservoirs.

Riverkeeper is currently collaborating with the City of Newburgh in an effort to map stormwater outfalls discharging to its reservoirs on city-owned property, and to implement water quality monitoring plans, including for nutrients. We have also called on the EPA to use any available authority to compel the drafting of a new, accurate and comprehensive Source Water Assessment.

Outside of Newburgh, a systematic evaluation of existing Source Water Assessments should be undertaken to identify other communities with a high-priority need for new assessments. This analysis should pay special attention to Environmental Justice communities such as Newburgh. These assessments should include all elements identified in this report.

⁷¹ DOH, New York State Source Water Assessment Program, at 14 (1999) *available at* <https://www.health.ny.gov/environmental/water/drinking/swapp.pdf>

B. Suspend, revise, re-issue and re-notice the Stewart Airport and Air National Guard Base SPDES permits

The Department of Environmental Conservation (DEC) must suspend⁷² the Stewart Airport⁷³ and Air National Guard Base⁷⁴ State Pollution Discharge Elimination System (SPDES) permits because documented PFOS contamination violates permit conditions prohibiting discharge of firefighting foam, and downstream drinking water reservoirs are contaminated at levels exceeding EPA's 70 ppt health advisory. This alone comprises "newly discovered, material information" requiring assessment and elimination of PFOS discharge points.

In addition, as we describe below, receiving waters were improperly classified and water quality standards are not being met. Finally, there is significant public interest in the resolution of the drinking water crisis. Therefore, DEC must publicly notice and schedule a public hearing, known as a "legislative hearing" as part of the suspension, revision and re-issuing of these SPDES permits. The public should be offered robust opportunity to review and comment on the proposed SPDES permit renewals.

More than a year ago, Riverkeeper urged DEC to take specific steps to address some of the significant concerns we have with the threats to the City of Newburgh's drinking water.⁷⁵ Riverkeeper called upon DEC to perform an in-depth technical review of the Air National Guard's SPDES permit in the Town of Newburgh rather than simply allowing an automatic renewal of the permit.⁷⁶ The State Comptroller has been highly critical of the

⁷² Pursuant to ECL § 17-0817(5).

⁷³ SPDES Permit NY0234915.

⁷⁴ SPDES Permit NY0250457.

⁷⁵ See Letter of Dan Shapley, Riverkeeper Water Quality Program Director to Lindy Sue Czubernat, DEC Environmental Program Specialist, Division of Environmental Permits, dated February 5, 2015.

⁷⁶ ECL § 17-0817(5) provides that any interested party may file a written request with the Department at any time for modification, suspension, or revocation of a SPDES permit "on the grounds that newly discovered, material information has been discovered; that a material change in environmental conditions has occurred, [or] that relevant technology or applicable law or regulations have changed since the issuance of the existing permit."

DEC's administrative renewal process for SPDES permits.⁷⁷ The permit expiration date was set for August 31, 2015.

To the best of our knowledge, those concerns have not been addressed, including:

- Correcting misclassified receiving waters to protect them as Class A tributaries supplying Newburgh's primary reservoir;
- Revising effluent levels accordingly;
- Investigating the water quality of receiving waters, and increasing monitoring, beyond the emergency investigation of PFOS; and,
- Institutionalizing a spill notification program to be created to warn the City of toxic spills of jet fuel, oil or other hazardous wastes.⁷⁸

Many of Riverkeeper's concerns apply equally to the Stewart Airport SPDES permit that is due to expire December 31, 2016, and many of these concerns have been echoed by the City of Newburgh.⁷⁹

Regarding PFOS, even though Stewart Airport and the Air National Guard Base had ample opportunity to disclose the use of PFOS firefighting foams, they apparently did not. DEC's permit renewal application has a statement advising that if toxic or hazardous pollutants are used, stored, handled or discharged, the permittee must draft an Industrial Best Management Practices plan to prevent or minimize release of pollutants to receiving waters. Neither discharger apparently disclosed its use of PFOS. Further, in its prohibition of discharges of firefighting foam, no monitoring was required of either permittee for PFOS.

Indeed, for the Stewart Airport SPDES renewal, the permittee, the Port Authority of New York and New Jersey, simply checked the box stating that the facility did not conduct ancillary activities that involved use of toxic substances such as PFOS. Thus, the Stewart

⁷⁷ DEC, N.Y. State Comptroller Rep., *Clean Water Permit Process*, 2001-S-18 at 5-6 (2003), available at <http://www.osc.state.ny.us/audits/allaudits/093003/093003-h/01s18.pdf> (last visited June 2, 2016).

⁷⁸ The response to Riverkeeper's letter was given during a general meeting with Riverkeeper last year where DEC apparently referred our concerns over the lack of a spill notification and response program for Stewart Airport to the Orange County Department of Health.

⁷⁹ See Letter from Michael Ciaravino, Newburgh City Manager, to Kelly Turturro, Acting Regional Director, DEC Region 3 (July 1, 2016).

Airport permittee avoided any DEC or public review of their actual use of PFOS in firefighting foam.

DEC should also correct its misclassification of Stewart Airport in its SPDES permit.⁸⁰ That SPDES permit wrongly identifies the airport as a “Petroleum Bulk Station” rather than an Air Transportation Facility.⁸¹ And DEC should ensure that these site-specific SPDES permits, at a minimum, include all best management practices required of the SPDES Multi-Sector General Permit (MSGP) to control industrial stormwater discharges, while retaining the current prohibitions against the discharge of firefighting foam contained in Section F of each SPDES permit.

C. Correct classifications so that all streams that supply Newburgh’s reservoirs are recognized as Class A or AA sources of drinking water

In 2015, Riverkeeper commented to DEC regarding the proposed renewal of the Air National Guard SPDES permit, noting the misclassification of Patton Brook and Silver Stream as Class “D” streams. These tributaries flow to Lake Washington, Newburgh’s principal drinking water supply, and their tributaries receive discharges from the Stewart Air National Guard Base and Stewart Airport.

The two permits at issue classify and name the same stream differently, with the Stewart Airport permit documenting discharges to tributaries of a Class A tributary of Moodna Creek, and the Air National Guard Base permit documenting discharges to tributaries of Class D Silver Stream. The streams are one and the same, and all discharges should meet Class A standards, at a minimum. Patton Brook, in the Air National Guard permit, too, is identified as a Class D “tributary to Quassaick Creek.” The DEC Waterbody Inventory/Priority Waterbodies List for the Lower Quassaick Creek indicates that “the waters of this portion of the stream are Class C. [Tributaries] to this portion of the stream

⁸⁰ See DEC’s SPDES database, available at <https://www.dropbox.com/sh/hz3spt98h4d88ue/AADmNLcYxcpZQFeWUNAxGMi9a?dl=0>.

⁸¹ Stewart Airport’s SPDES permit identifies it with Standard Industrial Code (SIC) No. 5171 as “[e]stablishments primarily engaged in the wholesale distribution of crude petroleum and petroleum products, including liquefied petroleum gas, from bulk liquid storage facilities.” By contrast, DEC’s Multi-Sector General Permit identifies “Air Transportation Facilities” as classified by SIC numbers between 4512-4581. See Permit No. GP-0-12-001 Appendix B, at 199, Sector S: Air Transportation.

are also Class C.”⁸² Information available on the NYS Environmental Resource Mapper indicates relevant segments of Patton Brook are Class A. Thus, different DEC records identify Patton Brook as Class A and C, and discharges were set to meet Class D standards.

As noted in the February 2015 Riverkeeper letter regarding the Air National Guard base SPDES permit, properly classifying the receiving waters affects multiple discharges, including benzene and toluene, which have been permitted to be released at higher levels than Class A or AA standards into the City of Newburgh’s drinking watershed via tributaries of Silver Stream and Patton Brook.

DEC must ensure the accurate classification of Patton Brook and Silver Streams, and their tributaries, as Class “A” or “AA” streams. Where they are classified other than “A” or “AA” they should be re-classified, and all references to these streams should be updated and corrected. Further, all SPDES permits in the city’s drinking watershed must undergo a full individual and technical review and revision, to ensure permits are in compliance with discharge limits to Class A or AA waters. This review and revision must start with the Stewart Airport and Stewart Air National Guard Base SPDES permits and must include new draft permits with a public comment and review period, as stated above.

As part of Source Water Assessments for other communities, stream classifications should be systematically reviewed and updated similarly.

D. Implement New York State Water Quality Standards

The DEC is vested with the authority and entrusted with the obligation to *abate and prevent* the pollution of waters of the state *both* in accordance with water quality standards and in connection with the SPDES program.⁸³ The DEC must use all known, available and reasonable methods to prevent and control pollution of the waters of the State.⁸⁴ There must be compliance with SPDES permits.

⁸² Quassaic Creek-Hudson River (0202000805) WI/PWL available at http://www.dec.ny.gov/docs/water_pdf/wilhudsquassaic.pdf.

⁸³ ECL § 17-0303.

⁸⁴ See *Matter of Port of Oswego Auth. v Grannis*, 70 A.D.3d 1101, 1104 [3d Dep’t 2010], quoting ECL §17-0101 and citing ECL § 17-0501(17).

The water quality standards law and regulations are clear:

it shall be unlawful for any person, directly or indirectly, to throw, drain, run or otherwise discharge into such waters organic or inorganic matter that shall cause or contribute to a condition in contravention of the standards adopted by the department pursuant to section 17-0301.⁸⁵

Further, discharges of deleterious substances which would impair waters for the best usages are prohibited.⁸⁶

Satisfaction of SPDES permit provisions notwithstanding, the Commissioner may require abatement action to be taken by the permittee and may prohibit the permittee's operation until the SPDES permit has been modified.⁸⁷ In addition, the State regulations clearly contemplate situations where, despite the existence of a current SPDES permit, a permittee may still be in violation of New York Water Quality Standards.⁸⁸

Several actions are necessary in this context. Patton Brook and Silver Stream, and their tributaries should be reclassified as A or AA streams and DEC's water quality standards enforced. Both the Stewart Airport and the Air National Guard SPDES permits must be amended as described above, to reflect the appropriate water quality standards in order to protect use of these waters as a source for drinking as required by State and Federal law.

E. Protect all existing wetlands within the City's watershed

Wetlands are universally recognized as important natural infrastructure for filtering pollutants. DEC must designate any wetlands associated with these tributaries as Class 1 wetlands because they perform the critical function of enhancing drinking water quality.⁸⁹ Riverkeeper also urges DEC to undertake a comprehensive review including all necessary

⁸⁵ ECL § 17-0501.

⁸⁶ 6 NYCRR § 703.2.

⁸⁷ See 6 NYCRR § 750-2.1(b).

⁸⁸ *Id.*

⁸⁹ See 6 NYCRR § 664.5(a).

classification procedures⁹⁰ related to all wetlands in the City of Newburgh drinking water watershed.⁹¹

The DEC should also undertake a full mapping and delineation review of all wetlands in the watershed that may not meet the regulatory Article 24 threshold of 12.4 acres as part of a “wetlands of unusual local importance” determination. No further loss of wetlands should be allowed in this watershed.

As part of Source Water Assessments for other communities, wetlands protections should be systematically reviewed and updated similarly.

F. Reduce and eliminate discharges to Newburgh’s source waters

Past overdevelopment has constrained the natural ability of Newburgh’s watershed to filter stormwater and other pollutants from its source waters. The percent of impervious surface (pavement, rooftops, etc.) in a watershed is a marker of its health, with as little as 10% imperviousness having been linked to degraded water quality. The percent imperviousness in Newburgh’s source watershed is nearly 33 percent, suggesting that the watershed is overbuilt as a drinking water supply.⁹²

Recognizing this, the Department of Environmental Conservation should assign a “discharge restriction category” to all streams in the watershed of Newburgh’s reservoirs in order to increase protections for these source waters. The purpose of discharge restriction categories are to protect “waters of particular public health concern” and “other sensitive waters where”... “existing standards are not adequate to maintain water quality.” Those thresholds are met in this case.⁹³

⁹⁰ Pursuant to 6 NYCRR §§ 664 *et seq*

⁹¹ See also 6 NYCRR §§ 662, 663, and 664.

⁹² “Quassaick Creek Watershed Management Plan,” Orange County Water Authority, 2014, http://waterauthority.orangecountygov.com/PROJECTS/QUASSAICK_CREEK/REPORTS/Chapter%202_Assessment%20of%20Waterbodies%20and%20Watershed%20Resources.pdf.

⁹³ See 6 NYCRR §§ 701.19, 701.20.

DEC should also designate Newburgh's source waters for "no new discharge."⁹⁴ For waters so-designated, "no new discharges shall be permitted, and no increase in any existing discharges shall be permitted." A zero-discharge goal should be set, not just for new discharges, but for existing discharges, including stormwater.

⁹⁴ See 6 NYCRR § 701.23.

6. LONG-TERM ACTIONS TO INSTITUTE A COMPREHENSIVE STRATEGY FOR PROTECTING SOURCE WATERS OF NEWBURGH'S DRINKING WATER SUPPLY

For decades, Newburgh's drinking water source has been degraded due to inadequate implementation of existing laws, from inadequate coordination among neighboring municipalities, and inadequate attention to preservation and restoration of this critical natural and public health resource. The drinking water crisis is not limited to PFOS. The City of Newburgh's water supply has been a slow-moving crisis for decades.

This crisis affects people outside of the City of Newburgh, as well. Some residents in the Towns of New Windsor and Newburgh rely on Lake Washington and the City of Newburgh's drinking water infrastructure; and Brown's Pond can act as a backup supply for the Town of New Windsor. The Orange County Water Authority identified Lake Washington as a critical piece of regional drinking water infrastructure for future use not only by the City of Newburgh but the Towns of New Windsor and Newburgh.⁹⁵

The best practices for protecting watersheds include preserving substantial forested areas, minimizing and treating stormwater runoff and pollution discharges, reducing impervious surfaces, limiting land uses to avoid the handling and disposal of hazardous materials and chemicals, regulations and programs to reduce nutrient loads, and many other practices.

Clearly, Newburgh could be well served by implementing and enforcing existing laws and regulations, as outlined above. Additional effort would benefit the watershed, and the thousands of families reliant on it for their drinking water. Multiple agency actions are needed to lead an effort to create a new paradigm that will allow for the future protection and restoration of this critical resource.

The first steps toward achieving these long-term actions can be taken today, though their full implementation is likely to take longer than the actions listed above.

⁹⁵ Orange County Water Authority, Northeast Orange County Water Supply Project Facility Plan (April 2014) *available at* <http://waterauthority.orangecountygov.com/PROJECTS/NORTHEAST%20ORANGE%20COUNTRY/NEOC%20Water%20Supply%20Implementation%20Plan.pdf>.

A. Promulgate Source Water Protection Rules

Public Health Law empowers the Department of Health (DOH) to “make rules and regulations for the protection from contamination of any or all public supplies of potable waters and water supplies of the state” and specifically to empower localities to take actions outside of their municipal borders in order to protect their drinking water supplies.⁹⁶ As described by a Hudson River Regional Council and Hudson River Watershed Alliance white paper, published with funding from the NYS Environmental Protection Fund:⁹⁷

... unlike most laws that enable local governments to control land use and related activities, the enactment of watershed rules and regulations by NYSDOH under NYS Public Health Law Article 11, §1100, allows local governments to regulate certain activities occurring in other municipalities where their water sources are located. Through this extraterritorial authority, where one community’s reservoir or parts of its watershed are located in another municipality, under this legal mechanism, the municipality that owns the water supply can have certain inspection and enforcement powers for regulated activities in the relevant watershed. At the same time, because both NYSDEC and NYSDOH can have authority over certain activities involving land use and discharges of pollutants into waterbodies, their authority can sometime overlap. This has created challenges in the past both internally for each department and in terms of inter-agency coordination. Because NYSDOH regulations can give specific authority to local government to have a role in administering regulations that affect land use in a separate municipality, the administration of watershed rules by NYSDOH can present complications for local and state government. Perhaps these complications lead to the NYSDOH focusing resources on other priorities rather than the review and enactment of new or updated watershed regulations.

⁹⁶ See § 1100.

⁹⁷ Watershed Rules and Regulations for Protection of Drinking Water in New York *available at* <http://hudsonvalleyregionalcouncil.org/wp-content/uploads/2015/11/Watershed-Rules-and-Regs-for-Protecting-Drinking-Water-in-NY-Article.pdf>.

The authority for New York City's watershed regulations come in part from this law, and have empowered New York City to enact a world-renowned watershed protection effort for the largest unfiltered drinking water supply in the world.⁹⁸

Source water protection rules for Newburgh are decades out of date and inadequate. The authority that exists under this law requires DOH action but would empower the City to actively engage and address many necessary issues that directly impact its drinking water. For example, the City of Newburgh can exercise no more influence than participating in public comment periods when developments are proposed in the Towns of New Windsor or Newburgh that may impact its watershed and degrade water quality in its reservoirs. As a second example, funding of an aggressive green infrastructure retrofit program is likely to be a high priority for reducing the impacts of urban stormwater runoff to these source waters, and yet the city (to Riverkeeper's knowledge) has no current authority to compel the implementation of such a program in the towns outside of its city limits, where it is needed to improve water quality in the city's reservoir. Promulgation of Source Water Protection Rules could empower the City of Newburgh in these or other ways.

It is past time to utilize the Public Health Law, as was done to worldwide acclaim to protect New York City's drinking water supply, to ensure the long-term preservation and restoration of Newburgh's source waters. Promulgation of rules for other communities around the state, too, should be prioritized, with achieving Environmental Justice as one priority.

B. Update New York's Open Space Conservation Plan to prioritize source water protection

The first goal listed in the Draft 2014 Open Space Conservation Plan is "[t]o protect water quality, including surface and underground drinking water supplies, lakes, streams and coastal and estuarine waters needed to sustain human life and aquatic ecosystems."⁹⁹

⁹⁸ DEP, Rules and Regulations for the Protection from Contamination, Degradation, and Pollution of the New York City Water Supply and its Sources, (Apr. 2010) available at <http://www.nyc.gov/html/dep/pdf/recrules/regulations.pdf>.

⁹⁹ DEC, 2014 Draft Open Space Conservation Plan, available at http://www.dec.ny.gov/docs/lands_forests_pdf/osp14draftplan.pdf.

Priority lands are identified on Long Island to protect groundwater supplies used for drinking water, and in New York City's drinking watersheds in the Catskills and Croton system. The Delaware River system is identified as a priority for its use as drinking water for both New York City and downstream users in other states. The Palisades Ridge is identified as a priority for conservation, in part because it helps preserve drinking water for Lake DeForest, a drinking water source for some 300,000 residents in Rockland County and countless additional residents of northern New Jersey.

Newburgh's drinking water supply, however, is not mentioned, despite the need being highlighted in a 2008 letter from the City of Newburgh sent to multiple recipients, including state and regional DEC and DOH officials. That letter requested DEC and DOH to "promote land acquisition in order to protect watersheds," and estimating the cost of acquiring remaining open lands in the city's watershed at \$19.5 million.¹⁰⁰

The need to conserve remaining open lands in Newburgh's drinking water supply is acute, and priority must be given to it in the state's Open Space Conservation Plan, ideally before a new final plan is adopted.

Given the relative few drinking water supplies identified as priorities in the plan, we also recommend a comprehensive approach to identifying source waters in need of protection regionally and statewide. Environmental Justice should be given high priority in prioritizing land acquisition for source water protection, and the Source Water Assessment Program, if implemented effectively statewide, could be an effective vehicle for updating priorities in the Open Space Conservation Plan.

Finally, eligibility for funding projects that protect land in drinking water reservoirs should be changed, in light of the requirement that funding is contingent on the owner of the water supply reservoir having enacted "watershed rules and regulations pursuant to Public Health Law § 1100."¹⁰¹ This barrier is too high, given that the DOH has not promulgated source water protection rules for Newburgh or presumably for many other communities that would benefit from land acquisition in their watersheds.

¹⁰⁰ Letter from City Manager Jean-Ann McGrane to Honorable Robert K. Sweeney, Chair, Assembly Committee on Environmental Conservation, *Re: Protection of Water Quality and Aquatic Resources* (Aug. 28, 2008).

¹⁰¹ DEC, Project Eligibility and Evaluation Process, NYS Open Space Conservation Plan, http://www.dec.ny.gov/docs/lands_forests_pdf/osp14eappc.pdf.

C. Reconstitute the Water Resources Planning Council to coordinate source water protection efforts

The Department of Environmental Conservation (DEC) is to establish a Water Resources Planning Council.¹⁰² The council is to consist of the “commissioners of agriculture and markets, economic development, environmental conservation, health, transportation, the chair of the public service commission, president of the New York state energy research and development authority,” and seven other members appointed by the governor, of which at least one should have “expertise in the science of water resources planning” and at least one should be a “member selected from a list proposed by public interest or environmental citizens organizations.”¹⁰³

Newburgh’s water crisis – both the immediate issue of PFOS and the longstanding issues of inadequate watershed protection outlined in this document – is best addressed as a multi-agency process, and with representatives from not only state agencies, including the NYS Thruway Authority, one of the largest landowners in this watershed, but county, city, town and stakeholder environmental and community representatives. A regional Water Resources Planning Council focused on City of Newburgh could provide a template for identifying comprehensive strategies and prioritizing their implementation.¹⁰⁴ This is particularly important on the issue of drinking water, as there are severe gaps with poorly coordinated actions associated with DEC’s regulation of discharges to ground and surface waters, wetlands protections and other environmental regulations; DOH’s regulation of drinking water quality and treatment; and local municipalities’ regulation of land use.

The City of Newburgh’s drinking water supply has been threatened and degraded by inadequate coordination and implementation. The same challenges to coordination exist statewide. The Water Resources Planning Council could correct this situation by coordinating effective actions related to source water protection.

¹⁰² See ECL § 15-2901.

¹⁰³ ECL §15-2901.

¹⁰⁴ Letter from City Manager Jean-Ann McGrane to Honorable Robert K. Sweeney, Chair, Assembly Committee on Environmental Conservation, *Re: Protection of Water Quality and Aquatic Resources* (Aug. 28, 2008).

D. Fund the full implementation of recommendations in regional watershed management plans

The Orange County Water Authority published watershed management plans for the Moodna Creek in 2010¹⁰⁵ and the Quassaick Creek in 2014.¹⁰⁶ Funding for these efforts was provided by New York State's Environmental Protection Fund. Newburgh's source water includes parts of both watersheds, and both plans provide a number of relevant recommendations for protecting and improving water quality. While these plans have capable and active volunteers working to implement recommendations, there is no staffing or funding dedicated to the sole priority of achieving these watershed goals.

A *partial list* of the recommendations that should be fully implemented by the reconstituted Regional Water Resources Planning Council, in order to better protect and restore Newburgh's source waters, includes:

- Draft new or update existing DOH Watershed Protection Rules and Regulations for all reservoirs within the watershed;
- Establish a program for ongoing monitoring of various stream water quality parameters; collect and monitor water quality at reservoirs and lakes; develop a system to monitor and track groundwater quality; and continue stream biomonitoring research and determine causes of pollution;
- Research nutrient loading;
- Track monitoring results of closed landfills in Lake Washington watershed;
- Identify and protect priority lands, wetlands, riparian buffers and other natural areas within reservoir subwatersheds; restore and protect riparian and wetlands habitats; create a checklist and/or maps of sensitive areas for municipal boards; and adopt at the county level official map showing high priority resources and drainages;
- Encourage local regulatory measures for water resource protection, especially for drinking water and stormwater reductions; develop model codes for water resource protection; develop a watershed protection guide that can be adopted by municipalities;

¹⁰⁵ Orange County Water Authority Moodna Creek Watershed Management Plan *available at* http://waterauthority.orangecountygov.com/PROJECTS/MOODNA_CREEK_WATERSHED/Moodna%20Creek%20Watershed%20Plan%20Final.pdf.

¹⁰⁶ Orange County Water Authority, Quassaick Creek Watershed Management Plan *available at* [http://waterauthority.orangecountygov.com/PROJECTS/QUASSAICK_CREEK/REPORTS/Quassaick%20Plan%20\(Final\).pdf](http://waterauthority.orangecountygov.com/PROJECTS/QUASSAICK_CREEK/REPORTS/Quassaick%20Plan%20(Final).pdf).

- Fund a Regional Stormwater Specialist; implement stormwater retrofits at identified sites and other appropriate locations; inventory and address illicit MS4 discharges; incentivize stormwater management, implement stormwater drainage districts, promote the appropriate use of green infrastructure, increase maintenance of stormwater infrastructure, and update local codes to require regular inspections and reporting on stormwater infrastructure;
- Reassess safe yields for public and community water supplies;
- Develop program to encourage septic maintenance; and pilot and demonstrate decentralized wastewater treatment projects; and,
- Support development of local Conservation Advisory Councils (CACs).

Note that while these recommendations in many cases could be written about protecting any watershed, and indeed, many watershed management plans in the Hudson River watershed and elsewhere catalog similar recommendations, there are specific local projects identified to implement many of these recommendations relevant to Newburgh's source waters.

E. Establish a full-time watershed inspector general

New York City and New York State agencies devote considerable staff, resources and time to studying the watersheds that supply New York City with drinking water, implementing best practices, enforcing rules and regulations, and promoting the value of watershed protection for providing unfiltered drinking water. Newburgh lacks even a single staff member at any level of government whose sole responsibility is to protect and preserve its source watershed.

A full-time watershed inspector general should be established, either for Newburgh alone, or with regional jurisdiction.

The New York City Watershed Inspector General is a model that would be useful to emulate, having been established by Executive Order No. 86¹⁰⁷ to empower an Assistant Attorney General to conduct and supervise investigations of alleged violations with subpoena power; to commence, prosecute and settle proceedings relating to civil and criminal violations; to cooperate with any agency or department possessing regulatory authority relating to the use, operation and protection of the Watershed; to report; and to recommend legislative, regulatory and management practice changes.

¹⁰⁷ 9 NYCRR § 5.86.

An individual performing these duties would be invaluable in Newburgh's source waters, and many others in New York State.

CONCLUSION

Families and businesses turn on their taps and expect clean water that does not pose a threat to their health. The quality of that water, and the public health, is based upon many actions by government regulators. This is particularly true for a surface water reservoir system like that is used to provide drinking water to almost 30,000 residents in the City of Newburgh. The City of New York watershed system demonstrates what is possible when a comprehensive approach is taken to protect drinking water.

The story of the 2016 water crisis for the City of Newburgh highlights the acute need for adequately funded and staffed New York State agencies. The status quo was insufficient to protect Newburgh's drinking water.

The mission of the Department of Health and the Department of Environmental Conservation, and the state and federal laws they are charged to implement and enforce, provide the legal authority necessary to have prevented the crisis from occurring. Coordinated action can prevent the next crisis, in Newburgh and elsewhere, and at much less cost than remediation. Protection of source water requires a comprehensive and vigilant effort by communities and regulators. At this time, with ample legal authority to protect high-quality drinking water, even with emerging contaminants like PFOS, government must supply the will and the resources to act.

This analysis identifies many key areas for action. We now call on the State agencies with authority to protect and restore water quality for the City of Newburgh to act.