

Fordham Environmental Law Review

Volume 12, Number 3

2000

Article 4

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KEYNOTE ADDRESS

AN ENORMOUS AMOUNT OF WORK TO BE DONE: PROTECTING THE NEW YORK CITY WATERSHED

*Joel A. Miele, Sr.**

PROFESSOR JOHNSON: First of all, congratulations to Sharron and everyone on the *Journal*. You really did an extraordinary job. Starting from, as you said, not knowing a whole lot about this to knowing more than perhaps you want to is really sort of a testament to your diligence and the hard work of everyone else involved.

It is my special pleasure to introduce Commissioner Joel Miele as our Keynote Speaker today. It is a pleasure not just because of his long and distinguished career as a professional engineer, and not just because of his work as Planning Commissioner and Building Commissioner and the important work that he is doing now as Commissioner of the New York City Department of Environmental Protection.

You may not know this (I did not know this) but after an early stint in the Navy, then not Commissioner Miele, just Joel Miele, a young fellow, continued to serve in the Navy Corps of Engineers Reserve. Evidently, and this was a surprise to me, in 1998 he was promoted to Admiral of the New York Naval Militia. When I saw this, along with all of his other accomplishments, my first thought was, "Well, where does one find the time to do all of these things as well as serve as an admiral and all of the ranks below that?" And then, I was reminded of another extraordinarily energetic New York City

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Commissioner who served well as Police Commissioner and went on to become a great conservationist and Secretary of the Navy and other things. It struck me that that Commissioner would look on today at this Commissioner and probably envy him his energy and would envy him his work and his accomplishments, but also would envy him the challenges ahead of him.

Theodore Roosevelt, who obviously I am alluding to, always relished a good scrap, and as I was listening to the panel this morning and thinking about the work ahead of everyone in this room perhaps, it occurred to me that, quite clearly, resolving, handling, wrestling with, the watershed problem that we have been talking about today will certainly be a very, very hard scrap from now out into the future, something that Theodore Roosevelt and others who relish such things would be happy to join in. I think he would also envy you those Admiral's braids.

In any case, it is my pleasure to introduce Joel Miele, someone who has ahead of him a good deal of work on this and other issues.

MR. MIELE: Thank you very much, Professor.

Good afternoon.

It is interesting to kind of reflect on how I got to this position. By the way, you have heard a lot of the jobs I have had. My wife takes the point I cannot keep a job. I have enjoyed them all though, I have to tell you that.

I got into this one kind of through the back door. I was the Buildings Commissioner, as you have heard, for the City of New York for about two and a half years. I have been, for about thirty-five years, an engineer in private practice, in the area of sanitary engineering and foundation work primarily, but I am also a forensic engineer.

But the bottom line is I was over at the Building Department doing what I felt was God's work, because that place certainly needs an overhaul and I was in the process of it, and then the Mayor asked me to move over and take on DEP. I was not sure. In fact, I told him I really did not want to do it. He is persuasive.

I think the thing that finally put it in focus for me was he told me that you never finish doing any job when you are in government. There is always somebody who has got to come behind you, because government just keeps going on and on and on, and you should not feel bad about moving out of this thing.

In any event, I agreed, after consulting with my family and my wife, to take on the job, and I did.

I have to tell you there was a major furor as soon as I took on the job, because the lady who had the job before me had done a great deal of work in putting together the MOA that you have heard about, will hear about, and we will hear about ad infinitum over the years.

But the bottom line was that the watershed communities felt that reason I was being brought in was to negate everything that had gone on before and to start all over again with some other wild and wonderful proposal.

I immediately got approached by my Deputy Mayor, Peter Powers, who said, "You've got to go up to the watershed, explain to those people you are going to carry on, this is not something that was designed specifically to wipe out everything we have done over the last two years."

So they put me in a car with the Deputy Mayor and an attorney from the Corporation Council's Office to brief me, because I had not been briefed up until that point in time, and off we drove up the Thruway headed for the watershed. The young lady from the Corporation Counsel's Office briefed the hell of me over the two hours that it took to get up to the watershed, and then she finally sort of settled down in the shotgun seat in the front. I am mulling over all of this stuff that I have been told so far and I get to the point of saying, "What the hell am I doing here?"

Finally, she got up in the seat, turned around, put her knees on the seat, looked over the headrest, and said to me, "By the way, I do not know if you know this, but the Commissioner of DEP is the most sued public official east of the Mississippi." Then she turned around and sat down. And now I am saying, "I really know I do not want to be here."

We went on about another five or ten miles and she got up, turned around with her knees on the seat, looked over the headrest at me, and said, "By the way, in most cases your position sucks." And on we went to the watershed.

I have not regretted it a second, by the way. This is a challenging position to be in. To put it in perspective, this year we will have a \$4 billion budget and we've got about 6,200 employees. There is an enormous amount of work to be done. We are larger than most states.

Everything that goes into the agency, by the way, in the way of funds from water and sewer goes back into the water and sewer business. The City does not benefit by what we do. The rate payers

benefit by what we do and the people who drink our water and use our wastewater treatment plants.

So I have enjoyed all of the five years, and I am just about at five years at this point in time. To me, as an engineer, as an environmentalist, and as a sanitary engineer, this is like turning a kid loose in a candy store. Everything you do is world-class. Part of the problem with that, of course, is that everything you do tends to take a hell of a long time to study because of the scale of what we are doing and it takes a long time to accomplish the construction because of that.

I keep hearing about our wastewater interim upgrades at all of our plants. I once asked, "When do we ever get a final upgrade done?" The answer is, "We never do because there is always another round of improvement that you have to make." So everything we tend to do is an interim upgrade. But those interim upgrades have taken as long as fifteen years to design and fifteen years to accomplish. That takes some time to get involved in the size of what you are doing, and we are talking 300 million gallons a day in the way of waste at one plant.

In any event, it is an honor and a great privilege to participate in this important Symposium and to discuss the importance of New York City's watershed, both as the magnificent natural resource, which it certainly is, if you have ever been up there, and I think most of you have, and as the source of the City's excellent drinking water.

You have to keep in mind the dichotomy here. There are people who live up there, work up there, recreate up there, and they think it is their land. And yet, as you have heard here and you will hear again and again, it is our water. Well, it cannot be both unless there is a partnership to keep both of us thinking about the fact that we both have to benefit by the conjunction between us. We cannot do without the folks who live upstate because they are the source of our water. They really cannot do without us because if we made some of the changes that you have heard would be a wonderful idea, and that is to eliminate all pollution in the watershed, one of my deputies said the only way to eliminate all pollution in the watershed is to kill everything in it. Think about that, okay? That means no one should live there, no one should pass through it, animals should not do what animals normally do up there.

This has got to be a series of compromises, as life is a compromise, and we have to come up with something that will benefit both of us.

The City of New York, as I am sure all of you know—you are lawyers, most of you anyhow—has the power of eminent domain. We can go and take anything that is creating a problem. That, over a period of 150 years, has not generated, folks, a great deal of goodwill in the 2,000 square miles of our watershed.

One of the things I was told when I first got this job was do not ever wear a jacket that has got the DEP emblem on the back of it and do not take a marked car on anybody's private property. You are liable to get shot.

I think we have turned that around a great deal. But at the same time, you have got to work at a partnership, whether it is a marriage or it is a law partnership or it is a program as we have through the MOA, and we will continue to do that.

Although protecting this precious resource is one of the Department's most important responsibilities, it is by no means our sole duty. Let me now briefly describe what the Department does.

A thumbnail description of what we do, I guess, would put down the fact that we protect New York City's environmental quality of life as well as deliver many of its essential services. These services include, among others, delivering a daily average of approximately 1.3 billion gallons of safe drinking water to the over eight million, and now officially over eight million, residents of New York City and another million upstate residents, as well as to the millions of daily commuters and visitors and people who come to the City to do business.

We treat a daily average of approximately 1.3 billion gallons of wastewater. That, by the way, eats up probably as much as 60 percent of my budget because there is an enormous amount of federal requirement for us to continuously clean up the harbor, which I am very pleased to tell you we have been succeeding at very well.

Stabilizing water and sewer rates, very near and dear to my rate payers' hearts, something we will be talking about again for the coming year. In fact, I have a meeting with the Mayor tomorrow morning to discuss that very topic.

Advancing the City's water and sewer infrastructure replacement, which is obviously fairly enormous, since we have about 6,600 miles of sewer and a little over 6,000 miles of water main.

The final thing, of course, and the thing that we are all here to talk about, is protecting the quality of New York City's drinking water.

You heard Eric speak a little earlier about some of the history of the water system. I am going to take you right back to the beginning, as far as Europeans are concerned, 1625.

The Dutch had a colony here in 1625 as you know, and they had a fort down by the Battery, and at some point in time after 1625, a British fleet showed up and took extreme exception to the Dutch being here. The Dutch, being very pragmatic and practical people, took one look at the British fleet and said, "This is not a good place to be at this point in time," packed up and went home.

When they got back, they told the folks back at The Hague that there was no big deal about this, they got out because there was no water source in the fort; and therefore they could not stand a siege, but they would go back next year and take it back because the British would be in the same problem that they were when they went back.

Unfortunately, when the Dutch decided to come back, the British had already built a well in the fort. Today we are called New York because of that, and not New Amsterdam.

New York City is fortunate in its magnificent water supply system that enables us New Yorkers at the turn of a tap to enjoy safe, delicious-tasting water. And I put it to you that in this city, and not very many other places in the world, it is ubiquitous that every time you inhale and exhale, you anticipate and expect you are going to get oxygen, and every time you turn on that tap, you know damn well there is going to be good drinking water. That does not occur very many places in the world. The oxygen yes, but not the water.

The system that makes this daily miracle possible was conceived about 150 years ago. In order to trace the elements that led to the construction of the system, we must travel further back in time to the decisive moment in New York City's history that you heard about a little earlier also. More than 200 years ago, the City Fathers were faced with the critical issue of how to ensure a safe and abundant source of drinking water.

You have heard all of the problems that we hear. I am not going to reiterate them again. However, at the point in time that we are talking about, about 1800, there were 22,000 residents and nobody was drinking clean water. That Collect Pond was drunk out of by the animals that the farmers and the residents of the City kept and they did everything that you would expect animals to do in those cases. There was no way you could get clean water, which is why we had to get it from outside the area that we lived in.

By 1842, New York City had resolved its need for a pure and abundant source of drinking water by drawing water from the Croton River in what is now Westchester County. As time went on, it became clear that New York City's water supply system needed to keep pace with our growing city.

When the five boroughs merged into the modern City of New York in 1898, the system began expanding to include the Catskill and Delaware watersheds. And by the way, if you go back and look at the history of that, you will find that the City of Brooklyn voted by one vote to join the consolidation in 1898, and the overwhelming factor for it was they were going to get clean water from the City, because the Brooklyn water system, which ran out into what is today Nassau and Suffolk counties, was getting to the point where it could not handle the people of Brooklyn and the deciding factor for that vote was the fact they were going to get New York City water.

Today, New York City's drinking water originates as far as 125 miles north and west of the City in nineteen reservoirs and three control lakes comprising three upstate watersheds, the Croton, the Catskill, and the Delaware. These three watersheds combined, cover an area of almost 2,000 square miles. 90% of the City's water comes from the Delaware and Catskill systems and the remaining 10% from the Croton system. Considering that the Croton system was the first that went up and was the only supply available until the turn of this century, you can see the explosive expansion there has been in the use of the City's water, since 90% of it comes from systems that have been created basically in the 20th century.

New York City's water supply system is based on a natural principle: rain or snow falls in the watershed, flows into streams and rivers, and is collected in reservoirs. Croton water reaches the City through the New Croton Aqueduct. We have abandoned the old Croton Aqueduct. Water from the Catskill/Delaware systems travels through aqueducts to balancing reservoirs that establish a uniform height for water coming from reservoirs with different elevations.

From this point, water travels to the City through City Tunnels Number One completed in 1917, and Number Two completed in 1936, and is fed into the 6,600 miles of City water main. Water is also conveyed to the City by a third tunnel that is partially in service and partially under construction. All three tunnels are constructed within the rock deep beneath New York City.

It is interesting to note also that our system is almost entirely a gravity-driven system, again a unique factor in New York City's water supply.

The third water tunnel has been under construction since 1970. This sixty-mile when it is completed engineering marvel, with depths ranging from 300 to 800 feet below grade, is one of the largest capital projects in the world, and certainly the largest in New York City's history.

Currently, the quality of New York City's drinking water meets all federal and state standards and state health-related standards. Nevertheless, New York City must comply with the 1986 Federal Surface Water Treatment Rule that requires surface water suppliers like New York City to filter their water, prove that their water meets strict quality criteria, or, if necessary, implement comprehensive watershed protection programs.

Although the more densely developed Croton watershed, and there are about a quarter-million residents in the Croton watershed, provides water that currently meets, as I have said, all federal and state health-related standards, Croton water may not be able to meet future standards. Accordingly, the EPA and the City have determined that water from the Croton system should be filtered, and we are currently reviewing all of our options related to that determination.

In the less-developed Catskill and Delaware watersheds, about 125,000 people, the EPA is pursuing a dual track. While implementing a watershed protection program designed to avoid filtration, the Department continues to plan for the construction of a filtration plant. This plant is currently estimated—and Eric is a little outdated in his costs—we are down to about \$4 billion at this point, nothing to sneeze at. The \$4 billion would add about 80% to your current water bill. The plant with its maintenance and operating costs is estimated at \$100 million per year.

In 1997, New York City, the State, seventy-three watershed towns and villages, the State's Department of Health and Environmental Conservation, the United States Environmental Protection Agency, and numerous environmentalists signed the Watershed Memorandum of Agreement that enabled New York City to implement its Watershed Protection Program to filter its water at the source.

I might point out that if you had asked anyone whether that group of people would agree to anything, including whether the sun would

shine tomorrow morning, you would not have gotten a unanimous answer. It is a remarkable fact alone that all of those people were able to come to the compromises that were necessary on the part of everyone to reach an agreement to take care of a fundamental problem such as our water supply.

That same year, the EPA issued for us a five-year Filtration Avoidance Determination for the Catskill and Delaware systems, allowing the City to pursue its Watershed Protection Program.

I am happy to report to you that this historic Watershed Agreement and our watershed protection efforts have been a great success.

The watershed program is an environmentally wise and financially smart program that protects New York City's drinking water at the source. This program has helped to forge a closer relationship between upstate and downstate, and the folks whose nameplates are here will tell you about that after I am finished speaking.

This bond has resulted from the acknowledgement that the needs of New York City's residents and those of the watershed residents are inextricably linked. On one hand, New York City needs to protect the quality of its excellent drinking water, and on the other, watershed communities need to promote their regions' economic viability as well as to preserve their traditional rural way of life.

Our Watershed Protection Program includes the approval of new regulations governing land use, the acquisition of hydrologically sensitive lands, and the funding and implementation of partnerships between the City and those watershed communities.

Various components of the Filtration Avoidance Determination, taken together, are estimated to cost the rate payers, those people who pay our water and sewer bills, about \$1.5 billion over a ten-year term. We are in the fourth year of that ten-year term right now.

Since 1996, we have more than tripled the head count of DEP's Police Department. We also provided our police force with new vehicles and additional support resources. They are obviously amongst the first line of defense against environmental problems and hazards.

Since 1998, the numbers of summonses issues by DEP Police have gone up steadily and, given the additional resources allocated to our police force, we expect this trend to continue. Unfortunately, due to the normal conditions of an evolving world, one of the other responsibilities that force has perforce had to take on was the problem of responding to and protecting against a terrorist threat.

The City is committed to spending \$250 million under the MOA on land acquisition in the Catskill and Delaware watersheds, which includes east of the Hudson the Boyd's Corner and West Branch reservoirs in Putnam County and the Kensico Reservoir in Westchester.

Let me give you a little update on the success of our land acquisition program. You may not believe it is a success from what you have heard so far.

DEP has met all of its land solicitation goals. Under the MOA, we are not obligated to buy a single acre of land. We are obligated to solicit every acre of land. We are buying only from a willing seller - and a willing seller, the last time I looked, means they are willing to sell. We have met our land solicitation goals every year since the signing of the 1997 FAD and the MOA.

In the first four years of the program, the City solicited owners of more than 203,000 acres of Catskill and Delaware lands. In the program year that concluded on January 21st of this year, DEP solicited the owners of 52,800 acres of watershed lands in designated priority areas.

To date, we have secured either by outright purchase or have under contract. Actually, this says 29,000, but I happen to know, since I sign the contracts, it is over 30,000 acres of land since 1997. That is a remarkable achievement. I might add this is more acreage of land than all of New York City's parks combined and is one of the most aggressive open space initiatives in the United States.

1,732 acres, or 36% of the 4,830 acres eligible in the Rondout Basin, have been acquired or are under contract. That is as of today. We are not finished.

6,576 acres, or 52% of the 12,645 acres eligible in the West Branch Basin have also been secured.

A total of twenty-eight parcels, totaling 16.8 acres, of the twenty-nine floor plain buyout projects in Delaware County have been acquired.

The signing of the MOA also formalized a range of innovative public partnerships between New York City and watershed communities. I will give you two examples, but you will hear more about it a little bit later.

One of them is the Wastewater Treatment Plant Upgrade Program, which you have heard about, and the Watershed Agricultural Program, which I do not think you have so far.

We have already upgraded all of our own six wastewater treatment plants to state-of-the-art standards, including the use of microfiltration technology. These plants, which are large for the watershed, account for approximately 40% of the total discharge in the west-of-Hudson watershed. That has already been accomplished.

Furthermore, the City is committed to paying for the completion of upgrades at the 102 non-City-owned plants, thirty-four of which are in the Catskill and Delaware watersheds. As of February 28th of this year, 99 of the 102 wastewater facilities had approved engineering proposals, 98 of the 102 had been authorized to enter into contracts with design engineers, 98 facility owners had held meetings with DEP to be better prepared to submit conceptual upgrade plans, 93 of the 102 had conceptual upgrade plans approved, 61 had submitted draft facility plans, and 33 had approved facility plans.

We expect, and I see no reason to say otherwise, that we will substantially conform with the criteria outlined in the FAD and the MOA as we go forward.

I have to tell you that the one area of the MOA that was not under the control of the City and the Agency was the upgrade program, because all we are doing in this program is supplying the money. We are not hiring the engineers; we are not doing the design. Now, if I had to do this again—the lawyers are in the front row here—I would never have done that, and I have said to them when we negotiate the second five-year FAD, which we will, do not ever get into a program where you are committing money but you have to get the consent of the other party first, because what ended up happening was we got back into a negotiating posture after we had negotiated the MOA.

Now, some of them thought they should have gotten a Rolls Royce plant. We were looking at pretty much a Chevrolet plant. Some of them decided they would like to get another 10,000 gallons out of this. We said, “Uh-uh, that is not what the MOA says. You get exactly what you got the capability for.”

What they did is they dragged their feet. Not all of them. I told you there were 102. There were less than one hand's worth that did drag their feet. But that is enough to raise a question in the eyes of the environmental community, it is enough to raise a question in my mind as to whether we can do it, and certainly EPA asked me how will we do it. I am very comfortable with where we are going.

If you look at it in terms of percentages of flow that will be upgraded, we anticipate being over 90% before we have to get the

end of the first five years completed. We expect to be to 100% shortly thereafter. Within twelve months thereafter, we expect to beat those numbers.

The Watershed Agricultural Program is a partnership between the City and watershed farmers for the implementation of best management practices to prevent agricultural non-point source pollution and, at the same time, increase farmers' productivity. I am going to give you two quick examples. It is so simple that it is frightening that no one thought of it before.

Has anyone ever seen a farm building with gutters and leaders on it? They do not build them. Why would you build gutters and leaders when you are out in the woods? The answer to that is very simple. If you build gutters and leaders, you can pipe clean water to a stream without it getting muddied by the manure in the farm land. What does that mean? It means there is less mud in the farmer's barnyard and it means there is cleaner water being discharged to the streams.

The normal barnyard, the entrance to the milking parlor for a dairy farm and all of our farms are dairy farms, generally is a mud hole. What we have done is we have put in concrete platforms with curbs around them so that, first of all, you contain the manure that gets dropped in that area. The farmer can pick that up and reuse it instead of buying fertilizer, because he's got it pure, he does not have to drag it out of the mud and the dirt. Secondly, the runoff from that goes into a filter, so that by the time it hits our streams it is cleaned again.

Now, things like that, if you think about them, they are so fundamentally logical. But to a farmer who has a very marginal financial basis, it might be the greatest thing in the world, but he cannot finance it and it is not going to give him another dime of income. It will help him, it will help him spend less money on fertilizer and make a cleaner farm for him, but it is not going to help him at the end of the year when he tries to figure out whether he made money or lost money.

But if we provide the cash to do it and they determine, the farmers themselves—we do not determine what is the good thing for them to do—they have a committee, and you will hear about that later, that determines what is the best thing to do.

Of the 450 farms, we have reached over 415 of the farms now, and we are putting programs together for the purposes of making sure that they are better able to survive financially, because whatever

replaces them if they go bad financially is going to be a bigger problem for us environmentally than the farmers are. So it is in our best interest to support them to be economically viable.

Funding for this program is primarily provided by New York City, but with some additional funding from the State, Federal, and any available local sources we can get at.

You have heard about the Kensico Reservoir. We are working aggressively to acquire land around the Kensico Reservoir, and we continue to pursue acquisitions and conservation easements. This is an area ripe for development.

The Basin is just over 8,000 acres. There are 6,405 acres around the reservoir, which means that the reservoir itself is about 1,600 acres. 38% of that 6,405 acres of dry land is already protected because it is either under City or other governmental ownership. There are only 996 acres eligible for acquisition. We are negotiating with a dozen major landowners of significant properties to protect them through purchases of easements or fee title.

Bottom line basically is it is a small basin, it is an expensive basin and we are paying market value for the land, and we are paying real estate taxes to the towns there because we cannot negatively impact the towns either. Now, I do not know if you know what the price of land in that area is, but it is in the high six figures. So when we get land—and we are looking for it—we have, as we speak, about I think it is twenty-some-odd acres in title.

Mark Hoffer, we've got about twenty-some-odd acres in title so far in that basin?

MR. HOFFER: Yes, sir.

MR. MIELE: But we are negotiating for hundreds of acres in the way of easements and/or fee title.

We have also created, which we apparently have not gotten a hell of a lot of credit for—I am going to have to go into the public relations business—prevention programs around the Kensico Reservoir which include structural and nonstructural stormwater controls. We are dropping the quantity of pollutants that end up in the reservoir. The last time I looked, that is a very positive thing to do.

You have heard that stormwater control is necessary. We think it is necessary, and we are working on that with Westchester County and with the local communities. We have a series of partnerships with them to work on stormwater control.

We also monitor wells to study the potential for fecal coliform and chemical transport via groundwater. Our studies to date confirm that groundwater is not a significant source of contamination to the reservoir.

New York City has been blessed with one of the world's best drinking waters. This extraordinary legacy, however, carries a great responsibility. We must all accept this responsibility and work together to ensure that New York City's watershed, the source of our superior drinking water, is treasured, preserved, and protected.

During the past five years, we have embarked on this great experiment with our regulators and watershed partners. We have learned lessons in how citizens, local, state, and federal governments, and the environmental community can work in partnership towards shared goals, rather than meeting head-on in the arena of the courtroom. The watershed agricultural program, the land acquisition and stewardship program, the wastewater treatment plant upgrades, and other partnership programs are setting national, even international, models for other folks.

Despite all the detractors, both governmental and environmental, who said we could not succeed, we have, and we fully intend to succeed in the next five years. The citizens of New York demand no less and the watershed deserves no less.

Thank you very much. I will take questions, if there are any.