

LEAGUE OF WOMEN VOTERS OF NEW CASTLE

**STUDY REPORT:
SEWAGE DISPOSAL OPTIONS FOR NEW CASTLE
2004**

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LEAGUE OF WOMEN VOTERS OF NEW CASTLE

Report: Study of Sewage Disposal Options In New Castle

INTRODUCTION

The League of Women Voters of New Castle and Sewage Disposal

In April 1999 the League of Women Voters of New Castle (LWV) completed a study of sewage disposal in New Castle. In addition to “supporting the establishment of an ongoing educational program by the Town on proper use and maintenance of septic systems for residents...”, the study consensus concluded that the LWV should “continue to monitor the progression of the Croton Wastewater Diversion Study (see below) and any action to be taken with respect thereto.” As part of the 2002-2003 program, the LWV monitored the planning and progress of the Town of New Castle’s proposed new sewer district(s), a sewage disposal option. After county-sponsored public hearings on the proposal elicited considerable controversy and suggestions for alternative solutions, the LWV decided to study the issues in order to effectively join the policy discussion. Consensus would allow us to establish a position on sewage disposal options for New Castle. The LWV could then advocate on policy issues concerning these options. Our 2003-2004 program specified a study of sewage disposal options in New Castle considering water quality, development and economics.

For more than twenty years, New York City has been aware of the importance of planning for increased watershed protection. As a result of increased development in Westchester and Putnam Counties, pressure to implement the plans and utilize the funding that has been set aside to pay for these projects has never been greater. Residents of the Westchester watershed communities need to take an active role in understanding the implications of possible infrastructure changes related to the plans. More education is needed about the pertinent issues.

The proposed sewer district(s) for New Castle are part of a plan to divert sewage out of the Croton watershed to the county-owned Yonkers Joint Treatment Plant (YJTP) from wastewater treatment plants (WWTP’s) as well as from septic systems in specified areas. The scope of our study concentrated on the first part of Phase I of the New Castle diversion project: Riverwoods WWTP and Random Farms WWTP (which discharges subsurface to a septic field), which are privately owned and operated treatment plants; Yeshiva Farms Settlement, which uses the Riverwoods plant and septic systems; and Stanwood (New Castle portion only) which uses septic systems. Other areas in the first part of Phase I include Seven Bridges School, Travelers Rest Restaurant and Pheasant Run Condominiums.

PROTECTING OUR DRINKING WATER SUPPLY

The New York City (NYC) drinking water supply for nine million people, which also supplies most of Westchester County, comes from surface water: roughly 90% from the Catskill/Delaware watershed (West of Hudson) and 10% from the Croton watershed (East of Hudson). Surface water is all water open to the atmosphere and subject to surface runoff. Most of the country's large water systems use surface water, drawing it from rivers, lakes and reservoirs.

1 - What effects water quality?

Failing septic systems and malfunctioning wastewater treatment plants can potentially pollute the reservoirs of the Croton watershed. The burgeoning population of 250,000 increases this potential.

The Surface Water Drinking Rule of the Safe Drinking Water Act seeks to prevent disease-causing microbes present in most surface waters; it requires filtration and disinfection of drinking water from surface sources. Surface water is particularly susceptible to contamination from sewage treatment plants, septic system discharges, and stormwater runoff, and, consequently, will often contain high levels of fecal microbes.

2 - How is water quality controlled?

Centralized wastewater treatment plants (WWTP's), as well as the privately owned treatment plants such as Riverwoods and Random Farms, are regulated by State Pollutant Elimination Discharge System (SPDES) permits issued by NYS Department of Environmental Conservation (DEC), which monitors compliance. Permits control the amount of pollution that may be discharged from a facility into a waterbody; these are renewed every five years.

While the county-owned plants treat sewage to a secondary level, the privately owned plants in New Castle treat the sewage to a tertiary level. If these plants were upgraded to microfiltration, an even cleaner effluent would be discharged to the Croton Watershed. Some environmentalists argue that keeping this effluent in the watershed is environmentally beneficial because it contributes to the recharge of the total water load.

3 - Filtration and Watershed Protection

Because of extensive and ongoing development in the Croton watershed, the Environmental Protection Agency (EPA) ordered the New York City Department of Environmental Protection (DEP) - the government agency responsible for protecting the NYC drinking water supply - to filter Croton water. The DEP is currently planning a filtration plant, which is projected to cost \$1.4 billion to build, and \$100 million per year to maintain and operate. In order to avoid costs of \$4 - 8 billion in construction and \$500-800 million in annual operations for a filtration plant for the Catskill/ Delaware water, the DEP signed the 1997 Memorandum of Agreement (MOA) with EPA, the New York State Department of Health (NYS DOH), and the watershed communities. This agreement outlines an aggressive watershed protection plan for the Catskill/Delaware watershed. The MOA also includes watershed protection for the Croton system and has allotted \$54,000,000, to the East of Hudson Fund to help pay for implementation of the watershed protection rules in the Croton watershed.

4 - Diversion Plan History

In the MOA, the DEP agreed to upgrade all Westchester and Putnam Counties WWTP's to advanced treatment, yielding a cleaner effluent. At the same time, Westchester County contracted with Savin Engineers for a study to determine the feasibility of diverting wastewater out of the watershed to be treated at county-owned WWTP's.

The study offered six diversion alternatives. Based on the information in the study, New Castle and Yorktown offered the best opportunity to remove the most wastewater out of the watershed at the least cost.

In late 2002, Dolph Rotfeld Engineering presented a diversion plan map for the Town of New Castle based on an August, 1999 Sewer Study completed specifically for New Castle diversion. In 2003 the League began its study to look at the options for sewage disposal.

WATER QUALITY I N THE CROTON WATERSHED

I. Standards and Issues

The Surface Drinking Water Rule of the Safe Drinking Water Act sets legal limits (Maximum Contaminant Levels (MCL) for contaminants, which may be health risks.

Surface water is susceptible to contamination from pathogens in stormwater runoff, wastewater treatment plants, and failing septic systems. To prevent disease-causing microbes, the rule requires surface water to be filtered and disinfected. However, there are serious problems with disinfection by-products, especially haloacetic acids, which may be carcinogenic. Effective in 2005, EPA is setting more stringent standards for pollutants contained in the Enhanced Surface Water Treatment Rule.

Water quality concerns include:

- Pathogens – disease causing organisms e.g. giardia and cryptosporidia
- Disinfectant by-products (some may be carcinogenic)
- Heavy metals (lead & copper from pipes)
- Toxic chemicals (pesticides)
- Phosphorus – causes hypoxia (oxygen depletion) upsetting the ecology of the waterbody (algae bloom); causes bad taste and smell.
- Pharmaceuticals – medicines flushed down the drain

While Croton water continues to meet federal and state health-related water quality standards, it is lower in quality than water from the Catskill/Delaware watershed, according to a DEP White Paper (*Why New York Needs a Filtered Croton Supply, May, 2003*). This is due to the fact that the Croton watershed is more densely populated and has more development; it is 80% suburbanized. This development increases stormwater runoff and raises the risks of accidental spills from wastewater treatment plants and of failing septic systems.

Croton water regularly experiences seasonal problems of eutrophication due to excess phosphorus, which affects taste and odor, releases metals, and causes disinfection problems. Croton is not expected to meet the new federal standards for disinfection by-products. Phosphorus levels are measured by using the Total Maximum Daily Load (TMDL) process, which allocates permissible amounts of pollutants; the New Croton Reservoir currently exceeds Phase II TMDL levels and requires nonpoint source reductions of phosphorus.

Another concern in the Croton Reservoir is pathogens. Any amount of exposure to these contaminants is considered a health risk. Therefore, EPA requires filtration and disinfection to remove and inactivate 99.99% of Giardia and viruses. DEP monitors the water for Cryptosporidium and Giardia; weekly samples are taken from the outflow of the New Croton Reservoir, the end point for the sixty day travel time during which pathogens will die, before chlorination occurs. Lab protocols have been upgraded twice to improve detection, which is desirable, but the differences in the tests do not allow for accurate yearly comparisons. Also, the tests do not determine if the organisms are dead or potentially infectious; they just note their presence. In 2003, 59 samples revealed 30 positive for Giardia and 7 positive for Cryptosporidium.

Currently, there are no numerical standards for these pathogens; however, the Enhanced Surface Treatment Rule will address this. At this time, NYC water is below the proposed threshold.

II. Centralized Wastewater Treatment Plants

The portions of New Castle, which are sewerred, send the sewage to the county WWTP in Yonkers where the sewage is treated to the secondary level and discharged into the Hudson River. The plant is monitored 24/7 and has redundant backup systems. The plant has recently completed implementation of the safety and maintenance recommendations made in the 1999 Black and Veatch Study. Some of these improvements include:

- Enhanced worker training
- Expanded safety program
- Computerization in many areas, such as preventive maintenance
- Sewer rehabilitation (Infiltration & Inflow to decrease flow to plant)
- A rapid report and response system
- Odor hotline

Odors have been an ongoing problem at the plant. To address odor problems the plant has:

- Installed triple wet air scrubbers in the sludge de-watering facility (source of most odors) at a cost of \$2 million
- Insured that sludge will be loaded into trucks in an enclosed building
- Has begun to use a new strain of microbes to decompose sludge which has reduced ammonia and hydrogen sulfide (cause of most odors) by 85%

WWTP's are regulated by State Pollutant Discharge Elimination System (SPDES) permits issued by DEC. The permit sets limits for the amount of each pollutant that can be discharged into the receiving waters. Twenty-five samples are taken daily; a monthly report is sent to DEC; and the plant is inspected by DEC three or four times per year.

The impact of discharging effluent into the Hudson River is unknown. DEC has recommended that the county conduct a study to make this determination.

III. Onsite Systems (septic, decentralized)

U.S. Census data reports that failing septic systems are the second most cited source of contamination to groundwater, and that 10% of onsite systems are failing, resulting in improperly treated wastewater being discharged into our waters daily. Most of these systems were installed over 30 years ago when rules were non-existent or poorly enforced, and technology was not as advanced.

Therefore, Congress requested EPA to examine decentralized systems. The Report (*National Water Quality Inventory 1996 Report to Congress*) states, "Improperly constructed and poorly maintained septic systems are believed to cause substantial and widespread nutrient and microbial contamination to groundwater---and to contribute to major water quality problems". The report concludes that while technology is better, "Ultimately, it is the absence of a comprehensive management program---that prevents onsite systems from being effective and reliable wastewater treatments" and that "adequately managed decentralized systems are a cost-effective and long-term option for meeting public health and water quality goals." The operative word is "management".

However, the Report also identified five major barriers to successful implementation of onsite technologies:

1. Misinformation and limited public knowledge about onsite systems
2. Legislative and regulatory constraints
3. Lack of system management
4. Existing engineering practices
5. Restricted access to funding

EPA has addressed some of these concerns by:

1. Establishing funding sources – Clean Water State Revolving Fund (\$1 billion annually to states); Nonpoint Source Pollution Grants (to upgrade, repair or construct onsite systems); HUD Block Grants
2. Developing management guidelines – Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems Manual
3. Verifying technology - market-ready protocols developed by manufacturers; *Design Manual*; Fact Sheets; technical assistance through the Small Flows Clearinghouse
4. Sponsoring demonstration projects in 25 states

The benefits of a management program include:

1. Protection of water quality and public health
2. Protection of consumer/business investment in property
3. Increased system life & replacement cost savings
4. Conservation of groundwater by keeping water onsite
5. Tax savings in lieu of sewers

EPA has developed a Management Guidelines Manual to help and to encourage communities to institutionalize a management program, in order to enhance proper performance and reliability of decentralized systems. Several environmental engineering firms to whom we spoke emphasized repeatedly that a management plan is critical in preventing failure of onsite systems.

Ninety percent of homes in New Castle use septic systems; most were installed more than 30 years ago. The average life of a system is 20-30 years---if properly designed, constructed and maintained. The Westchester County Department of Health is responsible for oversight. There are no routine maintenance requirements, no regular inspections, and most homeowners are not educated about proper care and maintenance. Failing systems remain undetected unless reported by the owner or a neighbor.

The DOH has legal authority to require repair or replacement; but if the owner cannot comply because of financial reasons or because there are no options on the property, DOH does not enforce the law because it could mean vacating the premises. DOH works with the owner by strictly reducing water use to decrease demand on the system; but the system remains in failure.

In the Catskill/Delaware watershed, unreported failing systems suddenly were reported when DEP instituted its Septic Rehabilitation & Replacement Program with financial incentives.

There are new onsite technologies. These alternative systems can remediate or replace conventional systems, enhancing performance in conditions where conventional systems will not

work. These often require less area for absorption fields because the effluent entering the field is cleaner, requiring less treatment within the soil. Alternatives are often used for remediation or replacement, but only two (Elgin in-drain & Infiltrator) are currently approved by NYSDOH for new construction. Regulations lag behind technology.

EPA also notes that the decision to use onsite systems should consider risks to the environment and public health. There may be cases where these systems are not appropriate because of environmental sensitivity or public health concerns.

IV. Background Information on Areas of Study

The League studied four sites:

- Wastewater treatment plants in Riverwoods and Random Farms
- Focus areas (septic) of Yeshiva and Stanwood New Castle

1 – Riverwoods WWTP

- Services 148 homes in addition to dormitories and schools at Yeshiva
- Treats 25,000 gallons per day (gpd) to tertiary level
- Has dual backup system, emergency generator, alarm to central office
- Surface discharge to Kisco River to Croton Reservoir less than one mile away
- In 2003 had overflow; released contaminated effluent to Kisco River, resulting in DOH fine.

2– Random Farms WWTP

- Services 105 houses
- Treats 41,500 gpd to tertiary level
- Has no backup system; supervised only 2-3 hours per day
- Subsurface discharge to field that has been failing for years due to reported marginal soils, resulting in improperly treated effluent
- No definitive determination regarding soils
- No hydrological tests to check for high groundwater

3 – Yeshiva Focus Area

- 100+ of multi-family housing; schools, dorms
- 9,000gpd treated at Riverwoods
- 30,000gpd on septic
- 1996 outbreak of Hepatitis A from failing septic which polluted drinking water; under court order to remediate; working with DEP
- Ongoing septic failures due to poor soils and high groundwater
- Repaired or replaced septic often fail within 6-9 months
- Current failures being pumped out

4 – Stanwood (New Castle) Focus Area

- 63 houses = 18,600 gpd
- Small lots; no space for absorption field replacement
- Some houses on cisterns
- Most are on Town water but some have wells
- Rocky soils; steep slopes

- Borders on New Croton Reservoir
- No reports of failures to DOH in past ten years
- Area was identified for sewers in 1986 county study

V. Comparison of Diversion and Alternatives

1 - Diversion

A. Advantages

- Will remove 160,000 gpd sewage from the watershed, reducing the risks from pathogens and phosphorus
- Will address septic problems in Stanwood and Yeshiva
- NYC will fund low pressure system in Stanwood
- NYC will fund operation and maintenance costs for 15 years
- Will use existing right-of-ways; no private properties needed
- May add other marginal areas, if deemed necessary in the future
- Will use Best Management Practices to remediate environmental disturbance

B. Disadvantages

- Will require 8-10 stream crossings for construction
- Stormwater runoff possible in heavy rains
- Some blasting in Stanwood to depth of 4 feet (compared to 6-8 ft gravity flow)
- General disruption of construction
- Will remove water off the watershed instead of using it for recharge
- Will require connection costs and sewer district taxes for the homeowner

2 – Alternatives: Upgrades to WWTP's and Septic Repair/Replacement

(1) Upgrades to WWTP

A. Advantages

- NYC will fund advanced treatment resulting in a cleaner effluent
- Microfiltration removes 99.99% of pathogens
- Will include back-up systems, 24 hour monitoring, larger emergency generators
- NYC will pay O&M costs for upgraded equipment

B. Disadvantages

- Plant operation will have minimal oversight
- NYC will not pay for O&M except for upgraded equipment
- Possibility of malfunction, human error, overflows releasing pathogens
- Does not address failure of absorption field at Random Farms

(2) Septic System Repair/Replacement

A. Advantages

- New technologies give better control of nutrient discharge
- County now has an education & licensing program for contractors
- County is establishing a database to track septic systems
- Keeps water in the watershed for recharge
- Croton Watershed Protection Plan recommends studying Focus areas and addressing inspection and maintenance issues

B. Disadvantages

- Cost of repairs/replacement is responsibility of homeowner
- Costs may include: ongoing annual maintenance contract; annual microbe replacement, motor replacement 5-7 years
- No education of consumers on care & maintenance
- No regular inspections requirement
- No management plan in place

VI. Conclusion

As a steward of the Croton Watershed, New Castle has a responsibility for addressing issues that impact the quality of drinking water for nine million people. Options for sewage disposal are available. The option chosen should provide the best water quality for the health and safety of the public.

DEVELOPMENT

Another impact of sewage disposal options could be on development. When a discussion of sewers comes up, there is an assumption that there will be a surge in development of new homes on subdivided properties. This reasoning argues that without the need for septic systems and absorption fields, there is no need for half-acre or one-acre zoning; lots will be subdivided resulting in more and/or larger homes on small lots.

To address this issue, the draft Term Sheet for the Diversion Project states that “connections in a sewer district will be limited to such lots as could otherwise be legally developed, with a lawful septic system meeting all regulations” and “that the application shall be made to the Town, and if approved, to the City.” The Town provides the first layer of approval based on its zoning, and its Comprehensive Plan. This is Home Rule.

Therefore, the building of sewers does not, in and of itself, produce a change. It could add another group asking the Town Board for a chance to build on more of their land. But the availability of sewers does not automatically give them the right to build.

Development is decided by the town’s Zoning Ordinance, which comes from the Comprehensive Plan. The Zoning Ordinance includes the regulation of setbacks, area coverage limitations, height limitations, road frontage and permitted uses. For example, if the Town has half-acre zoning, and most people want it to stay, the Town Board can issue Findings about why the Town would oppose re-zoning to smaller parcels. The reasons could include: environmental degradation, changing the nature of the neighborhoods, the impact on community services, or the integrity of the Town Plan. The will of the Town, expressed in the Zoning Ordinance, sets the standard. The Town may face court challenges so it is important that its laws are reviewed and updated regularly.

A further limitation to development in a sewer district that may be used by the Town is in the sizing of the sewer pipe to carry only a certain amount of flow. No additional hook-ups could be accommodated beyond that flow.

Finally, the amount of wastewater flow per day is to be determined by the agreements with the Waste Water Treatment Plant (WWTP) to which the sewer must be connected. These amounts are central to the discussions of whether the county plant in Yonkers will accept additional New Castle effluent. The plant has a capacity limit, which is part of its permit to operate, and any additional flow cannot exceed this capacity. The effluent from New Castle would amount to 0.018% of the total flow at the Yonkers facility. The current effort includes negotiation to take some homes currently on septic, but located in the county Saw Mill Sewer District (and paying a tax to it), out of the District, and to replace these with the properties to be sewered under the Diversion Plan. It is important to note that there are 1437 properties in the Saw Mill Sewer District which are not sewered but which have been paying sewer taxes since the 1970’s. This point should be seriously considered in the negotiations. If agreement to accept a flow is not reached by the county Board of Legislators, there will be no sewers.

An assessment of the specific sites in the proposed sewer district reveals that the potential for growth is limited.

1. Stanwood. The lots are small. There are perhaps ten empty lots that could possibly be developed. It would have to be proven that a septic system could be built. It is probable that the reason that many of them have not been subdivided and built on already is that there is no place for fields, or that other requirements, like setbacks and frontage, cannot be met.
2. Riverwoods. There is no more land for building under the accepted site plan. Although the Waste Water Treatment Plant has unused capacity; a change in its use would not make Riverwoods eligible for more development.
3. Random Farms. The development is complete. The change of the WWTP to a pump station to send the effluent to Yonkers would not allow for more building.
4. Yeshiva: There is an agreement between Riverwoods and the Yeshiva about how many more units Yeshiva can connect to the Riverwoods Treatment Plant. It is not known whether the Yeshiva's failure to build all of its units is economic, or whether it is related to the unsettled legal situation with Riverwoods. However, the Town of New Castle Planning Board must approve all building, under the Town Zoning Laws. Should the Yeshiva decide to aggressively expand, the issue will reside with the Planning Board, which requires compliance with Zoning and the Comprehensive Plan.

The chain of zoning regulations is as strong as its weakest link. That may be in the Planning Board's use of setbacks and environmental regulations, inspections, enforcement of building permits, or the standards used by the Zoning Board of Appeals. While there may always be a tension between the desires of homeowners to have the maximum use of their property and the overall Town Plan for land use, it is the Town Board's policies, presumably reflecting community's wishes, which are operative.

In summary, the town should rely on its comprehensive Plan, Zoning laws, and review and enforcement by its Planning Board to direct development.

Economics

The quoted costs of the *diversion project* were estimated two years ago. Currently, the diversion project is in a state of flux; costs will change if the project changes.

I. Sewage Treatment Costs

Costs for centralized WWTP's are paid by the homeowner through yearly sewer district taxes. These taxes are made up of a town and county tax rate, which fund the operation and maintenance of the sewer district. New Castle sewer districts are piped to the Yonkers Joint Treatment Plant.

There are 2,371 New Castle homes in the county Saw Mill River Sewer District that have been paying taxes since before 1970; only 934 homes have sewers. In 2004 New Castle residents paid \$1,156,738 to the county Saw Mill Sewer District even though most of these residents have no sewers.

Homes with on-site treatment systems, which are the majority in New Castle, pay pump-out fees of \$200 – 400, which include a sludge disposal fee. The sludge from these systems is also treated at the Yonkers Plant. For on-site system owners, there are also unforeseen costs of repair and/or replacement that can range from \$5,000 - \$30,000.

II. Diversion Option

DEP is currently looking at the New Castle project in conjunction with the Yorktown diversion project. Based on information in the draft term sheet from May 2002, the total cost of these two projects comes to approximately \$29 million dollars.

The money for this project would come from several different sources, but most of it would come from DEP's Regulatory Wastewater Treatment Plant Upgrade Program. Through this program, WWTPs are being upgraded throughout the NYC watershed. \$22 million has been earmarked for upgrades at the two New Castle plants and at the plant in Yorktown. If the diversion project moves forward, the funds to upgrade these plants would be used to fund diversion because the upgrades would be unnecessary. These monies would go to Westchester County to fund the sewers. In addition, there would be another \$3.5 million from DEP and \$3.5 million from the East of Hudson Fund. This would bring the funds for diversion up to the \$29 million figure.

What is the economic impact of diversion for these communities?

The DEP funds mentioned above would pay for all the infrastructure costs. Pump stations would be constructed at the Riverwoods and Random Farms plants, and those plants would be decommissioned. The portion of Yeshiva that is served by septic systems would also connect to the sewer line, but Yeshiva would have to fund their on-site infrastructure costs. Because of its physical characteristics, the Stanwood community would require a low-pressure system with duplex pumps. DEP would fund the entire low-pressure infrastructure.

According to the draft term sheet, DEP would also fund operation and maintenance costs of the project at \$400,000 for the first year, escalating by 3% each year, for 15 years.

In order to form a district, at least 51% of the property owners, whose total property values represent at least 50% of the total assessment in the proposed district, must vote in favor of it. Once the sewer district is established, homeowners would pay a sewer district tax. The actual tax amount is levied based on the taxable assessed value of a property within the sewer district. Should a district be established, the levy would be offset by DEP's payment for operation and maintenance.

III. Upgrades and/or Septic System Repair/Replacement Option

1 - Upgrades

Riverwoods and Random Farms:

If the diversion plan were not implemented, the funds for the DEP Regulatory Upgrade Program would be used for upgrading the plants. These upgrade funds would be paid directly to treatment plant owners.

Both plants are privately owned and operated by the homeowners associations. In the case of Riverwoods, the plant is located on Yeshiva property. Environmental management companies run the day-to-day operation and maintenance of the plants. Annual sewer fees are paid by the homeowners to support the operation of the plant.

The estimated costs for the treatment plant upgrades, made available to us, are between \$1.5 – 2.5 million dollars. The annual operation and maintenance costs associated with the upgrades range from \$50,000-100,000. According to the draft term sheet, these costs will be paid by DEP.

The homeowners associations of each development would still be responsible for the annual O & M expenses, *excluding* the upgrade components.

Another part of this picture is the fact that the septic field at Random Farms is failing. In the upgrade scenario, before remediation of the field is attempted, an engineering study would be required. The study would need to be done over the course of a year to account for seasonal changes and could cost between \$30,000-50,000. If remediation were possible, that cost would be estimated after the initial engineering study was complete.

2 - Septic System Repair and Replacement

Yeshiva and Stanwood:

Most of the Yeshiva community uses septic systems. These systems are in need of remediation, and in some instances replacement. DEP has been working with Yeshiva since 1996 to determine ways of remediating the problems. There are still failing systems, which need to be pumped out regularly. This is costly and not a long-term solution.

For Stanwood and Yeshiva, there is the possibility that septic system alternatives exist for some but not all problem areas. These alternatives would need to be determined by evaluating problems on a house-by-house, site-by-site basis. In order to effectively remediate areas like these, formal and costly engineering surveys would have to be completed to evaluate the exact number and types of problems that exist.

It is not clear where the funding for repairs or remediation will come from. DEP has spent \$13.6 million and has committed another \$15 million to repair or replace failing septic systems in the Catskill/Delaware watershed. Whether or not the same type of program will be implemented and

financed in the Croton Watershed is unclear. To date, there are no plans by DEP to do so. However, some of the EOH funds could be used for this purpose, as has been done by Putnam County.

The Yeshiva could possibly get funds from the NYS DEC under the NYC Watershed Environmental Assistance Program, or some other State funding program to pay for their infrastructure costs. The NYS Environmental Facilities Corporation, EFC, also has a Clean Water State Revolving Fund that provides financial assistance to communities for decentralized wastewater systems. These funds must be managed by a municipal entity, and the replacement and repair would have to use NYSDOH approved systems. There has been discussion at EFC of establishing a linked deposit loan system, used successfully in other states, whereby a bank would receive the EFC funds and make low-cost loans available to the homeowner. This has not yet been implemented.

Another financing option is that these communities could set up septic maintenance districts to help them manage and/or pay for their septic systems. These districts are similar to sewer or fire districts as a way to collectively fund a service. The most basic requires that residents submit a fee along with documentation that their septic system has been pumped and inspected. In a community where failing systems need to be repaired or replaced, maintenance districts can take care of services such as educational programs, repair, replacement, training and administration. It can be set up as a public utility or as a local department of a municipality. The financing can work in a variety of ways:

- User fees (permits, membership, annual service, etc)
- A surcharge added to an existing utility
- Payment for services as needed
- Issue bonds

This type of financing option has been proven to work well in areas of new development, but it may be difficult to structure in areas of existing development, since the needs and costs will vary by site conditions, age of system, etc

Compared to the costs of constructing and maintaining a centralized treatment system, repairing or replacing failing systems or cleaning up polluted water supplies, management programs can be much less expensive.

If none of these options were chosen, it would be the responsibility of the homeowner to repair and maintain their septic system.

IV. Summary

Sewer construction (diversion) would be paid by NYC DEP and monies from the East of Hudson Fund. In addition, users in the sewer district would pay a connection charge plus town and county sewer district taxes.

Upgrades to Riverwoods and Random Farms WWTP's would be paid for by DEP, including O/M for fifteen years.

The homeowner would pay septic Repair or Replacement, since there are no maintenance plans in place.

At this time, December 2004, the sewage diversion is still awaiting approval of funding for the SEQRA by the county Board of Legislators. The money would come from the East of Hudson Fund established by DEP for towns in the watershed to implement the Rules and Regulations imposed by the MOA. This is not county money. The Northern Westchester Watershed Committee, composed of official representatives from each town in the watershed, elected the Diversion Plan as a top priority. However, disbursement of the funds requires approval by the Board of Legislators; and legislators for the Yonkers and Peekskill districts, where the WWTP's are located, object to diverting sewage to these plants.

CONCLUDING COMMENTS

This report gives lots of facts about the options for sewage disposal and the preservation of our water supply. It has attempted to present an objective analysis of the situation.

In addition to this information, the following points should be considered:

1. The problems in the Croton watershed are real and will not go away. Ignoring them is simply not an option.
2. If the problems are ignored or inadequately addressed, there will be growing pressure on the New York City DEP, the County Health Department and the New York State DEC to step up their enforcement efforts. Such enforcement could have major impacts on residents.
3. Solutions will have to be arrived at through the political process of give and take. This will undoubtedly require courage on the part of our legislators. It is up to us, the voters, to make sure that facts outweigh emotion and that water quality outweighs local politics. We must hold our legislators accountable, for they have the decision-making power. Let us all be sure that they act before the courts or enforcement agencies take the decisions out of their hands.

GLOSSARY

Advanced Wastewater Treatment - the process which removes pollutants not adequately removed by secondary treatment, particularly nitrogen and phosphorus; accomplished by means of sand filters, microfiltration, or other methods. Combinations of biological and physical-chemical treatments are used simultaneously.

Biochemical Oxygen Demand (BOD) – a measure of the amount of oxygen consumed in the biological processes that break down organic matter in water. The greater the BOD, the greater the degree of pollution.

Diversion – to move wastewater from an area to a large centralized plant, using sewer pipes.

Effluent – wastewater, treated or untreated, that flows out of a treatment plant, sewer or industrial outfall.

Focus Areas – in the Diversion Study, 1) areas within each municipality which are currently experiencing septic system failures and 2) areas within each municipality which are currently not sewered but which because of planned development may require sewers”

Maximum Contaminant Level (MCL) – EPA legal limits for contaminants, which may be a health risk

Memorandum of Agreement (MOA) – document signed by NYC, EPA, NYSDOH, outlining the rules and regulations for watershed protection for New York City water supply

Northern Westchester Watershed Committee (NWWC) - comprised of the supervisors, or their representative, from each of the twelve watershed Towns charged with making recommendations for allocating the East of Hudson Funds.

Nutrients – any substance that is assimilated by organisms and promotes growth; generally applied to nitrogen and phosphorus in wastewater, but also applied to other essential and trace elements.

Primary Treatment - the first stage in water treatment. Screens and sedimentation are used to remove most material that floats or will settle. Primary treatment results in the removal of a substantial amount of suspended matter but little or no dissolved or colloidal matter.

Secondary Treatment – generally, a level of treatment that produces removal efficiencies of 85 percent for BOD and suspended solids. Sometimes used interchangeably with the concept with the concept of biological wastewater treatment, where wastewater is mixed with air or oxygen and sludge to encourage the growth of bacteria that “eat” organic pollutants.

Septic (onsite, decentralized) systems - disposal of sewage into the soil at the site

Sixty-Day Travel Time – the time of water travel from its entrance into surface water to the intake, during which pathogens will die

State Pollutant Discharge Elimination System (SPDES) – permit issued by DEC that sets limits for each pollutant which may be discharged into a waterbody

Stormwater Runoff – stormwater and melted snow that flows along the land picking up contaminants and delivering them to surface waters.

Surface Water – all water open to the atmosphere and subject to surface runoff. Most of the country’s large water systems – which draw from lakes, rivers and reservoirs – use surface water.

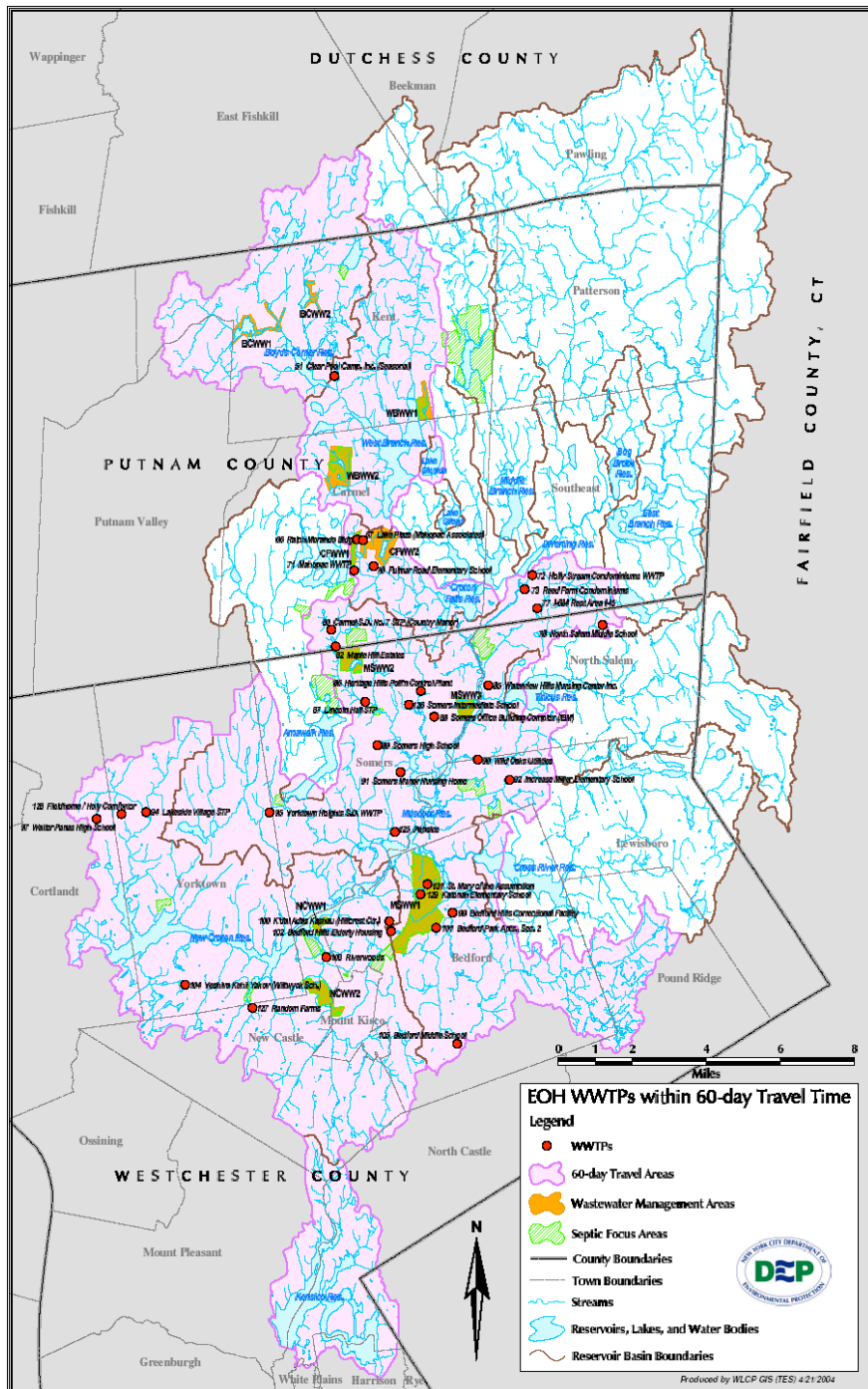
Tertiary Treatment – any level of treatment beyond secondary which could include filtration, nutrient removal (removal of nitrogen and phosphorus) and removal of toxic chemicals or metals. Additions to conventional secondary treatment could be as simple as an addition of a filter for suspended solids removal or as complex as the addition of many unit processes for organic, suspended solids, nitrogen and phosphorus removal. Also called “advanced treatment” when nutrient removal is included.

Total Maximum Daily Load (TMDL) – amount of pollutant permissible in waters to meet water quality goals, regulated by the NYS Department of Environmental Conservation

Wastewater – water that has been used for domestic or industrial purposes, including sewage.

Watershed – land that water flows across or to a specific water body. All the land area that contributes

water to any body, e.g. reservoirs, lakes, rivers, groundwater or coastal water bodies.



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Charles Beckett, Plant Superintendent
Yonkers Wastewater Treatment Plant
May 19, 2004

Susan Carpenter
Director of Land Preservation & General Counsel
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New Castle Town Hall
April 22, 2004

Sabrina Charney
Senior Environmental Planner
Westchester County Department of Planning
New Castle Town Hall
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Sarah Cwikla, Engineer
Stearns and Wheler, LLC
New Castle Town Hall
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Bureau of Water Supply: Drinking Water Control, Water Quality, Impact
Assessment,
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December 10, 2003

Ed Delaney, Area Supervisor
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New Castle Town Hall
February 11, 2004

Gennaro Faiella, Administrator
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New Castle Town Hall
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E-mail Interviews

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May 11, 2004

Kurt Matcherz
Malcolm Pirnie, Inc.
May 12, 2004

Telephone Interviews

Ed Barnett
Putnam County Watershed Information Coordinator
March/April 2004 [3 conversations]

Joe Margoliese, Deputy Commissioner
Westchester County Department of Health
November 4, 2003

Jagdish Mistry
Westchester County Department of Environmental Facilities
April 7, 2004

Irene Phillips, President
Random Farms Homeowners Association
September 2003/ April 2004 [4 conversations]

Marion Pompa, Associate Engineer
Septic System Contractor Licensing, Bureau of Environmental
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Westchester County Department of Health

Adam Zabinsky, Commissioner
Westchester County Department of Environmental Facilities
June 2, 2004

Site Visits

Riverwoods Wastewater Treatment Plant
April 2003

Stanwood
February 2003

Yonkers Wastewater Treatment Plant
May 19, 2004

**Addresses of Local Government Agencies
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LEAGUE OF WOMEN VOTERS OF NEW CASTLE
SEWAGE DISPOSAL OPTIONS CONSENSUS STATEMENT

Introduction:

In the spring of 2003, the League of Women Voters of New Castle began a study of sewage disposal options in New Castle considering water quality, development and economics.

The study focused on Random Farms, the Stanwood area, Riverwoods and Yeshiva Farm Settlement. These areas use both sewers and septic systems which allowed the committee to examine these options under actual conditions. Random Farms treatment plant discharges the wastewater subsurface to a septic field.

The committee presented its findings in a public education program in June 2004; and our membership reached consensus on this issue. Establishing a position allows the LWV of New Castle to join the policy discussion and to advocate on issues relating to sewage disposal. It will allow us to address the current New Castle plan to divert sewage from watershed areas, as well as sewage disposal in other areas or any future plans on sewage disposal. A Report of the study is available.

Consensus Position Statement:

The League recognizes New Castle's important role and responsibility in protecting our waters, particularly drinking water.

The League recognizes that properly sited, constructed and maintained onsite sewage disposal systems are an effective method of treating wastewater. A 1999 League study determined that the proper performance and reliability of these systems is key to protecting water quality; and that homeowner education on proper care and maintenance is essential for continuing performance of these systems.

Given the preponderance of these systems in New Castle, and the likelihood that they will continue to be the sewage disposal option for most residents, the League strongly supports formalized management plans for onsite (decentralized, septic) systems in New Castle. At a minimum, regular inspections and pumpouts, and certification of proper operation of these systems at the sale or transfer of property should be required.

We also support comprehensive enforcement of existing regulations for wastewater treatment by all responsible agencies and greater coordination among these agencies to achieve that end.

The League also recognizes that there are areas where onsite systems, and systems that discharge wastewater subsurface, are not appropriate due to environmental conditions or public health concerns. The determination not to use onsite systems must be validated, considering water quality, development, economic impacts, and timeliness.

Sites that have been validated to be unable to support onsite systems should be sewered to a centralized wastewater treatment plant.

The League recognizes that the creation of sewers does not inherently foster property development. To address these concerns, the town government has the responsibility to use its comprehensive plan to legislate zoning, land use and site plan regulations to reflect the desires of residents.

The League expects our town and county officials to exhibit strong leadership to address areas that require immediate attention, and to do so in a timely manner in order to prevent future threats to water quality.