

End Notes

¹ Water Treatment – Principles and Design, John Wiley & Sons, Inc. Second edition, 2005

² SEE INDEPENDENT BUDGET OFFICE (IBO) REPORT, 2006

³ NYC Department of Environmental Protection Extended Special Study Program Report, November 1997, page 3-5.

⁴ Reports on *giardia* and *cryptosporidium* concentrations in the three reservoir systems may be accessed at www.ci.nyc.ny.us/dep

⁵ *Ibid.* New York City's Water Supply System – *Cryptosporidium* and *Giardia* Background Information and Monitoring Program, pp.2 &3

⁶ NYC Watershed Phase I Total Maximum Daily Loads/Watershed Allocations/Load Allocations for Phosphorus in the Croton River System, Jack Douglas Smith, Ph.D. An algal biomass is described by the chemical formula $12C_{107} 1H_{263} 16O_{110} 14N_{15} 31P_1$ according to which 1 lb. of P can trigger 113.5 lbs. of algae. P is regarded as the limiting factor in the promotion of algae in fresh water systems

⁷ Watershed Management for Potable Water Supply: Assessing New York City's Approach, National Academy Press, Washington, D.C., p. 164.

⁸ AN ALTERNATIVE TREATMENT TECHNIQUE FOR A PUBLIC DRINKING WATER SUPPLY – CROTON WATERSHED WATER SUPPLY, NEW YORK CITY, by Ripple Engineering, P.C., James W. Roberts, P.E., February 2002 (unpublished)

⁹ Nonpoint Source Implementation of Phase II TMDLs, April 2001 – Prepared by the NYC Department of Environmental Protection and the NYS Department of Environmental Conservation. Note: TMDL is the acronym for Total Maximum Daily Load.

¹⁰ See footnote #5, page 79 of endnote #7

¹¹ The ABCs of Water-Quality Assessment in Georgia by Catherine A. Fox and Charles B. Absher, Stormwater, March/April 2002, pp. 10-22.

¹² A Study of Stormwater Conveyances as Point Sources of Pollution in the East of Hudson Watershed, New York City Drinking Water Supply, 2001 by John Keane, Clifford Ginn, Vincent Keane

¹³ Communication from Marc Yaggi, Senior Attorney at Riverkeeper, December 31, 2003.

¹⁴ EPA – Storm Water Phase II Final Rule, An Overview – Fact Sheet 1.0

¹⁵ EPA – Storm Water Phase II Final Rule, Small Construction Program Overview – Fact Sheet 3.0

¹⁶ See Footnote No. 5, pages 319 and 320.

¹⁷ Some of the most toxic, carcinogenic pollutants such as motor oil, grease, lead, nickel, cyanide and Polycyclic Aromatic Hydrocarbons (PAHs) are swept into streams and reservoirs during storm events. (see: Urban Sprawl Leaves its PAH Signature, by P.C. Van Meter, B.J. Mahler, E.T. Furlong – Environmental Science & Technology, Vol. 34, No. 19, 2000, pp. 4064 – 4070. The DEP concedes that “...a filtration plant does not effectively remove some pollutants...A number of the contaminants ...cannot be eliminated or completely controlled through filtration (i.e. petroleum products and hazardous substances).”

¹⁸ See Footnote #5, page 269.

¹⁹ Where Rivers are Born – The Scientific Imperative for Defending Small Streams and Wetlands – www.sierraclub.org/cleanwater/reports_factsheets.

²⁰ We use the term “sub-drainage basin” here to indicate a sub-unit of the development’s total watershed. Similar to the watershed that comprises it, the sub-drainage basin is a unit of land on which the water that collects on it runs off via a common outlet.

²¹ Porous Asphalt Pavement with Recharge Beds: 20 Years and Still Working”, by Michelle C. Adams, Stormwater, May/June 2003, pp. 24-32.

²² Predicting Pollutant Loading Through the Use of Models – A Supplement to the Watershed Planning Handbook for the Control of Nonpoint Source Pollution, November 1994. Prepared By: NYS Department of Environmental Conservation and NYS Soil and Water Conservation Committee.

²³ *Ibid.*

²⁴ DOT’s Plan for Route 120 - Will it Protect the Drinking Water for 9 Million People? CWCWC Letter to the Editor of the Journal News, 5/17/2000

²⁵ See www.epa.gov/OWOW/tmdl - “Under section 303(d) of the Clean Water Act, states, territories, and authorized tribes are required to develop lists of impaired waters. These are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop TMDLs for these waters. A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.”

²⁶ <http://www.dec.state.ny.us/website/dow/toolbox/index.html>

²⁷ Methodology for Calculating Phase II Total Maximum Daily Loads (TMDLs) of Phosphorus for New York City Drinking Water Reservoirs – Dr. Kimberlee Kane, DEP

²⁸ <http://www.google.com/search?hl=en&ie=ISO-8859-1&q=March+2002+-+NYCDEP+Nonpoint+Source+Implementation+of+the+Phase+II+Phosphorus+Total+Maximum+Daily+Loads+%28TMDLs%29+in+the+New+York+City+Watershed%2C+Interim+Report>

²⁹ See www.newyorkwater.org, home page for further information on these developments.

³⁰ <http://www.epa.gov/OWOW/wetlands/vital/toc.html>

³¹ A Guidebook to the Great Swamp of Putnam and Dutchess Counties, New York, Published by the Nature Conservancy for Communities of the Great Swamp Watershed, 1996

³² The Regulation and Protection of Wetlands Within the New York City Watershed: A Report for Policy-Makers and Concerned Citizens, July 23, 1999. By James M. Tierney, NYC Watershed Inspector General.

³³ *Ibid*

³⁴ See CWCWC Newsletter Issue #10, July/Aug.2002 “Critical Resource Waters-A Major Victory for Safe, Clean, and Affordable Water for More than Half of New York State.” at www.newyorkwater.org

³⁵ www.fmr.org/Buffer_Study_Final_Report.pdf

³⁶ EPA/600/R-05/1 18, October 2005: “Riparian Buffer Width, Vegetative Cover, and Nitrogen Removal Effectiveness: A Review of Current Science and Regulations”

³⁷ Wetlands – Environmental Gradients, Boundaries and Buffers, Lewis Publishers, 1996

³⁸ www.crjc.org/buffers/Introduction.pdf

³⁹ www.miamiconservancy.org/flood/pdfs/riparian_buffers.pdf

⁴⁰ <http://www.law.georgetown.edu/gelpi/takings/courts/decisions.htm>

“The Court said several important, positive things about takings law. First, and most importantly, the Court affirmed the so-called parcel as a whole rule, that is, that a taking claim must be evaluated in relation to the claimant's entire property, not just the restricted portion. The Court made clear that the parcel rule applies in the temporal dimension (as

in Tahoe), in the spatial dimension (where use of one part of a property is prohibited, but not others), and in the functional dimension (where the permitted intensity of use is restricted). In one sense, the Court's holding simply reaffirms what many believed was always the law. But many claims have been filed in recent years challenging the parcel rule, and the Supreme Court itself seemed open to reconsidering the rule. The Court has slammed the door on that idea, cutting off one of takings claimants' favorite theories for expanding takings doctrine.

Yet another important feature of the decision is the Court's recognition of the extent to which regulation can enhance property values by conferring a reciprocity of advantage on all property owners. The Court found no evidence that the Tahoe moratorium had in fact reduced property values and concluded that property values should generally increase during a moratorium. After all, the Court reasoned, the purpose of a moratorium is to protect environmental quality, which should logically make the community a more attractive place to live and invest. The Court's discussion of the reciprocity issue should heighten attention to this issue in all types of regulatory takings cases.

In sum, Tahoe is one step in a process of legal evolution, the ultimate direction of which is not entirely clear. The Court has clarified some issues and reaffirmed at least one important principle, the parcel as a whole rule. In the process, the Court has dealt the so-called property rights movement a serious setback.”

⁴¹ 2/16/00 DO MITIGATED WETLANDS REALLY WORK? ONLY TIME WILL TELL, Columbus, Ohio - Are man-made wetlands really as good as the real thing? <http://researchnews.osu.edu/archive/wetlands.htm> - size 8.6K

⁴² Hudson Highlands Unit Management Plan, May 1994 – Prepared by NYSDEC Division of Lands and Forests.

⁴³ New York State DEC Forest Tax Law brochure, 2002

⁴⁴ Update on Saving Mount Nimham, posted on PlanPutnam web-site, November 12, 2003.

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

⁴⁷ TREES – The Oldest New Thing in Stormwater Treatment? By Janis Keating, Stormwater, March/April 2002, Vol. 3, No. 2, pp. 56-61.

⁴⁸ See An Inexplicable Omission in Drinking Water and Air Quality Protection, Marian H. Rose, CWCWC Newsletter, Issue 47, 2008. Available @ www.newyorkwater.org

⁴⁹ *Ibid.*

⁵⁰ The Functions and Importance of Forests, with Applications to the Croton and Catskill/Delaware Watersheds of New York, by Aryn Wilder MS and Erik Kiviat PhD of Hudsonia, Inc., 6 October 2008.

⁵¹ County Studies Water Quality, by Roger Witherspoon, The Journal News, June 9, 2003

⁵² Concentrations of Pesticides and Pesticide Degradates in the Croton River Watershed in Southeastern New York, July-September 2000, by Patrick J. Phillips and Robert W. Bode, Report 02-4063.

⁵³ Endocrine Disrupters – What are they doing to you? By Kathy Jespersen – On Tap Magazine, Winter 2003

⁵⁴ Environmental Impacts of Road Salt and Alternatives in the New York City Watershed, William Wegner and Marc Yaggi, Stormwater, July/August 2001, pp 24-31.

⁵⁵ The Waterfowl Management Program Draft Environmental Impact Statement, October 30, 2003; www.ci.nyc.ny.us/html/dep/html/news/depnewsframeset.html

⁵⁶ See footnote 43 for a definition of the AA designation. AA(T) means that in addition to fulfilling the AA criteria, the stream is also suitable for trout propagation.

⁵⁷ NYSCRR Title 6, Chapter X # 701.5 **Class AA fresh surface waters** – (a)The best usages of Class AA waters are: a source of water supply for drinking...(b) This classification may be given to those waters that, if subjected to approved disinfection treatment...will be considered safe and satisfactory for drinking water purposes. NYSCRR Title 6, Chapter X # 701.6 (a) The best usages of Class AA waters are: a source of water supply for drinking... (b) This classification may be given to those waters that, *if subjected to approved treatment equal to coagulation, sedimentation, filtration and disinfection, with additional treatment if necessary to reduce naturally present impurities...will be considered safe and satisfactory for drinking water purposes (emphasis added).*

⁵⁸ New York City Watershed WWTP Upgrade Program – Town of Yorktown, May 2000 – Blasland, Bouck & Lee, Inc., page 1-2: “Additionally, based on the SPDES permitted flow of 1.5 mgd, the Yorktown WPCP must meet an effluent phosphorous concentration of 0.2mg/l (30-Day average)”

⁵⁹ For a more detailed analysis of both Diversion – “An End and a Beginning – by Marian H. Rose, and Infiltration & Inflow (I&I) - “The New Sword of Damocles” – by Ivanka Roberts, please consult CWCWC’s March-April, 2006 newsletter (Issue 31), available at www.newyorkwater.org.

⁶⁰ 1. Letter dated January 12, 2001 from Charlotte Abo-Comitini, Records Access Officer at DEP, detailing the reasons for Croton Aqueduct Shutdowns from 1996 to 2001. Apart from a prolonged shutdown in the aftermath of Tropical Storm Floyd, there was only one

week (9/14/98 – 9/21/98) during which the aqueduct was shut down for water quality reasons. All other shutdowns were due to spill remediation, inspection or sampling. The longest shutdown was due to infiltration of cleaning fluid into the system, south of Jerome Park Reservoir (from 6/15/00 to 2001). A chemical treatment/filtration plant sited even as far south as JPR would be unable to treat the water.

2. Letter dated March 14, 2003 from Frank Feigherty, Chief, Records Retention and Correspondence Unit at DEP. The letter details the work done on the water distribution pipes within a 1/2-mile radius of the Morris Park area in the Bronx. A CBS broadcast purported to show that dirty water at Morris Park during October, 2002 was originated in the Croton reservoirs. The FOIL showed that during a nearly six-week period from mid-September 2002 through most of October 2002, there were close to 40 incidents when hydrants needed flushing due to dirty water. There was also a main break.

⁶¹ Mark LeChevallier, American Water Works Service Co. Inc., remarks made at EPA Stage 2 Microbial/Disinfection Byproducts Health Effects Workshop in Washington, DC, February 12, 1999, as summarized in the Final Meeting Summary, June 1999.

⁶² See articles by Fay Muir in CWCWC newsletters, available at www.newyorkwater.org Issue # 40 - September/October 2007, Water, Taxes and The Croton Watershed Issue # 43 - March/April 2008, Impact Fees Implementation

⁶³ <http://www.impactfees.com/>

⁶⁴ See <http://www.azcentral.com/business/abg/articles/2008/11/20/20081120abg-phx-impact112>

⁶⁵ See http://www.miamiherald.com/news/miami-dade/gables_smiami/v-print/story/782858.html

⁶⁶ Tapped Out – New York’s Water Woes, Trout Unlimited, 2008, www.tu.org/tappedout

⁶⁷ *Ibid*, see Recommendations

⁶⁸ See (1) Northern Westchester County Groundwater Conditions Summary, Data Gaps, and Program Recommendations, Contract C-PL-02-71, April 2003, The Chazen Companies; (2) Putnam County Groundwater Protection and Utilization Plan, Putnam County, New York, September 2004, The Chazen Companies. Putnam County Groundwater Protection and Utilization Plan, Putnam County, New York, September 2004, The Chazen Companies.

⁶⁹ See articles by Suzannah Glidden on Peach Lake in the following issues of the CWCWC newsletter, “Our Water Our Future: Issue 41, 2007; Issue 42, 2008; Issue 44, 2008; Issue 47, 2008; Issue 48, 2008 www.newyorkwater.org.

⁷⁰ See *CWCWC* newsletters – Issue 44, 2008, Thirst: Fighting the Corporate Theft Of Our Water, Alan Snitow, Deborah Kaufman, with Michael Fox.
Issue 45, 2008, Bottlemania: how water went on sale and why we bought it, Elizabeth Royte.

⁷¹ See Suzannah Glidden, NYS Ground and Surface Water Extraction, Contamination and Legislation, *CWCWC* Newsletter “Our Water Our Future”, Issue 50, 2009.

⁷² See Maya Homics, MARCELLUS SHALE DRILLING SCOPE, Comments to Bureau of Oil & Gas Drilling NYSDEC, *CWCWC* newsletter “Our Water Our Future: Issue 50, 2009. Also, by the same author, see Gas Drilling in Marcellus Shale and NYS at www.newyorkwater.org.

For further information see www.newyorkwater.org. Click on:

Gas Drilling in Marcellus Shale and

NYS water withdrawal regulatory program legislation and water protection local ordinance.

⁷³ See article in *CWCWC* July/August 2008 newsletter: Are You Drinking Your Neighbor’s Sewage? By the Environmental Committee, League of Women Voters – New Castle and Westchester.

⁷⁴ Thanks to Edward A. Barnett, Watershed Information Coordinator, for supplying this information

⁷⁵ Westchester County Septic Management Program, WCDP/SDC4, May 30, 2000

⁷⁶ See article by Peter Harckham in *CWCWC* September/October 2008 newsletter

⁷⁷ See: http://www.westchester.com/Westchester_News/Government/Westchester_County_Taking_Lead_On_Septic_Management_2008090610291.html