

ENVIRONMENTAL LAW IN NEW YORK

ARNOLD & PORTER

MATTHEW BENDER
Partner with the Brightest Minds in Law

Volume 10, No. 12

December 1999

The Baked Apple Scenario

by Douglas Hill

I. YEAR 2001

It's January 1, 2001—the real first day of the new millennium—and we are looking back on the year 2000. Representatives of the 161 nations that agreed to the Kyoto Protocol met again in an attempt to define its requirements further. Braced by Senate Resolution S.R.98, which insists on emission limitations by developing countries, the U.S. delegation pressed for—what it called—“meaningful participation” from the developing countries. In response, the Indian representative noted that the world's per capita (*i.e.*, per person) carbon dioxide emissions amounted to about 1 ton per year, that India's were about half that, and that the U.S. emitted about 5 tons of carbon dioxide per capita per year. When the U.S. asks India, which has one-tenth its per capita carbon dioxide emissions, to make a “meaningful contribution,” he asked, what can that possibly mean? The U.S. delegation was unable to answer that question to the satisfaction of many of the developing countries, and thus failed to win such a commitment.

Despite a massive political effort by the White House, the U.S. Senate kept its promise and refused to ratify the Kyoto Protocol. The government of Japan, faced with growing public opposition to the threefold increase in nuclear power it planned to meet its commitments under the Kyoto Protocol, quickly followed suit. With these two nations out, the minimum requirement for ratification by nations contributing at least 55 percent of the 1990 carbon dioxide emissions of the industrialized countries could not be satisfied, and the Kyoto Protocol died. Some said it was the most significant withdrawal of the U.S.

from its international responsibilities since the Senate rejected membership in the League of Nations in 1919. Others shrugged it off as simply “business as usual.”

The nation's carbon dioxide emission reduction policy returned to the status quo: voluntary commitments. Although such voluntary commitments proved to be quite profitable to individual companies in many cases, in their entirety they made little dent in the continuing growth of national carbon dioxide emissions.

(continued on page 191)

IN THIS ISSUE

LEGAL DEVELOPMENTS

◆ Agency Practice	182
◆ Asbestos	182
◆ Hazardous Substances	183
◆ Land Use	184
◆ Lead	185
◆ Mining	186
◆ SEQRA/NEPA	186
◆ Solid Waste	187
◆ Toxic Torts	187
◆ Water	187

NATIONAL DEVELOPMENTS 188

NEW YORK NEWSNOTES 190

UPCOMING EVENTS 191

WORTH READING 191

a settlement in a case in which EPA alleged that the Transit Authority incorrectly managed six underground storage tanks (USTs) at the former Walnut Bus Depot in the Bronx. The Transit Authority paid a \$32,000 penalty as part of the settlement. After a 1996 inspection, EPA determined that the Transit Authority failed to conduct certain required checks for leaks from a UST that held waste oil from oil changes performed on the buses. EPA also found that five other USTs were improperly in temporary closure status for six years. RCRA permits tanks to be in temporary closure only up to 12 months before they must be permanently closed. Two major releases at the site have been or will be cleaned up under DEC oversight. The Transit Authority closed the bus depot in 1998 and transferred the property to the Empire State Development Corporation. The facility will be converted to a newspaper printing plant. EPA Region 2 Press Release (Aug. 24, 1999).

New York City's Drinking Water Protection Plan Should Focus More on Controlling Pathogens, Report Says

The comprehensive plan for protecting New York City's drinking water should place more emphasis on preventing and controlling disease-carrying pathogens, according to a report from the National Research Council's Committee on Watershed Management for New York City. The City's watershed management strategy currently focuses on phosphorus, which can play a large role in degrading water quality but is not itself toxic. The report states that efforts to monitor, model, and control pathogens such as cryptosporidium and giardia should be stepped up. The study was undertaken at the request of the New York City's Comptroller's Office to provide a scientific evaluation for implementing the 1997 New York City Watershed Memorandum of Agreement. The report generally hails the City's watershed management strategy as a prototype for water suppliers nationwide, but recommends that water system managers continually reevaluate treatment options beyond chlorination to control dangerous pathogens. Copies of the report, "Watershed Management for Potable Water Supply: Assessing New York City's Approach," are available from the National Academy Press at (202) 334-3313 or 1-800-624-6242.

UPCOMING EVENTS

March 8-9, 2000

"The Year 2000 Conference on Environmental Innovation: Creating Sustainable Business Assets for Today and Tomorrow," sponsored by The Conference Board, Arthur D. Little, and World Business Council for Sustainable Development. New York City. Information: (212) 339-0345, or <www.conference-board.org/environment.htm>.

April 15-19, 2000

"American Planning Association Conference," sponsored by

(Matthew Bender & Co., Inc.)

the American Planning Association, New York City. Requested topics include brownfields, takings, open space, and endangered species. Information: (312) 431-9100, or <www.planning.org>.

WORTH READING

Janet L. Abu-Lughod, *New York, Chicago, and Los Angeles—America's Global Cities* (University of Minnesota Press, 1999).

John M. Armentano, "Regulatory Takings: Battle Rages on Despite Two Decades of Court Rulings," *New York Law Journal*, Sept. 22, 1999, at 5:2.

Michael B. Gerrard, ed., *The Law of Environmental Justice: Theories and Procedures to Address Disproportionate Risks* (American Bar Association, 1999).

Charles Gobeil, "Silver in Sediments From the St. Lawrence River and Estuary and the Saguenay Fjord," *33 Environmental Science & Technology* 2953 (1999).

Stephen L. Kass and Jean M. McCarroll, "Environmental Justice and Community Gardens," *New York Law Journal*, Aug. 27, 1999, at 3:1.

Clyde Mitchell, "Environmental Liability of Bank Trustees," *New York Law Journal*, Sept. 15, 1999, at 3:1.

Michael A. Rivlin, "Wild Man in a Lab Coat," [New York State's Wildlife Pathologist Ward Stone] *Amicus Journal*, Fall 1999, at 28.

John M. Wilson, II, "Local Control Over the Siting of Cellular Towers—Part II," *Municipal Lawyer*, July/Aug. 1999, at 1.

The Baked Apple Scenario

(continued from page 181)

II. YEAR 2010

A. Heat

Looking ahead now to 2010, about when the nations would otherwise have had to meet their Kyoto targets, the signs of climate change have become more pronounced. Global temperature, which had inched up about one degree in all of the 20th Century, had already increased by another half degree in just one decade. Summer heat spells in which the daily temperature exceeds 90 degrees in New York City now stretch out longer than the two weeks people might have expected. In these summer months, traffic seems to be frequently disrupted by the pavement buckling. The Big Apple is becoming the Baked Apple.

The number of deaths from heat stress in New York City during these hot spells also has been increasing. (It had already averaged 300 or so in the 1990s—then the highest amount in the U.S.—higher on average than Chicago.¹) These deaths

(PUB.004)

usually occur among elderly residents living on the top floors of old, uninsulated buildings with black, tar paper roofs in which the room temperature sometimes reaches 108 degrees F, considerably higher than normal human body temperature, and remains at that level for hours or days at a time.² Here in 2010, the City is considering adopting a heat stress warning system tested in Philadelphia in 1995.³

Back in the 1990s, the U.S. EPA and Department of Energy established the *Cool Communities* program.⁴ This was designed to counteract these peak summer temperatures with extensive tree planting and the use of high-albedo (*i.e.*, light-colored reflecting) surfaces on roofs and pavements. According to meteorological modeling results, these could reduce summer peak temperatures in New York City by up to four degrees.⁵ Unfortunately, in this year of 2010, the program has gone unfunded for the seventeenth consecutive year.

New York State has a Weatherization Assistance Program, funded modestly by the federal government, which will spend about \$2,000 to renovate and insulate one of these old buildings. Since this program is designed to save on winter heating, however, somehow white roofs are not thought to be part of the solution. In 2010, roofing paper is still black.

B. Sea Level Rises—Urban Flooding

Sea level, which rose about one foot in the New York area in the 20th Century, has crept up another three inches in the past decade. Here in 2010, the Alliance of Small Island States which, in the run-up to Kyoto had proposed that the industrial nations reduce their carbon dioxide emissions by 35 percent from their 1990 levels, announced that it was changing its name to the Alliance of Smaller Island States.

Rising sea level, together with what seems to be more frequent and intense showers and thunderstorms, has caused the problem of urban flooding in 2010 to become commonplace. Downtown Manhattan seems to be regularly flooded, particularly during the Northeaster storms common to this area, and steps have begun to be taken to dike the river tunnel entrances. When a Northeaster struck a few days before Christmas, Wall Street itself was flooded. The floor of the New York Stock Exchange was saved when a small army of stockbrokers improvised dikes at the entrance using baled newspapers. The Wall Street Journal is good.

This flooding has taxed the subway system which even in the 1990s operated more than 300 pumping stations removing 15 million gallons of water a day which accumulated from rain water, high water tables, and water main breaks. Many PATH subway stations in downtown Manhattan and elsewhere are below sea level. Here in 2010, steps are being taken to protect the vulnerable points in the transit system—shafts, vents and approaches—from being flooded.

Periodic flooding is also affecting other waterfront infrastructure. This include landfills, 123 marine transfer stations for solid waste, power plants which are located on waterfronts for fuel delivery and cooling water, tank farms for oil storage, and bridge access roads.⁶

Operations at LaGuardia Airport, which is less than seven feet above sea level, are more frequently curtailed, although among the local airports LaGuardia is the only one that is diked.

C. Coastal Flooding Too

During the same storm that panicked Wall Street, a new inlet broke through the Fire Island barrier beach bordering Great South Bay, Long Island. During the past century, the Fire Island Inlet has migrated westward about seven miles from the Fire Island lighthouse that had been built, originally at its edge, so that the new breakthrough came as no surprise. However, it led to extensive inland flooding of Long Island's bayside towns of Freeport, Bay Shore, Islip, Sayville, and Patchogue, especially in places where canals had been cut inland. Now with the authority to do so, the Corps of Engineers immediately acted to fill the break in the barrier beach and restore the status quo.

Buildings in the flooded area were quickly restored by their owners who treasure their waterfront location, in some cases with structural improvements required by the Federal Emergency Management Agency to continue to be eligible for flood insurance they will need for the next big storm. The States of New York and New Jersey previously ranked eighth and fourth, respectively, in flood insurance claims per year. This year of 2010, each state moved up a notch.

D. Traffic Congestion

As projected in the late 1990s, motor vehicle traffic has increased by 20 percent in the metropolitan area, and congestion has doubled.⁷ Telecommuting is in. As it was put by the new owner of the New York Yankees, Yogi Berra, "The roads are so crowded, nobody drives anymore."

And the cars keep getting bigger and heavier. The evolution of cars from the old family sedan started with what looked like bigger Army jeeps, and then went on to sport utility vehicles (SUVs) that looked like off-the-road bulldozers. Nobody buys a family sedan anymore because they are not safe to drive in this sea of monster vehicles. The death rate from crashes of sport utility vehicles in 1998, when a lot of them were driven by soccer moms to pick up the groceries, was 17 percent higher than for cars. When the first generation of these vehicles passed into the hands of less responsible drivers as used cars, the death rate soared.

In city traffic congestion, these gas-guzzlers spend a lot of time idling and creeping along, so their gasoline mileage is only about half their highway mileage, and their carbon dioxide output in the city is nearly doubled.

However, things may be turning around. Now that everybody owns one of these dirty SUVs, the automobile industry has switched its TV advertising and lobbying muscle to replace them all with its new generation of high-efficiency cars.

E. Economic and Demographic Problems

In this year 2010, Manhattan retains its edge as a world-city

headquarters for foreign and domestic multinational businesses, global capital market functions, world government, the media, and cultural institutions. Increasingly, the New York region competes directly in the world economy. Indeed, one in three Manhattan jobs is linked to the global economy.⁸

However, with the oppressive summer heat, recurring flooding, and strangling traffic congestion, the New York metropolitan area is becoming a less attractive place to live. Greenhouse effects in the region are diverting capital needed for public infrastructure maintenance and private sector investment, contributing to greater inefficiencies in doing business, and less cost-competitiveness in global markets. In this year of 2010, three major financial companies moved their headquarters from downtown Manhattan to the Connecticut countryside.

Moreover, there is a widening gap in the labor market between the haves and have-nots. At the high end, there is a demand for cognitive and communication skills, and the ability to manage complex systems, with compensation on a knowledge-based scale. At the low end, the jobs stress in-person services, a modicum of training, with compensation based on the number of hours worked.

Global forces are bringing in a diverse array of foreign-born immigrants, largely unskilled. They are *pulled* into the region by forces of family reunification, and *pushed* out of their homelands by economic, political, and climate conditions. This is leading to higher unemployment in the city and greater stress on social support systems.

III. MOVING AHEAD NOW ANOTHER 15 YEARS TO 2025

A. Heat

By 2025, global average temperature has increased by two degrees since 1999.⁹ The belated phasing out of coal-burning power plants in the Midwest has removed the canopy of sulfate aerosols in the sky which partially shaded the Northeast, with the effect of further increasing peak temperatures in the metropolitan area. Summer hot spells now last for a month.¹⁰ Excess mortality for an average summer season has reached about 500, two-thirds more than in the 1990s.¹¹

B. Further Sea Level Increases

Sea level has risen a half-foot by 2025, half as much as in the entire 20th Century.¹² The Alliance of Smaller Island States again pleaded for a 35 percent reduction in carbon dioxide emissions by the industrial countries, and announced another name change, this time to the Alliance of Titanic Island States.

C. Water Supply Problems

In 2025, metropolitan New York is experiencing what is being called a 100-year drought. It's the second 100-year drought in the past 60 years. Although winter precipitation has increased, the runoff occurs immediately because it is not stored as snow.¹³ Summer precipitation has declined and that, combined with

greater evaporation caused by the hotter temperatures, has caused soil moisture to decline by about one-fifth.¹⁴ The reservoirs are way down.

The water shortage in the metropolitan area is exacerbated by the rise in sea level which has caused the salt water front to advance up the Hudson River and the Delaware River. As a condition of drawing on the headwaters of the Delaware River in upstate New York, the New York City water supply system must allow a minimum required freshwater flow into the Delaware River.¹⁵ As the salt water has risen, more fresh water has been held back from the New York City system and released to the Delaware River to prevent the salt front there from advancing too far upstream and threatening the Philadelphia water supply.

Not only that. The advance of the salt water front up the Hudson River has knocked out the river water supply of Poughkeepsie and other river towns. Under New York State law, these upstate communities have exercised their legal right to tie into New York City's water supply system as they experience shortages of their own.¹⁶

What can New York City do but impose stringent measures for water conservation? Unfortunately, under a 1954 decree of the U.S. Supreme Court, New York City is required to release to the Delaware system 83 percent of the difference between its "continuous safe yield" and its estimated consumption in any year. In other words, New York City gets to keep only 17 percent of the water it saves.¹⁷ Bipartisan legislation to relieve this problem has been introduced in Congress by two of its most senior members: New York's Senators Clinton and Guiliani.

In the last major drought in the Northeast in the 1960s, engineering studies developed some 100 alternative projects for meeting future water requirements of the metropolitan New York region.¹⁸ One of those was an exchange of water between the New York City system and Long Island groundwater, in opposite directions during drought and non-drought periods.¹⁹ Suffolk County, Long Island, which sits on a supply of ground water equivalent to half of Lake Erie, is getting nervous.

D. Economic and Demographic Problems Mount

By 2025, the severe economic distress around the world resulting from climate change has also had its effect on New York. Tens of millions of people have been flooded out of their home villages in Bangladesh by the rise in sea level,²⁰ for example. Many of these tired and poor have sought refuge here in the traditional gateway to America. New York City is overflowing with new immigrants, exacerbating the unemployment and welfare and health-care problems.

In a mere quarter century, "business as usual" has led to significant losses in the metropolitan area's quality-of-life assets, making the region less attractive to an educated labor force. In all probability, the region's mismatch between skills of the labor force and demands of employers will persist. The probable result of climate change will be less income equality, lower per capita growth in income, and less economic well-being overall.

Sometime after the middle of the 21st century, nothing more was heard from what was once called the Alliance of Small Island States.

Note: This scenario is a speculation by the author. Sources are cited for some of the factual information presented, but, of course, none bear any responsibility for this paper.

This article was presented to the conference on "Biodiversity and Climate Change: Conservation in the Face of Uncertainty," American Museum of Natural History, New York, NY, May 1, 1999.

Douglas Hill, Eng.Sc.D., P.E., is a systems engineer, presently a consultant to the Regional Plan Association (located in New York, New York), on climate change issues, and to the Energy Technology Systems Analysis Programme of the International Energy Agency. He edited "The Baked Apple? Metropolitan New York in the Greenhouse," the proceedings of a 1994 conference on the local consequences of climate change. He served as a

reviewer of the Working Group III Second Assessment report of the Intergovernmental Panel on Climate Change. As a consultant to Brookhaven National Laboratory, he helped develop the MARKAL model of the New York State energy system for projecting energy supply and demand technologies, especially to control carbon dioxide emissions. Dr. Hill holds degrees of Eng.Sc.D. and M.S. from Columbia University, and B.Aero.Eng. from Rensselaer Polytechnic Institute. He is a licensed professional engineer. He was co-author of the 1990 Long Island Energy Plan prepared for the Long Island Regional Planning Board, and articles published in the journals Energy, Energy Policy, and Science.

¹ L.S. Kalkstein and J.S. Greene, *An evaluation of climate/mortality relationships in large U.S. cities and the possible impacts of climate change*, Environmental Health Perspectives, Vol. 105, No. 1, Jan. 1997, p. 91.

² J. Huang, *Urban heat catastrophes: the summer 1995 Chicago heat wave*, Center for Building Science News, Energy and Environment Division, Lawrence Berkeley National Laboratory, Fall 1996, p. 5.

³ L.S. Kalkstein, P.F. Jamason, J.S. Greene, J. Libby, and L. Robinson, *The Philadelphia Hot Weather-Health Watch/Warning System: Development and Application, Summer 1995*, Bulletin of the American Meteorological Society, Vol. 77, No. 7, July 1996.

⁴ *Cooling our communities: a guidebook on tree planting and light-colored surfacing*, 22P-2001, Policy, Planning and Evaluation, U.S. Environmental Protection Agency, Jan. 1992.

⁵ H. Taha, S. Gabersek and S.J. Konopacki, *Modeling the meteorological and energy impacts of urban heat island control in the U.S.*, Energy Analysis Program 1995 annual report, LBL-38354, Lawrence Berkeley National Laboratory, Berkeley, CA, May 1996, p. 74.

⁶ R. Zimmerman, *Global warming, infrastructure, and land use in the metropolitan New York area: prevention and response*, in D. Hill (ed.) *The Baked Apple? Metropolitan New York in the Greenhouse*. Volume 790. Annals of the New York Academy of Sciences. 1996. Distributed by Johns Hopkins University Press.

⁷ *Towards the 21st century: a three-year research plan for New York's energy, economic, and environmental future, 1997-2000*, New York State Energy Research and Development Authority, Summer 1997, p. 2-7.

⁸ R.B. Armstrong, *The region's long-term economic and demographic outlook*, in D. Hill, *supra* note 6.

⁹ A.J. Broccoli, *The greenhouse effect: the science base*, in D. Hill, *supra* note 6, at p. 23.

¹⁰ V. Gornitz, C. Rosenzweig, C. Small, R. Goldberg, and D. Rind, *Development of climate scenarios for the Metro East Workshop*, presented to

the Metro East Coast Climate Impacts Assessment Workshop, 23-24 March 1998, Columbia University, New York, Table 1.

¹¹ L.S. Kalkstein and J.S. Greene, *An evaluation of climate/mortality relationships in large U.S. cities and the possible impacts of climate change*, Environmental Health Perspectives, Vol. 105, No. 1, Jan. 1997, p. 91.

¹² V. Gornitz, C. Rosenzweig, C. Small, R. Goldberg, and D. Rind, *Development of climate scenarios for the Metro East Workshop*, presented to the Metro East Coast Climate Impacts Assessment Workshop, 23-24 March 1998, Columbia Univ., New York, Table 1.

¹³ G.J. McCabe, Jr., and M.A. Ayers, *Hydrologic effects of climate change in the Delaware River Basin*, Water Resources Bulletin, Vol. 25, No. 6, Dec. 1989.

¹⁴ A.J. Broccoli, *The greenhouse effect: the science base*, in D. Hill, *supra* note 6.

¹⁵ R. Alpern, *Impact of global warming on water resources: implications for New York City and the New York metropolitan region*, in D. Hill, *id.*, p. 86.

¹⁶ Alpern, *id.*

¹⁷ The decree of the U.S. Supreme Court in *New Jersey v. New York et al.*, Delaware River, 347 U.S. 995 (1954), Section III, B, 1(c).

¹⁸ Metcalf & Eddy and Hazen & Sawyer, *Engineering feasibility report on alternative regional water supply plans for northern New Jersey -New York City -Western Connecticut metropolitan area*, Nov. 1971.

¹⁹ Parsons, Brinckerhoff, Quade & Douglas, *Further development of regional water supply alternatives: northern New Jersey -New York City -western Connecticut metropolitan area, Northeastern United States Water Supply Study*, June 1973.

²⁰ L. Bijlsma, *Coastal zones and small islands, Climate change 1995, Impacts, adaptations and mitigation of climate change: scientific-technical analyses*, Contribution of Working Group II to the second assessment report of the Intergovernmental Panel on Climate Change, Cambridge University Press, 1996, p. 308.