



# WATER FACT SHEET

U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR

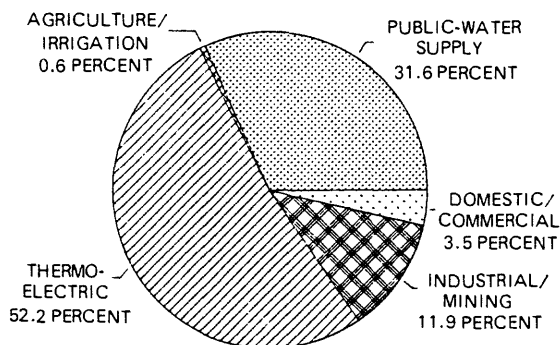
## WATER USE IN NEW YORK, 1985

### OVERVIEW

New York State has adequate rainfall to replenish its surface-water and ground-water withdrawals. In 1985, about 9,040 Mgal/d (million gallons per day) of freshwater was withdrawn from New York's rivers, streams, lakes, and aquifers; this represents an average of more than 500 gal/day (gallons per day) for each resident of the State. In addition to withdrawals, about 515,000 Mgal/d was used in-stream for hydroelectric-power generation, which means that in 1 year, enough water passed through hydroelectric plants in New York State to cover more than 900,000 square miles with 1 foot of water. New York ranks second among the States in its use of rivers for hydropower.

More freshwater is withdrawn by thermoelectric plants than for any other water-use category. Of the freshwater withdrawals, 52 percent were made by fossil-fuel and nuclear powerplants. Freshwater withdrawals for public-water supply were second, and industrial and mining withdrawals were third (fig. 1).

Figure 1. TOTAL FRESHWATER WITHDRAWALS IN NEW YORK STATE IN 1985



A facility may withdraw water from a surface or ground source (and be self-supplied), may receive water from a public-water supply, or may do both. The amount of water withdrawn and the amount delivered by public-water suppliers is shown in figure 2 by category (values may not add exactly to totals as a result of rounding). The water-use categories of industrial and mining, domestic, and commercial account for 46 percent of the water used if water use by self-supplied and public-supplied facilities is combined. The thermoelectric powerplants used 52

percent of the statewide total; agriculture, irrigation, and public service, such as street washing and fire-fighting, used 2 percent.

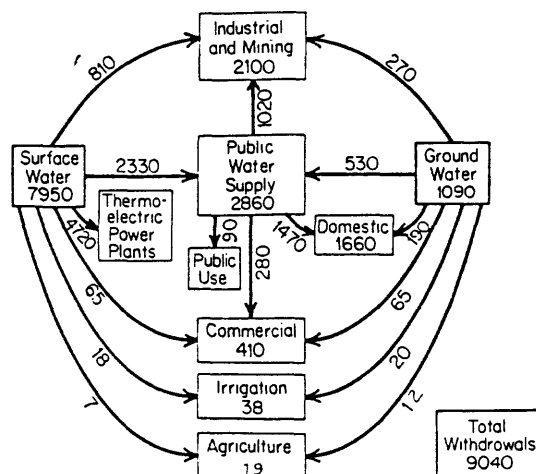
### Surface Water

Many of New York's large population centers have developed along major rivers and lakes, and, as a result, approximately 88 percent of the freshwater withdrawals in 1985 were from these sources. The largest withdrawals for public supply are concentrated near the major urban areas and in southeastern New York, where surface water is withdrawn for use in the New York City area. The largest withdrawals of fresh surface water statewide were for thermoelectric powerplants, including fossil fuel and nuclear, and for public supply.

### Ground Water

Only 12 percent of the freshwater withdrawals in 1985 were from ground water. The largest of these were for public supply, self-supplied industrial, and mining, domestic, and commercial use. Together these categories represent 1,055 Mgal/d or 97 percent of the total ground-water withdrawal. Of the freshwater withdrawals made on Long Island, 72 percent were ground water. Of the total ground water withdrawn in New York in 1985, 43 percent (468 Mgal/d) was on Long Island.

Figure 2. ESTIMATED FRESHWATER USE IN NEW YORK STATE IN 1985 (in million gallons per day)



## **WATER USE, BY CATEGORY**

### **Public Supply**

About 1,800 community public water-supply systems in New York provide water to 16 million people (89 percent of the State's population). Total withdrawals for public supply in 1985 were 2,860 Mgal/d, of which 2,330 Mgal/d was from surface-water sources and 530 Mgal/d was from ground-water sources. Of the population served by public-supply systems, 74 percent are supplied by surface water.

The 7.25 million people who live and work in New York City are supplied by a network of natural and artificial channels, reservoirs, and aqueducts that originate from as far as 125 miles away. This system delivers an average of 1,500 Mgal/d, which represents 52 percent of the water withdrawn in the State for public supply.

### **Domestic and Commercial Uses**

Domestic and commercial water users withdraw water and/or receive water from public-supply systems. Combined total withdrawals and public-supply deliveries in 1985 were about 2,070 Mgal/d. Domestic use was about 1,660 Mgal/d, of which 1,470 Mgal/d was from public-supply systems. About 11 percent of the population used a total of 190 Mgal/d from private wells or springs.

Commercial water use in 1985 totaled 410 Mgal/d, of which 130 Mgal/d was self-supplied and 280 Mgal/d was delivered by public-supply systems. Although domestic and commercial withdrawals (excluding deliveries from public water supplies) represented only 3.5 percent of the total statewide withdrawals in 1985, such uses are increasing as New York continues to expand its service-oriented, commercial enterprises.

### **Agricultural and Irrigation Uses**

Agricultural and irrigation water use statewide amounted to less than 1 percent of the total freshwater withdrawals. In 1985, about 57 Mgal/d was withdrawn for agricultural and irrigation use, of which 38 Mgal/d was used for irrigation. Of the Statewide withdrawals for irrigation, 46 percent were on Long Island. Nearly equal amounts of ground water and surface water were used for irrigation, whereas 63 percent of the water used for non-irrigation agricultural purposes was from ground water.

### **Mining and Industrial Use**

Freshwater industrial use, including mining, was about 2,100 Mgal/d in 1985. Self-supplied facilities withdrew about 270 Mgal/d of ground water and 810 Mgal/d of surface water; the remainder (1,020 Mgal/d) was delivered by public supplies, which nearly equaled self-supplied withdrawals.

### **Thermoelectric Powerplants**

In 1985, fossil-fuel and nuclear powerplants withdrew 4,720 Mgal/d of fresh surface water. The fossil-fuel powerplants used more than three times as much water as the nuclear powerplants but also generated three times as much power.

## **NATIONAL WATER-USE INFORMATION PROGRAM**

The data given above were collected and estimated by the U.S. Geological Survey (USGS) and New York State Department of Environmental Conservation (NYSDEC) as part of the National Water-Use Information Program of the USGS. That program is based on a Federal and State cooperative agreement designed to collect, store, and disseminate water-use information both nationally and locally. Together the NYSDEC and USGS collect, compile, and store water-use data to develop a data base useful for State water-resources management.

New York State law mandates that the New York State Department of Health (NYSDOH) collect public-water supply data. The USGS and NYSDEC investigate the other water-use categories in special projects and calculate withdrawals through estimation techniques and from information from a variety of State, Federal, and local sources.

## **WATER-RESOURCES MANAGEMENT**

The primary agency for water-resources management in New York State is the NYSDEC, which regulates the construction of, improvements to, and development of water resources for the public health, safety, or welfare. The NYSDOH has responsibilities pertaining to public-supply systems, and the New York State Department of Transportation manages the Barge Canal System.

NYSDEC is responsible for administering the State's environmental-quality and natural-resource programs, including those relating to the control of water pollution. Major elements of the NYSDEC's water program include water-resource management and planning, the establishment of water-quality standards and classifications, issuance of permits for water supply, monitoring water quality, issuance of water-discharge permits, the administration of municipal wastewater-treatment programs, and the administration of the New York State Pollutant Discharge Elimination System Program, which regulates point-source wastewater discharges.

The NYSDEC, in cooperation with the NYSDOH, is charged with the preparation of a Water Resources Management Strategy for New York State to meet the water-resource requirements of residential, agricultural, industrial, institutional, and commercial users for the next 50 years. The statewide strategy consists of strategies for 13 upstate areas. The enacting legislation requires review of strategies every 2 years with revisions as needed.

Additional information on water use in New York State can be obtained from:

District Chief	Director, Division of Water
U.S. Geological Survey	New York State Department of
P.O. Box 1669	Environmental Conservation
Albany, N.Y. 12201	50 Wolf Road
	Albany, N.Y. 12233