



Setting The Record Straight: Facts Required For An Informed Debate

The process of crafting good policy decisions benefits from public input. This has been a long-standing approach taken by the Delaware River Basin Commission (DRBC) since its creation in 1961. Using the best available, scientific information also is critical to making sound policy decisions. It is to be expected that controversial policy decisions will not receive the public's unanimous approval and that reasonable people will agree to disagree. This process is challenging enough when everyone is using good information; the process can be harmed when inaccurate information is distributed intentionally or unintentionally by individuals or groups as factual.

The following statements are among those being used by some who support a year-round 20 percent void (approximately 54 billion gallons of water) in the three New York City (NYC)-Delaware Basin reservoirs. Not all of the statements that have been circulating recently are based on facts and they are having the unfortunate effect of misinforming the general public, elected officials, and the media. The resulting confusion, in turn, negatively impacts the ongoing, complicated process now underway to provide a more adaptive means for managing multiple and competing uses of storage in those reservoirs while protecting the water supply rights of Delaware, New Jersey, New York State, Pennsylvania, and New York City under the 1954 U.S. Supreme Court decree.

Statement 1: *The three floods that took place along the main stem Delaware River between September 2004 and June 2006 were man-made and not the result of 100-year events or the perfect storm.*

Fact: The National Weather Service (NWS) has repeatedly said excessive rainfall/runoff was the primary cause of all three floods.

Fact: The NWS reports that the precipitation or rainfall frequency for each event ranged from a one-in-50-year to a one-in-250-year precipitation event.

Fact: In a May 2005 presentation to government officials, the NWS stated, "In summary, it takes an unusual set of conditions that come together in an unusual sequence, at an unusual time and place to produce a rare event," noting that the following conditions need to come together in order to cause main stem river flooding on the Delaware:

- Requires unusually heavy rain covering most of the river basin;
- Usually preceded by a wet period lasting months that "sets the stage" or an above normal snowpack; and
- Often preceded a few days before by a "precursor flood event" that results in very wet soils and above normal river levels.

The NWS also has noted, "The term '100-year flood' is misleading because it leads people to believe that it happens only once every 100 years. The truth is that an uncommonly big flood can happen any year. There is a 1-in-100 chance [or one percent chance] that a flood this size will happen during any year. Perhaps a better term would be the '1-in-100 chance flood.' "

While the 100-year flood determination is useful for purposes of national flood insurance, it should not always be relied upon to appropriately identify or communicate risk.

Statement 2: *The DRBC has the ability to direct water from the NYC-Delaware River Basin reservoirs to the Hudson River Basin.*

Fact: The DRBC does not have the independent authority to direct water out of the NYC-Delaware River Basin reservoirs.

The Delaware River Basin Compact, the 1961 public law creating the DRBC, defines the commission's authority and responsibilities. It stipulates that the DRBC, without the unanimous consent of the five parties to the 1954 U.S. Supreme Court decree (four basin states and NYC), "shall not impair, diminish or otherwise adversely affect the diversions, compensating releases, rights, conditions, obligations, and provisions for the administration thereof as provided in said decree." This specifically prevents the DRBC from independently making changes to the management of the three upper basin reservoirs owned by NYC without the unanimous agreement of the five decree parties. The decree parties are separate in function from the members of the DRBC.

The DRBC is comprised of the governors of Delaware, New Jersey, New York, and Pennsylvania, along with a federal government representative appointed by the President. DRBC staff advises the five commissioners and implements the policies and programs adopted by those five members as they jointly manage the basin's shared water resources without regard to political boundaries. The commission is an instrument of the four state governors and federal representative as it implements the directives of its five members; the DRBC is not a separate entity independently directing them.

Statement 3: *The NYC-Delaware River Basin reservoirs have to be at or above 100 percent capacity.*

Fact: The DRBC does not require that the reservoirs must be at or above capacity.

The 1954 Supreme Court Decree gives NYC the legal right to take an average of up to 800 million gallons per day from its three Delaware Basin reservoirs to supply the city with drinking water. During dry periods, Delaware, Pennsylvania, and New Jersey rely on releases from the same NYC reservoirs to maintain flows in the main stem Delaware that are needed to furnish the interstate region with vital water supplies in accordance with the 1954 decree. Some 2.5 million Pennsylvania and New Jersey residents obtain their drinking water from the Delaware River downstream of the Delaware Water Gap. During droughts, freshwater inflows to the Delaware Estuary are needed to repel salt that might otherwise creep upstream through tidal action and threaten the water supply intakes of Philadelphia and New Jersey American Water Company. Although NYC has historically taken less than its full allocation, it manages the reservoirs to achieve full storage in the late spring to provide for diversions and releases over the entire water year extending from June 1 through May 31. This is a water supply reservoir operating target, not a DRBC-imposed requirement, and has been in effect since the building of the reservoirs. This operating target or goal did not suddenly change over the past four years.

As of September 21, 2007, the combined level of storage in the three reservoirs was 65.2% of capacity or 176 billion gallons, which is 10 billion gallons below normal for that date.

Statement 4: *The DRBC is profiting from the sale of water stored in the NYC reservoirs.*

Fact: The DRBC, an interstate-federal government agency, is not a water company that treats, distributes, and sells water to customers.

Fact: The DRBC receives no funds from New York City for water the city is permitted to divert out of its Delaware Basin reservoirs as stipulated in the 1954 U.S. Supreme Court decree.

DRBC does have a Water Supply Charges program used to reimburse the federal government for costs associated with commission-reserved water storage in the Beltzville and Blue Marsh reservoirs located on Delaware River tributaries. Water from these lower basin

reservoirs, both owned by the U.S. Army Corps of Engineers, is released during periods of low flow in order to control salinity in the tidal Delaware River and thereby protect Pennsylvania/New Jersey water supplies (over half of Philadelphia's water supply comes from the Delaware River). All surface water withdrawals between Montague, N.J. (over 100 river miles downstream from the location of NYC's Cannonsville and Pepacton reservoirs) and the Cohansy River in Cumberland County, N.J. are subject to charges. These rates have not been raised since the late 1970s. There is no connection with the amount of water stored in or diverted from the NYC reservoirs.

Statement 5: *The DRBC released billions of gallons of water from the NYC-Delaware Basin reservoirs during the 2004, 2005 and 2006 floods into a river that was already swollen.*

Fact: The billions of gallons of water coming out of the NYC reservoirs during the three floods were due to involuntary, uncontrolled spills, not directed by any governmental agency including the DRBC.

Statement 5 is very misleading because it fails to recognize the important distinction between involuntary, uncontrolled spills which take place when reservoirs have reached 100 percent capacity and water that is directed through release works by human action. Uncontrolled spills occurred during the three floods due to the runoff caused by the heavy rainfall amounts or snowmelt. When you fill your bathtub, the water will overflow the tub and spill over the top if you continue to fill it after reaching capacity. The NYC reservoirs are no different, with the only exception being that uncontrolled releases from the reservoirs are directed over a spillway. Spillways are separate from the dam and designed to allow water to flow around the dam in cases when capacity is reached, thus preventing damage that might occur from an overtopping of the dam.

Information contained in a recent NWS presentation indicated a runoff inflow of 53.9 billion gallons into Cannonsville Reservoir and 34.5 billion gallons into Pepacton Reservoir as a result of the rain that fell in the eight-day period leading up to the June 2006 flooding. Based on total usable storage capacity available in each reservoir, voids in Cannonsville and Pepacton reservoirs would have needed to be 56% and 25%, respectively, to prevent any uncontrolled spills. Due to the current design of the release works at both reservoirs, it would have taken over 30 days prior to the June 2006 flood to create enough space to capture the entire rainfall runoff into Cannonsville Reservoir and over 70 days at Pepacton.

Statement 6: *The DRBC has stated that every time there is a heavy rainfall, the floodplain will flood.*

Fact: Floodplains do flood, but not in every storm. DRBC staff never said that floodplains flood during every heavy rainfall storm.

As explained by the NWS, main stem Delaware flooding is dependent on a number of meteorological and hydrological conditions, not just rainfall amounts. According to a recent NWS presentation that compiled seven-day average precipitation totals in the Upper Delaware Basin above Montague, N.J. between 1949 and 2006, the top five rainfall events occurred in August 1955 (remnants of Tropical Storms Connie and Diane; over 11 inches), June 2006 (about 8.5 inches), October 2005 (remnants of Tropical Storm Tammy; about 7.25 inches), September 1999 (remnants of Tropical Storm Floyd; over 6.5 inches), and April 2005 (over 5.5 inches).

Severe main stem flooding occurred in three of the five events: August 1955, June 2006, and April 2005. During the 1955 flood of record, two NYC reservoirs did not spill (the third reservoir, Cannonsville, was not yet constructed) while all three NYC reservoirs spilled in June 2006 and April 2005.

Main stem flooding did not occur during two of the top five events – October 2005 and September 1999 – but that can be explained by antecedent or precursor hydrologic conditions:

below normal precipitation over multiple months which resulted in very low streamflow, soil moisture, reservoir storage, and ground water levels. Conditions prior to a rainfall event influence the amount of stormwater runoff into waterways. Thus, topography, soil conditions, and vegetation play very important roles. Dry soil accommodates greater infiltration of rainfall by acting like a sponge and reducing the amount of runoff entering rivers. Conversely, soil that is saturated as a result of previous rains or frozen has a lower capacity for infiltration and results in higher rates of surface water runoff. Dormant vegetation also will result in higher runoff rates.

DRBC emergency drought actions were in effect when Floyd hit the watershed in September 1999, as were drought management actions in each of the four basin states. Contrary to what has been said by some individuals, both Pennsylvania and New Jersey had issued statewide drought watches which were in effect at the time of the June 2006 flood. This demonstrates the difficulty in balancing the needs for flood mitigation and water supply given the fact that weather forecasting is not yet sufficiently advanced to furnish long-range, reliable drought or flood predictions. Additional information on this subject can be found in a DRBC paper, "Water Supply Reservoirs and Flood Protection," which is available at www.drbc.net.

Fact: Floodplains should be expected to flood.

By definition, floodplains are areas along a waterway susceptible to being inundated by waters from any source. Riverine processes create floodplains. Structures built in the floodplain are at risk. The Delaware River Basin Interstate Flood Mitigation Task Force recently submitted its action agenda to the governors that included eight flood loss reduction recommendations in the area of floodplain regulations and mapping.

Ongoing Flood Loss Reduction Efforts Relating to Reservoirs

On July 12, 2007, the Delaware River Basin Interstate Flood Mitigation Task Force forwarded to the four basin state governors its action agenda for a more proactive, sustainable, and systematic approach to flood damage reduction. The 45 consensus recommendations fall into six management areas: reservoir operations, structural and non-structural mitigation, stormwater management, floodplain mapping, floodplain regulation, and flood warning. The task force was formed at the request of the governors in the fall of 2006.

In response to the public perception of a cause and effect relationship between spilling reservoirs in the upper basin and flood occurrence in the main stem river between Hancock, N.Y. and Trenton, N.J., the task force concluded that flooding would still occur along the Delaware even if a year-round void program was implemented. Historic data indicate that major flooding on the main stem Delaware River occurred before New York City reservoirs were built or in the absence of spills after they were put into service.

While stopping short of advocating permanent voids, task force members called for evaluating the cumulative effects of operations at all existing major basin reservoirs to develop a coordinated action plan to reduce the likelihood and volume of spills as long as water supplies are not adversely affected. Using \$500,000 provided by the four basin states along with additional federal funding provided by the cooperating federal agencies, the DRBC is working with the U.S. Geological Survey, U.S. Army Corps of Engineers, and NWS to develop an integrated flood analysis model for the Delaware River Basin to allow evaluation of flood operations at individual reservoirs and the reservoir system.

Visit the DRBC web site at www.drbc.net for more information.

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