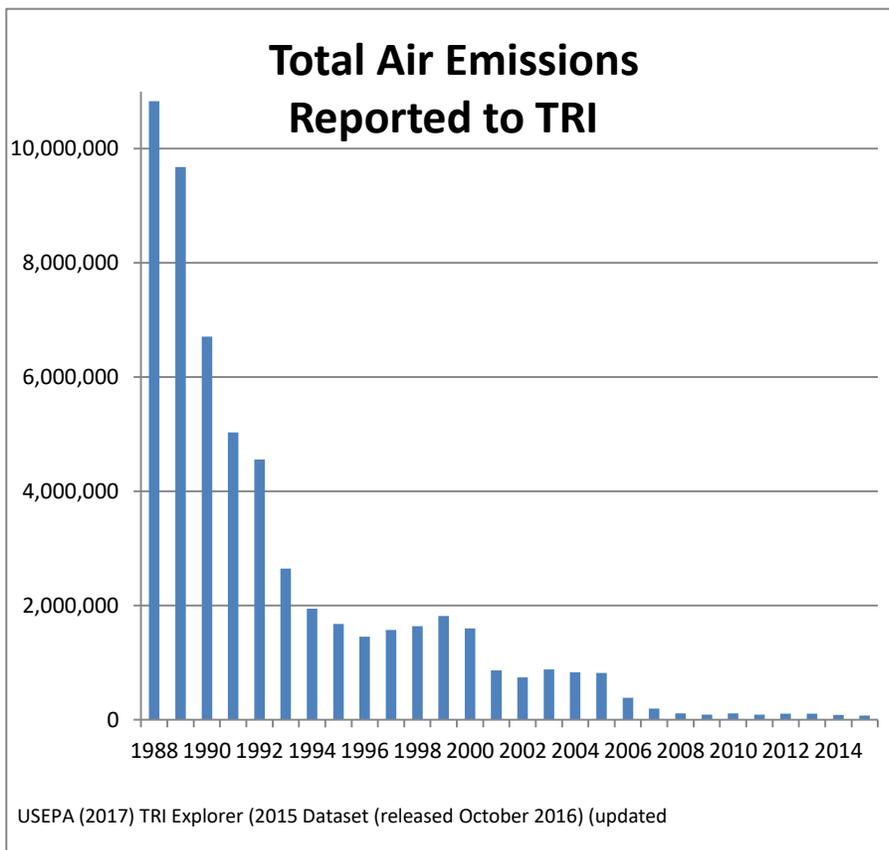


2017 marked the 30<sup>th</sup> anniversary of NHDES. Much has changed in the last 30 years to help sustain a high quality of life for all citizens by protecting and restoring public health and our beloved environment. While the work is not complete, NHDES took time this year to recognize 30 accomplishments and achievements that have impacted our environment and public health for the better over the past 30 years. Each of the six issues of our Environmental News newsletter in 2017 contained a description of five of these achievements, under a specific theme for each issue. In the March/April issue, it was:

## Our Health

### 1. Air Toxics Control Program

*Why it matters:* The EPA defines toxic air pollutants as “those pollutants that, at sufficient concentrations and exposure, cause or may cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects.” Today there are



more than 70,000 chemicals used by business and industry in the U.S. with over 1,000 new compounds introduced each year. Many of these chemicals are emitted into the atmosphere from various processes operated by business and industries in New Hampshire. These chemical emissions may result in adverse environmental and human health impacts.

*Progress in 30 years:* The New Hampshire Air Toxics Control Program was established in 1987 to prevent, control, abate and limit the emissions of toxic

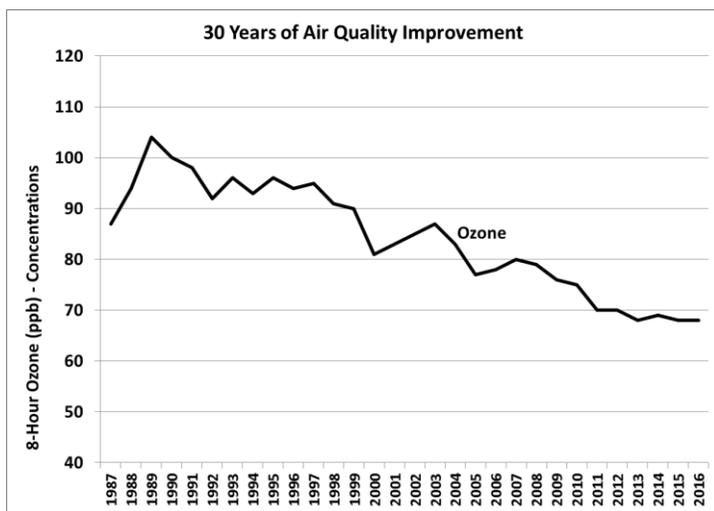
air pollutants into the ambient air in order to protect the health of New Hampshire residents, and the environment. Any business or industry that emits any of the more than 700 chemicals listed in the air toxic rule must demonstrate that their air toxic emissions do not impact the ambient air beyond the facility boundary above the established Ambient Air Limit (AAL). The Air Toxics Control Program works with the state air permitting bureau and the EPA air toxics program to help reduce emissions of these



toxic chemicals. An examination of the chemical emissions reported to the EPA Toxic Release Inventory (TRI) between 1988 and 2015 shows that emissions of hazardous chemicals into the ambient air in New Hampshire have decreased by 99%.

## 2. Ozone

*Why it matters:* There is an old saying that goes; “You can go for days without eating, but see how long you can last without breathing.” Clean breathable air is an important part of maintaining good health, a strong economy and sustainable ecosystems. While there are many different types of air pollution, reducing ozone has proven to be the most challenging, even in New Hampshire. Breathing high levels of ozone causes respiratory irritation including asthma, bronchitis and other lung diseases, and it damages and stresses foliage and crops and thus reduces their yield and life span.



*Progress in 30 years:* New Hampshire failed to meet the national ozone standard for 15 of the past 30 years, but thanks to the Clean Air Act and New Hampshire state statutes, ozone in the state has been reduced by 40 to 66% and now meets the Clean Air Act standards. Controls on power plants, cars using cleaner technology, better formulations of gasoline and widespread use of natural gas are among the measures that have brought us cleaner air.

NHDES issues emission permits and ensures compliance through an inspection program to maintain the progress we have achieved. Ozone is not the only air pollutant being reduced in New Hampshire. Carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), and sulfur dioxide (SO<sub>2</sub>) are other “criteria pollutants” now present in much lower concentrations than existed 30 years ago. Emissions of toxic air pollutants are also down significantly throughout the state. Comparatively, progress in removing ozone from our air has been slower than for the other pollutants, partially because some of it is natural (about 20-30%), but mostly because large amounts can be transported into New Hampshire from states to our south and west (upwind states). Ozone can be transported into New Hampshire from thousands of miles away. Getting upwind states to reduce their air pollution emissions to help northeastern states like New Hampshire has been a challenge, which has slowed progress.

## 3. Ensuring Safe Drinking Water

*Why it matters:* If not properly tested and treated, drinking water can contain any number of contaminants, ranging from disease-causing organisms to naturally-occurring toxic minerals, to industrial chemicals. These contaminants can make people ill, and even cause death, if present at unhealthy levels. A number of natural contaminants commonly occur at unsafe levels in surface water and wells used for water supply in New Hampshire.



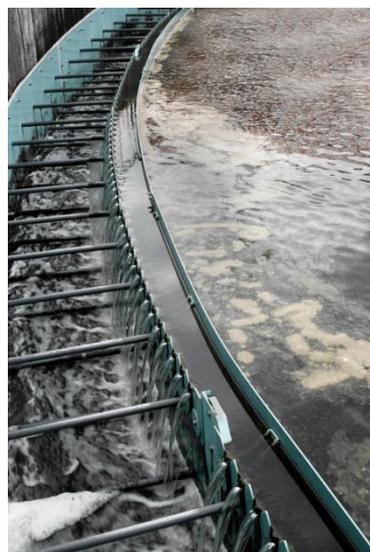
*Progress in 30 years:* Public water systems (PWSs) provide water to 54% of New Hampshire residents at home and to the entire population when they are away from home at schools, places of work, restaurants and other public places.

NHDES administers the federal Safe Drinking Water Act (SDWA) in New Hampshire, overseeing approximately 2,500 PWSs to ensure that they comply with both the federal and state SDWAs. The 1986 and 1996 amendments to the federal SDWA improved public health protection by driving many of the improvements to water supplies during the past 30 years. Under the 1986 amendments, new standards were established for approximately 100 contaminants, and filtration and disinfection requirements were added for PWSs that use surface water. Consequently, NHDES ensured that 35 water systems either added filtration systems or replaced their surface water sources with wells. Changes to the SDWA also emphasized preventing contamination of water supply sources, rather than relying as heavily on treatment and monitoring as in the past. Water systems struggling with aging infrastructure and the need to address additional contaminants received financial assistance from the Drinking Water State Revolving Fund (DWSRF) beginning in 1997.

Since then, NHDES has provided \$260 million in low-interest loans for 250 drinking water infrastructure projects thanks to federal grants and state match funds through the DWSRF. For the 46% of NH residents who have private wells at home, progress has been made in understanding the prevalence of naturally occurring contaminants; making home buyers aware of the most common contaminants, radon and arsenic; encouraging testing; and making it easier for well owners to determine what kind of water treatment would work for them.

#### **4. Wastewater**

*Why it matters:* Healthy water bodies such as our lakes, rivers and streams are vital to New Hampshire and its way of life. The ability to set water quality standards for all contaminants in surface waters and regulate pollutant discharges from wastewater treatment facilities (WWTFs) is essential to maintaining the designated uses that New Hampshire residents and tourists have come to expect of its water bodies for fishing, swimming and other recreational purposes. The connection between properly operated and maintained wastewater treatment facilities and the quality of our water bodies is undeniable and continues to be an important focus for the environment and public health of New Hampshire's residents.



*Progress in 30 years:* Thirty years ago, the construction grants program was phased out and was replaced with the State Water Pollution Control Revolving Fund, more commonly known as the Clean Water State Revolving Fund (CWSRF). In 30 years, the CWSRF program has helped fund more than \$765 million in wastewater infrastructure projects including wastewater treatment, new sewers, sewer rehabilitation and replacement, combined sewer overflow (CSO) abatement, landfill closures, and stormwater and non-point source pollution. WWTFs and related



infrastructure has unquestionably benefited the entire state in the form of a healthy and clean environment.

## 5. Dam Inspection & Maintenance



*Why it matters:* Construction or reconstruction of unregulated dams poses a risk of significant property damages, personal injury or death. While some dams provide a public benefit, there are others that do not. In 1996, a significant dam failure in Alton caused major flooding of a residential area, killing one resident.

*Progress in 30 Years:* After the failure in Alton, the State implemented several changes to

its dam safety statutes, regulations and practices. In 2000, the legislature passed a law that would allow construction or reconstruction of Significant or High Hazard Dams (i.e., dams that pose a threat to public health and safety) only if they serve a public purpose by providing one or more of the following public benefits: public water supply; flood control; storage and treatment of liquid industrial, agricultural, commercial wastes or municipal sewage; hydropower production for the public; public recreation; or preservation of historic or cultural resources.

Low Hazard dams may still be permitted, even absent a public purpose. The rules on designing and inspecting dams were also revised. One new requirement is that both the design and construction engineers have a minimum of five years of engineering experience related to the design and construction of similar dam projects, as determined by the NHDES Dam Bureau after a review of the engineer's resume.

The NHDES Dam Bureau must also be provided updated information on the dam from start to finish. In addition, all construction inspections of Significant Hazard and High Hazard dams must be conducted continuously by on-site inspectors unless specifically exempted by the approved inspection plan for particular items of work. With these changes, some of the human factors that led to the failure of the dam in Alton have been eliminated.

