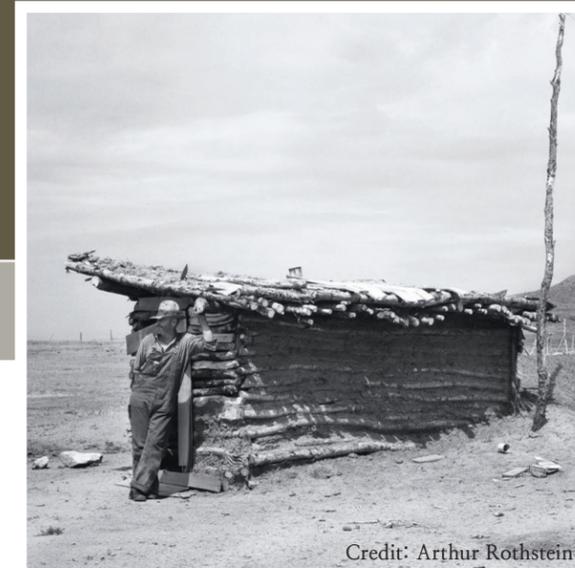


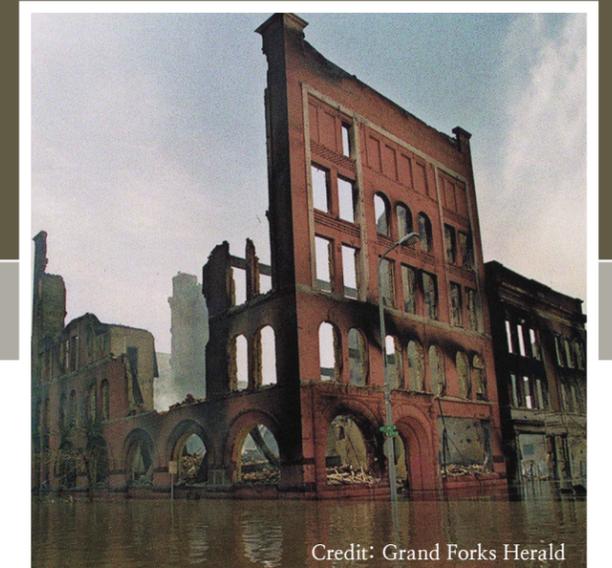
# 75 <sup>1937-2012</sup> Years State Water Commission

A farmer during the drought in 1936 indicates how tall his wheat would be with normal rainfall. Credit: Arthur Rothstein

In the 1930s, North Dakota and most of the central United States were afflicted with a drought so severe, that its like has not been experienced since.



Credit: Arthur Rothstein



Credit: Grand Forks Herald

*"The decisions made by our predecessors, became the foundation for decades of sound water policy and management."* Todd Sando, State Engineer



North Dakota State Water Commission 1937 - Present



Credit: Senior Airman Jesse Lopez, U.S. Air Force

North Dakota's extreme climate variability from the "Dust Bowl" era of the 1930s and 1940s (top left), to the epic floods of 1997 in Grand Forks (top right), and 2011 in Minot (bottom) have posed tremendous water management challenges to the state.

*on march*  
On March 23, 1937, in the midst of an extreme drought that had devastated the country, the State Water Conservation Commission (Water Commission) was created. 75 years later, the Water Commission continues to work to fulfill its mission of improving the quality of life and strengthening the economy of North Dakota by managing the water resources of the state for the benefit of its people.

*"The Water Commission was created in order to respond to the most severe drought recorded in this country, a period of unprecedented challenges that had catastrophic affects on the people of North Dakota."* explains Todd Sando, the 17<sup>th</sup> State Engineer.

# Roots In The “Dust Bowl”

“The need for a program which aims to utilize to the greatest advantage the waters of the State that are naturally available needs no lengthy discourse.”

In the 1930s, North Dakota and most of the central United States were afflicted with a drought so severe, that its like has not been experienced since. Known as the “Dirty Thirties” or “Dust Bowl” the drought lasted from the 1930s into the early 1940s, the driest years being 1934 – 1936, with most of the state suffering from a severe lack of moisture that affected crops and water supplies.

The years leading up to the Great Depression and Dustbowl in North Dakota were an exciting time, with Bonanza Farms, a massive influx of people, and a future that seemed limitless. Unexpectedly, all of that seemed at risk when the drought impacted the state. Farmland, such as is found in the Red River Valley, the “bread basket of the world,” was suddenly missing one of the key ingredients that allowed crops to flourish - sufficient water.

When the drought hit, it became apparent to the people of the state, that while this was a region that was outstanding for growing crops, a long-term deficit of precipitation, which was now shown to be possible, and maybe even likely, presented a significant obstacle to meeting that potential. The drought and Great Depression had a devastating impact on the state, resulting in 31.6% of the people in North Dakota being on some form of federal assistance in 1936, which spurred programs and initiatives like the Civilian Conservation Corps (CCC), and Works Progress Administration (WPA). These efforts prompted the construction of small dams and other public works structures throughout the state.

Facing a drought that people feared would stretch on for decades, it became evident that a need existed to inventory, quantify, develop, enhance and manage the state’s water resources for the benefit its people.

With these things in mind, the 25th session of the North Dakota Legislative Assembly created the Water Commission in House Bill No. 125, appropriating for that purpose \$112,500 for

a two-year period. A board to oversee the agency’s operation was created and appointed by Governor William Langer. The Commission board noted *“The need for a program which aims to utilize to the greatest advantage the waters of the State that are naturally available needs no lengthy discourse. During a relatively short period of time, this state has witnessed both years of over abundance of rain and years of extreme deficiency. The program that is proposed herewith attempts to minimize the shortcomings of such conditions.”*

Establishing a well was a priority for settlers, as can be seen in the background of this picture.



Credit: ND Historical Society

Section 210 of the ND Constitution it states, *“All flowing streams and natural water courses shall forever remain the property of the state for mining, irrigating and manufacturing purposes.”* This language guides the actions of the Water Commission today, and it was noted in the 1968 State Water Plan *“Its [referring to that same Constitutional language] very simplicity and generality are its strength.”*

The State Engineer position, which was created in 1905, was to serve as the Commission’s Chief Engineer and Secretary. The State Engineer, who was originally appointed directly by the Governor, was now to be appointed by the Water Commission, with the Governor as Chairperson, a relationship that continues today.

At its creation, the Water Commission membership included the Governor and six others. Shortly after the completion of the first State Water Plan, the Legislature reduced the Water Commission to the Governor and four

members. In 1949, the agency was increased to the Governor and six members. In 1981, membership was expanded to the Governor, the North Dakota Agricultural Commissioner, and seven others appointed by the Governor; a situation that continues to this day.

Rather than developing and organizing the new agency from scratch, the Commissioners drew upon the experiences of states with similar agencies, noting *“...North Dakota never before had a governmental body of this kind and in formulating its policies and arranging its work the commission was, necessarily, guided by the*

*experience of other states and by the advice of experts employed by the federal government. At the beginning, the commission was assisted in perfecting its organization program by M. R. Lewis of Corvallis, Ore., an expert in the water conservation field whose services were loaned to the commission by the Bureau of Agricultural Engineering of the Department of Agriculture. His services to the commission were invaluable.”*

With these new tools in hand, the Commission began work on the state’s first water plan in 1936, completing it in 1937.

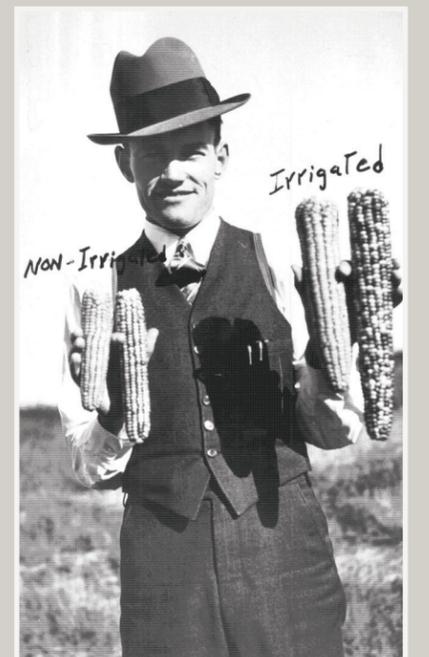
## PROJECT NEEDS IDENTIFIED IN 1937 STATE WATER PLAN

- 3.2 } 3.2 million acre-feet in additional water storage estimated to cost \$47.5 million (\$758 million in 2012 dollars), to provide water sufficient to irrigate 250,000 acres in western North Dakota.
- 3.2 } \$3.2 million (\$51 million in 2012 dollars) for municipal water supply.
- 4.9 } \$4.9 million (\$78 million in 2012 dollars) for sewage treatment works throughout the state.

Pumping from a well on Turtle Lake in 1937. The first well project developed by the state water commission. Credit: ND Historical Society



A man compares irrigated to non-irrigated corn on the Henry Rix farm south of Mandan. Credit: ND Historical Society



A steam train travels through flooded bottom land during the 1947 Missouri River flood.





# Quantifying Resources & Federal Support

“Planning for the use and control of water is planning for most of the basic functions of the life of the Nation.”

On January 1, 1937, tasked with determining the water needs of the state, and after over a year of work, the 11-member North Dakota State Planning Board, and a 21-person water study staff, which included engineers, geologists, geographers, draftsmen, economists, administrators, and one assistant; released the first State Water Plan (Plan) for North Dakota, titled “A Plan Of Conservation For North Dakota.” In that document, they stated, *“Planning for the use and control of water is planning for most of the basic functions of the life of the Nation. We cannot plan intelligently for water unless we consider the relevant problems of the land. We cannot plan intelligently for water and land together unless we plan in terms of collective interests. We are but tenants and transients on the earth; we should hand down our heritage unimpaired—yea; enriched—to those who come after us.”*

That first Plan was only authorized to study the problem, identify needs, and propose future projects. The Plan used a basin approach to water management, characterizing the state’s precipitation, geology, hydrology, and the problems unique to each of the thirteen major watersheds identified. It was noted in the Plan *“Although man cannot control precipitation, modern engineering has made it possible for him to control a considerable degree of the runoff to the streams.”* And, *“In the development of a program of water utilization, the need for human use must be given priority. In an agricultural state such as North Dakota this problem becomes one of not only providing adequate supplies for such municipal needs as domestic and industrial consumption and pollution abatement but also the providing of adequate rural supplies.”* This vision has guided the Water Commission ever since.

The Water Commission found three distinct types of water problems in North Dakota, noting that each would require long years of wise effort and considerable funding to solve.

## Water Problems Identified In 1937 Plan

1. Water for human and industrial needs, and sewage dilution.
2. Water for livestock and other farm animals.
3. Water for irrigation to insure crop yields in those areas of North Dakota, which had been hardest hit by drought.

It became obvious to the Water Commission, that in order to manage the waters of the state in a region that frequently experienced dramatic swings in climate, it would be necessary to quantify and characterize the state’s water resources to better understand their nature and variability. This was the foundation of the extensive and detailed water resource information data collection that continues to serve so effectively today. The Water Commission continued its work of quantifying, measuring, and analyzing the resources of the state, for its employees knew that the time would come when those resources would be needed. *“Having a half century of consistent and scientifically valid data at our fingertips on a diverse range of water resources in North Dakota has proven to be a key ingredient in the recipe of prudent and well informed water management.”* noted Todd Sando, State Engineer.

The 1937 Plan catalogued the existing projects in the state, including approximately 800 dams and reservoirs with a total capacity of 390,000 acre-feet, built at a cost of \$4.75 million (\$75.8 million in 2012 dollars). This first Plan was noteworthy, in that it made an attempt to prioritize project funding based upon readiness, feasibility, and need.

*This concludes the first part of the special article for the 75th Anniversary of the State Water Commission. In next month’s article we will cover how the 1937 water plan led to the efforts that drove ND water development.*