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# NORTH DAKOTA WATER APPROPRIATION

NORTH Dakota | State Engineer

Be Legendary.™

Chris Bader, Director Water Appropriation

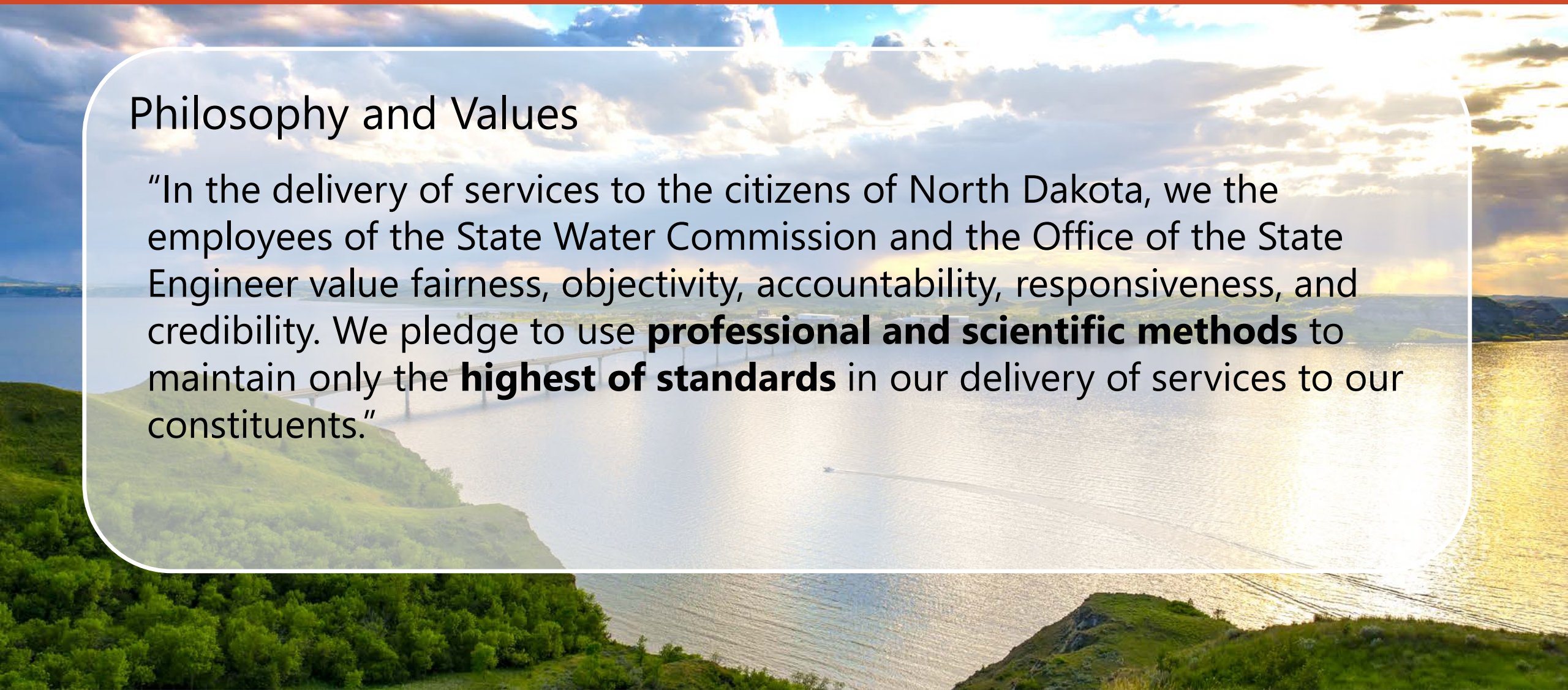
# OFFICE OF THE STATE ENGINEER



## Office of the State Engineer : Responsibilities

The Office of the State Engineer is responsible for several regulatory functions and responsibilities, including the allocation of the state's waters.

# OFFICE OF THE STATE ENGINEER



## Philosophy and Values

"In the delivery of services to the citizens of North Dakota, we the employees of the State Water Commission and the Office of the State Engineer value fairness, objectivity, accountability, responsiveness, and credibility. We pledge to use **professional and scientific methods** to maintain only the **highest of standards** in our delivery of services to our constituents."

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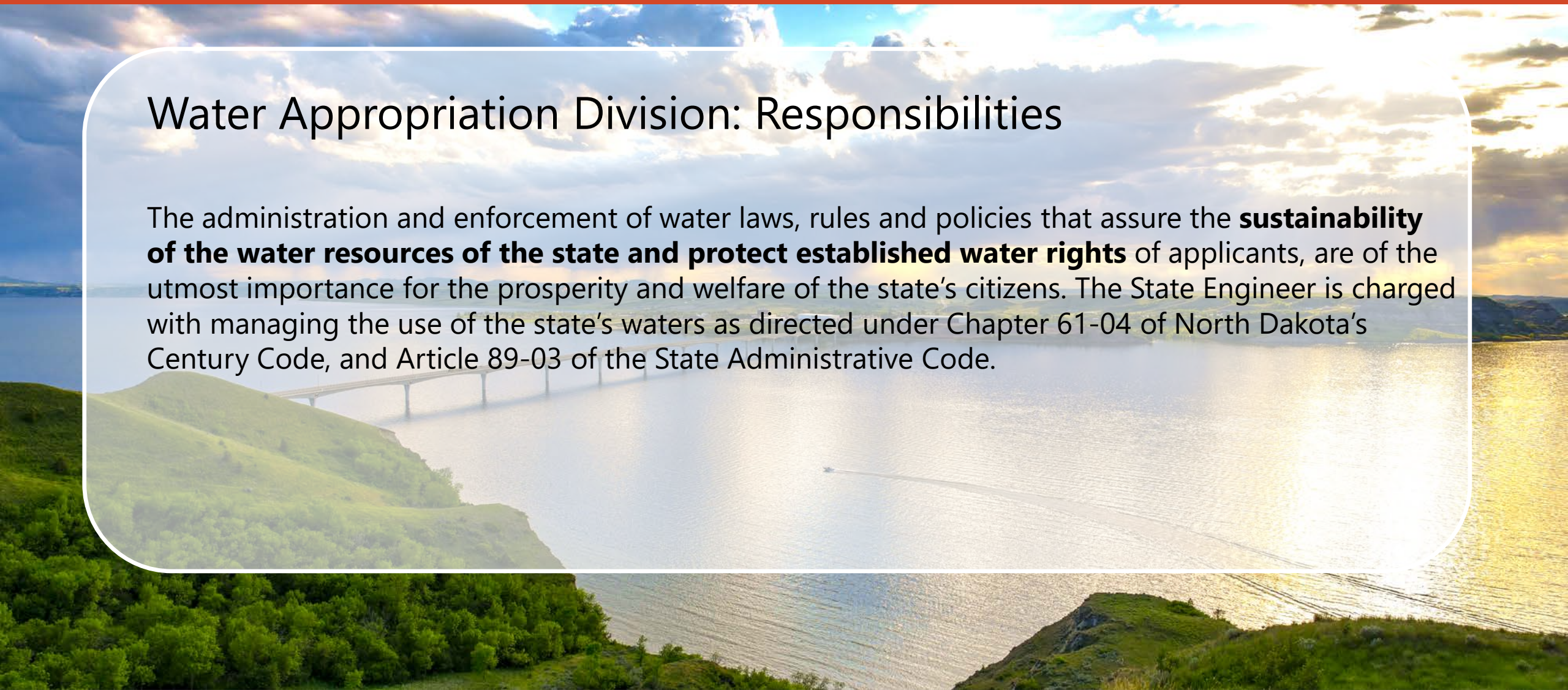
## Goals

- Goal 1 – "Promote development and investment in water resource projects."
- Goal 2 – "**Utilize technology** and education to **increase our understanding for the improved management** of the state's water resources."
- Goal 3 – "Continue our **strong commitment to sustainable water management**."

# WATER APPROPRIATION



# OFFICE OF THE STATE ENGINEER



## Water Appropriation Division: Responsibilities

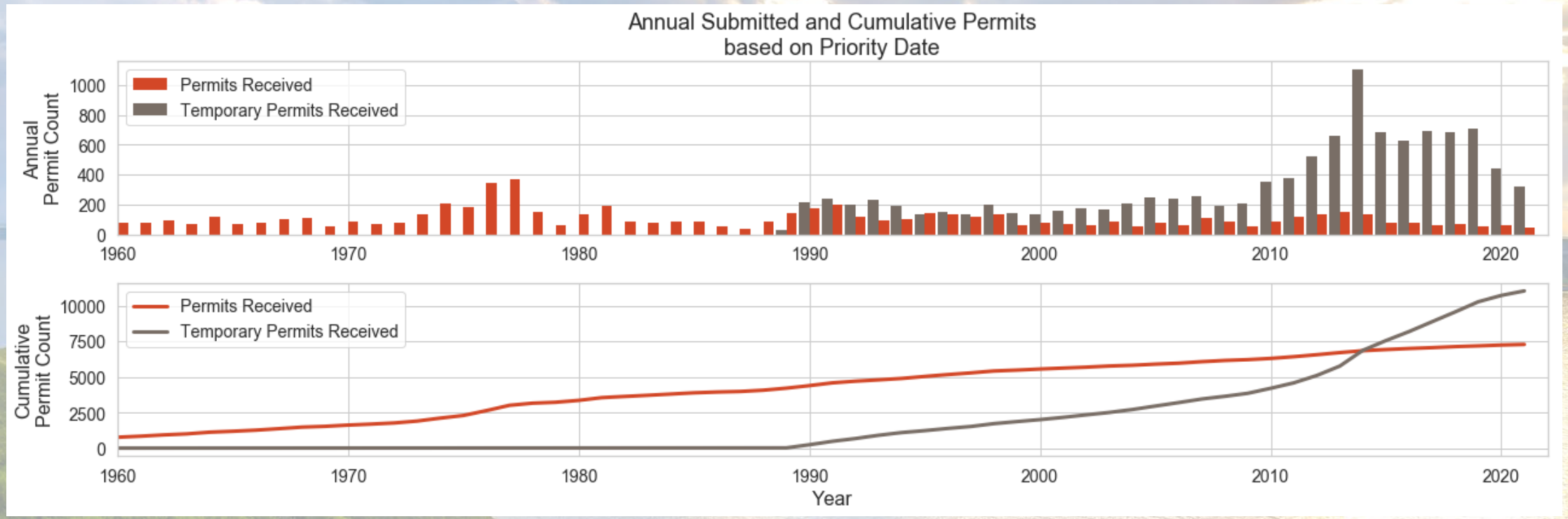
The administration and enforcement of water laws, rules and policies that assure the **sustainability of the water resources of the state and protect established water rights** of applicants, are of the utmost importance for the prosperity and welfare of the state's citizens. The State Engineer is charged with managing the use of the state's waters as directed under Chapter 61-04 of North Dakota's Century Code, and Article 89-03 of the State Administrative Code.

# OFFICE OF THE STATE ENGINEER

## Criteria for Issuance of a Water Permit (N.D.C.C. § 61-04-06)

- **The rights of a prior appropriator will not be unduly affected.**
- The proposed means of diversion or construction are adequate.
- The proposed use of water is beneficial.
- The proposed appropriation is in the public interest. In determining the public interest, the following shall be considered:
    - The benefit to the applicant.
    - The effect of economic activity resulting from the proposed appropriation.
    - The effect on fish and game resources and public recreational opportunities.
    - The effect of loss of alternate uses of water that might be made within a reasonable time if not precluded or hindered by the proposed appropriation.
    - Harm to others resulting from the proposed appropriation.
    - The intent and ability of the applicant to complete the appropriation.

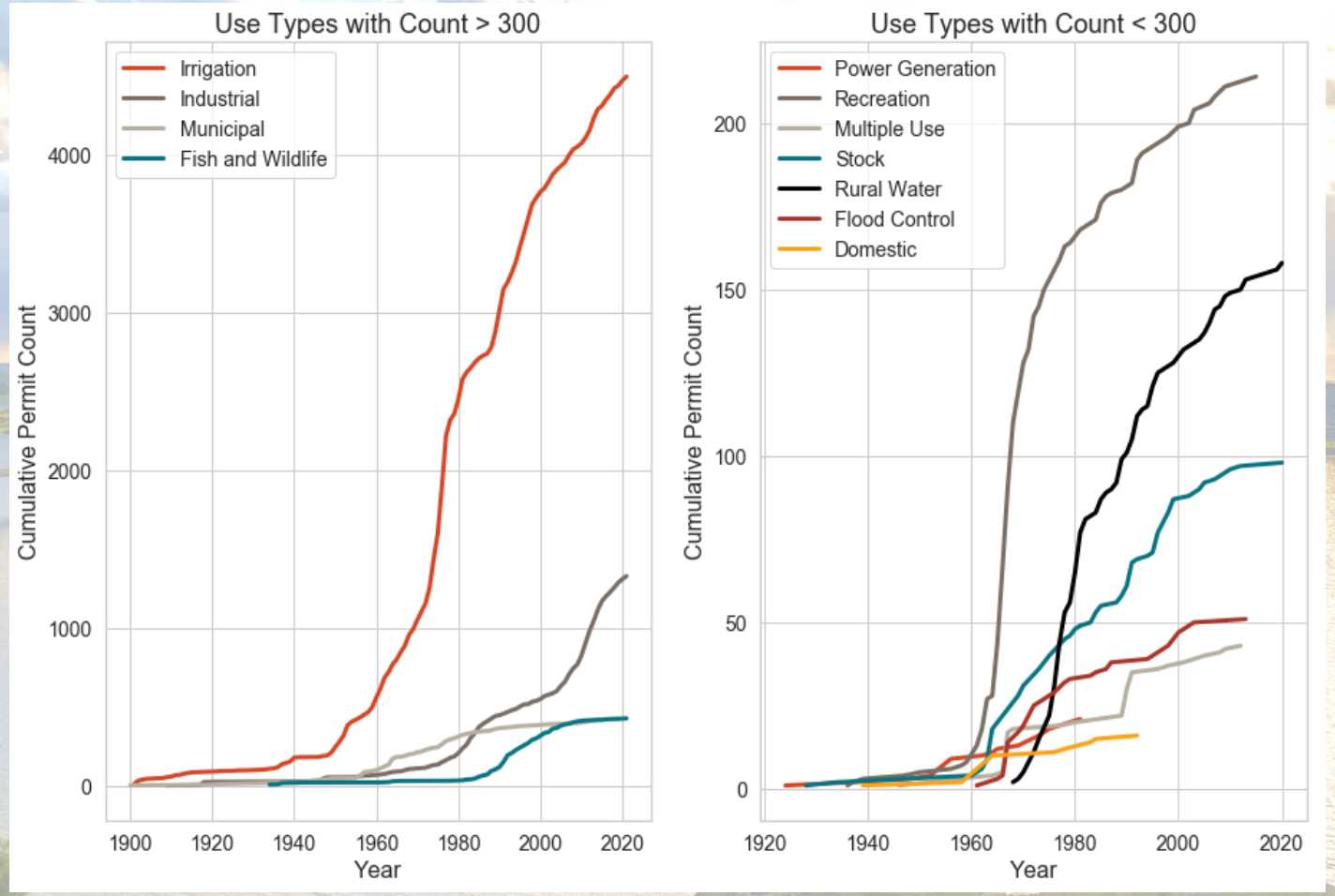
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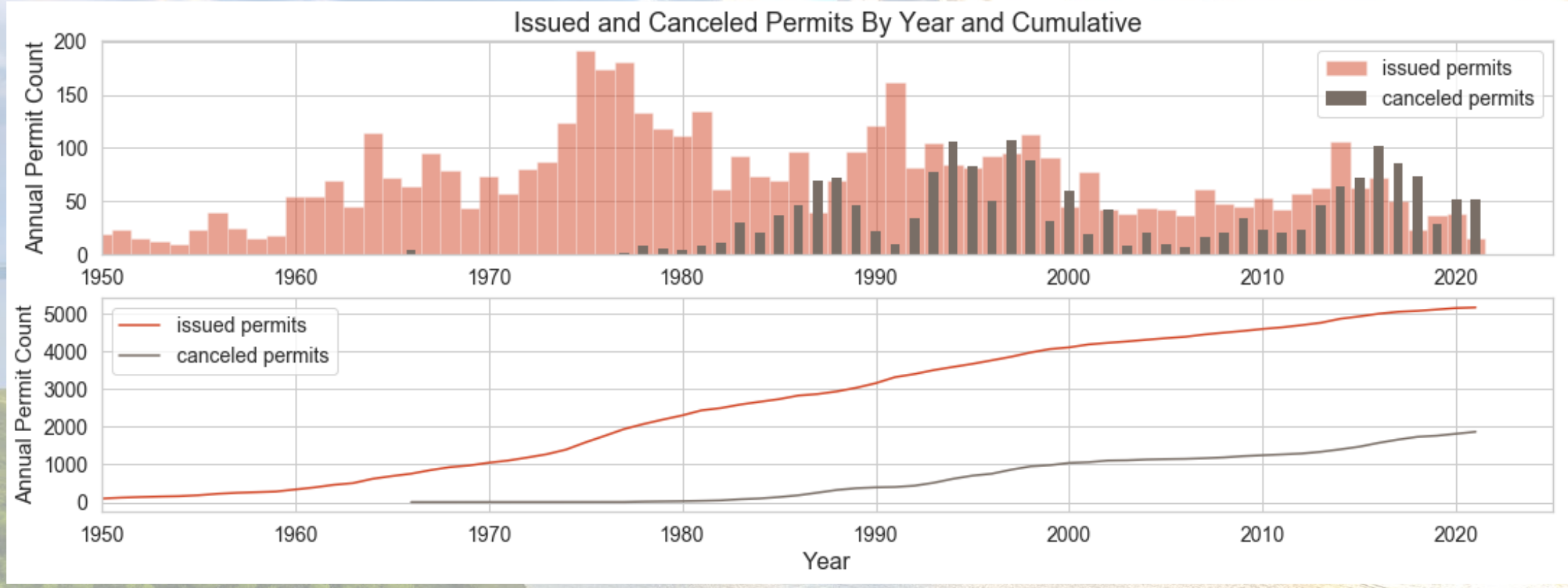

Historical Submission of Conditional and Temporary Water Permits. Applications have been fairly consistent through time with the exception of notable increases in the late 1970's, late 1980's, and 2010's. Large increase in temporary water permit applications is largely influenced by the industrial surface water use for FRAC water.

# NORTH DAKOTA WATER APPROPRIATION

- Irrigation has seen steady application requests since the 1970's
- Municipal, Recreation, and Flood Control application requests showed significant expansion during the 1960's
- Rural Water applications increased from the 1970's through the 2000's
- Power Generation growth was primarily in the 1960's and 1970's.
- Industrial increases resulted from 1980s oil boom and recent oil boom.



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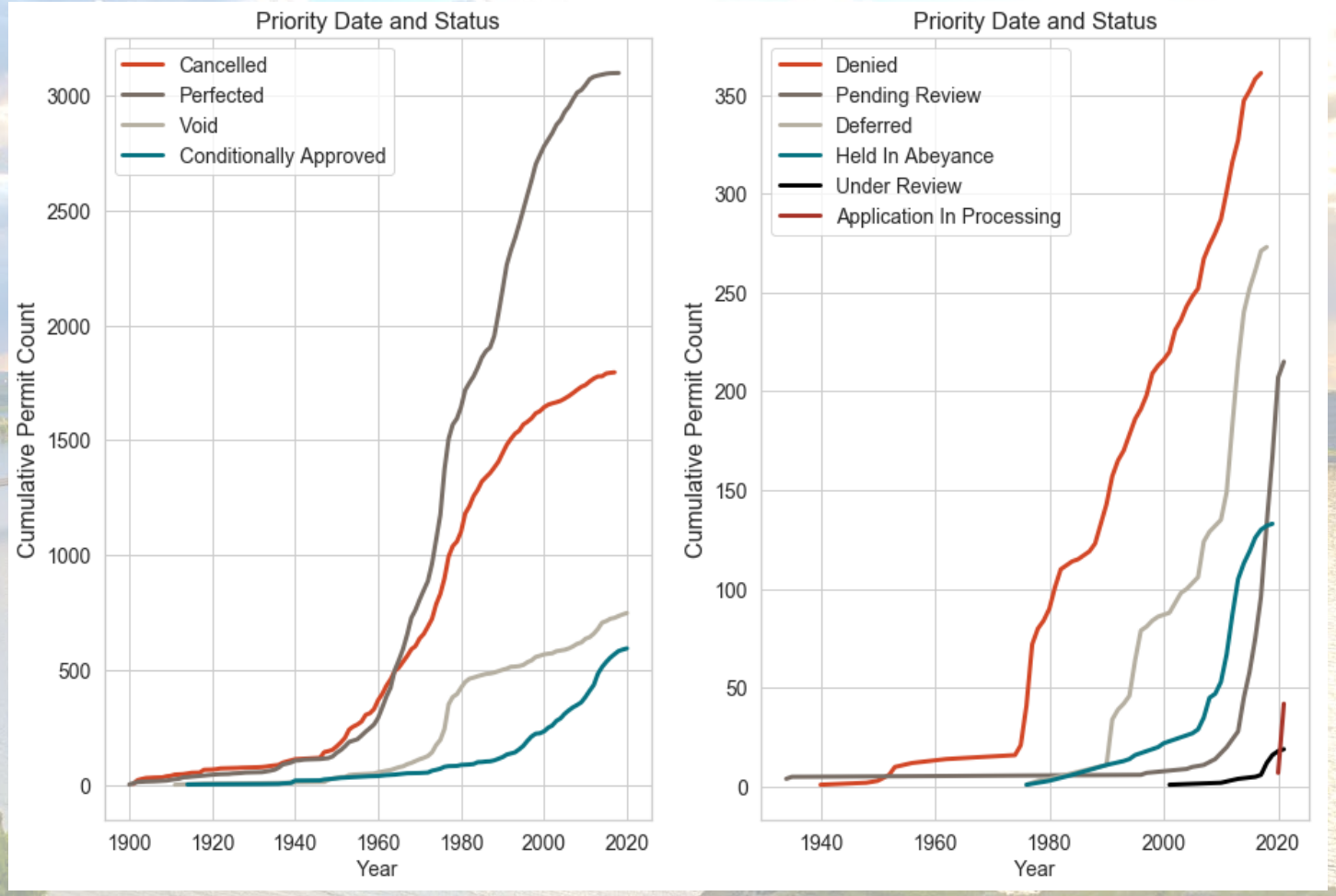



Annual and cumulative count of permits issued and canceled by year. Note increase in activity in the mid-70's, 90's, and 2010's. Increased cancellations followed periods of increased applications for each of these three periods.

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Demonstrates the status of Water Permit applications based upon priority date

Permit Applications that require additional consideration or action represent less than 6% of the total Permits and Applications that have been processed.



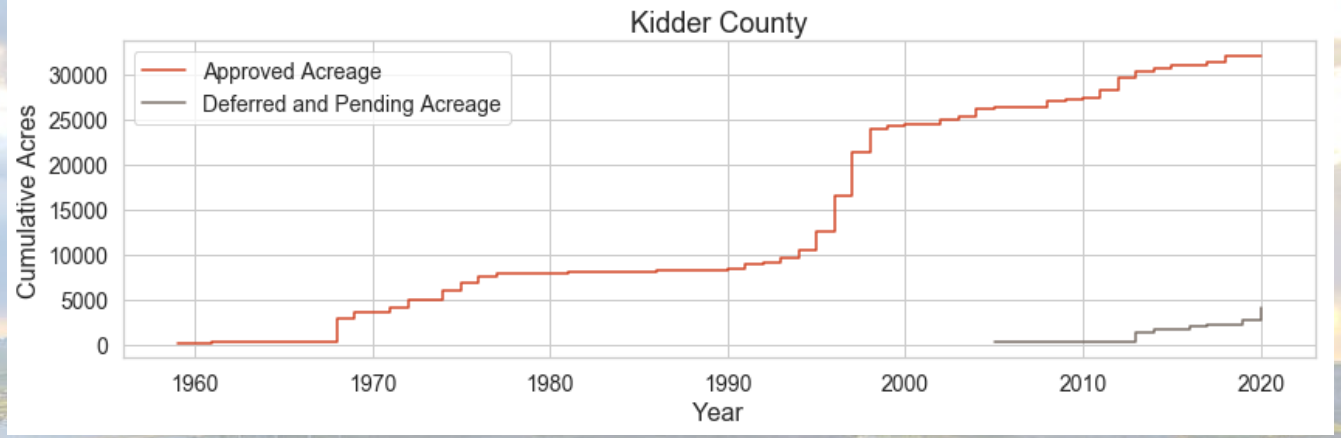
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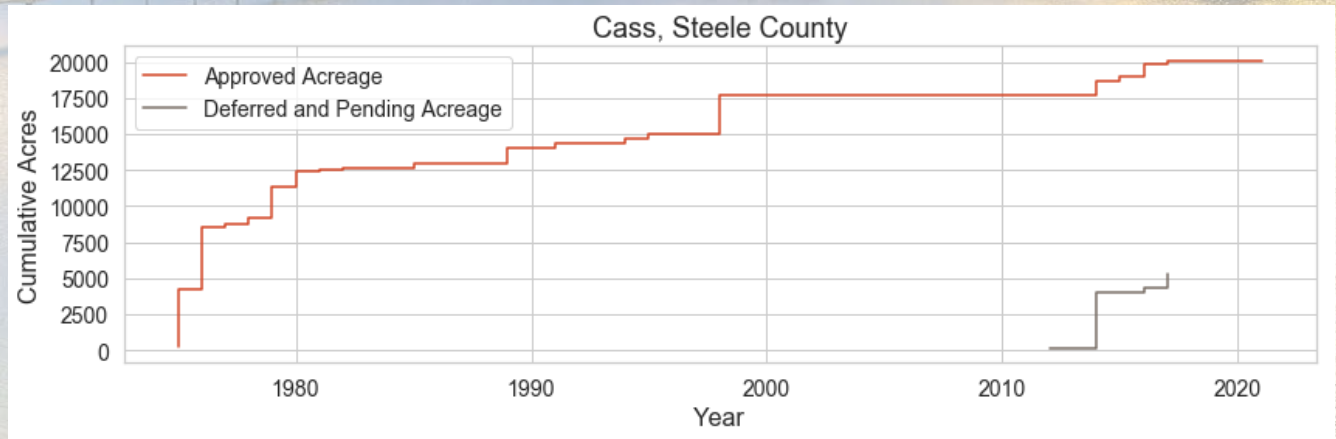
Many of the major groundwater systems across the state have demonstrated a very similar development cycle.

Development will typically occur in stages with the approval of a number of application requests followed by a period of evaluation to see if the groundwater system responds to the increased appropriation as was modeled and predicted.

This evaluation will include the assessment of a number of items including :

- Impacts from increased pumping on source
- Impacts from increased pumping on senior appropriators
- Water Chemistry variations induced from pumping
- Sustainability of the increased appropriations



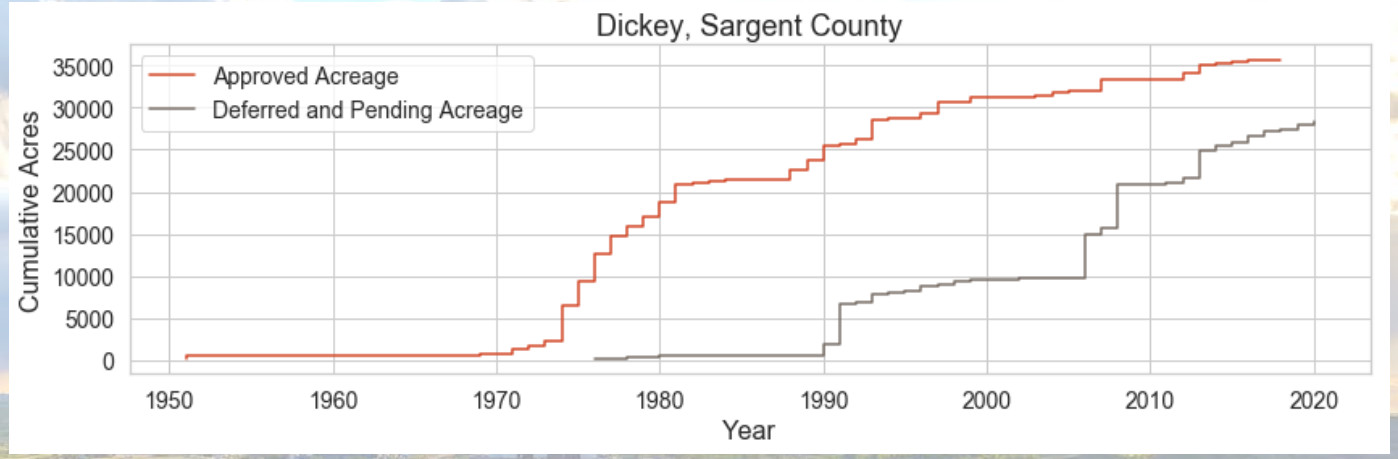
# NORTH DAKOTA WATER APPROPRIATION

Development in the Dickey Sargent County region began in the early 1970's and really expanded through the 1970's.

This was followed by nearly a decade of little new development.

Additional water was granted in the 1990's with continued limited development from 2000 and beyond.

While general development is similar across most of the groundwater systems, each aquifer presents a unique set of conditions and challenges.



# NORTH DAKOTA WATER APPROPRIATION

The Oakes Aquifer is located in southeastern North Dakota straddling the Dickey and Sargent county line.

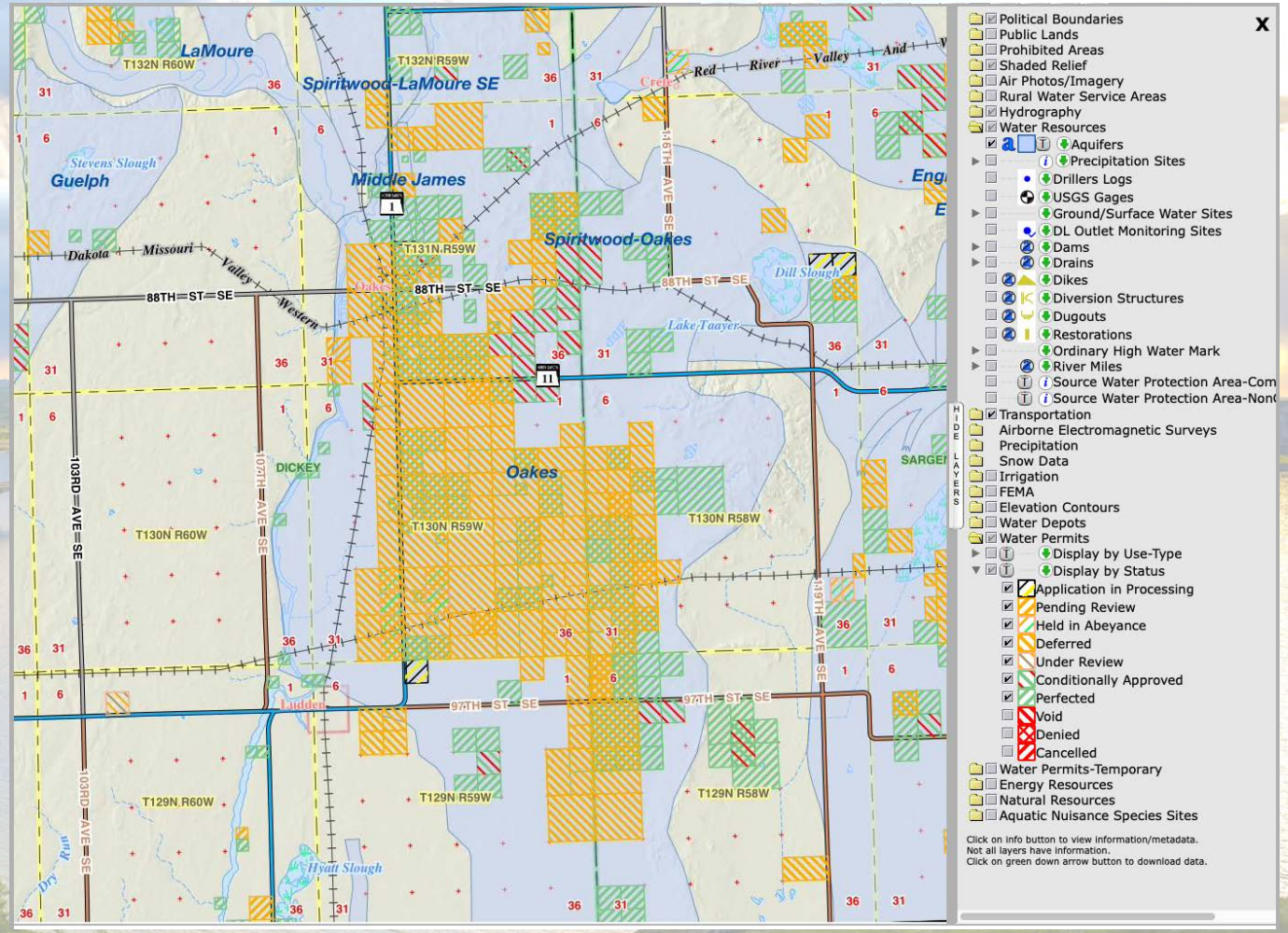
The Oakes Aquifer presents a number of unique challenges.

Significant development was approved throughout the 1970's and early 1980's.

Drought conditions persisted through the late 1980's which demonstrated the impacts of current appropriations and helped to define sustainable appropriation levels within the aquifer system.

Since the early 1990's this area has been in a wet cycle with above average precipitation resulting in above average aquifer recharge. However, as we move back into more normal conditions or drought conditions water levels will respond accordingly.

The Oakes Aquifer is approaching full allocation. It is unlikely this system will support much additional development.



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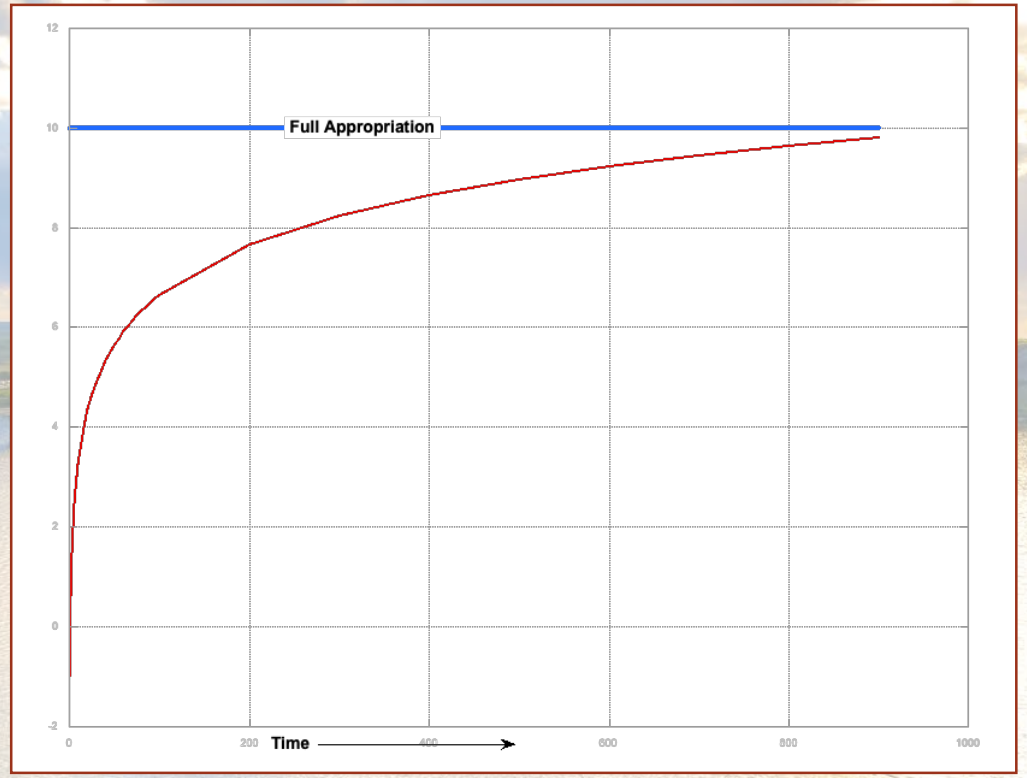
One of the primary goals of the Water Commission is to continue our **strong commitment to sustainable water management.**

Moving forward with many of these areas, it is important to take appropriate steps to ensure that any additional appropriation does not exceed the sustainable yield of the respective groundwater system.

While this type of approach may appear at times to be slow or unresponsive, North Dakota is currently one of the few states that does not have any major groundwater systems under duress from over allocation.

Over allocation, which would severely jeopardize the sustainability of the groundwater system moving forward, would likely lead to legal challenges as we attempt to remedy the over allocation through cancellation or cease and desist orders during more normal or dryer conditions.

North Dakota is also currently one of the few western states where water appropriation is not driven by costly litigation processes resulting from poor or inappropriate management practices.





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