

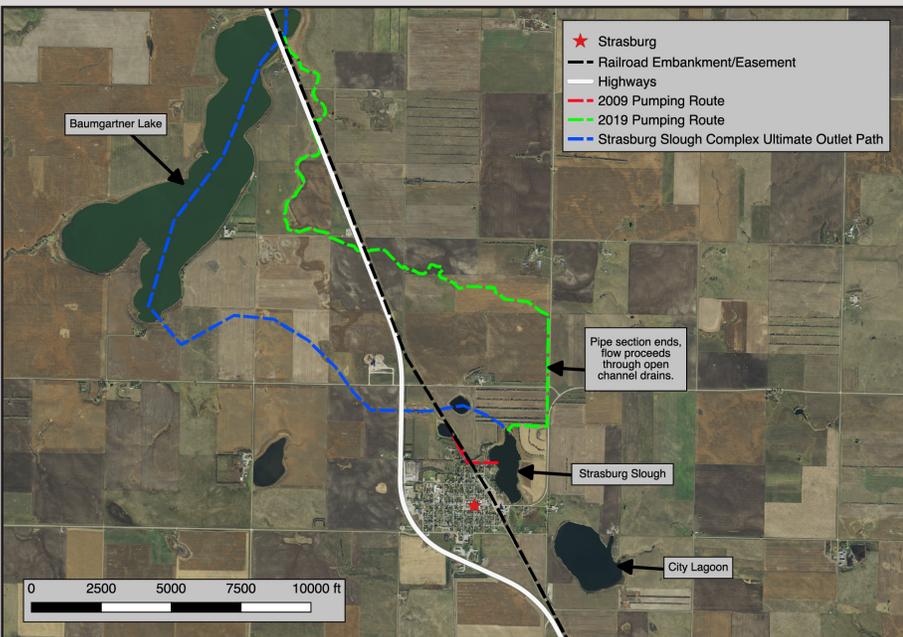


# WATER COMMISSION AIMS SERVICES TOWARD LOCAL SUPPORT

## *SWC Special Investigations*



The State Water Commission’s (SWC) Investigations Section regularly conducts feasibility level assessments of surface water projects, also referred to as “investigations,” to provide valuable information to local entities to assist in making water resource-related decisions. The Investigations Section completes these feasibility studies based upon the specific needs and circumstances surrounding local water management challenges. The section has completed eleven investigations since 2012, many of which included multiple feasibility studies.



Aerial photograph of Strasburg Slough 2009 and 2019 pumping routes.

Most recently, the SWC completed an investigation concerning Strasburg Slough, a complex water body that has been impacting the City of Strasburg in Emmons County. The first known flooding issue related to Strasburg Slough occurred in 2009, when the city experienced flooding from rapid snowmelt. With the SWC’s assistance, the city was able to alleviate much of the flood threat by using pumping equipment to move the water northwest of the slough.

When the slough rose again in 2014, the SWC conducted a preliminary findings analysis to identify a potential outlet for the slough. Five years later, spring 2019 brought the slough to its highest elevation on record, resulting in temporary emergency pumping to Baumgartner Lake at a price tag of about \$58,000.

The ongoing flooding prompted the Emmons County Water Resource District to pursue the most recent analysis for Strasburg Slough, which improved on the findings of the SWC's 2014 study. The new study benefited from incorporating Light Detection and Ranging (LiDAR) data, lake elevation observations, and modeling methods that were unavailable during the 2014 study.

The SWC's investigation resulted in four different alternatives for the Emmons County Water Resource District to consider. Each alternative includes cost estimates, potential structural alignments, and detailed discussion. This service is an invaluable tool for eligible entities to utilize when facing difficult decisions, and represents one of a number of methods by which the SWC helps North Dakota's communities engage in effective water management. To view the full investigation and other feasibility study reports, please visit our website ([swc.nd.gov](http://swc.nd.gov)) and click on "Reports and Publications" under the Information & Education tab. If you would like more information on SWC special investigations, please contact Laura Ackerman, Investigations Section Chief, at (701) 328-4868 or [lcackerman@nd.gov](mailto:lcackerman@nd.gov).

## SWC EXPANDS UAS CAPABILITIES

Since late 2016, the SWC has been integrating the use of a drone, or small Unmanned Aircraft System (sUAS) into its normal agency operations. For over three years, the drone program has enhanced various agency tasks, processes, and emergency operations, all facilitated by Steve Best from the Planning and Education Division. As demand for the drone continued to increase, it became apparent that the SWC would need additional staff to be licensed to conduct drone flights.

Earlier this year, Dan McDonald and Damon Grabow, both members of the Investigations Section, successfully completed the requirements to be licensed as drone pilots. Specific to their section, the new pilots plan to use the drone to capture footage of hydrologic conditions, dams, bridges, levees, drains, and other points of interest for the agency. Aerial imagery and video will also be useful, particularly for current projects requiring modeling or plan review. The Investigations section is also involved in emergency response and monitoring throughout the year. In fact, McDonald and Grabow recently used the drone to gather images of the Wild Rice River near Abercrombie and Fargo as it neared its spring flooding peak.

In addition, the Dam Safety Section is in the process of licensing one of its employees to use the drone. The use of drones in the field of dam safety is increasing, and in the fall of 2019, the SWC's dam safety program used the drone to fly over Sykeston Dam, which was experiencing high flows from heavy rains in the area. The drone provided a valuable aerial view of the dam, which was inaccessible by land at the time. This innovative integration of drone technology allowed access to critical information while not placing agency personnel at risk.



## ONGOING AND FUTURE INVESTIGATIONS

Currently, the Investigations section is working on several feasibility studies throughout North Dakota. The studies include an investigation of flood control options for the City of Zap, an investigation of flood control options for Spiritwood and Alkali Lakes, outlet and alternatives analysis of Rice Lake in Emmons County, and participation and technical analysis in the International Souris River Plan of Study. Each of these analyses are unique and some are in partnership with federal entities. The investigation of flood control options for the City of Zap, and support for the International Souris River Study are each being completed through the federal Planning Assistance to States program with the United States Army Corps of Engineers.

The efficiency created by utilizing existing staff as a network of drone pilots simultaneously allows the agency to provide improved drone utility, while not sacrificing other critical services. As the drone program continues to progress, the SWC's strategic use of existing staff has ensured a more sustainable integration of sUAS technology into future agency operations.