

WATER TOPICS OVERVIEW COMMITTEE

North Dakota Century Code Section 54-35-02.7 directs the Legislative Management during each interim to appoint a Water Topics Overview Committee in the same manner as the Legislative Management appoints other interim committees, and to designate a chairman. The committee must meet quarterly and is to operate according to the statutes and procedures governing the operation of other Legislative Management interim committees. This section originally created the Garrison Diversion Overview Committee in 1981 but was amended in 2009 to create the Water-Related Topics Overview Committee. The name was changed to its current form in 2013.

Section 54-35-02.7 provides the committee is responsible for:

1. Legislative overview of water topics and related matters;
2. The Garrison Diversion Project; and
3. Any necessary discussions with adjacent states on water topics.

In addition, the committee may meet with the State Water Commission (SWC) and must:

1. Work collaboratively with the SWC;
2. Report on the committee's project prioritization process;
3. Provide updates on allocated program expenditures; and
4. Report on the fund balances of projects, grants, and contracts.

In addition to its statutory obligations, the committee was tasked with receiving multiple reports concerning water projects during the 2017-18 interim. Section 8 of House Bill No. 1020 (2017) required the committee to receive quarterly progress reports from the Garrison Diversion Conservancy District on the Red River Valley Water Supply Project (RRVWSP). Sections 11 and 12 of House Bill No. 1029 (2017) required the committee to receive a report from the Industrial Commission by June 1, 2018, on the results of the study of the feasibility and desirability of the sale or lease of the industrial water supply assets of the Western Area Water Supply (WAWS) Authority and the timeline to complete the lease or sale. Section 29 of Senate Bill No. 2014 (2017) required the committee to receive a report from the Industrial Commission by September 30, 2018, regarding the results and recommendations of the study of the feasibility of and appropriate jurisdiction for regulation of sediment studies and dredging operations from the beds of reservoirs. Section 9 of Senate Bill No. 2020 (2017) required the committee to receive a report from the Bank of North Dakota on the terms and conditions of the WAWS Authority consolidation loan upon its completion.

The committee also was assigned two studies, although one study was to be performed by the State Engineer. Section 14 of House Bill No. 1020 (2017) required a study of issues related to the state's development of a statewide flood hazard risk management framework by granting authority to the State Engineer to perform a study and proof of concept demonstration to implement statewide flood risk management capabilities for assessing, managing, and reducing property-specific flood risk. Section 26 of House Bill No. 1020 (2017) required a study of the oil and gas industry's use of industrial water. The study was required to include the recapture of water used in fracking, the recycling or water used in fracking and other oil and gas activities, fracking methods that do not require the use of water, and taxes or fees other states charge for water used in the oil and gas industry.

Committee members were Representatives Jim Schmidt (Chairman), Dick Anderson, Tracy Boe, Chuck Damschen, Michael Howe, Bob Martinson, Alisa Mitskog, Jon O. Nelson, Mark Sanford, Roscoe Streyle, and Denton Zubke and Senators Jonathan Casper, Curt Kreun, Gary A. Lee, Larry J. Robinson, Donald Schaible, and Ronald Sorvaag.

The committee submitted this report to the Legislative Management at the biennial meeting of the Legislative Management in November 2018. The Legislative Management accepted the report for submission to the 66th Legislative Assembly.

GARRISON DIVERSION CONSERVANCY DISTRICT AND RED RIVER VALLEY WATER SUPPLY PROJECT Background

Research suggests a strong possibility of a drought in the Red River Valley area within the next 5 decades. As the population in that area grows, the impact of such a drought would be even greater than the impact of droughts in prior years. The Red River Valley Water Supply Project was authorized by the Dakota Water Resources Act of 2000 to address this concern and provide a solution to the water supply and quality problems in the Red River Basin. That legislation also called for \$200 million of federal appropriations for the project. The Garrison Diversion Conservancy District, on behalf

of the state, and the United States Bureau of Reclamation, on behalf of the federal government, executed a memorandum of understanding to begin studying these issues in 2000. After years of work, the United States Bureau of Reclamation issued a draft environmental impact statement for the project in December 2005. The draft included analyses of eight alternative plans for accomplishing the objectives of the project. After additional information was obtained, a revised draft environmental impact statement was released in January 2007. In the revised draft, both parties identified the Garrison Diversion Unit import to the Sheyenne River as the preferred alternative for bringing a reliable supply of quality drinking water to the Red River Valley area. This alternative includes the installation of a pipeline from Washburn to the Red River Valley area through the Sheyenne River north of Lake Ashtabula, which will act as a regulating reservoir. From there, water will be released into the Sheyenne River and flow into the Red River supplying water systems in the Red River Valley with a reliable supply of drinking water. This plan will provide flexibility for future expansion so water can be conducted to residents in central North Dakota as well. In December 2007 the United States Bureau of Reclamation issued the final environmental impact statement for the project. It includes responses to public comments received on the prior iterations of the document, a final biological assessment prepared in compliance with the federal Endangered Species Act, an analysis of forecasted depletions and sedimentation on the Missouri River main stem reservoir system, and a review of climate change literature. After due consideration and evaluation of technical, hydrologic, and design aspects, and water permitting and environmental impacts, the state and the United States Bureau of Reclamation each identified the Garrison Diversion Unit import to the Sheyenne River alternative as the preferred alternative. However, the federal government has not approved the project. As a result, it is now a state and local project, and the Garrison Diversion Conservancy District is the lead state entity on the project.

Testimony and Committee Deliberation

The committee received testimony regarding several aspects of the Garrison Diversion and RRVWSP. According to the testimony, the necessary permits and approvals for the projects are on track. The committee was informed the RRVWSP will require 20 cubic feet of water per second to flow through the McClusky Canal, and the United States Department of the Interior issued a "finding of no significant impact" for that requirement after conducting the department's final environmental assessment. It was noted permit applications for the project have been submitted to the Army Corps of Engineers, State Department of Health, and SWC. Representatives of the Garrison Diversion Conservancy District reported the preliminary design report and the engineering for the RRVWSP were completed in 2018 and property acquisitions for the project are continuing, and the next step for the project is to obtain a water service contract and special use permit from the United States Bureau of Reclamation.

At multiple meetings, the committee was informed the Garrison Diversion Authority has not finished its work on a financial model to calculate the cost of water for residents in communities that sign up to obtain water through the RRVWSP. It was noted some communities that signed up for the RRVWSP may withdraw from the project once the cost is determined. The committee expressed concerns that infrastructure installed for the project may go to waste if the cost is too high, communities withdraw from the project, and the project is not completed.

Early in the interim, the committee was informed the Mayor of Fargo disagreed with the committee's position that the city must contribute a cost-share for some of the state funds appropriated to the project. According to the testimony, it was the mayor's position the state funding set out in House Bill No. 1020 (2017) for the RRVWSP is a grant with no cost-share requirement. However, officials from the Garrison Diversion Conservancy District informed the committee the district prepared its baseline financial model using a 20 percent local cost-share.

Representatives of the Garrison Diversion Conservancy District testified the district will seek a \$150 million appropriation during the next legislative session. The committee was informed, as of August 2018, approximately \$20 million has been spent on the RRVWSP.

The committee was informed changing plans for the Garrison Diversion to use the Sheyenne River rather than the McClusky Canal would require an additional \$170 million. However, that change is no longer under consideration.

The committee also received testimony indicating Manitoba officials expressed concerns over the potential transfer of biota from North Dakota to Manitoba resulting from the RRVWSP. The testimony noted discussions with Manitoba officials on this issue are proceeding in a way that indicates the concerns will be addressed sufficiently.

COLLABORATION WITH THE STATE WATER COMMISSION, PROGRAM EXPENDITURES, AND REPORTS ON THE FUND BALANCES OF PROJECTS, GRANTS, AND CONTRACTS

Background

The State Water Commission was created in response to the drought of the 1930s and was charged with developing irrigation in the state. From 1937 to 1981, the Legislative Assembly funded the commission on a biennium-to-biennium basis with approximately \$500,000 to \$2,000,000 appropriated per biennium. The duties of the commission changed with creation of the resources trust fund in 1981. When the resources trust fund was created, the proceeds of the fund were dedicated to financing the Southwest Pipeline Project, which was the first state water project. During this period,

the scope of projects increased dramatically as the Southwest Pipeline Project was a \$100 million project. The State Water Commission now serves many functions, including the approval and funding of water projects throughout the state.

Testimony and Committee Deliberation

The committee met twice with the SWC during the interim, once in October 2017 and once in September 2018. During the joint meetings, the committee members and commissioners discussed the importance of continuing collaboration and communication to ensure state funds are allocated appropriately. Additionally, the committee received updates on the commission's work from commissioners or SWC employees at each committee meeting. The updates included testimony on the progress of the commission's economic and life cycle analysis models required under House Bill No. 1374 (2017), the status of approved water projects, fund balances, and the creation and ongoing work of commission subcommittees. The committee also was informed of the commission's reviews of projects that are at least 4 years old. Committee members encouraged the commission to expedite the reviews and reallocate money obligated in stalled projects to projects ready to begin. Committee members also encouraged the commission to expedite reviews of new project applications and discussed the problems associated with delayed approvals, especially considering the short construction season in North Dakota. There was significant committee discussion regarding the need to put money to use for projects that make sense for the respective basins. This was a continuation of the discussion that occurred during the 2015-17 biennium regarding basin-wide planning for water projects.

The committee received monthly SWC project summaries throughout the interim. The summaries provided details on the SWC's budget, expenditures, and unobligated funds, as well as information about each ongoing project approved by the commission. The committee also received periodic updates on the resources trust fund, including comparisons of its estimated revenues and actual collections. The commission was informed the fund revenues may be greater than anticipated. The committee concluded the SWC has authority under Section 3 of House Bill No. 1020 (2017) to allocate the additional revenue from the resources trust fund to water projects if the commission obtains Budget Section approval to do so.

FARGO FLOOD CONTROL AND FM AREA DIVERSION PROJECT

Background

In 2009 and 2011, the Legislative Assembly provided \$45 million and \$30 million respectively for Fargo flood control. In 2013 the Legislative Assembly provided \$100 million for the Fargo flood control project to provide a total of \$175 million. In addition, the 2013 Legislative Assembly included legislative intent that the state provide up to \$450 million for the project, with the remaining \$275 million to be provided over the next 4 bienniums. The 2013 Legislative Assembly also limited the use of the funding designated for the Fargo flood control levee and dike protection until the Fargo flood control project receives federal authorization, a project partnership agreement is executed, a federal appropriation is provided for project construction, and the budget for the Fargo flood control project is approved by the SWC. The 2015 Legislative Assembly provided an additional \$69 million for the Fargo flood control project and \$60 million for Fargo interior flood control projects, of which \$30 million is from the state disaster relief fund, to provide a total of \$304 million for flood protection in Fargo. The Legislative Assembly also included legislative intent to provide up to \$570 million for Fargo flood control projects, an increase of \$120 million. The \$120 million is to be used for Fargo interior flood control projects and requires 50 percent matching funds from the Fargo Flood Authority. These funds may be expended only for Fargo interior flood control projects, including levees and dikes, until a federal appropriation is provided for construction of the Fargo flood control project, at which time it may be used for a federally authorized Fargo flood control project. The Legislative Assembly also included legislative intent that funding for the Fargo flood control project will end June 30, 2021, if a federal appropriation has not been provided by that time. The 2015 Legislative Assembly provided legislative intent that the remaining funding be made available in equal installments over the next 4 bienniums. Money from the Cass County sales tax has been used for levy work in small communities and for retention.

Testimony and Committee Deliberation

The Fargo flood control projects were discussed extensively throughout the interim, and one meeting was held in Fargo to give the committee members the opportunity to tour the projects. The committee was informed the anticipated cost of the project has increased from \$1.8 billion to \$2.2 billion, and one-half of that sum is anticipated to come from federal and state funds, including \$43 million from Minnesota which is in addition to the \$570 million from North Dakota. The remaining one-half of the funding is anticipated to be derived from local sources, including a Fargo city sales tax.

In 2017, the Minnesota Department of Natural Resources indicated it would not approve a necessary permit for the Fargo flood control projects. In September 2017, a federal judge issued a preliminary injunction halting most work on the project, including land acquisition, design, procurement, cultural mitigation studies, and construction. The governors of North Dakota and Minnesota created a task force to develop a mutually acceptable plan, known as Plan B, for the project. A technical advisory group and policy group also were formed to work on the development of the plan. In March 2018, the FM Area Diversion Authority submitted Plan B to the Minnesota Department of Natural Resources for a permit.

The committee was informed Plan B will increase the level of water that will flow through the river channel in Fargo during a flood from 35 to 37 feet, shift the western tie-back levee south and west from Horace, move the southern embankment north, and reduce negative impacts to Minnesota, among other changes. Representatives of the FM Area Diversion Authority testified Plan B will reduce negative impacts to Richland and Wilkin Counties, but several residents and representatives of those areas testified the two counties still will bear a disproportionate burden under the plan for the protection of Fargo residents who live in the flood zone. The Minnesota Department of Natural Resources and the Army Corps of Engineers each released Supplemental Environmental Impact Statements on the project changes. The committee was informed the Minnesota Department of Natural Resources permitting decision is anticipated in November 2018.

Portions of the diversion project are being implemented by a public-private partnership (P3). According to the testimony, the P3 agreement between public entities involved in the project and the private developer chosen to participate in the project allocates responsibilities and risks of the design, construction, financing, operation, and maintenance of the project. It was noted the private developer will secure private financing and operate and maintain the diversion channel. The testimony indicated the P3 will be more efficient and cost-effective than a purely public undertaking.

REPORTS

Red River Valley Water Supply Project

As required by Section 8 of House Bill No. 1020 (2017), the committee received quarterly reports from the Garrison Diversion Conservancy District on the RRVWSP. The reports were given in October 2017, February 2018, June 2018, and September 2018. The reports provided information on the project's status, budget, and plans, and anticipated requests for state funds.

Western Area Water Supply Authority's Industrial Water Supply Assets

The committee received several reports on the status of the Industrial Commission's study of the feasibility and desirability of the sale or lease of the industrial water supply assets of WAWS Authority pursuant to Sections 11 and 12 of House Bill No. 1029 (2017). In July 2017, the committee was informed the Industrial Commission established an advisory committee to oversee the study, and the advisory committee issued a request for proposals to conduct the study. In October 2017, the committee was informed Stantec was awarded the study contract and would work with Houston Engineering, Inc., on the study. The committee received an update on the study status in February 2018, and received the final study report in June 2018. The study concluded few of the industrial water supply assets were owned wholly by the WAWS Authority, and the value of the assets depended heavily on having long-term water supply contracts requiring use of the assets. The committee was informed it is unlikely any private entity would be willing to purchase the assets without the contracts. According to the final report, "the most realistic and financially feasible option is to sell available water supply on an interruptible basis through a structured offering that includes a combination of upfront and fixed payments, and a discounted rate for water sales."

Regulation of Sediment Studies and Dredging Operations from Beds of Reservoirs

As required under Section 29 of Senate Bill No. 2014 (2017), in June 2018, the committee received a report on the study of the feasibility of and appropriate jurisdiction for regulation of sedimentation studies and dredging operations from the beds of reservoirs. No executive agency in North Dakota regulates this specific activity. The study was conducted by the Industrial Commission in consultation with the Game and Fish Department, State Department of Health, and SWC. The commission was informed the administrative rules and regulations of several Midwestern states regarding lakebed sedimentation studies and dredging operations were reviewed for the study, and the study participants recommended North Dakota follow a regulatory scheme similar to South Dakota's. The commission was informed reservoir beds are treated as minerals in South Dakota, and South Dakota's Department of Environment and Natural Resources coordinates the permitting of lake dredging activities. The commission also was informed annual permits costing \$100 are required for any dredged sediment planned for sale, and permittees must provide annual reports. According to the report, South Dakota has not issued any permits under these regulations since the regulations were adopted in 1996. The study report included additional best practices culled from other states for consideration.

Western Area Water Supply Authority Consolidation Loan

House Bill No. 1020 (2017) contained provisions to restructure \$88 million of debt owed by the WAWS Authority. The need to restructure the debt arose, in part, because of the decrease in WAWS's industrial water sales in recent years. The committee was informed the decrease is due to the decline in oil and gas industry activity and the inability of WAWS to compete on price with other water suppliers in the area.

The plan to restructure the WAWS Authority's debt assumes WAWS revenues would include \$12 million in industrial water sales in 2017 and \$14 million in industrial water sales per year for the period of 2018 through 2022. The Bank of North Dakota planned to restructure and consolidate the debt so the assumed revenues would be sufficient to repay the

debt over a 20-year term. In July 2017, the committee was informed the Bank had issued a request for proposal for a vendor to study the issue.

Representatives of the Bank of North Dakota provided an update to the committee in August 2018 and described the various options for restructuring the debt which the study vendor had examined. The committee was informed bonding the WAWS Authority debt would be difficult or impossible at that time, although preparations for future bonding the debt would continue. The committee also was informed the most feasible debt structure model was a hybrid between variable rate debt held by the Bank and bonding long-term debt as accepted by the market. According to the testimony, WAWS was \$1.4 million ahead in its repayments of the debt as of August 2018.

Souris River Basin Flood Control

The committee received reports on the status of the Souris River Basin flood control projects throughout the interim and held a meeting in Minot to allow the members to tour the projects. The City of Minot and the surrounding towns and rural areas are impacted by the projects. The committee received testimony on the status of flood protection in rural areas around Minot, including the rural structure acquisition, relocation, or ring dike (StARR) program, which helps rural landowners pay for flood protection efforts. According to the testimony, approximately one-half of the \$12 million authorized for the StARR program had been used by August 2018.

The committee was informed Phases 1 through 3 of the Minot flood control project have been completed or are under construction, and the contractors are focused on acquiring properties for and designing Phases 4 and 5. According to the testimony, some rural residents in the basin are opposed to the project because it causes periodic flooding of their land, much of which is used for agricultural purposes. The testimony indicated the available funding for the project was sufficient to advance Phase 4 to a 50 percent design level, but an additional \$8 million is needed to match federal funds for property acquisitions to proceed to Phase 5. The testimony indicated \$20 million in project savings was returned to the SWC but was reallocated to property acquisitions and other parts of the project. The total project will require the acquisition of approximately 650 homes, businesses, and lots, and will result in reducing the floodplain so approximately 60 percent of the residents currently in the floodplain will no longer be in the floodplain.

Southwest Pipeline Project

The committee received testimony regarding the status of the Southwest Pipeline Project, which is owned by the state and operated and maintained by the Southwest Water Authority. According to the report, the project had received a total of \$356.8 million in funding, including \$210.4 million in state funds and \$24 million in state bonds, as of August 2017. The project repaid more than \$56 million to the state as of September 2017, and the project is exceeding its cost-share requirements. The Southwest Water Authority receives a mill levy from each of the 12 counties served by the project. The report noted the Southwest Water Authority had a \$13.8 million funding shortage for the 2015-17 biennium and requested \$84 million in state funds for the 2017-19 biennium.

Northwest Area Water Supply Project

The committee received updates on the Northwest Area Water Supply (NAWS) Project, which will provide water to approximately 81,000 people in Burke, Ward, Renville, Bottineau, and McHenry Counties. In 2002, Manitoba filed a lawsuit to halt construction of the NAWS Project due to environmental concerns. In 2005, a court ordered the United States Bureau of Reclamation to conduct additional environmental studies of the project, and in 2009, a final Environmental Impact Statement and Record of Decision were issued by the bureau. However, Missouri initiated a lawsuit claiming the bureau's conclusions and decision were insufficient to fully analyze the environmental impacts of the project. The court ordered the bureau to conduct further studies, and a new decision was issued in 2015. In August 2017, the court ruled in favor of the bureau and North Dakota, and construction on the NAWS Project was allowed to continue pending an appeal by Manitoba and Missouri. The committee discussed concerns about the condition of some of the project's physical assets that lay dormant through the litigation.

International Issues Related to the Souris River

The committee received testimony on the operations of the International Souris River Board. The board is composed of nine Canadian members and nine American members representing government agencies and local entities. The board established an International Souris River Study Board to evaluate and make recommendations regarding the Operating Plan for flood and nonflood operations which is contained in an annex of the 1989 International Agreement between the Government of Canada and the Government of the United States of America for Water Supply and Flood Control in the Souris River Basin. The committee received testimony the study is expected to cost \$1.8 million and be completed by February 2020.

The committee also received testimony regarding the regulation of the elevation of Lake Darling, which is affected by the 1989 agreement. Lake Darling, which was created to provide a water supply for protected wetlands below a dam, also provides flood protection from spring runoff for Minot. The committee was informed the 1989 agreement allocates

the water in the lake between the United States and Canada and requires the United States Fish and Wildlife Service and the Army Corps of Engineers to operate the dam to ensure the water rights under the agreement are satisfied.

The committee also received testimony regarding the activities of the Assiniboine River Basin Initiative. The Assiniboine River Basin encompasses the Qu-Appelle, Souris, and Assiniboine River watersheds, which extend over Saskatchewan, Manitoba, and North Dakota. The committee was informed the Assiniboine River Basin Initiative brings stakeholders together to develop basin-wide watershed management plans.

Alternative Water Project Funding

The commission received testimony regarding water project funding available from sources other than the SWC. The committee received testimony on flood impact grants from the Department of Commerce, which received \$5 million of federal funds for the grants for the 2017-19 biennium. The committee also received testimony on water project funding available from the Public Finance Authority, State Department of Health, Bank of North Dakota, and United States Department of Agriculture's North Dakota Office for Rural Development.

Waters of the United States Regulations

The committee received testimony regarding the background and status of litigation over federal regulations concerning the definition of "waters of the United States" (WOTUS) as used in the Clean Water Act. In 2015, the United States Environmental Protection Agency (EPA) and Army Corps of Engineers jointly issued regulations regarding the definition of WOTUS. Several states filed suit seeking to enjoin the regulations as an overreach of federal authority. Eventually, a nationwide injunction was granted, and the pre-2015 definition was restored. After additional litigation over jurisdictional matters, North Dakota's lawsuit was remanded to district court for litigation on the merits of the claims. In the meantime, President Trump issued an executive order directing the EPA and the Department of the Army to rescind or revise the 2015 regulations. In January 2018, the EPA and Department of the Army issued final regulations stating the WOTUS regulation would become effective in 2020, and indicated the intent is to continue using the pre-2015 regulation while working on the review.

Cloud Seeding

The committee received testimony regarding the State Atmospheric Resource Board, cloud seeding, and county weather modification authorities. The committee was informed the State Atmospheric Resource Board's cloud modification project aims to suppress hail and enhance rainfall. According to the testimony, two-thirds of the project's funds are from counties while one-third of the funds are from the state. The committee recognized significant controversy over the practice of cloud seeding and strong disagreement regarding its benefits and detriments.

Lake Sakakawea and Lake Audubon

The committee received testimony regarding the Army Corps of Engineers management of water levels in Lake Sakakawea and Lake Audubon. The committee was informed lowering the level of water in Lake Audubon would jeopardize the water supply to the McClusky Canal and negatively impact the Garrison Diversion project. The committee also was informed a drought contingency plan does not exist in the water control plan for the two lakes, which creates a risk of dam failure due to underseepage at the dam foundation.

Railroad Right-of-Way Crossing Fees

The committee received testimony stating railroads are charging residents high fees to allow rural water supply lines to cross under railways. According to the testimony, different railroads impose different fees for the crossings, and the fees may exceed \$5,000 for a water supply line to one residence. The testimony indicated Minnesota and Wisconsin cap railroad crossing fees at \$1,250 and \$500, respectively. The committee discussed the difficulty of residents and water suppliers to afford the fees, and encouraged representatives of the railroads to work to resolve the issue. However, the committee was informed in September 2018 the problem had not been resolved.

STUDIES

Statewide Flood Hazard Risk Management Study

Section 14 of House Bill No. 1020 (2017) required a study of issues related to the state's development of a statewide flood hazard risk management framework by granting authority to the State Engineer to perform a study and proof of concept demonstration to implement statewide flood risk management capabilities for assessing, managing, and reducing property-specific flood risk. The legislative intent for the study was to determine whether residents who live in floodplains may be able to reduce or eliminate the need for costly flood insurance. The committee received testimony the State of North Carolina used a combination of light detection and ranging (LiDAR) and geographic information system (GIS) data to identify which homes in that state are sufficiently elevated to be considered above floodplains. The committee was informed, based on the mapping data, a homeowner can obtain elevation certifications to demonstrate to the federal government the homeowner does not need flood insurance. According to the testimony, LiDAR and

GIS data are not available to all North Dakota residents. As a result, residents who are deemed to reside in floodplains must pay about \$1,500 to obtain an elevation certification or obtain flood insurance.

In August 2018, the committee was informed the unresponsiveness of public officials in North Carolina to inquiries by the State Engineer delayed the study. The committee was informed attorneys in both states were working on a partnership structure to carry out the study, but it had not progressed beyond that stage.

Conclusion

The committee makes no recommendation regarding the State Engineer's study of the state's development of a statewide flood hazard risk management framework.

INDUSTRIAL WATER USAGE STUDY

Background

Section 26 of House Bill No. 1020 (2017) required a study of the oil and gas industry's use of industrial water. The study was required to include the recapture of water used in fracking, the recycling of water used in fracking and other oil and gas activities, fracking methods which do not require the use of water, and taxes or fees other states charge for water used in the oil and gas industry. Industrial water use in the Bakken area has increased significantly during North Dakota's recent oil boom. This increase is due in large part to the process of fracturing or "fracking," which is common in the Bakken area, generally utilizes large volumes of water that then must be captured, disposed of, or recycled. The committee has studied industrial water costs, infrastructure, and permitting in recent interim periods, but this study was intended to examine a broader range of issues.

Testimony and Committee Deliberations

The committee received testimony regarding technologies for treating water previously used for industrial purposes. The committee was informed of the technological, logistical, and economic challenges of treating water used by the oil and gas industry in the Bakken area. A university researcher testified more water is used per frack in the Bakken area now than in the past because the oil and gas industry in the Bakken area has reduced the volume of chemicals used per frack. According to the testimony, approximately 24 billion gallons of water were used for irrigation, fracking, industry, and municipal and rural water supply in the Bakken area in 2014, and approximately 10 billion gallons of that amount were used for fracking. The committee was informed more surface water than groundwater was used for fracking, although the opposite was true before 2012. Despite the large volume of water used for fracking, testimony indicated the oil and gas industry generally had a limited impact on groundwater and surface water resources in the state. However, studies presented to the committee indicated the 22 percent increase in precipitation the state received in recent years offset the industry's total impact, and the state's water resources may be affected more significantly by the oil and gas industry when precipitation levels return to normal. According to the testimony, development of alternative fracking fluids, including acid-based fluids, energized fluids, foams, emulsions, and mixture-based fluids, is ongoing, perhaps because of the difficulty of recycling or reusing water that has been used for fracking in the Bakken area. The committee was informed recycling fracking waste water is more difficult in the Bakken area than other oil-producing regions in Texas, Colorado, and Pennsylvania due to several factors.

Other research presented to the committee described a demonstration project to evaluate a brine treatment test bed and carbon capture and storage options. Testimony indicated the project will help determine whether and how brine produced by the oil and gas industry may be treated and reused for water supply and will evaluate technologies for the recovery or creation of materials such as lithium, hydrochloric acid, and sodium hydroxide from industrial brines. According to research presented to the committee, however, there are significant challenges to the treatment of water from the Bakken area, including the high level of salinity, potential for naturally occurring radioactive material in the treatment concentrate streams, logistical challenges during cold winters, and the inexpensive and convenient current methods of brine disposal.

Conclusion

The committee makes no recommendation regarding its study of industrial water usage in the state.