

2014 Integrated Management Plan Annual Report

The Lower Niobrara Natural Resources District (District) and the Nebraska Department of Natural Resources (Department) began the process of developing a Voluntary Integrated Management Plan (Plan) (IMP) in the Fall of 2011. Through the Stakeholder process the District and Department identified goals, objectives and action items to insure the groundwater and surface water resources will be protected for future generations. The Plan was approved in March of 2014 and became effective in May of 2014.

In accordance with the Plan's Section 10. A. the following outlines the District's activities in regards to groundwater management activities which have taken place within the District since the adoption of the IMP and focuses on 2014 activities.

Overview of Goals and District Activity to Accomplish the Goals

Goal one was to develop and implement processes for the adequate collection of hydrologic and other related data to assess water resources within the District. To accomplish this goal the staff has researched the data available through the United State Geological Survey, Nebraska Conservation and Survey and other sources to determine the information available. Using the data collected five different hydrologic areas have been identified within the District. These five hydrologic areas were divided into 12 areas based on the static water level data the District has. These areas are defined in the [Spring 2015 Static Water Level Report](#). Four of the hydrologic areas have been determined to have less than 24 feet saturated thickness for the development of groundwater and very little to no groundwater development. Three of the hydrologic areas have a saturated thickness of 24-106 feet. These areas have some irrigation development. The remaining five hydrologic units have saturated thicknesses of 75-350 feet. This is where the majority of the groundwater irrigation development is in the District.

The District has been taking static water levels in the spring and fall since 1982. The spring reading are used for management. [\(Attached is the Spring 2015 Static Water Level Report\)](#)

Currently Nebraska Conservation and Survey is looking at the deeper aquifers in the hydrologic units in the areas where the shallow aquifer is non-existent. There are a few livestock and domestic wells into the Carlyle formation in these areas. Once the results from the study are available they will be published in the next IMP annual report.

Goals two and three go hand in hand. Goal two is to develop systematic approaches for the development and sustainability of water resources within the District. And Goal 3 is to prevent, resolve, and minimize water related conflicts among and between surface water and groundwater users. To accomplish these goals the District has developed both land ranking and

well ranking models to provide the staff with a score for each. Land must meet a minimum score of 20 point and new high capacity wells must meet a minimum score of 250 points. Also the District adopted revised Rules and Regulations which went into effect April of 2014.

The Revised Rules and Regulations for the LNNRD gives the LNNRD Board of Directors the ability to evaluate the District each June to determine if any new irrigated acres will be added that year. In June of 2014 the Directors voted not to add any new irrigated acres in 2014 and not to allow transfers. The Board did the same in June of 2015.

These Rules and Regulations also require all the irrigated acres in the District be certified by April of 2016; outline the process for transfer of irrigated acres; flowmeter requirement; groundwater management controls and water banking.

Goal four is focused on education. The District Programs Assistant has re-designed the District's website and keeps the public informed of activities via the District's Facebook page. The District also coordinated with the Upper Elkhorn NRD on a Water Issues Meeting for the public. Topics covered were District updates; cost-share toward new irrigation and soil moisture technology; climate change; nitrogen inhibitors; Clean Waters Act; and Department surface water permitting and IMP process and planning.

Groundwater Action Items to Achieve Goals & Objectives

1. Certification of Irrigated Acres. The District hired a Programs Assistant in July of 2014 to handle the acre certification process. We also contracted with GIS Workshop to develop the program and data base needed for the process. Assessor's records are being used as the base. The Programs Assistant started working on Keya Paha and Rock then moved to Boyd and Knox Counties with Holt being left for last because of the amount of acres to certify. Currently 94% of Boyd and Keya Paha along with 80% of Rock and 51% of Knox Counties have been certified. At this time only 10% of Holt County has been certified. We continue to work to get the remaining irrigated acres certified.

2. Ranking System for the Addition of Wells. Well ranking includes: thickness of primary aquifer formation, transmissivity, irrigation well density, public water supply well density, domestic/livestock well density and irrigation best management practices. This is also calculated using a GIS model so each application is calculated the same. [\(Attached is a completed well ranking sheet\)](#). Three well applications were received and denied because they did not meet the minimum score.

3. Flowmeter. The revised Rules and Regulations require a flowmeter on all new high capacity wells and systems requesting helper wells. Several replacement wells have been installed and flowmeters put in place. Three applications for helper wells required the installation of

flowmeters so monthly readings could be taken to meet the requirements of the application process.

4. Restrictions on Addition of Irrigated Acres. Land ranking includes: well ranking, land capability class, stream depletion factors, static water levels, nitrates and proximity to other high capacity wells. The LNNRD Water Coordinator has developed a GIS model to calculate all the above factors and enters the values into the form. This insures each application is calculated the same to reduce human error. The land ranking is also used on historic acres. Historic acres are fields which have not been irrigated 2 of the last 10 years. This is based on land irrigated in 2104 or prior, because this is the effective year of the IMP and updated rules and regulations. [\(Attached is a completed land ranking sheet\)](#)

As stated before the District is not accepting applications for new irrigated acres. But the District has received fourteen applications for historic acres. Eleven have been approved and three are being considered. The ones under consideration are in pasture and the owners would like to irrigate the pasture. These did not meet the land ranking, so the Board is considering creating a separate class for irrigated pasture.

The District did receive a variance application for a transfer. This is a result of the Department granting a surface water application. The land which was to be irrigated with the surface water was being irrigated with groundwater. The producer requested to move the groundwater irrigation to the next quarter to the west leaving the well in the same location. The Board granted his request.

The historic acres, if granted, require a 5% reduction in acres. These acres are held by the District for future development if needed. Currently the District has 13.35 acres banked.