


LOWER ELKHORN

Natural Resources District


Lower Platte River Basin Coalition Plan – Annual Report (March 1, 2025)

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1.0 Introduction

The Lower Elkhorn Natural Resource District (LENRD) covers approximately 2,591,300 acres; with predominant land uses divided among agriculture (76%), pasture/grassland (20%), and small areas of forests, open water, wetlands, and urbanized areas (<4%).

The District's Board of Directors approved the interlocal agreement which agreed to the adoption of the Lower Platte River Basin Water Management Plan on November 21st, 2017. This action, along with the six other Natural Resource Districts and the Nebraska Department of Natural Resources, set forth a collective effort to work cooperatively towards the management and development of the water resources within the Lower Platte Basin.

For future reference, the Board of Directors for the Lower Elkhorn NRD approved acceptance of the terms of the Interlocal Cooperative Agreement #3 for the Lower Platte River Basin Water Management Plan Coalition on March 24, 2022, which also sets forth the amounts of available depletions as part of the second increment.

Since 2009, the Lower Elkhorn NRD has utilized a managed-growth philosophy when considering the decision to allow new groundwater uses for agricultural irrigation purposes. Prior to December of 2008, no restrictions were in place that limited property owners regarding the development of agricultural land for irrigation purposes. Current policy requires an approved variance from the District before expanding groundwater use for irrigation purposes. This requirement has been in place since April of 2009 within the LENRD. No limitations have been enacted on the approval of permits for high-capacity groundwater wells for other uses, such as commercial, industrial, livestock, or municipal wells, however, any request to construct a new well for any of those purposes is reviewed for any potential impacts to existing groundwater supplies and/or impacts to groundwater quality prior to approval.

The Lower Platte River Basin Water Management Plan provides guidance to the partners in respect to the amount of (excess) available water that can be allotted for new uses (depletions). Coalition partners have, in return, agreed to adhere to the suggested limits for the second five-year increment of the plan. Table 1 lists the allowable depletions for each sub-basin of the Lower Platte Basin and Table 2 breaks it down into the available amount for each Natural Resource District. As listed in Table 4.2, the number of depletions available during the second increment, to be shared between the Lower Elkhorn Natural Resource District and the Nebraska Department of Natural Resources is ***8,347*** Acre-Feet of allowable new depletions.

Table 1. – Second 5-year Increment Allowable New Depletions by Basin

Basin	Average Peak Season Excess Supply (acre-feet)	Second 5-year increment Allowable Development (acre-feet)
Full Lower Platte Basin	228,894	22,889
Loup Basin (46% BSW)	105,291	10,529
Elkhorn Basin (32% BWS)	73,246	7,325
Lower Platte Subbasins (22% BWS)	50,357	5,036

NRD	Allowable Depletions by NRD - 2nd Increment	1st Increment Carryover	Total
Upper Loup NRD	3,369	2,065	5,435
Lower Loup NRD	7,160	4,749	11,908
Upper Elkhorn NRD	1,831	1,134	2,965
Lower Elkhorn NRD	5,493	2,853	8,347
Papio-Missouri NRD	1,057	768	1,825
Lower Platte South NRD	1,209	890	2,098
Lower Platte North NRD	2,770	966	3,736
TOTAL	22,889	13,425	36,315

Table 2. – Second 5-Year Increment Allowable New Depletions by NRD

This report and its content will serve to fulfill the annual data collection and reporting requirement of the Lower Platte River Basin Management Plan for the LENRD for the year 2024, as required in *Section 5.0 – Plan Review and Monitoring, Lower Platte River Basin Management Plan.*

2.0 Certified Irrigated Acres

The District initiated the process of certifying irrigated acres in January of 2013, and conducts public hearings to certify new irrigated acres, or modifications to existing certified acres on an annual, or as needed basis.

Rule 14 of the Lower Elkhorn Districts Rules & Regulations for the Enforcement of the Nebraska Groundwater Management and Protection Act indicates that the District will certify, as irrigated, any tract of land greater than two acres that (1) has been irrigated any one out of ten years, from 1999 to 2008, (2) is currently enrolled in a federal, state, or local conservation program and was classified as irrigated land by the local County Assessor within one year prior to being enrolled in such a program, (3) has otherwise been allowed to develop under an approval granted by the District's Board of Directors since 2007, (4) has otherwise been allowed to develop under an approval granted by the NeDNR since 2007, or (5) is irrigated by wastewater effluent from a livestock operation or municipality that is operating in compliance with a Clean Water Act permit.

Table 3. – LENRD Certified Irrigated Acres – 12/31/2024

LENRD CERTIFIED IRRIGATED ACRES BY SOURCE				
	GROUNDWATER	***SURFACE WATER***	***WASTEWATER***	***TOTAL ACRES BY COUNTY***
ANTELOPE	*435.94*	*-*	*-*	*435.94*
BURT	*16,450.19*	*1,077.36*	*1,505.06*	*19,032.61*
CEDAR	*48,933.97*	*529.80*	*432.94*	*49,896.71*
COLFAX	*24,864.53*	*407.87*	*2,249.11*	*27,521.51*
CUMING	*59,801.61*	*2,040.74*	*14,258.59*	*76,100.94*
DAKOTA	*-*	*-*	*-*	*-*
DIXON	*15,412.82*	*422.12*	*191.79*	*16,026.73*
DODGE	*67,777.23*	*3,954.06*	*2,428.12*	*74,159.41*
KNOX	*11,451.90*	*70.00*	*-*	*11,521.90*
MADISON	*125,017.34*	*2,067.67*	*3,585.54*	*130,670.55*
PIERCE	*156,529.67*	*1,338.15*	*476.94*	*158,344.76*
PLATTE	*24,323.06*	*-*	*2,220.71*	*26,543.77*
STANTON	*39,723.80*	*1,216.11*	*1,940.44*	*42,880.35*
THURSTON	*12,098.81*	*373.87*	*634.80*	*13,107.48*
WAYNE	*50,345.70*	*913.42*	*1,761.00*	*53,020.12*
TOTAL IRRIGATED ACRES BY SOURCE	*653,166.57*	*14,411.17*	*31,685.04*	
Net change from previous report	***0***	***0***	***0***	
TOTAL IRRIGATED ACRES	*699,262.78*			

As indicated by the data in Table 3, groundwater is the primary water source for agricultural irrigation in the Lower Elkhorn NRD with current inventory totaling ***653,166.57*** acres irrigated by this source. ***Note: This current inventory only includes a portion of the total new irrigated acres approved in conjunction with the Lower Platte River Basin Management Plan, since only a portion of the new irrigated acres have been formally certified as irrigated by the District.***

The LENRD is also home to many livestock operations and species include: beef cattle (feedlot and cow/calf), dairy, swine, and poultry operations (both egg and meat-bird production). Current production trends for livestock and poultry operations indicate that large numbers of animals are situated on individual farms, which will require large volumes of water necessary for production. Many of these operations are also required to have operating permits to comply with the Clean Water Act requirements. Some of these locations will apply groundwater, as necessary, alongside animal waste/lagoon effluent for irrigation of growing crops. To date, records indicate that ***31,685.04*** acres utilize wastewater as a source of irrigation water.

To date, certification records show that surface water irrigation comprises the smallest increment of the total irrigated acreage in the District, estimated at ***14,411.17***.

3.0 Municipal, Water-Use Data

Table 4 (below) contains municipal water-use data from public water supply systems located within the LENRD for 2024.

Table 4: LENRD_Municipal Water-Use Data_2024			
System Name	2020 Pop.	2024 Usage/Gal.	Gal/Capita/Day
City of Battle Creek	1,397	76,485,750.00	150.00
City of Clarkson	641	32,175,666.00	131.00
City of Hooper	857	32,954,637.00	100.00
City of Humphrey	857	54,428,070	174.00
City of Laurel	972	73,840,198	198.00
City of Lyons	824	49,625,400.00	165.00
City of Madison	2,561	112,685,570	115.00
City of Norfolk	24,955	1,799,643,216	179.00
City of Oakland	1,571	102,067,870.00	178.00
City of Osmond	873	61,750,286.00	184.00
City of Pierce	2,013	106,745,361.02	138.00
City of Plainview	1,398	115,513,116.00	194.00
City of Randolph	1,035	63,637,270.00	160.00
City of Scribner	754	44,308,810.00	161.00
City of Stanton	1,814	86,243,262.00	124.00
City of Tilden	1,105	72,987,319.00	171.00
City of Wakefield	1,545	103,762,200	184.00
City of Wayne	5,973	369,540,136.00	161.00
City of West Point	3,481	201,175,930.00	150.00
City of Wisner	1,323	52,031,408.00	102.00
Village of Beemer	610	39,097,340.00	167.00
Village of Belden	127	Served by WauColRWS	NA
Village of Bancroft	458	25,056,000	142.00
Village of Carroll	237	16,608,960	182.00
Village of Concord	162	5,972,130	96.00
Village of Craig	202	17,288,137.00	198.00
Village of Creston	206	8,346,090.00	105.00
Village of Dixon	125	5,083,771.00	106.00
Village of Dodge	550	30,488,781.00	144.00
Village of Emerson	902	50,174,652.00	145.00
Village of Hoskins	281	10,848,023.00	100.00
Village of Howells	657	65,035,116.00	206.00
Village of Leigh	396	30,895,549.00	203.00
Village of Magnet	54	Served by WauColRWS	NA
Village of McLean	25	Served by WauColRWS	NA
Village of Meadow Grove	249	12,468,528.92	130.00
Village of Nickerson	334	12,434,820.00	96.00
Village of Pender	1,204	54,932,500	125.00

Village of Pilger	305	17,700,675.00	159.00
Village of Snyder	327	19,335,510.00	162.00
Village of Tilden	1,105	60,902,075.00	151.00
Village of Uehling	271	15,064,754.50	144.00
Village of Wausa	562	19,673,947.61	91.00
Village of Winside	574	13,789,200.00	94.00
Woodland Park CDP	1,621	80,466,440.00	129.00
Logan East Rural Water District	NA	267,874,210.03	NA
Cardinal Health	NA	9,204,771.05	NA
Henningsen Foods Inc	NA	9,734,438.02	NA

4.0 New Groundwater Allocations and Depletion Impact

Prior to participation in the Lower Platte River Basin Management Plan, the only accounting for new groundwater consumptive uses by the Lower Elkhorn Natural Resource District would be the new irrigated acres located within the hydrologically connected areas authorized by an approved Variance from the District, and most importantly those acres approved under the prior requirements of LB 483. The LENRD has required an approved variance to expand irrigated acres districtwide since early 2009. A variance is required for both the Hydrologically Connected and Non-Hydrologically Connected portions of the District, which under the current boundaries (as recognized by the District and the Nebraska Department of Natural Resources) equals approximately a 1/3rd (Hydrologically Connected) and 2/3rd (Non-Hydrologically Connected) split.

In September of 2024, the Lower Elkhorn NRD Board of Directors approved a motion that instructed staff to schedule a sign-up period for Standard Variances to be facilitated from October 1 to October 31, 2024 and to allow up to 400 Acre Feet of new depletions in the Hydrologically Connected Area, and up to 3,500 new groundwater irrigated acres in the Non Hydrologically Connected Area. In addition, the Conditions for Approval Policy was reauthorized which allocates 14 inches per irrigated acre/annually for any new irrigation well that is constructed under an approved variance.

In December 2024 and January 2025, the Lower Elkhorn NRD Board of Directors approved 433.67 Acre Feet of new peak-season depletions, or 4,446.85 new acres, in the Hydrologically Connected Area, and 3,929.61 new acres in the Non-Hydrologically Connected Portion of the District. Site-specific information regarding the locations associated with the approved peak-season depletions is contained within Appendix A, which is attached to this report.

5.0 Transfers

The Lower Elkhorn Natural Resource District did not process any groundwater use transfer requests from within the hydrologically connected boundary area (in the LENRD) during this reporting period, and therefore no data is provided for this section.

6.0 Permits for High-Capacity Wells

Permits are only required to construct a high capacity well (any well constructed or equipped to pump greater than 50 gallons per minute) in the Lower Elkhorn NRD. Table 5 lists the well permits issued for construction of high-capacity wells in the Lower Elkhorn NRD between January 1, 2024 through December 31, 2024. A breakdown of this inventory includes permits for: irrigation (74) (29 replacement well permits, 45 new), commercial/industrial (2), livestock (5), and public water supply (5).

Table 5. 2024 Well Permits in the LENRD

High Capacity Well Permit Type	Number of Approved Permits	Average Capacity (GPI
Irrigation (New wells)	45	800
Irrigation (Replacement)	29	825
Livestock	5	200
Public Water Supply	5	450
Commercial/Industrial	2	1000
Total	86	655

7.0 Retirement of Groundwater Consumptive Uses

During the 2024 reporting period, there were no new requests for retirements of groundwater uses inventoried or reviewed within the Lower Elkhorn NRD.

8.0 Flow Meter Data

As of January 1, 2019, all active high-capacity wells are required to be equipped with a flow meter to measure the total annual groundwater withdrawal, and to report water-use readings to the LENRD by December 1 of each calendar year. The water use information is inventoried into a central data management system that was developed for the LENRD by Phoenix Webgroup (PWG) of Waverly, NE. This data management system, which houses the information from over 5,000 flow meters, also contains a user interface that allows well owners or operators to submit their information using a web-based interface.

The summary table below captures the preliminary information collected from flow meter reports for irrigation wells in the Lower Elkhorn NRD for the 2024 irrigation pumping season.

The entry labeled "Irrigation" represents information from irrigation wells located throughout the entire District, and the QM Subarea information is gathered from irrigation wells located in two Quantity Management Subareas (Eastern Madison and Wayne Counties), in which irrigation wells are subject to an annual groundwater allocation.

Also included in Table 6 is pumping data from well uses identified as Commercial/Industrial, and Livestock.

Table 6. Flow Meter Data_Lower Elkhorn NRD_2024 Pumping Season	Column1	Column2	Column3	Column4	Column5	Column6
Well Use	Number of Locations	Minimum Withdrawal		Maximum Withdrawal		Median/AI per acre
Irrigation (all other)	4,722		0 Acre In.		16.74 Ac In.	6.54 Acre inches
Quantity Management Subareas						
Eastern Madison County	106		0 Acre In.		15.99 Acre In.	6.50 Acre Inches
Wayne County	85		0 Acre In.		7.61 Acre In.	3.00 Acre Inches
New Wells						
Irrigation - 14 Ac. In. Allocation	209		0 Acre In.		14.00 Acre In.	6.32 Acre Inches
Commercial/Industrial						
Golf course, ethanol plants,			0.00 gal.		gal.	gal.
ready-mix plants, food processing						
other industries						
Livestock						
			gal.		gal.	gal.

Table 6. Flow meter data for the Lower Elkhorn NRD for the 2024 pumping season. *At the time of this report, not all 2024 flow meter data had been reviewed for accuracy.

9.0 Water Banking Activities

The Lower Elkhorn NRD does not currently participate in any water banking activities and therefore no data exists for this reporting requirement.

10.0 Stream-flow Accretion Activities

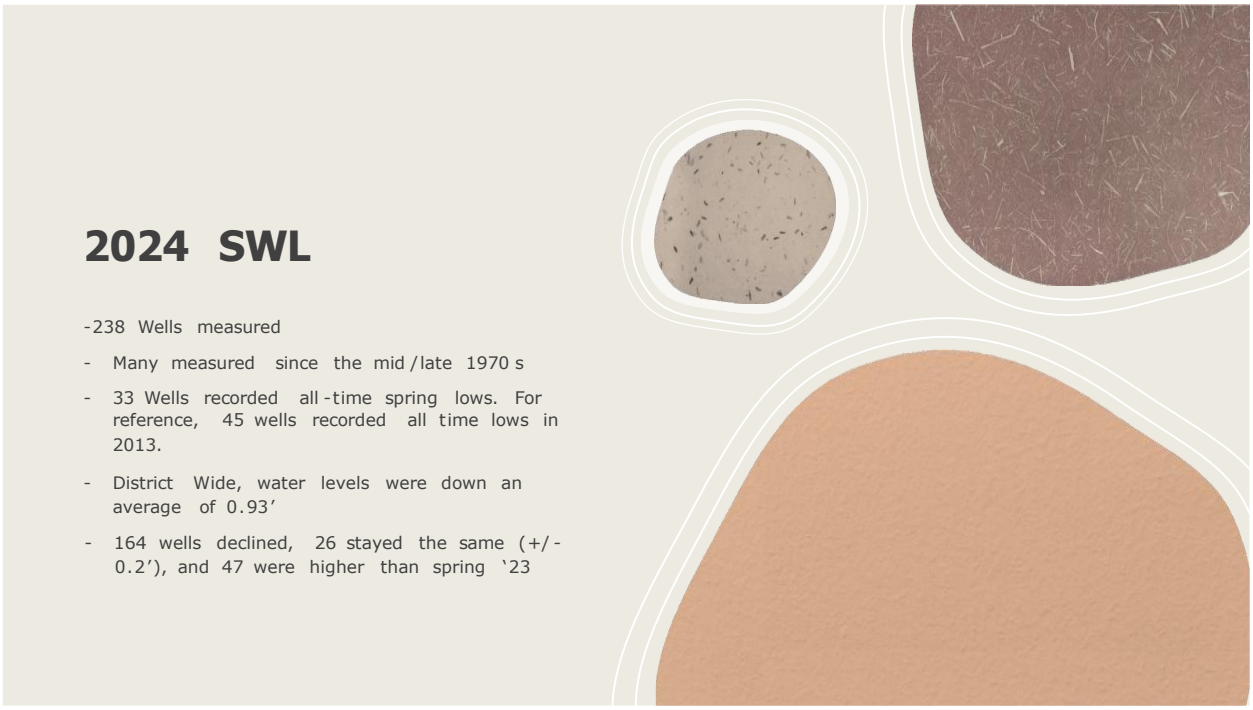
Within the Lower Elkhorn NRD there are currently no operating projects that would create reporting data associated with stream flow augmentation or to compensate for any conjunctive management requirements.

11.0 Groundwater Elevation Observations

Groundwater level observations are collected annually from a network of 237 privately owned irrigation wells. Periods of record will date back to the mid 1970's for most of these locations.

Spring 2024

Groundwater elevations declined at a majority of observation locations within the District between the Spring 2023 to Spring 2024, with the average decline of 0.93". 2023 was once again below average for annual precipitation for all of the District, though beneficial precipitation did occur especially during the first half of the 2024 growing season.



-CONNOR & DALLAS MEASURED WELLS FROM MID TO LATE OCTOBER

-231 WELLS MEASURED THROUGHOUT THE DISTRICT

-FALL READINGS MAY BE HIGHLY VARIABLE DEPENDING ON CROP, LOCALIZED AREA CONDITIONS, LAST PUMPING DATE, HYDROLOGIC CONNECTIVITY, AND MANY OTHER VARIABLES

-GREATEST DRAWDOWN (SPRING TO FALL) WAS 22.22'

-38 WELLS HAD HIGHER WATER LEVELS IN FALL 2024 THAN IN THE SPRING. MOST OF THESE WELLS ARE VERY CLOSE TO CREEKS/RIVERS

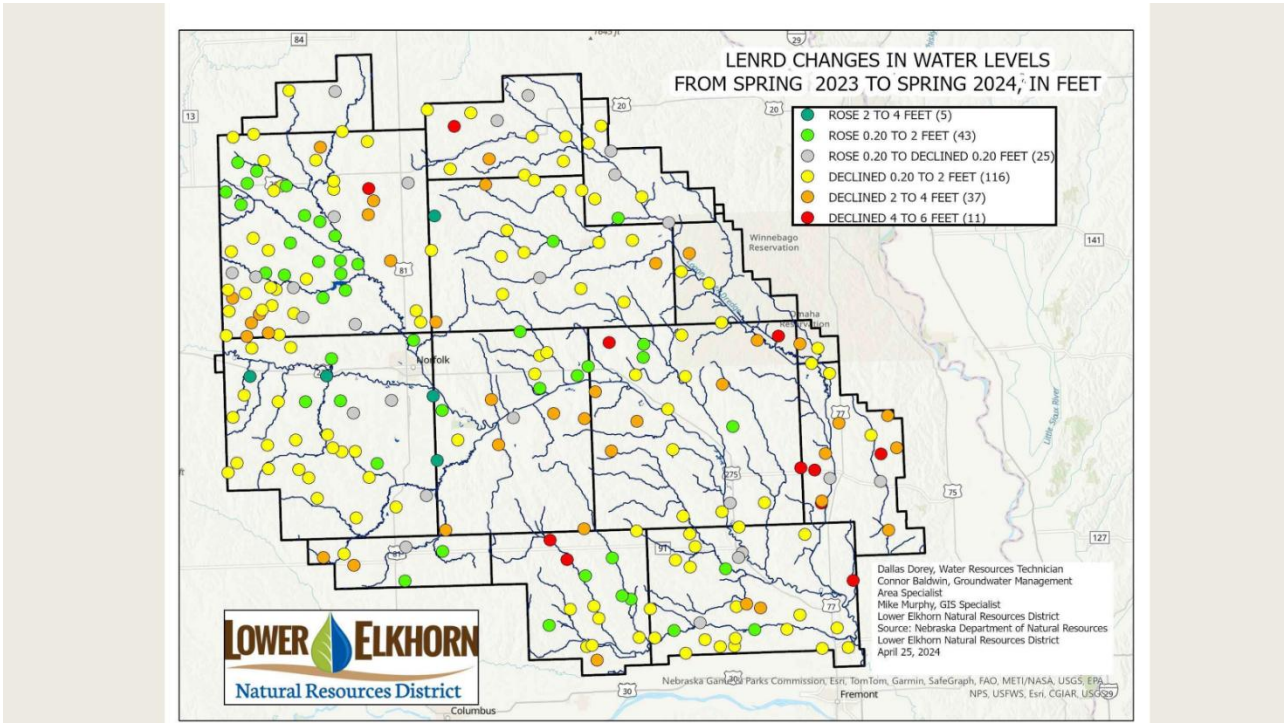


Figure 2. Map depicting the differences between depths to groundwater for the LENRD Observation Well Network for measurements collected in the Spring of 2024 compared to measurements collected in the Spring of 2023.

Fall 2024

Static water levels were also collected in the Fall of 2024, and occurred from mid to late October. The second half of the growing season was below normal for average precipitation, showing a stark reversal from some very wet conditions which prevailed in the early part of the growing season. Therefore, irrigation season lasted well into late September or even early October for some locations in the District. As is typical for any groundwater elevation data which is collected at the end of the pumping season, site specific variables can create a wide range of measurements. In the Fall of 2024, our observations showed one location which *increased* from the Spring of 2024, while the greatest in-season decline of 22.22 feet was recorded.

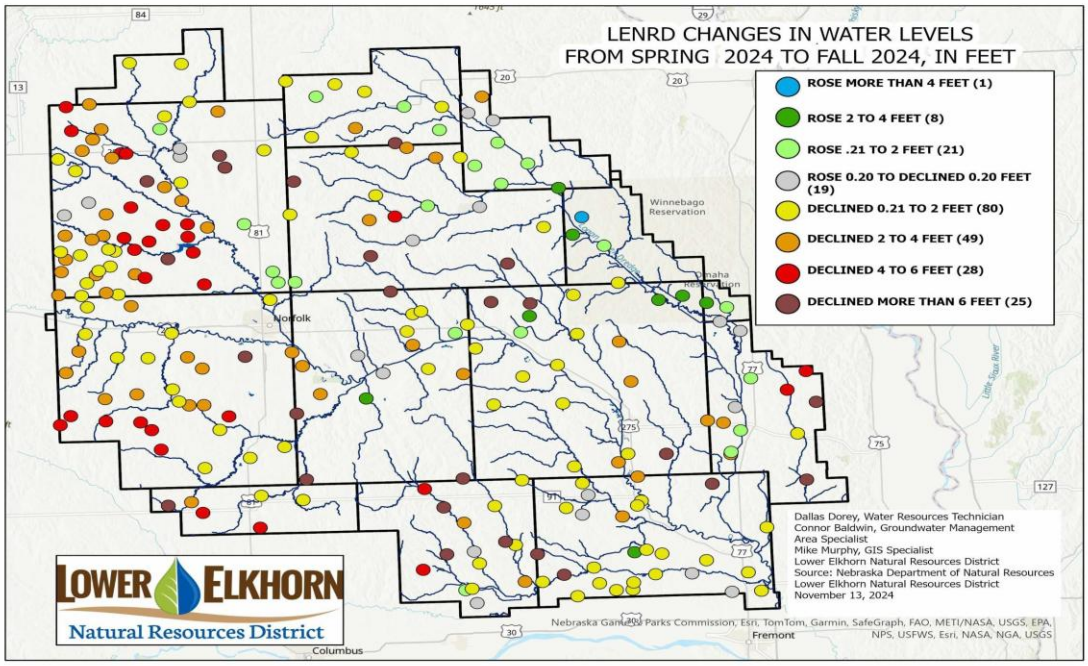


Figure 3. Map of the LENRD that indicates the changes in depths to groundwater between the measurements obtained in the Spring of 2024 and the Fall of 2024 for the LENRD Observation Well Network.

As the previous maps help to illustrate, the aquifer systems in the Lower Elkhorn NRD are geologically diverse, and subsequently the groundwater levels react differently by location. This phenomenon presents a situation where the year-to-year water level data will vary significantly at the local level. That being stated, groundwater levels have generally been very resilient in the Lower Elkhorn NRD and have (in the past) recovered from periods of deficit

precipitation coupled with increased groundwater demand. However, groundwater inventories could become stressed if acute drought persists into subsequent pumping seasons, especially since the Lower Elkhorn has allowed for the development of nearly 29,000 new groundwater irrigated acres since 2016.

12.0 Stream-gage Measurements

The Lower Elkhorn NRD does not maintain any stream gages within the District that are independent of gage-data collected by the United States Geological Survey (USGS) or the Nebraska Department of Natural Resources (NeDNR). However, a Joint Funding Agreement is in place with USGS to assist in the expenses associated with the operation and maintenance of gages located on the North Fork of the Elkhorn River near Pierce, and on the Elkhorn River near Pilger.

13.0 NRD Regulations and Management Activities

Modifications to Rules and Regulations

In March of 2024, the Board of Directors conducted a public hearing to receive testimony on proposed changes to the Groundwater Management Area Rules and Regulations. A summary of the changes that were enacted on May 31, 2024, include the addition of definitions of important terms, added changes to sections of Rule 12 relative to Phase Area requirements, and amended Rule 17, to allow the LENRD flexibility in allowing new irrigated acres in the Quantity Management Subareas.

Enforcement Activities

2024 presented many of the same challenges that require the District to engage in additional activities when enforcing its policies, as occurred in previous reporting years. It is not uncommon for the District to issue Notices of Violation for failure to submit flow meter readings, management area reports, or for non-compliance with other groundwater related matters. Typically, farm operators will come into compliance after receiving a Notice of Violation, yet some will push the limits before eventually coming into compliance.

14.0 New Depletions Accounting Report

Inventoried in the table below are the new peak season depletions that have been allowed in the Lower Elkhorn NRD from 2016 through 2024. As stated by the table, the Lower Elkhorn NRD is reporting 433.67 Acre Feet of New Peak Season Depletions for this reporting cycle, even though these depletions weren't given official Board approval until December 2024/January 2025.

Table 7. Accounting table for new depletions allowed in the Lower Elkhorn Natural Resources District from 2016 through 2024.

Table 7. LENRD Summary of Allowable Depletions	Column1	Column2	Column3	Column4
Depletion Description			**Peak Season Depletion (AF)**	**Balance (AF)**
LENRD 2016/2021 Allowable Dep.				4514.00
2016/2017 LENRD			223.10	4290.90
2016/2017 NeDNR			117.00	4173.90
2017/2018 LENRD			292.00	3881.90
2017/2018 NeDNR			97.00	3784.90
2018/2019 LENRD			292.20	3492.70
2018/2019 NeDNR			70.00	3422.70
2019/2020 LENRD			286.40	3136.30
2019/2020 NeDNR			-103.60	3239.90
2020/2021 LENRD			292.00	2947.90
2020/2021 NeDNR			94.65	2853.25
LENRD_1st Increment Carryover				2853.25
LENRD_2nd Increment_Allowable Depletions				5493.00
Total				8346.25
2021/2022 LENRD			0.00	8346.25
2021/2022 NeDNR			0.00	8346.25
2022/2023 LENRD			305.93	8040.32
2022/2023 NeDNR			-38.00	8078.32
2023/2024 LENRD			433.67	7644.65
2023/2024 NeDNR				

15.0 New Data Collected Through Models or Studies

Groundwater Quality

During 2024, the Lower Elkhorn NRD collected water samples from a baseline set of wells located within the Bazile Groundwater Management Area to assess groundwater nitrate concentrations from the portion of the LENRD within the Management Area. In total, 127 wells were sampled – 112 irrigation wells that had been sampled at least every other year, dating back to 1980, and 15 monitoring wells that are sampled every year, dating back to 2001.

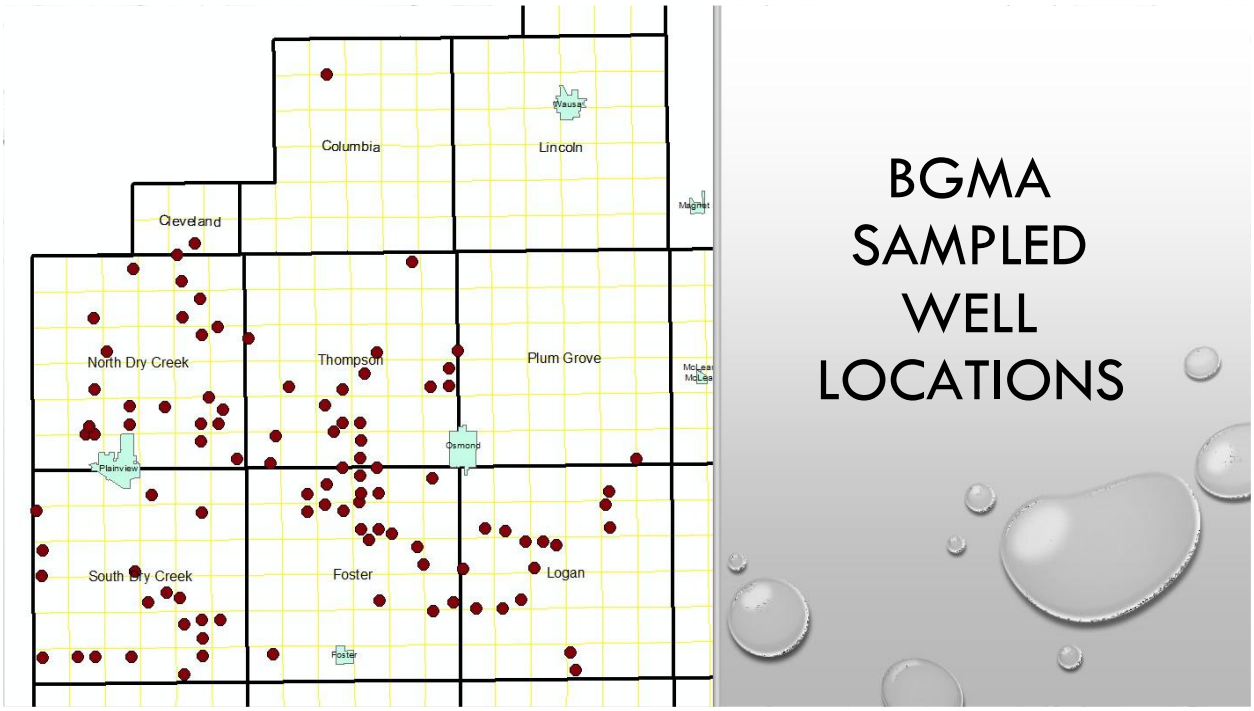
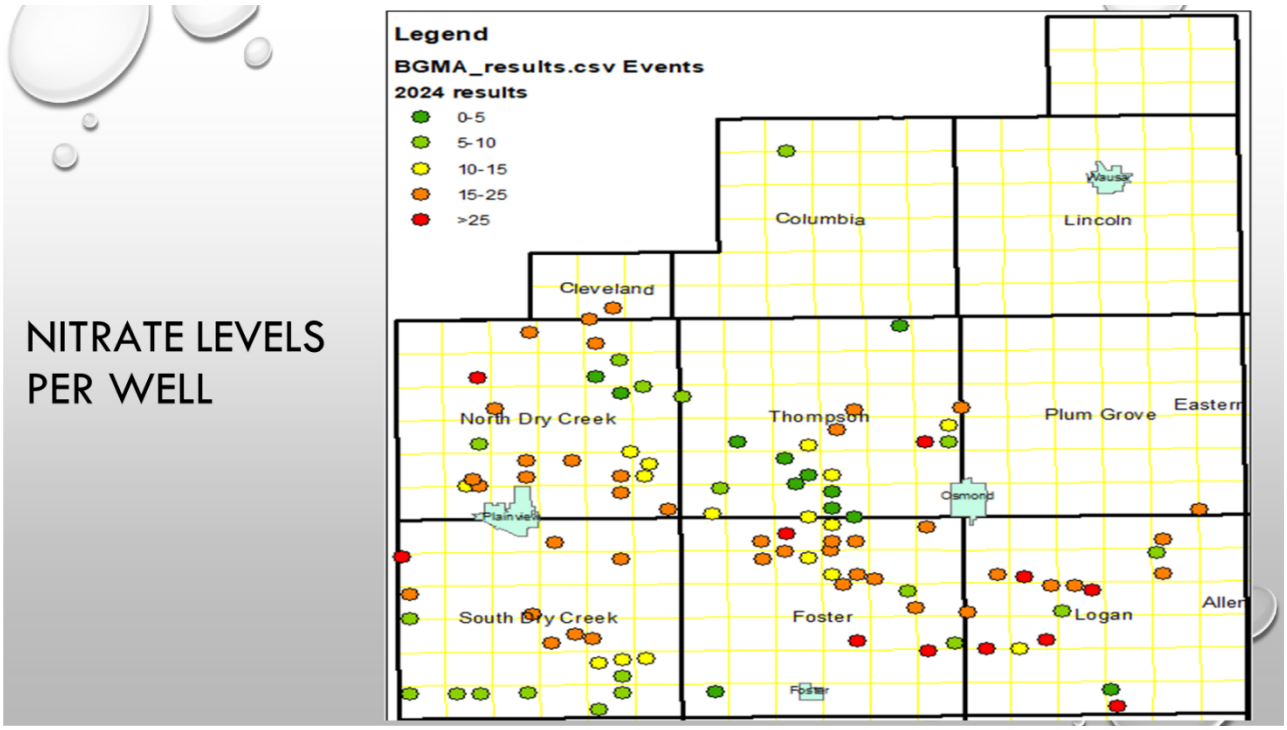


Figure 4. Nitrate concentration map depicting locations of baseline wells located in Pierce and Knox Counties, from within the Lower Elkhorn Natural Resources District.



Regrettably, the trendlines for the water quality data collected from the baseline wells continues on an uptrend in the area. As can be interpreted from the map above, it is common to find groundwater nitrate concentrations in excess of the 10 mg/L threshold, and in many locations the concentrations will exceed 20 mg/L.

In addition to its activities associated with the annual monitoring of groundwater quality at the county level, the District also samples irrigation wells that are part of a statewide network with the Nebraska Department of Environment and Energy (NDEE) that are monitored for long-term nitrate trends. The LENRD currently has a network of 89 irrigation wells that were first sampled in 1987. Figure 5 below shows the results from the 42 locations sampled during 2024.

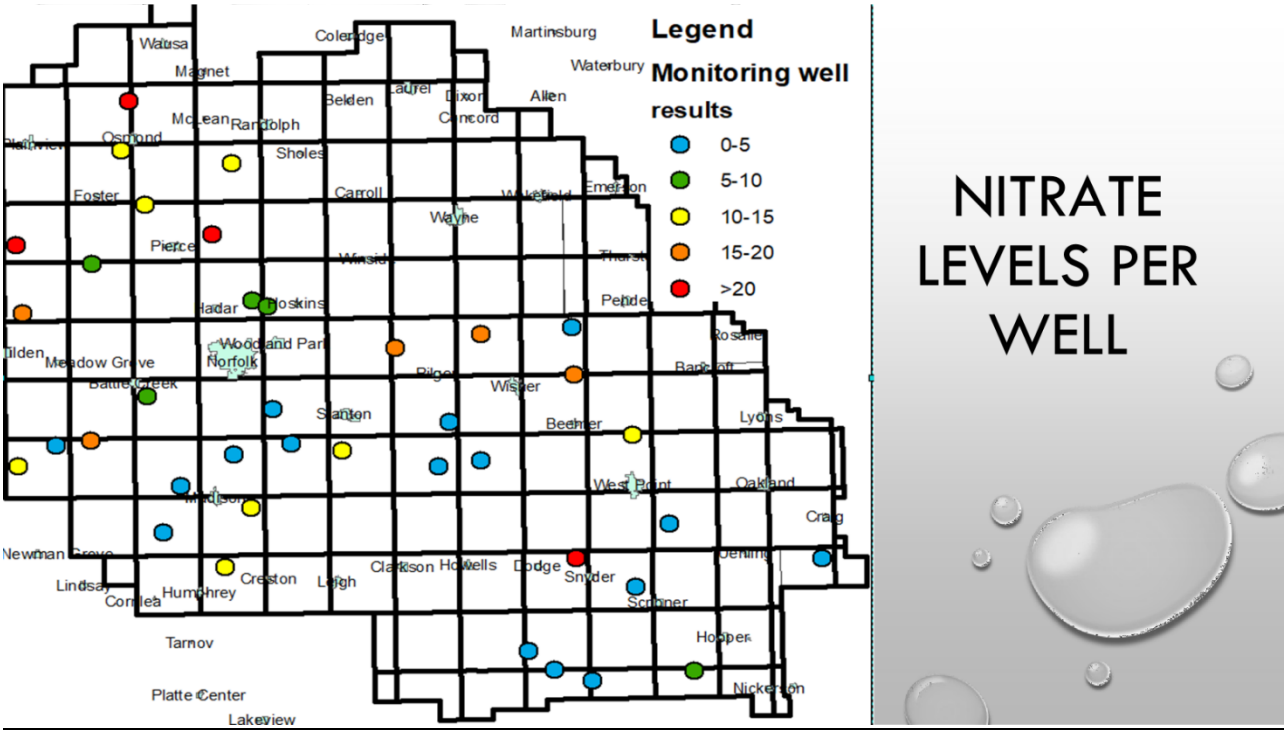
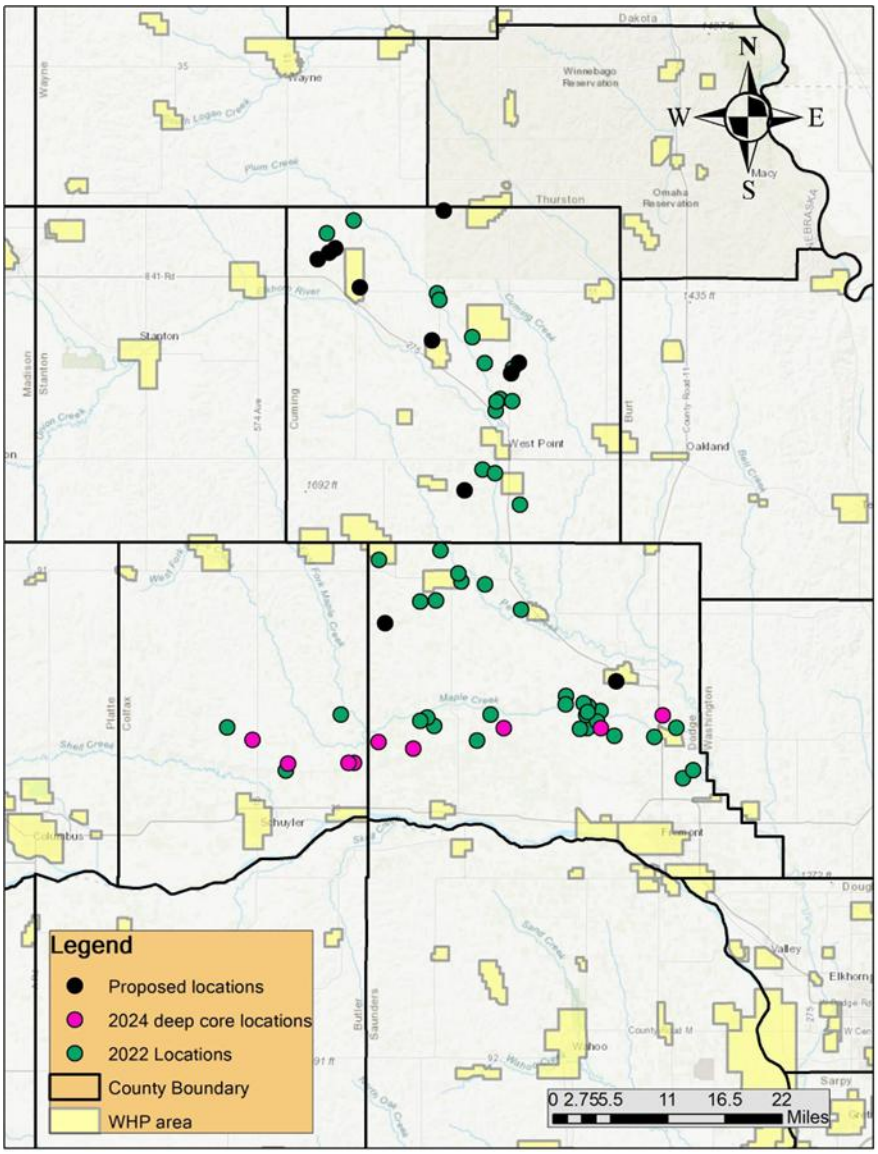


Figure 5. Map of the LENRD that displays the locations and results for the wells sampled in the statewide network.

LENRD Vadose Sampling and Proposed Groundwater Management Area in Portions of Cuming, Colfax, and Dodge Counties

Approximately 50 locations were identified for vadose coring in the proposed management area. At least 25 of the locations are center-pivot irrigated row crop, 6 are gravity-irrigated row crop, with the balance of the locations represented by dryland row crop and CRP practices. The map below shows the locations that had been cored by the Spring of 2024, with the remaining sites being completed during the fall of 2024 – though we are still awaiting results from the UNL Water Sciences Laboratory.



The map at the left shows the locations identified in Cuming, Colfax, and Dodge Counties which are part of the recent vadose coring effort in the LENRD.

Unfortunately, the preliminary results show a substantial number of locations (~50%) with >200 lbs/acre Nitrate load

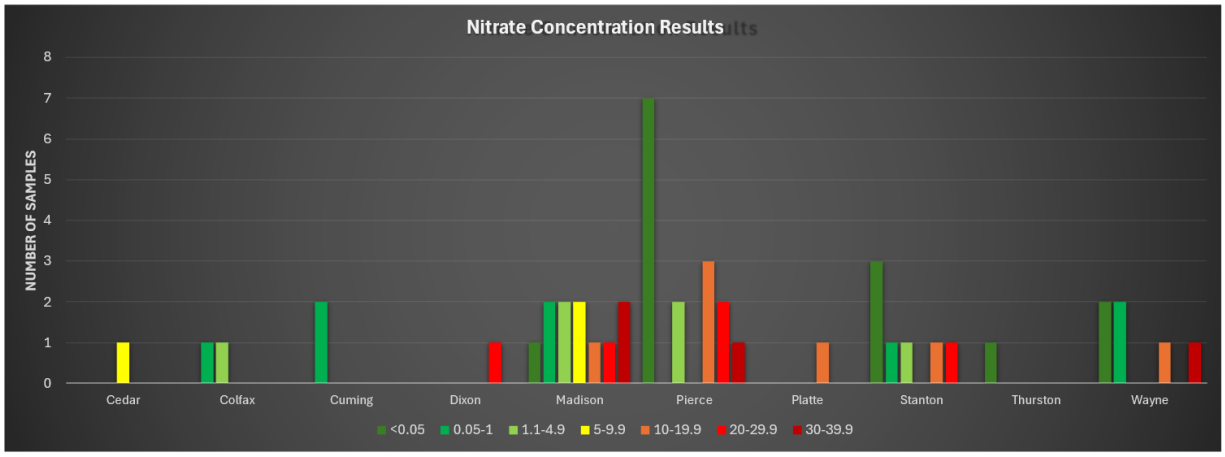
Final results will be presented in CY25.

LENRD Domestic Well Testing Program and Reverse Osmosis Treatment Systems

In the fall of 2022, the LENRD Board of Directors approved a Domestic Well Testing program for well owners with registered domestic wells in the District. Water samples are collected by District staff and are analyzed for agricultural herbicides and glyphosate/AMPA by the Nebraska Water Sciences Laboratory, nitrate by the Nebraska Department of Health and Human Services Public Health Laboratory, and for e coli and coliform by the Lower Elkhorn Natural Resources District.

The goal of this entire effort is to provide well owners with assistance in gaining the necessary information to 1) ensure that their drinking water is safe, and 2) to provide them with sample results that would allow them to utilize the grant program for in home reverse osmosis treatment put in place by the Nebraska Department of Environment and Energy (NDEE).

Also, at the same time as the testing program was established, the LENRD established its own Reverse Osmosis Treatments System Assistance Program, which will provide up to $800 in financial assistance to qualified well owners. The District is requiring well owners to first utilize the resources put in place by NDEE if they are eligible, but if the nitrate levels in their drinking water do not exceed the MCL for nitrate, they may be able to utilize our program. As of ***12/1/2024, 206 domestic wells*** have been sampled as part of this program and the graphic below illustrates some of these results.



	Cedar	Colfax	Cuming	Dixon	Madison	Pierce	Platte	Stanton	Thurston	Wayne
<0.05					1	7		3	1	2
0.05-1		1	2		2			1		2
1.1-4.9		1			2	2		1		
5-9.9	1				2					
10-19.9					1	3	1	1		1
20-29.9				1	1	2		1		
30-39.9					2	1				1

Of the 47 locations which were sampled during CY24, 19 locations (40%) were in excess of 5 mg/L for nitrate and therefore eligible for either the LENRD of NDEE Reverse Osmosis Assistance Programs.

Appendix A

Pts.	Net Irrigation Requirement	NIR Factor	Pts.	Weighted Avg. Soil Score	Transmissivity Value	Pts	High Capacity Well Density (2 mile radius)	Pts	Test Hole Estimate / Existing Well Yield	Pts.	WELL #1 gpm	WELL #2 gpm	WELL #3 gpm	3 wells - Average Proven Well Yield gpm	Pts	Prior Applicant	Pts	NonCompliance w/R&R	Pts. Deduction	Wellhead Prot. Area	Pts Deduction	Chemigation ?	Points	New acres complete pivot circle?	Pts	Prox. To NRD Stay Area	Pts Deduction	Total Ranking Points	Peak Season Depletion
75	8	0.75	0	143	100,001 or	100	31	35	1000	50	1250	1250	1250	1250	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	778	1.20
75	8	0.75	0	167	20,001-60	50	12	75	1250	50	1250	1250	0	833	125	No	0	No	0	No	0	Yes	100	No	0	N/A	0	767	1.94
150	7	0.66	25	128	20,001-60	50	14	75	900	35	900	800	600	767	125	No	0	No	0	No	0	Yes	100	No	0	N/A	0	738	1.38
125	7	0.66	25	199	100,001 or	100	33	35	1300	50	1400	1300	1200	1300	150	Yes	1	No	0	No	0	No	0	No	0	N/A	0	735	1.89
150	8	0.75	0	158	60,001-10	75	42	0	800	35	1200	1200	1000	1133	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	718	1.58
125	7	0.66	25	191	20,000 or l	25	30	0	1800	50	1800	1346	1122	1423	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	717	3.32
40	8	0.75	0	142	60,001-10	75	29	35	1000	50	1500	1500	1000	1333	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	717	2.70
125	7	0.66	25	144	20,001-60	50	20	35	800	35	1000	1000	800	933	125	No	0	No	0	No	0	Yes	100	No	0	N/A	0	714	1.78
40	6	0.58	50	159	100,001 or	100	47	0	800	35	1300	1200	1200	1233	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	709	7.64
50	8	0.75	0	167	20,001-60	50	26	35	1000	50	1200	1000	900	1033	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	703	4.45
100	8	0.75	0	81	20,001-60	50	25	35	1000	50	1250	1200	1100	1183	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	691	0.97
50	8	0.75	0	143	20,001-60	50	29	35	850	35	1250	950	950	1050	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	688	0.99
20	8	0.75	0	164	100,001 or	100	39	35	900	35	1250	1000	950	1067	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	680	13.08
150	8	0.75	0	119	60,001-10	75	40	0	800	35	1250	1100	1000	1117	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	679	0.51
30	8	0.75	0	186	20,001-60	50	22	35	1000	50	900	900	900	900	125	No	0	No	0	No	0	Yes	100	No	0	N/A	0	676	6.37
75	8	0.75	0	85	20,001-60	50	25	35	1000	50	1250	1200	1100	1183	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	670	1.73
40	8	0.75	0	88	100,001 or	100	29	35	1000	50	1250	1000	850	1033	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	664	5.54
40	7	0.66	25	195	60,001-10	75	58	0	1200	50	1000	800	800	867	125	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	661	14.14
0	8	0.75	0	120	100,001 or	100	33	35	1000	50	1250	1250	1000	1167	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	656	13.54
10	8	0.75	0	85	100,001 or	100	35	35	1000	50	1250	1250	900	1133	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	656	6.26
150	8	0.75	0	89	20,001-60	50	12	75	725	15	1000	800	725	842	125	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	655	2.07
10	7	0.66	25	195	60,001-10	75	81	0	1200	50	1400	1253	1250	1301	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	655	19.43
40	8	0.75	0	88	20,001-60	50	34	0	1000	50	1150	1100	900	1050	150	No	0	No	0	No	0	Yes	100	Yes	50	N/A	0	653	2.22
30	8	0.75	0	86	60,001-10	75	31	35	1000	50	1250	1250	1250	1250	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	651	2.90
100	7	0.66	25	124	60,001-10	75	18	75	1000	50	1000	1000	1000	1000	150	No	0	No	0	Yes	-100	Yes	100	No	0	N/A	0	649	4.36
30	8	0.75	0	80	100,001 or	100	26	35	1200	50	1250	1200	1000	1150	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	646	9.11
75	8	0.75	0	134	20,001-60	50	22	35	1000	50	1000	1000	850	950	125	No	0	No	0	No	0	Yes	100	No	0	N/A	0	644	6.04
20	8	0.75	0	138	20,001-60	50	30	35	1200	50	1000	950	900	950	125	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	644	7.47
40	8	0.75	0	82	20,001-60	50	24	35	800	35	1000	1000	900	967	125	Yes	1	No	0	No	0	Yes	100	Yes	50	N/A	0	643	2.19
100	8	0.75	0	117	20,000 or l	25	12	75	1200	50	800	325	0	375	75	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	643	2.89
150	8	0.75	0	96	20,001-60	50	28	35	800	35	1200	1000	900	1033	150	No	0	No	0	No	0	No	0	No	0	N/A	0	641	0.10
10	8	0.75	0	118	100,001 or	100	24	35	400	0	2000	750	750	1167	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	639	8.99
125	8	0.75	0	127	20,001-60	50	43	0	800	35	1230	1200	1200	1210	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	637	3.58
30	7	0.66	25	156	20,001-60	50	5	75	1500	50	1200	925	0	708	100	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	637	17.75
100	7	0.66	25	169	20,001-60	50	32	0	600	15	1500	1500	1250	1417	150	Yes	1	No	0	Yes	-100	Yes	100	No	0	N/A	0	635	0.50
40	8	0.75	0	84	100,001 or	100	28	35	1433	50	900	850	850	867	125	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	635	4.91
40	8	0.75	0	84	20,001-60	50	25	35	1000	50	1250	1200	1100	1183	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	634	2.70
10	8	0.75	0	82	100,001 or	100	27	35	1000	50	900	800	800	833	125	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	628	7.34
125	8	0.75	0	82	60,001-10	75	28	35	900	35	2000	1200	1000	1400	150	Yes	1	No	0	Yes	-100	Yes	100	No	0	N/A	0	628	0.63
50	8	0.75	0	203	20,000 or l	25	16	35	600	15	1000	1000	1000	1000	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	628	9.21
10	8	0.75	0	81	100,001 or	100	16	75	750	35	900	775	0	558	100	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	627	4.23
10	7	0.66	25	213	20,001-60	50	10	75	1000	50	2000	1100	900	1333	150	Yes	1	No	0	Yes	-100	Yes	100	No	0	N/A	0	624	21.97
30	7	0.66	25	157	20,001-60	50	29	35	1200	50	1500	1500	1250	1417	150	Yes	1	No	0	Yes	-100	Yes	100	No	0	N/A	0	623	1.96
40	8	0.75	0	97	20,001-60	50	29	35	1000	50	1200	1000	850	1017	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	622	5.99
10	8	0.75	0	251	20,001-60	50	23	35	1400	50	900	875	800	858	125	No	0	No	0	No	0	No	0	No	0	N/A	0	621	11.35
10	8	0.75	0	84	60,001-10	75	17	75	1000	50	1000	900	900	933	125	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	620	10.05
20	8	0.75	0	89	100,001 or	100	28	35	1000	50	1000	800	775	858	125	No	0	No	0	No	0	Yes	100	No	0	N/A	0	619	8.45
0	8	0.75	0	134	100,001 or	100	25	35	1000	50	1250	1250	1000	1167	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	619	26.98
40	7	0.66	25	143	60,001-10	75	34	35	1250	50	1000	800	800	867	125	Yes	1	No	0	No	0	No	0	Yes	74	N/A	0	618	11.17
150	8	0.75	0	97	20,001-60	50	28	35	800	35	950	950	900	933	125	No	0	No	0	No	0	No	0	No	0	N/A	0	617	0.18
75	7	0.66	25	141	20,001-60	50	16	35	700	15	800	750	700	750	125	No	0	No	0	No	0	Yes	100	No	0	N/A	0	616	4.72
40	8	0.75	0	139	20,001-60	50	12	75	750	35	1250	800	725	925	125	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	615	16.59
20	8	0.75	0	83	20,001-60	50	29	35	1000	50	1250	1000	1000	1083	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	614	3.98
20	8	0.75	0	82	100,001 or	100	27	35	1000	50	900	800	800	833	125	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	613	10.69
40	7	0.66	25	127	60,001-10	75	19	35	750	35	1180	850	800	943	125	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	613	9.24
40	7	0.66	25	146	20,001-60	50	8	75	1000	50	500	500	300	433	75	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	612	11.19
10	7	0.66	25	136	100,001 or	100	45	0	800	35	1450	1250	1000	1233	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	607	20.94
10	8	0.75	0	83	100,001 or	100	38	35	1000	50	818	800	800	806	125	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	604	9.61
50	8	0.75	0	186	20,001-60	50	39	0	700	15	1800	1000	1000	1267	150	Yes	1	No	0	No	0	Yes	100	No	0	N/A	0	602	11.22
150	8	0.75	0	145	100,001 or	100	25	0	800	35	1250	1000	1000	1083	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	805	1.03
125	8	0.75	0	205	20,000 or l	25	26	0	1450	50	1450	1200	1000	1217	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	805	1.35
40	8	0.75	0	192	60,001-10	75	41	0	1075	50	1450	1250	1200	1300	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	782	3.58
125	8	0.75	0	115	20,001-60	50	41	0	1000	50	1200	1000	1000	1067	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	765	0.57
125	8	0.75	0	97	20,001-60	50	18	0	1000	50	1000	1000	1000	1000	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	747	0.69
75	8	0.75	0	165	60,001-10	75	20	0	1000	50	1250	1100	1000	1117	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	740	3.71
30	8	0.75	0	159	100,001 or	100	26	0	1200	50	1200	1005	900	1035	150	No	0	No	0	No	0	Yes	100	No	0	N/A	0	739	7.84
75	8	0.75	0	82	20,001-60	50	21	0	1250	50	1250	1250	1000	1167	150	No	0	No	0	No	0	Yes	100	Yes	74	N/A	0	706	4.05
125	8	0.75	0	128	60,001-10	75	19	0	900	35	1550	1200	1017	1256	150	No	0	No	0	No	0	Yes	100	Yes	74	N/A	0	887	4.91
																													433.67