



LOWER ELKHORN

Natural Resources District



**Lower Platte River Basin Coalition Plan –
Annual Report (March 1, 2024)**

Table of Contents

- 1.0 Introduction**
- 2.0 Certified Irrigated Acres**
- 3.0 Municipal Water-Use Data**
- 4.0 New GW Consumptive Uses**
- 5.0 Transfers of Water Uses**
- 6.0 Well Construction Permits Granted**
- 7.0 Retirement of GW Consumptive Uses**
- 8.0 Flow Meter Data – Irrigation, Commercial/Industrial, and Livestock**
- 9.0 Water Banking Activities**
- 10.0 Stream Flow Accretion Activities**
- 11.0 Groundwater Elevation Data**
- 12.0 Stream Gage Measurements**
- 13.0 NRD Regulation and Management Activities**
- 14.0 New Depletions Accounting Report**
- 15.0 New Data Collected Through Models or Studies**

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-Foot 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 2023, 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 – 12/31/2023

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	
<i>Net change from previous report</i>	+10,690.92	-8.48	+237.70	
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 STILL IN PROGRESS

Table 4 (below) contains municipal water-use data from public water supply systems located within the LENRD for 2022. *At the time of this report, not all 2023 flow meter data had been received.

Table 4: LENRD_Municipal Water-Use Data_2022			
System Name	2020 Pop.	2022 Usage/Gal.	Gal/Capita/Day
City of Battle Creek	1,397	84,644,230.00	166.00
City of Clarkson	641	32,175,666.00	137.52
City of Hooper	857	32,954,637.00	105.35
City of Humphrey	857	57,384,077	183.45
City of Laurel	972	73,840,198	208.13
City of Lyons	824	52,109,677.60	173.26
City of Madison	2,561	112,685,570	120.55
City of Norfolk	24,955	1,799,643,216	197.58
City of Oakland	1,571	107,412,097.80	187.32
City of Osmond	873	61,750,286.00	193.79
City of Pierce	2,013	106,745,361.02	145.28
City of Plainview	1,398	115,513,116.00	226.38
City of Randolph	1,035	63,637,270.00	168.45
City of Scribner	754	46,782,947.90	169.99
City of Stanton	1,814	86,243,262.00	130.26
City of Tilden	1,105	72,987,319.00	180.96
City of Wakefield	1,545	109,474,760	194.13
City of Wayne	5,973	369,540,136.00	169.50
City of West Point	3,481	201,175,930.00	158.34
City of Wisner	1,323	52,031,408.00	107.75
Village of Beemer	610	39,097,340.00	175.60
Village of Belden	127	Served by WauCoIRWS	NA
Village of Bancroft	458	25,056,000	149.88
Village of Carroll	237	16,608,960	192.00
Village of Concord	162	5,972,130	101.00
Village of Craig	202	17,288,137.00	234.48
Village of Creston	206	8,346,090.00	111.00
Village of Dixon	125	5,083,771.00	111.43
Village of Dodge	550	30,488,781.00	151.87
Village of Emerson	902	50,174,652.00	152.40
Village of Hoskins	281	10,848,023.00	105.77
Village of Howells	657	65,035,116.00	217.20
Village of Leigh	396	30,895,549.00	213.75
Village of Magnet	54	Served by WauCoIRWS	NA
Village of McLean	25	Served by WauCoIRWS	NA
Village of Meadow Grove	249	12,468,528.92	137.19
Village of Nickerson	334	12,434,820.00	102.00
Village of Pender	1,204	58,061,455	132.12
Village of Pilger	305	18,738,224.00	168.32
Village of Snyder	327	20,434,769.55	171.21
Village of Tilden	1,105	64,120,608.50	158.98
Village of Uehling	271	15,064,754.50	152.30
Village of Wausa	562	19,673,947.61	95.91
Village of Winside	574	13,789,200.00	65.82
Woodland Park CDP	1,621	80,466,440.00	136.00
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 October of 2023, 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 November 1 to December 1, 2023 and to allow up to 295 Acre Feet of new depletions in the Hydrologically Connected Area, and up to 2,500 new groundwater irrigated acres in the Non Hydrologically Connected Area. In addition, the Conditions for Approval Policy was amended to allocate 14 inches per irrigated acre for any new irrigation well that is constructed under an approved variance.

In January of 2024, the Lower Elkhorn NRD Board of Directors approved 305.93 Acre Feet of new peak-season depletions, or 2,891.40 new acres, in the Hydrologically Connected Area, and 2,836.04 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, 2023 through December 31, 2023. A breakdown of this inventory includes permits for: irrigation (33) (30 replacement well permits, 3 new), commercial/industrial (2), and livestock (5).

Table 5. 2023 Well Permits in the LENRD

High Capacity Well Permit Type	Number of Approved Permits	Average Capacity (GPI)
Irrigation (New wells)	3	800
Irrigation (Replacement)	30	825
Livestock	5	270
Commercial/Industrial	2	1000
Total	40	1013

7.0 Retirement of Groundwater Consumptive Uses

During the 2023 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 2023 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.

Well Use	Number of Locations	Minimum Withdrawal	Maximum Withdrawal	Median/AI per acre
Irrigation (all other)	4,712	0 Acre In.	31.41 Ac In.	9.46 Acre inches
Quantity Management Subareas				
Eastern Madison County	106	0 Acre In.	21.51 Acre In.	7.89 Acre Inches
Wayne County	84	0 Acre In.	10.46 Acre In.	5.44 Acre Inches
New Wells				
Irrigation - 9 Ac. In. Allocation	167	0 Acre In.	10.97 Acre In.	6.08 Acre Inches
Commercial/Industrial				
Golf course, ethanol plants, ready-mix plants, food processing other industries		0.00 gal.	gal.	gal.
Livestock				
		gal.	gal.	gal.

Table 6. Flow meter data for the Lower Elkhorn NRD for the 2023 pumping season. *At the time of this report, not all 2023 flow meter data had been received.

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 2023

As can be expected, groundwater elevations declined in every county of the District between the Spring 2022 to Spring 2023, ranging from a decline (on average) of 1.38 feet in Thurston County to 4.72 feet in Colfax County. 2022 was the driest year, on record, for many National Weather Service stations in the Lower Elkhorn NRD.

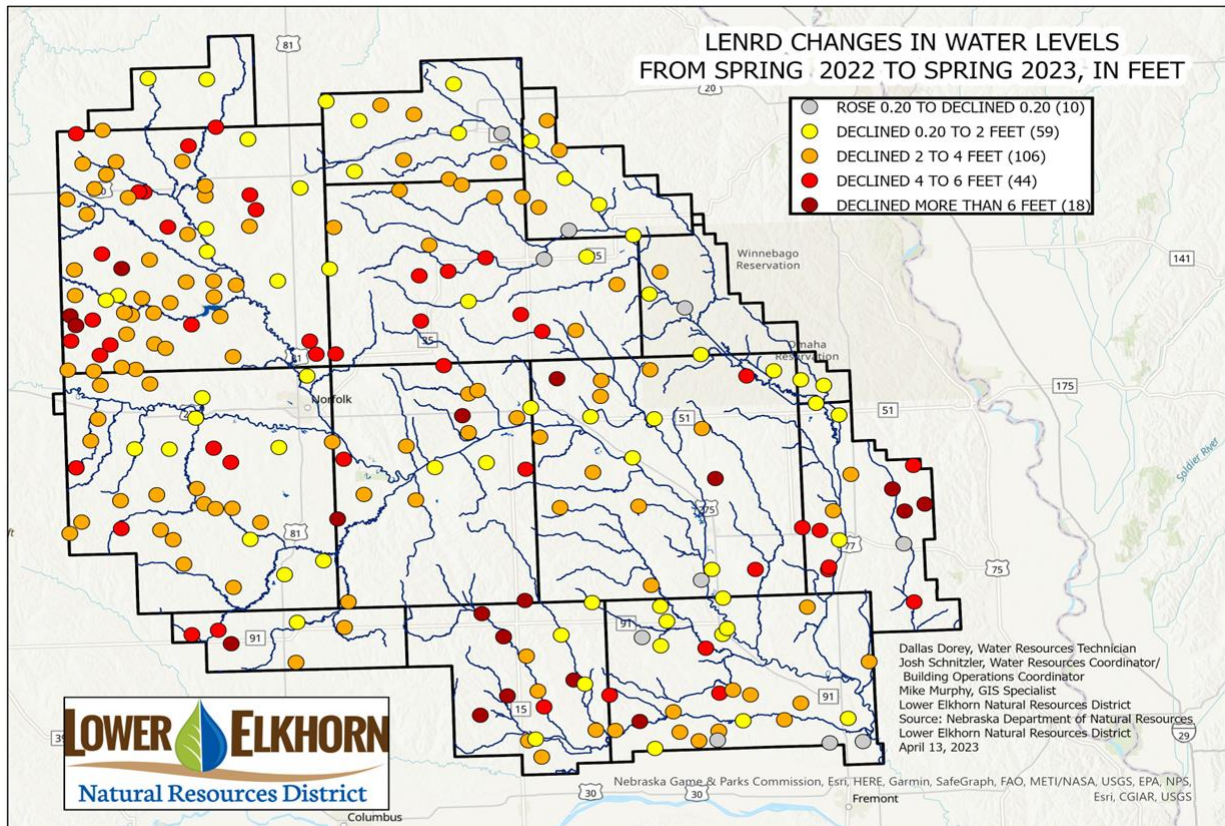


Figure 2. Map depicting the differences between depths to groundwater for the LENRD Observation Well Network for measurements collected in the Spring of 2023 compared to measurements collected in the Spring of 2022.

Fall 2023

Static water levels were also collected in the Fall of 2023, to assess the impact of increased demand for groundwater due to the drought conditions which were prevalent through the first half of the growing season. Timely, and beneficial precipitation began to occur in portions of the District in late June/early July, which took some of the pressure off of groundwater pumping demands.

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 2023, our observations showed one location which *increased* from the Spring of 2023, while another location experienced a drawdown of 27.64 feet.

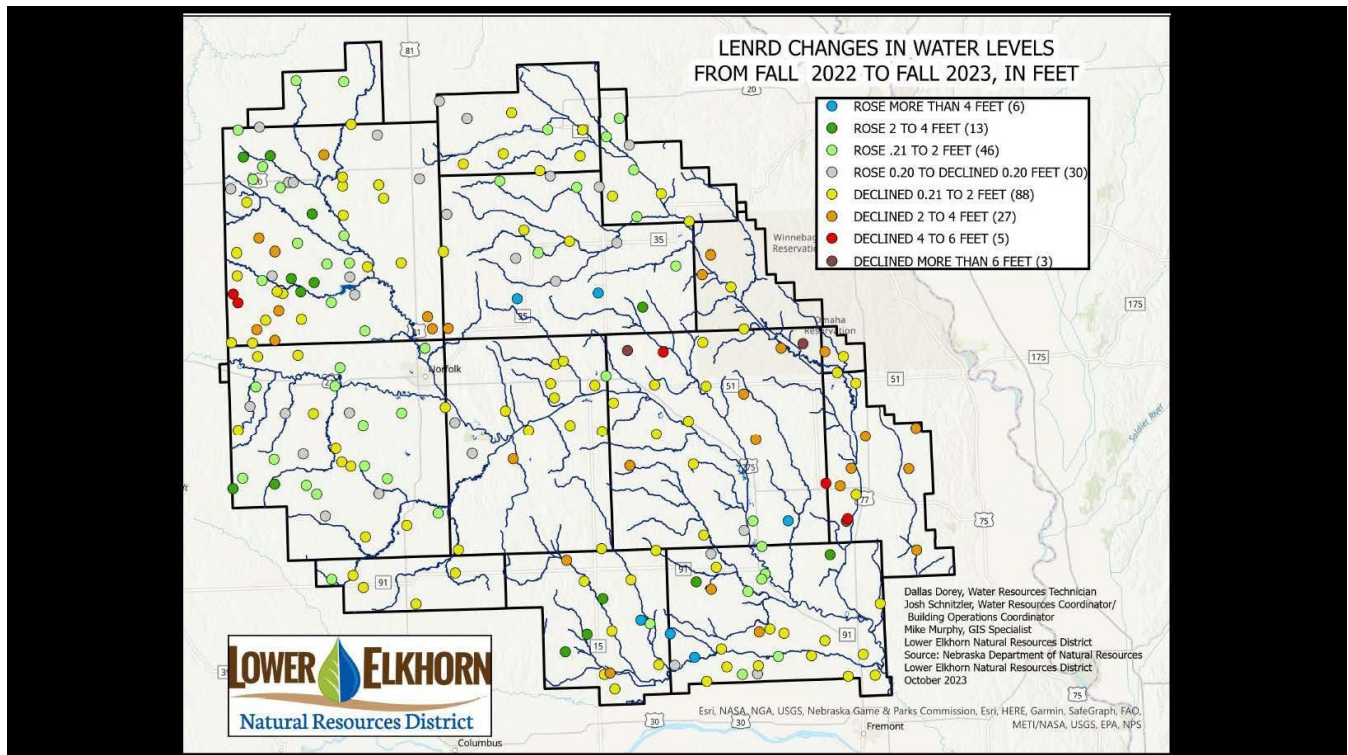


Figure 3. Map of the LENRD that indicates the changes in depths to groundwater between the measurements obtained in the Spring of 2023 and the Fall of 2023 for the LENRD Observation Well Network.

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 25,000 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 September of 2023, the Board of Directors advanced a motion to instruct staff to prepare amendments to the Groundwater Management Area Rules and Regulations. Proposed changes to Rule 17, which governs the activities in the Quantity Management Subareas are a primary focus, along with some other minor adjustments within the document. As of this writing, no changes have been adopted, but a hearing to receive testimony on these changes is scheduled for March 28, 2024.

Enforcement Activities

2023 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.

LENRD Drought Management Plan – Drought Response Measures

As previously mentioned, the Lower Elkhorn NRD was significantly impacted by drought conditions which carried forward into the first half of 2023. In October of 2022 the Board of Directors utilized their authority in the Groundwater Management Plan to impose a 15 inch allocation for all irrigation wells located in a D3 or D4 designated area by the U.S. Drought Monitor. If a location within the District would improve to a D2 designation for a period of 14 days, that location would be removed from the Drought Response Allocation. In early 2023, significant snowfall in the northwest section of Pierce County provided beneficial improvements, which were then expanded with spring/summer precipitation. The weekly changes to the drought maps were monitored closely by District staff, with weekly assessments and notifications generated to impacted well owners

In June of 2023, a majority of the Board of Directors approved a motion which increased the Drought Response Allocation to 20 inches/acre from 15 inches/acre. Supporters indicated a willingness to allow additional groundwater pumping in locations with coarse textured (sandy) soils while opponents reiterated the need to be conservation minded when approaching these types of decisions.

14.0 New Depletions Accounting Report

Table 7 inventories the amounts for peak-season depletions allowed within the LENRD for each year of the first increment, and for the first and second years of the second increment.

Inventoried in the table below are the new peak season depletions that have been allowed in the Lower Elkhorn NRD from 2016 through 2023. As stated by the table, the Lower Elkhorn NRD is reporting 305.93 Acre Feet of New Peak Season Depletions for this reporting cycle, even though these depletions weren't given official Board approval until January 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							<u>5493.00</u>
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							

Table 7. Accounting table for new depletions allowed in the Lower Elkhorn Natural Resources District from 2016 through 2023.

15.0 New Data Collected Through Models or Studies

Groundwater Quality

During 2023, the Lower Elkhorn NRD continued efforts to collect groundwater quality data from locations in Dixon, Thurston, and Burt Counties, which is revealing additional pockets of nitrate contamination that could warrant the need for new management areas. Figure 4 below shows the results of those sampling efforts from 2021 to 2023.

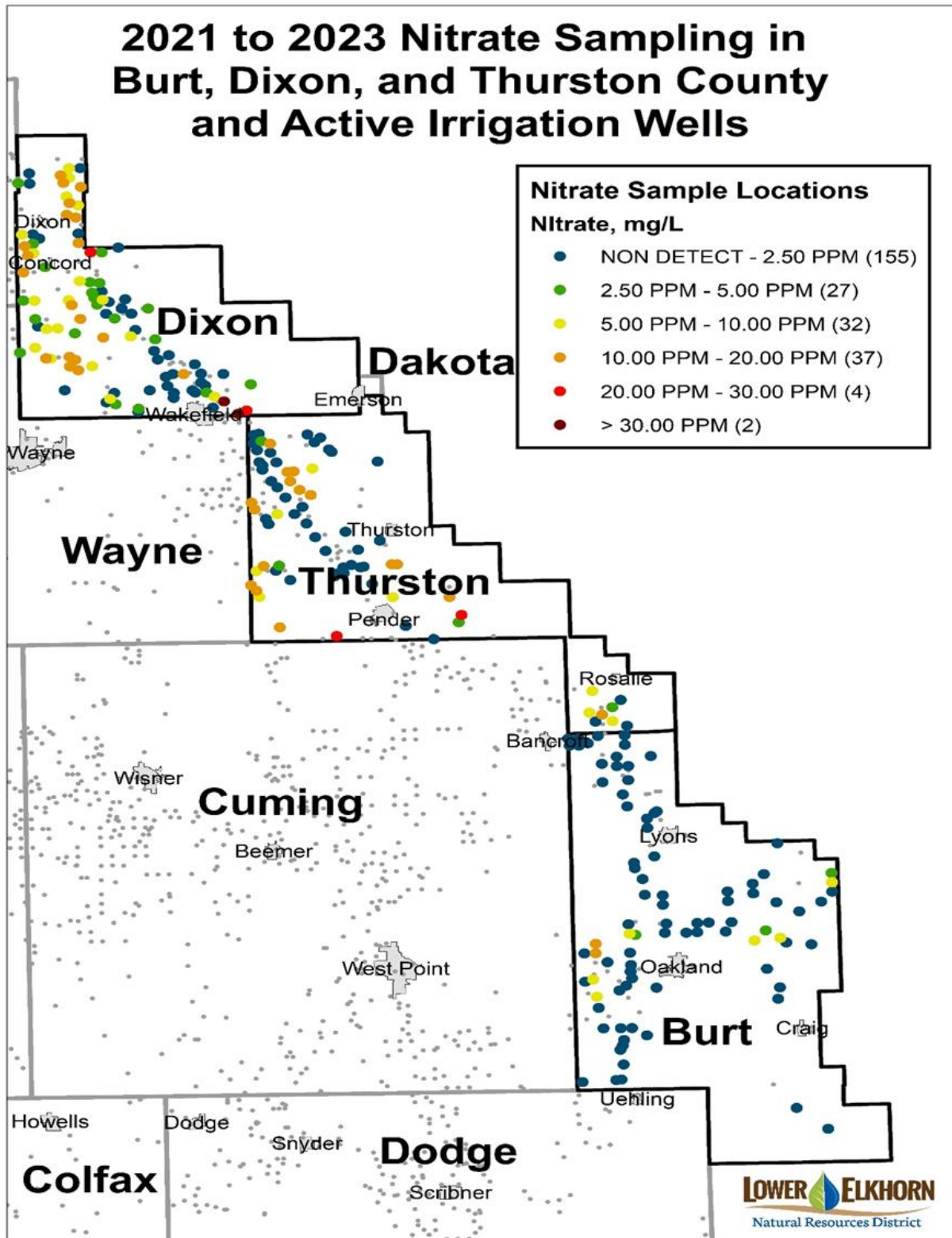


Figure 4. Nitrate concentration map depicting data collected from 2021 to 2023 in Burt, Dixon, and Thurston Counties.

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 2023.

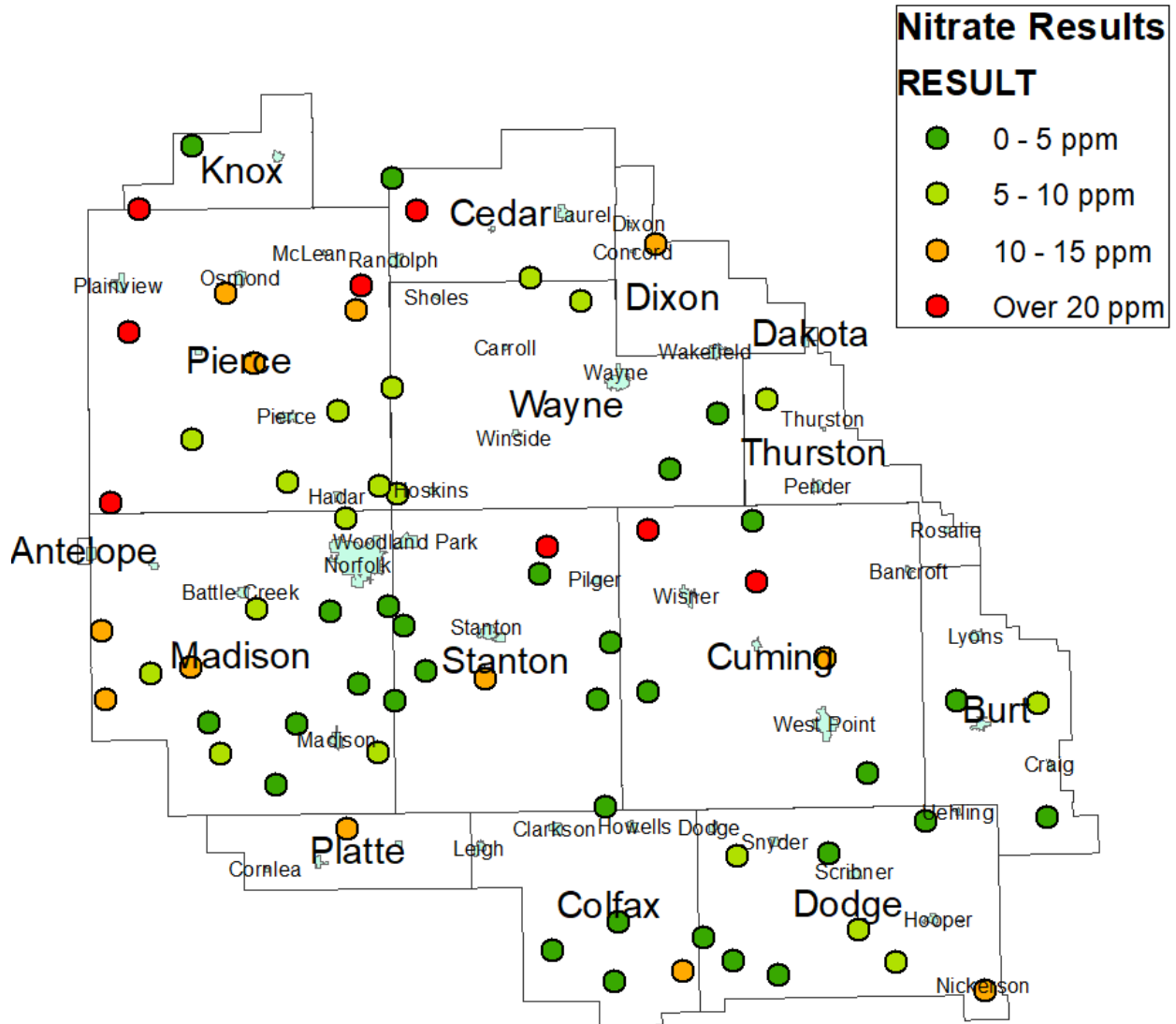


Figure 5. Map of the LENRD that displays the locations and results for the wells sampled in the statewide network.

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

The District has 25 additional sites located in Cuming, Colfax, and Dodge Counties which were scheduled to be sampled for vadose cores in the fall/winter of 2023. Due to weather conditions and scheduling conflicts, those sites were not completed during the initially proposed timeframe but should be on the books for 2024. This data is the final piece of a puzzle which

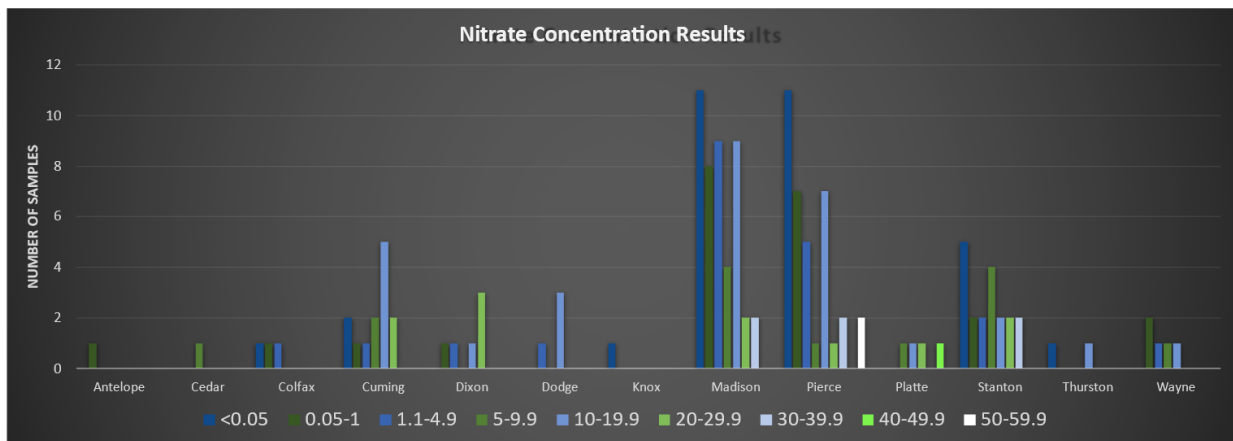
includes irrigation well nitrate sample data, isotope characterization of irrigation water samples, and isotope characterization of vadose cores. Once this information is collected, and analyzed, the District will revisit the staff recommendation to delineate a groundwater management area for water quality purposes. It is proposed that this discussion could occur sometime later this year.

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 **3/1/2024, 159 domestic wells** have been sampled as part of this program and the graphic below illustrates some of these results.



	Antelope	Cedar	Colfax	Cuming	Dixon	Dodge	Knox	Madison	Pierce	Platte	Stanton	Thurston	Wayne
<0.05	0	0	1	2	0	0	1	11	11	0	5	1	0
0.05-1	1	0	1	1	1	0	0	8	7	0	2	0	2
1.1-4.9	0	0	1	1	1	1	0	9	5	0	2	0	1
5-9.9	0	1	0	2	0	0	0	4	1	1	4	0	1
10-19.9	0	0	0	5	1	3	0	9	7	1	2	1	1
20-29.9	0	0	0	2	3	0	0	2	1	1	2	0	0
30-39.9	0	0	0	0	0	0	0	2	2	0	2	0	0
40-49.9	0	0	0	0	0	0	0	0	0	1	0	0	0
50-59.9	0	0	0	0	0	0	0	0	2	0	0	0	0

LENRD Hydrogeologic Groundwater Model and Graphic User Interface (GUI)

The hydrogeologic groundwater model and graphic user interface (GUI) projects have been completed, and the LENRD staff have continued working with the GUI; running scenarios and interpreting the outputs; in preparation for future application of the tool in analyzing requests for new and expanded uses of groundwater in the District.

Application	Appendix A			Acres Requested		Net Irrigation Requirement			Weighted Avg. Soil Score			Transmissivity Value			High Capacity Well Density (2 mile radius)			Test Hole Estimate / Existing Well Yield		3 wells - Average Proven Well Yield gpm					NonCompliance w/R&R		Pts. Deduction		Wellhead Prot. Area		Pts. Deduction		New acres complete pivot circle?		Prox. To NRD Stay Area		Pts. Deduction		Total Ranking Points	Peak Season Dep. AF	Acres Requested
	Depletion Factor	Depletion Factor	Pts.	Acres Requested	Pts.	Net Irrigation Requirement	NIR Feet	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	Average Proven Well Yield gpm	Pts	Prior Applicant	Pts	NonCompliance w/R&R	Pts. Deduction	Wellhead Prot. Area	Pts	Pts. Deduction	New acres complete pivot circle?	Pts	Prox. To NRD Stay Area	Pts. Deduction	Total Ranking Points	Peak Season Dep. AF	Acres Requested							
23-294	89.61	0.8961	50	6.37	150	7	0.67	25	192	100,001 gpc	100	16	75	1000	100	1000	1000	900	967	75	No	0	No	0	No	0	No	0	No	0	767	1.15	6.37								
23-215	89.61	0.8961	50	5	150	7	0.67	25	186	60,001-100	75	16	75	1000	100	1000	1000	900	967	75	No	0	No	0	No	0	No	0	No	0	736	0.90	5								
23-078	89.53	0.8953	50	4.7	150	6	0.5	50	147	100,001 gpc	100	34	35	800	85	1300	1200	850	1117	100	No	0	No	0	No	0	No	0	No	0	717	0.63	4.7								
23-247	14.47	0.1447	125	30	75	8	0.75	0	173	20,001-60	50	27	35	886	85	1250	1207	1000	1152	100	No	0	No	0	No	0	Yes	74	No	0	717	0.98	30								
23-088	61.12	0.6112	75	6.5	150	7	0.67	25	190	60,001-100	75	29	35	600	65	1250	1250	1250	1250	100	No	0	No	0	No	0	No	0	No	0	715	0.80	6.5								
23-125	89.42	0.8942	50	13.2	125	7	0.67	25	183	100,001 gpc	100	31	35	800	85	1400	1300	1200	1300	100	No	0	No	0	No	0	No	0	No	0	703	2.37	13.2								
23-114	81.06	0.8106	50	29.22	100	7	0.67	25	196	60,001-100	75	15	75	1300	100	800	800	800	800	75	No	0	No	0	No	0	No	0	No	0	696	4.76	29.22								
23-283	87.1	0.871	50	17.75	125	6	0.5	50	158	60,001-100	75	32	35	1200	100	1500	1350	1300	1383	100	No	0	No	0	No	0	No	0	No	0	693	2.32	17.75								
23-164	16	0.16	125	12.55	125	8	0.75	0	216	20,000 gpc	25	29	0	850	85	1250	1000	950	1067	100	Yes	1	No	0	No	0	No	0	No	0	677	0.45	12.55								
23-015	35.41	0.3541	100	10.4	125	7	0.67	25	127	20,001-60	50	14	75	1000	100	900	850	800	850	75	No	0	No	0	No	0	No	0	No	0	677	0.74	10.4								
23-002	17.64	0.1764	125	8.05	150	8	0.75	0	93	60,001-100	75	30	35	900	85	1500	1000	1000	1167	100	No	0	No	0	No	0	No	0	No	0	663	0.32	8.05								
23-190	86.75	0.8675	50	28.92	100	7	0.67	25	196	60,001-100	75	17	75	700	65	800	750	700	750	75	No	0	No	0	No	0	No	0	No	0	661	5.04	28.92								
23-155	89.73	0.8973	50	59.33	50	7	0.67	25	275	20,001-60	50	13	75	850	85	850	800	450	700	50	No	0	No	0	No	0	No	0	No	0	660	10.70	59.33								
23-256	79.87	0.7987	50	17.6	125	7	0.67	25	167	20,001-60	50	11	75	750	85	1000	1000	800	933	75	No	0	No	0	No	0	No	0	No	0	652	2.83	17.6								
23-205	16.93	0.1693	125	17.18	125	8	0.75	0	90	60,001-100	75	27	35	1250	100	1250	1250	1250	1250	100	No	0	No	0	No	0	No	0	No	0	650	0.65	17.18								
23-003	89.7	0.897	50	68.91	40	7	0.67	25	188	100,001 gpc	100	30	35	900	85	1000	900	825	908	75	No	0	No	0	No	0	Yes	50	No	0	648	12.42	68.91								
23-038	41.05	0.4105	100	3.8	150	8	0.75	0	144	20,001-60	50	24	35	600	65	1250	1000	885	1045	100	No	0	No	0	No	0	No	0	No	0	644	0.35	3.8								
23-237	89.2	0.892	50	7.8	150	7	0.67	25	177	20,001-60	50	49	0	800	85	1200	1000	800	1000	100	No	0	No	0	No	0	No	0	No	0	637	1.40	7.8								
23-162	96	0.96	50	11.5	125	7	0.67	25	186	20,001-60	50	39	0	1000	100	1425	1200	1000	1208	100	No	0	No	0	No	0	No	0	No	0	636	2.22	11.5								
23-284	84.22	0.8422	50	95.27	30	7	0.67	25	168	60,001-100	75	19	35	1000	100	1000	1000	1000	1000	100	Yes	1	No	0	No	0	Yes	50	No	0	634	16.13	95.27								
23-165	16	0.16	125	16.64	125	8	0.75	0	167	20,000 gpc	25	29	0	850	85	1250	1000	950	1067	100	Yes	1	No	0	No	0	No	0	No	0	628	0.60	16.64								
23-062	20.77	0.2077	125	29.95	100	8	0.75	0	88	60,001-100	75	35	35	1433	100	1200	1000	900	1033	100	No	0	No	0	No	0	No	0	No	0	623	1.40	29.95								
23-235	26	0.26	125	89.85	30	8	0.75	0	131	100,001 gpc	100	28	35	1250	100	1250	1250	900	1133	100	No	0	No	0	No	0	No	0	No	0	621	5.26	89.85								
23-174	89.7	0.897	50	67.83	40	7	0.67	25	186	100,001 gpc	100	27	35	800	85	1300	900	900	1033	100	No	0	No	0	No	0	No	0	No	0	621	12.23	67.83								
23-149	51.04	0.5104	75	8.12	150	7	0.67	25	126	20,001-60	50	16	35	800	85	850	800	750	800	75	No	0	No	0	No	0	No	0	No	0	621	0.83	8.12								
23-248	13.19	0.1319	125	111.58	125	8	0.75	0	125	20,001-60	50	28	35	900	85	1000	900	850	917	75	No	0	No	0	No	0	No	0	No	0	620	3.31	111.58								
23-106	88.6	0.886	50	66.56	40	7	0.67	25	195	20,001-60	50	11	75	1000	100	1000	900	800	900	75	No	0	No	0	No	0	No	0	No	0	610	11.85	66.56								
23-297	70.16	0.7016	50	67.86	40	6	0.5	50	156	60,001-100	75	43	0	800	85	1300	1300	1200	1267	100	No	0	No	0	No	0	Yes	50	No	0	606	7.14	67.86								
23-224	16	0.16	125	45	50	8	0.75	0	120	60,001-100	75	33	35	1433	100	1250	1250	950	1150	100	No	0	No	0	No	0	No	0	No	0	605	1.62	45								
23-202	22.66	0.2266	125	138.8	10	8	0.75	0	157	60,001-100	75	33	35	1000	100	1250	1110	1100	1153	100	No	0	No	0	No	0	No	0	No	0	602	7.08	138.8								
23-184	74.69	0.7469	50	26.25	100	7	0.67	25	89	100,001 gpc	100	35	35	1250	100	1250	1250	1200	1233	100	No	0	No	0	No	0	No	0	No	0	599	3.94	26.25								
23-228	90	0.9	50	3	150	8	0.75	0	159	20,001-60	50	42	0	800	85	1200	1200	1000	1133	100	No	0	No	0	No	0	No	0	No	0	594	0.61	3								
23-243	70.78	0.7078	50	1.87	150	8	0.75	0	133	100,001 gpc	100	19	75	800	85	1250	1250	850	1117	100	No	0	No	0	Yes	100	No	0	No	0	593	0.30	1.87								
23-044	87.69	0.8769	50	25.63	100	7	0.67	25	153	20,001-60	50	9	75	550	65	1000	900	550	817	75	No	0	No	0	No	0	No	0	No	0	593	4.52	25.63								
23-161	90	0.9	50	18.05	100	7	0.67	25	167	20,001-60	50	44	0	1000	100	1425	1200	1000	1208	100	No	0	No	0	No	0	No	0	No	0	592	3.27	18.05								
23-117	56.23	0.5623	75	75.27	40	7	0.67	25	189	20,001-60	50	12	75	800	85	800	800	600	733	50	No	0	No	0	No	0	No	0	No	0	589	8.51	75.27								
23-217	25	0.25	125	171.42	0	8	0.75	0	144	100,001 gpc	100	41	35	800	85	1300	1250	1000	1183	100	No	0	No	0	No	0	No	0	No	0	589	9.64	171.42								
23-252	96	0.96	50	104.6	20	6	0.5	50	174	60,001-100	75	33	35	800	85	1200	1000	900	1033	100	No	0	No	0	No	0	No	0	No	0	589	15.06	104.6								
23-022	51.93	0.5193	75	111.74	20	7	0.67	25	133	100,001 gpc	100	25	35	1200	100	1500	1100	1000	1200	100	No	0	No	0	No	0	No	0	No	0	588	11.66	111.74								
23-240	13.24	0.1324	125	65.55	40	8	0.75	0	99	60,001-100	75	27	35	850	85	900	850	850	867	75	No	0	No	0	No	0	Yes	50	No	0	584	1.95	65.55								
23-128	18	0.18	125	79.39	40	8	0.75	0	83	100,001 gpc	100	34	35	1000	100	1250	1250	850	1117	100	No	0	No	0	No	0	No	0	No	0	583	3.22	79.39								
23-059	18.01	0.1801	125	52.57	50	8	0.75	0	110	100,001 gpc	100	26	35	800	85	850	850	800	833	75	No	0	No	0	No	0	No	0	No	0	580	2.13	52.57								
23-233	36.43	0.3643	100	99.36	30	8	0.75	0	144	60,001-100	75	17	75	1433	100	800	500	400	567	50	No	0	No	0	No	0	No	0	No	0	574	8.14	99.36								
23-214	13.08	0.1308	125	68.64	40	8	0.75	0	158	20,001-60	50	33	0	1000	100	1250	1250	1050	1183	100	No	0	No	0	No	0	No	0	No	0	573	2.02	68.64								
23-239	18.01	0.1801	125	131.9	10	8	0.75	0	103																																