

MEMORANDUM

TO: Programs, Projects, and Operations Subcommittee
FROM: Eric Williams, Natural Resources Planner
DATE: April 7, 2022
SUBJECT: Joint Funding Agreements for Water Quality Monitoring
a. Lower Platte River Corridor Gages
b. Leshara Gage

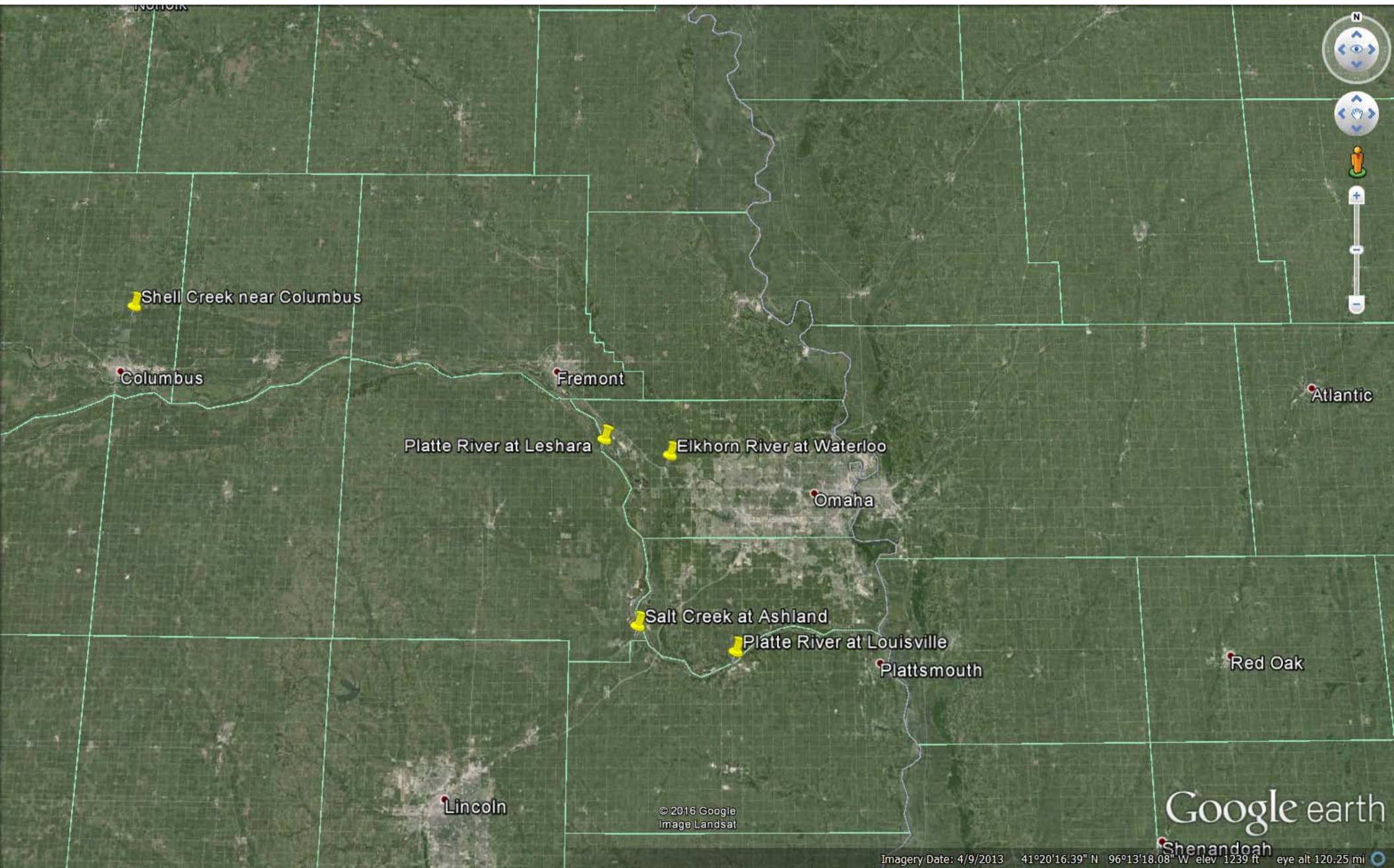
As a member of the Lower Platte River Corridor Alliance (LPRCA), the District has been involved with real-time water quality monitoring network sites to provide comprehensive real-time water quality data for the Lower Platte River. Past agreements thru the LPRCA have led to three long term existing testing locations; Platte River at Louisville, Salt Creek at Ashland, and Elkhorn River at Waterloo. An additional location was added in the Platte River at Leshara.

These sites are operational approximately March through October with data collected at 15-minute intervals. The data is publicly available over the internet in near real time and historical data are available. Additional constituents can be monitored upon request. Data have been collected since 2007 for the long term gage sites, and since 2016 from the gage at Leshara.

The long term gages are a partnership between the District, Lower Platte South NRD, and the USGS. The gage at Leshara is a partnership between the District, Lower Platte South NRD, Lower Platte North NRD, Lincoln Water Systems (LWS), Metropolitan Utilities District (MUD), and USGS. These agreements are directly between the District and LPSNRD acting as the administrating agency on behalf of the LPRCA.

Additional information is attached including a description of the benefits of the gages, and a breakdown of funding from each partner in each of the agreements. The expenses are broken out between the federal fiscal year, and the fiscal year used by the NRDs.

- **It is recommended that the Subcommittee recommend to the Board of Directors that the General Manager by authorized to execute the Joint Funding Agreement with Lower Platte South Natural Resources District for the for the Lower Platte River Corridor Gages in the amount of \$46,600 in FY 2023, \$41,800 in FY 2024, and \$30,800 in FY 2025 subject to changes deemed necessary by the General Manger and approval as to form by District Legal Counsel.**
- **It is recommended that the Subcommittee recommend to the Board of Directors that the General Manager by authorized to execute the Joint Funding Agreement with Lower Platte South Natural Resources District for the Leshara Gage in the amount of \$6,400 in FY 2023, \$5,320 in FY 2024, and \$4,360 in FY 2025, subject to changes deemed necessary by the General Manger and approval as to form by District Legal Counsel.**



Google earth

Shenandoah

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Image Landsat

Imagery Date: 4/9/2013 41°20'16.39" N 96°13'18.08" W elev 1239 ft eye alt 120.25 mi

Long Term USGS Water Quality Gages in the Lower Platte River Corridor

The USGS Nebraska Water Science Center, Lower Platte South NRD, and Papio Missouri NRD are interested in extending the agreement for continuous water quality monitoring in the Lower Platte River. This ongoing data collection covers the monitoring of water quality parameters and the reporting of data on the USGS's website. The proposed extension would continue data collection for the 2022, 2023, and 2024 calendar years.

Three gages have recorded continuous water-quality data seasonally since 2007. Readings of water temperature, specific conductance, dissolved oxygen, turbidity, and nitrate are taken every 15 minutes. These measurements provide information for a variety of goals in the Lower Platte River, some of which include:

- Monitoring in support of the Lower Platte River's Water Quality Management Plan
- Potential to identify the water-quality impacts from management and land use changes in the contributing basin as well as to provide a baseline for future comparisons.
- Assessing the stream health for fisheries
- Better characterization of nitrate concentration in the drinking water source of many Nebraskans.
- Inform those who use the river for recreating of potential water quality risks
- Development of surrogate estimates to help better quantify loads of non-monitored parameters.

For this proposed extension, the data collection would continue at the three long term sites that have had continuous monitoring since the fall of 2007. These sites include the Platte River at Louisville, Salt Creek at Ashland, and Elkhorn River at Waterloo. Funding for the site would be provided from the USGS Cooperative water program, the Papio-Missouri River NRD, and the Lower Platte South NRD.

Seasonal data collection for the current agreement is scheduled for completion in the fall of 2021, with the agreement set to expire on April 30, 2022. The proposed extension would add data collection for the 2022-2024 years and extend the agreement from June 30, 2022 to June 30, 2025. All historic and real-time data are provided on the USGS website.

Below are the approximate annual funding levels for the Papio-M and LPS NRD. These combined funding levels are very similar to the funding levels from the previous three-year agreement. These funds include the data collection at each of the three locations mentioned above.

Table 1:

	Federal Fiscal Year 2022	Federal Fiscal Year 2023	Federal Fiscal Year 2024	Federal Fiscal Year 2025	Total
USGS	\$14,000	\$26,000	\$27,200	\$8,000	\$75,200
Papio-M NRD	\$26,200	\$40,800	\$42,800	\$9,400	\$119,200
Lower Platte South NRD	\$26,200	\$40,800	\$42,800	\$9,400	\$119,200

For questions or additional information, contact Matt Moser, (402)328-4184 mmoser@usgs.gov

The following is extended billing information for the NRDs use. If the Federal fiscal year is divided out to fit State fiscal years, either the Papio-M or LPS NRDs could expect to pay the following for each of its fiscal years:

7/1/2022 to 6/30/2023	\$46,600
7/1/2023 to 6/30/2024	\$41,800
7/1/2024 to 6/30/2025	\$30,800

Below is an extended breakdown with expected billing dates and amounts:

Table 2:

Agreement # 13EMNE000250

Billing Date	Total Amount	Federal Fiscal Year	Papio-M NRD	LPS NRD	USGS
6/30/2022	\$33,200	2022	\$13,100	\$13,100	\$7,000
8/31/2022	\$33,200	2022	\$13,100	\$13,100	\$7,000
12/31/2022	\$26,900	2023	\$10,200	\$10,200	\$6,500
3/31/2023	\$26,900	2023	\$10,200	\$10,200	\$6,500
6/30/2023	\$26,900	2023	\$10,200	\$10,200	\$6,500
8/31/2023	\$26,900	2023	\$10,200	\$10,200	\$6,500
12/31/2023	\$28,200	2024	\$10,700	\$10,700	\$6,800
3/31/2024	\$28,200	2024	\$10,700	\$10,700	\$6,800
6/30/2024	\$28,200	2024	\$10,700	\$10,700	\$6,800
8/31/2024	\$28,200	2024	\$10,700	\$10,700	\$6,800
12/31/2024	\$13,400	2025	\$4,700	\$4,700	\$4,000
3/30/2025	\$13,400	2025	\$4,700	\$4,700	\$4,000
	\$313,600		\$119,200	\$119,200	\$75,200

Handwritten notes in red:
 FY-23: 46,600 (bracketed to rows 1-4)
 FY-24: 41,800 (bracketed to rows 5-8)
 FY-25: 30,800 (bracketed to rows 9-12)

Project completion date: 6/30/2025

JOINT FUNDING AGREEMENT

For

LONG TERM REAL-TIME CONTINUOUS WATER QUALITY MONITORING GAGES

in the LOWER PLATTE RIVER CORRIDOR at LOUISVILLE in the PLATTE, at ASHLAND in SALT CREEK, and at WATERLOO in the ELKHORN RIVER

The “JOINT FUNDING AGREEMENT for the THREE LONG TERM REAL-TIME CONTINUOUS WATER QUALITY MONITORING GAGES in the LOWER PLATTE RIVER CORRIDOR at LOUISVILLE in the PLATTE, at ASHLAND in SALT CREEK, and at WATERLOO in the ELKHORN RIVER” (hereinafter referred to as “the Agreement”) to be executed by and among the Lower Platte South Natural Resources District, on behalf of the Lower Platte River Corridor Alliance and Papio-Missouri River Natural Resources District (herein after referred to as “the Partners”).

The Partners agree as follows.

Scope of work

Real-time continuous water quality monitoring data will be collected by USGS personnel and equipment in the Platte River at Louisville, in Salt Creek at Ashland, and in the Elkhorn River at Waterloo. Water quality data to be collected include temperature, turbidity, dissolved oxygen, specific conductance, nitrate/nitrite and others as available, however no nitrate/nitrite collection on Salt Creek. Data will be displayed in real-time over the internet. The data is anticipated to be collected generally March through October in 2022, 2023 and 2024.

Funding

The Lower Platte South Natural Resources District, on behalf of the Lower Platte River Corridor Alliance, will hold and disburse funds from all Partners as needed for this study. Papio-Missouri River Natural Resources District will provide \$46,600.00 in 2022 (FY23), \$41,800.00 in 2023 (FY24), and \$30,800.00 in 2024 (FY25) for a total of \$119,200.00 for the three-year agreement. The Lower Platte River Corridor Alliance will pay the balance of the annual fee for the monitoring agreement (Lower Platte South NRD being the one other partner paying equal amounts).

Effective date

The agreement shall become effective upon execution by all parties.

Duration of agreement

The agreement shall run through the end of calendar year 2024 when all required funds have been received and data collection completed.

This Agreement is hereby approved and executed by the following parties on the dates shown below.

Paul Zillig, General Manager LPSNRD

DATE

John Winkler, General Manager PMRNRD

DATE

USGS Water Quality Gages on the Platte River near Leshara

- 1) The USGS Nebraska Water Science Center in addition to several cooperators are interested in extending the agreement for continuous water quality monitoring at the Platte River near Leshara gage. Beginning in April, 2016 a continuous water quality monitor was deployed in the Platte River near Leshara to help get additional water quality information in the upper portions of the Lower Platte River. This site has a joint agreement with several cooperators. This site's operation is similar to data collected at other USGS-Lower Platte River monitoring sites.
- 2) Water quality information collected at this site helps:
 - a) Monitoring in support of the Lower Platte River's Water Quality Management Plan
 - b) Potential to identify the water-quality impacts from management and land use changes in the contributing basin as well as to provide a baseline for future comparisons.
 - c) Assessing the stream health for fisheries
 - d) Better characterization of nitrate concentration in the drinking water source of many Nebraskans.
 - e) Inform those who use the river for recreating of potential water quality risks
 - f) Development of surrogate estimates to help better quantify loads of non-monitored parameters.
 - i) Assess the stream health for both immediate concentrations and loads heading downstream
 - g) Understand nitrate concentrations above the shallow aquifers used for drinking water
- 3) The water quality gage at the Platte River Leshara has been a multi-cooperative agreement.
 - a) Funds contributed by Lower Platte South NRD, Lower Platte North NRD, Papio-Missouri NRD, Lincoln Water Systems, M.U.D, and USGS
 - b) For the 2022-2024 data collection the USGS contributes 30% of the total cost, Papio, LPS, LPN, , LWS, and M.U.D c split the remaining funds.
- 4) The current agreement runs from April 30, 2019 to June 30, 2022. This covers data collection for the 2019-2021 calendar years. A proposed extension to this agreement would cover data collection for the years of 2022-2024. Funding below assumes that all parties would still be interested in operating the gage with the same scope for an additional three years beyond the 2021 data collection year. Please see Table 2 for a detailed breakout of charges.

Table 1:

	Federal Fiscal Year 2022	Federal Fiscal Year 2023	Federal Fiscal Year 2024	Federal Fiscal Year 2025	Total
USGS	\$7,200	\$9,600	\$10,000	\$3,600	\$30,400
Partners	\$19,000	\$26,000	\$27,200	\$8,200	\$80,400

Table 2:

Agreement # **16EMNE000210**

Billing Date	Total Amount	Federal Fiscal Year	LPN NRD	LPS NRD	Papio-M NRD	LWS	M.U.D.	USGS
6/30/2022	\$13,100	2022	\$1,900	\$1,900	\$1,900	\$1,900	\$1,900	\$3,600
8/31/2022	\$13,100	2022	\$1,900	\$1,900	\$1,900	\$1,900	\$1,900	\$3,600
12/31/2022	\$8,900	2023	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$2,400
3/31/2023	\$8,900	2023	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$2,400
6/30/2023	\$8,900	2023	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$2,400
8/31/2023	\$8,900	2023	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$2,400
12/31/2023	\$9,300	2024	\$1,360	\$1,360	\$1,360	\$1,360	\$1,360	\$2,500
3/31/2024	\$9,300	2024	\$1,360	\$1,360	\$1,360	\$1,360	\$1,360	\$2,500
6/30/2024	\$9,300	2024	\$1,360	\$1,360	\$1,360	\$1,360	\$1,360	\$2,500
8/31/2024	\$9,300	2024	\$1,360	\$1,360	\$1,360	\$1,360	\$1,360	\$2,500
12/31/2024	\$5,900	2025	\$820	\$820	\$820	\$820	\$820	\$1,800
3/30/2025	\$5,900	2025	\$820	\$820	\$820	\$820	\$820	\$1,800
	\$110,800		\$16,080	\$16,080	\$16,080	\$16,080	\$16,080	\$30,400

FY-23
6,400

FY-24
5,320

FY-25
4,360

Budgeting assumes all cooperators would take part and fund the agreement equally.

- 5) Beginning with the installment in 2016, a nitrate meter was also deployed at this to provide continuous nitrate concentrations in the Platte River. This location has been useful because it is above the L.W.S. and M.U.D. wellfields. The nitrate meter operates similarly to data being collected downstream at the Platte River at Louisville, and the Elkhorn River at Waterloo. Together, these monitors help provide a better understanding of nutrient concentrations and loads in the Lower Platte River.
- 6) Parameters monitored at the Platte River near Leshara include: water temperature, specific conductance, turbidity, dissolved oxygen, and nitrate
 - i) Data for the site can be accessed at: https://waterdata.usgs.gov/ne/nwis/uv?site_no=06796500
- 7) These water quality gages are operated seasonally from April 1 to October 1 because of the risk for ice damage to the equipment.

For questions or additional information, contact Matt Moser, (402)328-4184 mmoser@usgs.gov

JOINT FUNDING AGREEMENT

For

REAL-TIME CONTINUOUS WATER QUALITY MONITORING

in the LOWER PLATTE RIVER AT LESHARA

The “JOINT FUNDING AGREEMENT for REAL-TIME CONTINUOUS WATER QUALITY MONITORING in the PLATTE RIVER AT LESHARA” (hereinafter referred to as “the Agreement”) to be executed by and among the Lower Platte South Natural Resources District, on behalf of the Lower Platte River Corridor Alliance and Papio-Missouri River Natural Resources District (herein after referred to as “the Partners”).

The Partners agree as follows.

Scope of work

Real-time continuous water quality monitoring data will be collected by USGS personnel and equipment in the Platte River near Leshara. Water quality data to be collected include temperature, turbidity, dissolved oxygen, specific conductance, nitrate/nitrite and others as available. Data will be displayed in real-time over the internet. The data is anticipated to be collected generally March through October in 2022, 2023 and 2024.

Funding

The Lower Platte South Natural Resources District, on behalf of the Lower Platte River Corridor Alliance, will hold and disburse funds from all Partners as needed for this study. Papio-Missouri River Natural Resources District will provide \$6,400.00 in 2022 (FY23), \$5,320.00 in 2023 (FY24), and \$4,360.00 in 2024 (FY25) for a total of \$16,080 for the three-year agreement. The Lower Platte River Corridor Alliance will pay the balance of the annual fee for the monitoring agreement (four other partners paying equal amounts).

Effective date

The agreement shall become effective upon execution by all parties.

Duration of agreement

The agreement shall run through the end of calendar year 2024 when all required funds have been received and data collection completed.

This Agreement is hereby approved and executed by the following parties on the dates shown below.

Paul Zillig, General Manager LPSNRD

DATE

John Winkler, General Manager PMRNRD

DATE