LOWER PLATTE SOUTH
natural resources district

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Memorandum

TO: Board of Directors
DATE: May 13, 2022
FROM: David Potter, Assistant General Manager
SUBJECT: Integrated Management Subcommittee meeting minutes.

The Integrated Management Subcommittee met virtually (via Zoom) on Wednesday, May 11, 2022. Members present included Lisa Lewis, Bob Andersen, Gary Hellerich, Bruce Johnson, Anthony Schutz, Mark Spangler (arrived late) and Ken Vogel. Members absent included Don Jacobson. Others present were Paul Zillig, Dick Ehrman, and David Potter. The meeting was called to order at 5:30 p.m. by Chair Lewis.

In 2009, LPSNRD adopted rules and regulations for the management of ground and surface water in what is known as the hydrologically connected area (HCA). The HCA was delineated by the Nebraska Department of Natural Resources (NeDNR) based upon the likelihood of hydrologic connection between surface water and shallow ground water. For LPSNRD, this area consists of all or parts of about 70 sections along both sides of Salt Creek roughly between Waverly and Ashland, and then along the south side of the Platte River from Ashland to Plattsmouth.

As a natural extension of the above activities, LPSNRD developed its voluntary Integrated Management Plan (IMP) in conjunction with NeDNR. Following approval by both LPSNRD and NeDNR, the IMP became effective on May 15, 2014. As part of the effort toward a more comprehensive management strategy, LPSNRD joined six other NRDs (LLNRD, LPNNRD, LENRD, PMRNRD, ULNRD and UENRD) and NeDNR to form the Lower Platte River Basin Coalition (Coalition) to jointly develop a water management plan for the entire Lower Platte River basin. The intent of the basin-wide plan is to inform and provide consistency for the individual NRD IMPs. As of early 2018, all seven participating NRD Boards and NDNR had approved the Interlocal Agreement that continues the Coalition and adopted the first five-year (increment) plan. Directors Jacobson and Hellerich are the LPSNRD current representatives on the Coalition. The Coalition Board met on April 19th at the NARD office to discuss and take action on a number of items. A memo from Directors Hellerich and Jacobson and a copy of the draft Coalition Board minutes are attached. Hellerich briefed the subcommittee on the recent Board meeting.

The first agenda item was consideration of the Lower Platte River Coalition Interlocal Cooperation Agreement No. 3. The current Interlocal Agreement for the Lower Platte River Coalition is requiring an update. The Lower Platte River Coalition Board met on April 19th and voted to approve the Lower Platte River Coalition Interlocal Cooperation Agreement No. 3. The Agreement is attached. Staff answered questions of the subcommittee regarding the interlocal and the Basin Coalition.

It was moved by Hellerich, seconded by B. Johnson and approved (six voting yes and Spangler not present) to recommend the Board of Directors approve the Lower Platte River Coalition Interlocal Cooperation Agreement No. 3.

The second agenda item was consideration of the Basin Water Management Plan – Second Increment (2022-2026) of Plan Implementation. At the January 19th LPSNRD Board meeting we had a presentation by John Engel from HDR pertaining to the Lower Platte River Basin Coalition (seven NRDs) and the five-year increment plan of the joint water management plan of the entire Lower Platte River Basin. The first five-year increment allowable depletion period/plan is coming to an end and the second five-year increment is needed. Engel provided information on the first increment and the method of dividing up excess water development in the Platte among the NRDs, identified the benefits of the plan, what is proposed for the second increment, and answered questions from the Board. The following recommendations from the Lower Platte River Basin Management Committee were highlighted:

- Continue doing a 5-year review to update the calculations/depletions. Consider other triggers for doing future reviews based on drought conditions/changes.
- Continue to allow NRDs to keep any unallocated "carryover".
- Continue to use a 25-year period of record and 10% allowable depletions. (the less changes at this point the better for several NRDs. A longer period of record (33 years) was less beneficial due to the impact of other changes on the conditions in the model. Recognize that NRD's will need to consider and work on drought management planning as continuing to use up an additional 10% each period will not be sustainable).

The Lower Platte River Coalition Board met on April 19th and voted to approve the Second Increment (2022-2026) of Plan Implementation as recommended by the Basin Management Committee. Although the Coalition Board officially approved the Second Increment as authorized under the Lower Platte River Coalition Interlocal Cooperation Agreement, it is recommended that LPSNRD also take action to confirm. The Second Increment is attached. Staff answered questions of the subcommittee regarding the Second Increment, including purpose, 25-year period, allowable depletions, and carryovers.

It was moved by Andersen, seconded by Vogel and approved (six voting yes and Spangler not voting) to recommend the Board of Directors approve the Basin Water Management Plan – Second Increment (2022-2026) of Plan Implementation.

With no further business, Lewis adjourned the subcommittee meeting at 5:52 p.m.

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Memorandum

Date: April 26, 2022

To: Board of Directors

From: Don Jacobson and Gary Hellerich

RE: Lower Platte River Basin Coalition Board meeting – April 19, 2022

The Lower Platte River Basin Coalition Board met on April 19th at the NARD office at 10:00 a.m. to discuss and take action on a number of items. LPSNRD representatives attending the meeting included Don Jacobson, Gary Hellerich and Paul Zillig. Other Districts and Agencies attending the meeting included ULNRD, LLNRD, UENRD, LENRD, LPNNRD, PMRNRD, and NeDNR.

Action was taken to approve the Second Increment Plan Addendum, the Coalition Interlocal Agreement, and the FY23 Budget. The approved interlocal agreement would need to be sent to each member of the Coalition for final consideration and signature. NeDNR also gave a report on Perkins County Canal Project, the drought dashboard, and several other new tasks the Department will be carrying out over the next year.

The draft meeting minutes are enclosed.

DRAFT

SUMMARY
Lower Platte River Basin Wide Plan Coalition Annual Board Meeting - April 19, 2022 10:00 am
Offices of NARD- 8100 South 15th Street, Suite B, Lincoln, NE

Voting Members Participating: C. Higgins (ULNRD), A. Baum (ULNRD), R. Callan (LLNRD), J. Adams (LLNRD), D. Schueth (UENRD), G. Kelly (UENRD), G. Loftis (LENRD), D. Schultz (LENRD), B. Hilger (LPNNRD), D. Saalfeld (LPNNRD), G. Hellerich (LPSNRD), D. Jacobson (LPSNRD), J. Winkler (PMRNRD), R. Tesar (PMRNRD), J. Bradley (NeDNR), T. Riley (NeDNR)

Others: J. VanDerslice (UENRD), T. Naprstek (LLNRD), M. Sousek (LENRD), P. Zillig (LPSNRD), D. Andersen (LPNNRD), P. Woodward (PMRNRD), D. Wilcox (NARD), R. Kelly (NeDNR), C. Kingsley (NeDNR), M. Hoffer (NeDNR), J. Schellpeper (NeDNR), J. Engel (HDR)

I. Introductions – Chair Hilger (LPNNRD) called the meeting to order at 10:00 a.m. Roll call was taken, and a quorum was present. It was noted that publication of meeting notice was provided in the Lincoln Journal Star. A copy of the open meetings act was available.

II. A copy of the minutes from the 2021 annual meeting were presented.

J. Winkler (PMRNRD) moved to approve the minutes of the 2021 Annual meeting as presented, the motion was seconded by C. Higgins (ULNRD) – Following a voice vote the motion carried all in favor.

III. D. Wilcox (NARD) reviewed current financials with YTD revenue of $80K and YTD expenses of $148,876.79. The current FY21-22 budget was reviewed, and budgeted expenses were contrasted with current expenses through April. It was noted that invoices for contract work budgeted for FY20-21 carried over into the current FY – so the beginning cash balance exceeded the budgeted amount by $103,722.61, subsequently actual expenses will exceed budgeted in the current FY by an amount equal to the excess beginning balance.

It was reported that the current cash balance is $207,112. It was noted that budgeted remaining expenses total $84,445 – which would yield a projected FY end balance matching the budgeted amount of $122,667.

C. Higgins (ULNRD) moved to accept the financials as presented, the motion was seconded by G. Hellerich (LPSNRD). The motion carried all in favor.

IV. T. Naprstek (LLNRD), Technical Committee Chair, discussed that each members annual report was submitted on time using the process outlined by the plan. He thanked all districts and committee members for their efforts. It was noted that the plans can be viewed in their entirety on the Coalitions website: https://lprbc.nebraska.gov/.

T. Naprstek summarized the total annual depletions table that was distributed. It was discussed that following the end of the 1st increment, all members remained well below their allowable depletion levels. New peak season depletions totaled 5,380 acre-feet across the basin during the 1st increment, with 13,427 acre-feet, or

71% of total 1st increment depletions remaining basin wide. It was noted that consumptive use is still being compiled, but it doesn't impact the plan as it is just tracked and used for modeling purposes. D. Saalfeld (LPNNRD) raised the question about the impact of drought on consumptive use and net irrigation requirements – it was discussed that the NIR uses an average and that the analysis used a 25-year period that incorporates impact of drought periods.

T.Naprstek discussed that HDR is working to transition the online database for depletions tracking over to NeDNR. It was discussed that the technical committee has been involved, but the database has not been accessible and it is unknown how seamless the transfer may go. NeDNR noted they'll be meeting with HDR and they will continue to update the committee on progress.

T. Naprstek noted the committee will be working to discuss and inventory local drought planning efforts across the basin in accordance with the proposed new 2nd increment plan objective.

T. Naprstek distributed a chart outlining the timeline for incorporating AEM data and updating models in advance of the next 2nd increment analysis tentatively planed in 5-years. J. Schellpeper (NeDNR) noted the table outlines the processes that are required to ensure all data is ready to be used and that new models are developed and calibrated. She expressed that it's going to take pushing pretty hard if we want to use all the AEM data and the new models for the next analysis in 5-years.

UENRD representatives raised the question of how local boards are balancing the excess allowable depletions with managing for lower precipitation patterns. There was general round table discussion about how local boards have viewed the allowable depletions and how each is working to continually weigh the plans allowable depletions against other management considerations that each board must locally consider. Several districts provided examples of impacts they're managing for beyond the scope of the plans allowable depletions, which only account for streamflow impacts, including water quality and well interference among others. It was also discussed that the plan is drafted such that any unused allowable new depletions are not forfeited if unused and are carried over into the next increment.

V. D. Wilcox distributed copies of the proposed 2nd increment plan addendum. It was discussed that this addendum is a culmination of the work directed by the board and carried out by the committees and consultants over the last 2-years to complete the 1st increment analysis. It was discussed that the addendum contains the depletions tables and analysis overview information that was presented by HDR to each of the local boards during Dec. – Jan. J. Engel (HDR) walked through the addendum and outlined the three primary elements/additions including:

Evaluation of Basin supplies and uses, and annual average peak season excess flow, using the 1996-2020 period of record.

Development of allowable new depletions by NRD for the second increment, including first increment carryover.

Added one objective and four action items to the Plan Goals, Objectives, and Action Items to address drought effects in the Basin.

Following presentation of the addendum, B. Hilger raised the question of what is currently being planned by each district for drought. A. Baum noted ULNRD is finalizing a plan for drought that focuses on education. B. Hilger noted that they've worked to address interference complaints during drought. G. Hellerich noted that in LPSNRD, portions of the district operate with water restrictions due to declines and well interference during drought – he spoke to the need to have a definite standard addressing the issue of interference. Hilger noted it's the local districts responsibility to educate people about where good water is and at what depths. M. Sousek noted there are questions surrounding who bears the cost of dropping wells, he also noted there are instances during drought when wells are at bedrock, and you can't go deeper.

Following further discussion about local drought response actions, the technical committee action items were outlined under the plan addendum and the committee will work to inventory what local management actions exist and to work to evaluate potential impacts of new depletions during drought conditions.

A motion to approve the 2nd increment Plan Addendum as presented was made by J. Winkler (PMRNRD), the motion was seconded by C. Higgins (ULNRD). The motion carried all in favor.

VI. D. Wilcox distributed a draft interlocal agreement. It was discussed that the current interlocal expires with the expiration of the 1st increment. It was noted that while the format has been significantly altered, the language of the interlocal is similar to prior agreements and the draft maintains the same organization and framework for the coalition. It was discussed that in addition to formatting, the primary modification was to change the purpose from adopt and maintain the 1st increment of the plan – to *form a Coalition to implement and maintain the Plan and its Addendums.*

R. Callan (LLNRD) noted that a draft was reviewed and approved by the management committee. That draft was reviewed and modified by legal counsel at both NeDNR and by Blankenau and that version is what is before the Coalition board. It was noted that if approved by the Coalition Board, the interlocal agreement would then be sent to each member for final consideration and signature.

A motion was made by J. Adams (LLNRD) to accept and distribute the interlocal agreement as presented, the motion was seconded by J. Winkler (PMRNRD). The motion carried all in favor.

VII. D. Wilcox (NARD) outlined the FY 22-23 budget that was approved by the Management Committee to propose to the Board for final approval. The beginning cash balance is budgeted at $122,667.05. The presented budget included $10K dues from each of the 8-members for $80K in revenue. Budgeted expenses include $100 for meeting notices and $100K for Plan Implementation work. It was discussed that there are no current contracts in place, but the technical committee will be working on implementation of the plan objectives which may require consultant services, it was also noted the committee has not seen the database and following transfer to

NeDNR there may be additional work required. The budgeted FY23 yearend cash balance is $102,600.

A motion was made by G. Kelley (UENRD) to approve the FY23 budget as presented, the motion was seconded by C. Higgins (ULNRD). The motion carried all in favor.

VIII. T. Riley gave an overview of several new tasks NeDNR will be carrying out over the next year. It was discussed that NeDNR will be managing a $50M infrastructure bill for small irrigation districts. The department will also be administering $23M for Gering Fort Laramie Canal repairs and working to administer provisions of the STAR WARS legislation. In addition, the Department will be administering the healthy soils initiative.

T. Riley further noted that the legislation to proceed with the Perkins County Canal Project has been passed and signed by the Governor. J. Bradley (NeDNR), discussed the South Platte Compact and outlined the impacts the Canal project, or lack of a project, would have on the Lower Platte. It was discussed that Colorado is currently building, permitting, and planning for projects to make sure no "excess" water leaves their state. Without the canal, Nebraska cannot limit Colorado's use of water in the South Platte River between October 15th and April 1st. They would be able to make the Stateline flows go to zero during this timeframe.

It was noted that the Lower Platte Basin Coalition Plan currently manages new water development to no more than 100 cfs of new depletion during the summer. Today, Colorado is diverting about 100 cfs of water that could be coming into our state today if this project were constructed.

It was noted that the Compact cannot simply be renegotiated as Colorado has no incentive to provide Nebraska water that is worth 10 to 20 times more in Colorado.

Flows from the South Platte River contribute about 7% of the overall water supply to the Lower Platte Basin, including to Lincoln and Omaha's Platte River well fields. These South Platte flows also support many other agricultural, industrial and municipal uses all across the state.

The state's investment in the project would preserve and protect over $1B dollars of Nebraska's economy over the next 50-years and those benefits would go on into perpetuity.

IX. R. Kelly (NeDNR) presented on the drought dashboard developed by NeDNR and in partnership with the Lower Platte Drought Consortium. Kelly walked through the data the dashboard utilizes and how it can be utilized to portray drought risks and impacts, including to streamflow. It was noted the resources can be used to create dashboards for other metrics and purposes.

X. With no other business and no members of the public wishing to speak, Chair Hilger noted the next Annual Meeting would be scheduled in April at the call of the chair and adjourned the meeting at 11:35 a.m.

LOWER PLATTE RIVER COALITION
INTERLOCAL COOPERATION AGREEMENT #3

This Lower Platte River Coalition Interlocal Cooperation Agreement #3 ("Agreement") is entered into by and between the Nebraska Department of Natural Resources ("Department"); Lower Platte South Natural Resources District ("LPSNRD"); Lower Platte North Natural Resources District ("LPNNRD"); Papio-Missouri River Natural Resources District ("PMRNRD"); Lower Loup Natural Resources District ("LLNRD"); Lower Elkhorn Natural Resources District ("LENRD"); Upper Elkhorn Natural Resources District ("UENRD"); and Upper Loup Natural Resources District ("ULNRD") all of which are an agency or political subdivisions of the State of Nebraska, each sometimes hereinafter individually referred to as "Party" or collectively referred to as "Parties." The natural resources districts are sometimes collectively referred to as "NRDs."

WHEREAS, the Parties desire to work together, under the Interlocal Cooperation Act ("Act"), Neb. Rev. Stat. §§ 13-801 to 13-827, to make the most efficient use of their respective authorities and other powers by enabling them to cooperate with one another on a basis of mutual advantage and thereby to provide services and facilities in a manner and pursuant to forms of governmental organization that will accord best with geographic, economic, population, and other factors influencing the needs and development of each Party; and

WHEREAS, the Parties desire to form a joint agreement under Neb. Rev. Stat. § 13-807 authorized by the governing body of each Party to the agreement, and which shall set forth fully as provided in the Act the purposes, powers, rights, objectives, and responsibilities of the contracting parties; and

WHEREAS, the Department has certain statutory authorities and responsibilities pertaining to the surface water of the State, and also authorities and responsibilities granted under the Nebraska Ground Water Management and Protection Act ("GWMPA"), Neb. Rev. Stat. §§ 46-701 to 46-754 for integrated management of hydrologically connected ground water and surface water. In addition, the Department has authority to expend funds from the Water Resources Cash Fund to aid management actions taken to reduce consumptive uses of water or to enhance streamflows or ground water recharge in river basins, subbasins, or reaches which are deemed by the Department overappropriated or fully appropriated pursuant to the GWMPA or are the subject of an interstate compact or decree or a formal state contract or agreement; and

WHEREAS, the NRDs are organized pursuant to Neb. Rev. Stat. §§ 2- 201 et seq. and have certain statutory authorities and responsibilities, particularly pertaining to the ground water in their respective areas of the State, and also authorities and responsibilities granted by the GWMPA for integrated management of hydrologically connected ground water and surface water; and

WHEREAS, the Lower Platte River Basin ("Basin") is geographically large and diverse in its geology, land use, ground and surface water supplies, and water uses. Each of the Parties are charged with responsibilities for planning and managing water resources within their respective boundaries, but much of the water and uses are interrelated throughout the entire Basin. The Parties desire to work together towards furthering the purposes of the Agreement.

WHEREAS, the Parties entered into the Lower Platte River Basin Coalition Interlocal Cooperative Agreement #1 on April 12, 2013 for the development of the Lower Platte River Basin Water Management Plan ("Plan"), and the Parties entered into the Lower Platte River Basin Coalition Interlocal Cooperative Agreement #2 on January 10, 2018 for adopting and implementing the first increment of the Plan; and

WHEREAS, the Parties have determined that the previous Interlocal Cooperative Agreement's purposes and objectives have been completed and the previous Interlocal Agreement has terminated pursuant to its Partial or Complete Termination Provision; and

WHEREAS, the Parties desire to enter this Lower Platte River Basin Coalition Interlocal Cooperative Agreement #3 to administer, maintain, and implement the Plan and its Addendums, which are incorporated into this Agreement by this reference.

NOW, THEREFORE, in consideration of the mutual covenants and promises of the Parties, it is agreed by and among the Parties hereto as follows:

1. PARTIES:

1.01 All Parties to this Agreement are public agencies within the meaning of Neb. Rev. Stat. §13-803(2).

2. AUTHORITY:

2.01 Neb. Rev. Stat. § 13-807 authorizes any two (2) or more public entities to enter into agreements with one another to perform any governmental service, activity, or undertaking, which at least one (1) of the public agencies entering into the agreement is authorized by law to perform.

2.02 The Parties enter into this Agreement pursuant to the authority conferred on each of them under the Act.

2.03 No part of this Agreement shall be interpreted as relieving the Department of any obligation or responsibility it may have to regulate water use or to compel compliance with any laws, regulations, interstate compacts or interstate agreements or as a delegation of its responsibilities and obligations to the Parties of this Agreement. No part of this Agreement shall be interpreted as relieving the NRDs of any obligation or responsibility it may have to regulate water use or to compel compliance with any laws, regulations, interstate compacts or interstate agreements or as a delegation of its responsibilities and obligations to the Parties of this Agreement.

3. COALITION

3.01 The Parties hereby retain the Lower Platte River Basin Water Management Plan

Coalition ("Coalition"). The Coalition shall be governed by the terms of this Agreement and the Plan and its Addendums. The Coalition shall carry out the purposes as set forth in Section 4 of this Agreement. The Coalition shall be responsible for the administrative, technical, and financial affairs of the Coalition. The Coalition shall not be considered a joint entity separate and distinct from the respective Parties to this Agreement, but rather a collaborative working arrangement of the Parties.

3.02 The Coalition shall have such powers, privileges, and authority as authorized by the Parties, and as necessary to achieve the purposes of the Coalition as set forth in this Agreement and the Plan and its Addendums. Such powers, privileges, and authority shall include but not be limited to the following:

3.02.1 Schedule and conduct meetings to transact business.

3.02.2 Hold public meetings and public hearings.

3.02.3 Enter into contracts and agreements with other public agencies and private sector vendors.

3.02.4 Assess, collect, and expend funds from Coalition members, grants, or other financial sources.

3.02.5 Undertake studies, investigations, or surveys and do research as may be necessary to carry out the Agreement's purposes.

3.02.6 Take actions as set forth in the Plan and its Addendums.

3.02.7 Retain legal and other professional services.

4. PURPOSES

4.01 The purposes of this Agreement pursuant to Neb. Rev. Stat. § 13-804 (3)(c) are to form a Coalition to implement and maintain the Plan and its Addendums. The Plan and its Addendums implements water use policies and practices that contribute to the protection of existing surface water and groundwater uses, while allowing for future water development, as well as provides the flexibility for Parties to work cooperatively. These water use policies and practices will be incorporated into the individual NRDs Integrated Management Plans.

4.02 This Agreement shall provide the organizational and administrative structure and

enumeration of the powers, privileges, and authority of the Coalition and the financial cooperative effort necessary to carry out the purposes in Subsection 4.01 of this Agreement. The powers, privileges, and authorities of the Coalition shall not be used in a manner that is in violation of any of the Parties' public purposes.

5. MANNER OF FINANCING AND OF ESTABLISHING AND MAINTAINING A BUDGET

5.01 The manner of financing and expenditure accounting of the Coalition pursuant Neb. Rev. Stat. §13-804(3)(d) shall be as follows:

5.01.1 The Coalition shall have the authority to authorize applications for financial grants, to include use of Coalition funds and in-kind services for match. Such applications shall be made by the Lead Party on behalf of the Coalition.

5.01.2 No bonds will be issued and no taxes will be levied or collected jointly by the Parties. Individual Parties may contribute funds derived from tax levies or bonds, but these shall not be considered a tax levy or bond issuance by the Coalition.

5.02 The manner of establishing and maintaining a budget pursuant to Neb. Rev. Stat. §13-804(3)(d) shall be as follows:

5.02.1 Annually the Board shall establish and adopt a budget for the preparation and completion of the work undertaken by the Coalition. Following consultation with each Party regarding its ability to contribute toward such necessary funds, the Board shall determine the assessment.

6. ADMINISTRATION

6.01 Board

6.01.1 The Board shall be responsible for determining the overall direction of the efforts of the Coalition and shall set policies.

6.01.2 The Board shall be composed of the following: two (2) representatives from the Department, two (2) representatives from the LPSNRD, two (2) representatives from the LPNNRD, two (2) representatives from the PMRNRD, two (2) representatives from the LLNRD, two (2) representatives from the LENRD, two (2) representatives from the UENRD, and two (2) representatives from the ULNRD, for a total of sixteen (16) representatives on the Board. The NRD representatives may be members of their respective NRD Boards of Directors or staff appointed by the NRD Boards of Directors.

6.01.3 Each representative on the Board shall be entitled to one (1) vote.

6.01.4 Each representative shall be appointed to the Board by written designation, including any alternate and such designation shall be provided to the Board Chair and the Coordinator prior to or at the specific Board meeting.

6.01.5 All decisions shall be made by consensus, unless otherwise specifically provided for in this Agreement.

6.01.6 A quorum, which shall be one Board representative from each Party, shall be required to transact any official discussions or business.

6.01.7 Meetings shall follow the requirements of the Open Meetings Act.

6.01.8 Meetings of the Board shall be held annually, or at the call of the Board Chair.

6.01.9 The representatives of the Board shall select from among the members a "Board Chair" and "Board Vice-Chair." The Board Chair and Board Vice-Chair will hold office for a term of up to five (5) years. Upon the occurrence of a vacancy in either office, it shall be filled at the next regularly scheduled meeting. The Board Chair shall preside at all Board meetings and shall develop agendas for each meeting. The Board Vice-Chair shall, in the absence of the Board Chair, perform the duties of the Board Chair.

6.01.10 The Coordinator shall be responsible for preparing and maintaining Board meeting minutes and other records.

6.02 Management Committee

6.02.1 The Management Committee shall be responsible for the administrative, technical, and financial affairs of the Coalition, and other powers, duties, and authorities as delegated to it by the Board. The Management Committee shall be composed of the General Manager or his/her designee from each of the NRDs and one (1) member from the Department. Nothing shall preclude a representative on the Management Committee from also serving as a designated-staff representative on the Board.

6.02.2 Each representative on the Management Committee shall be entitled to one (1) vote.

6.02.3 All decisions shall be made by consensus.

6.02.4 A quorum, which shall be one-half the total of Management Committee members plus one, shall be required to transact any official discussions or business.

6.02.5 Meetings shall follow the requirements of the Open Meetings Act.

6.02.6 Meetings of the Management Committee shall be held at least annually, or at the call of the Management Committee Chair.

6.02.7 The representatives of the Management Committee shall select from among the Committee a "Management Committee Chair" and "Management Committee Vice-Chair." Upon the occurrence of a vacancy in either office, it shall be filled at the next regularly scheduled meeting. The Management Committee Chair shall preside at all Management Committee meetings and shall develop agendas for each meeting. The Management Committee Vice-Chair shall, in the absence of the Management Committee Chair, perform the duties of the Management Committee Chair.

6.02.8 The Coordinator shall be responsible for preparing and maintaining minutes and other records.

6.02.9 The Management Committee shall offer input on the selection of a candidate for the Coordinator position and shall provide the general direction for the Coordinator.

6.02.10 The Management Committee shall also retain professional and legal services, if needed, and shall provide coordination with counsel.

6.03 Technical Committee

6.03.1 The Technical Committee shall be responsible for review and consideration of technical and/or scientific matters pertinent to the Coalition and shall provide information and recommendations regarding such matters to the Management Committee. The Technical Committee shall be composed of representatives from the NRDs and the Department as appointed by the Management Committee and may include representatives from other local, state, and federal agencies as members or advisors, as determined appropriate.

6.03.2 The Technical Committee shall develop recommendations to the Management Committee.

6.03.3 The Technical Committee shall meet as needed.

6.03.4 Meetings of the Technical Committee may be chaired by the Coordinator; or a chairperson may be designated by the Technical Committee

6.04 Coordinator

6.04.1 Under a separate agreement, an NRD/Department liaison located in the office of the Nebraska Association of Resources Districts will assist in providing coordination services to the Coalition ("Coordinator").

6.04.2 The Coordinator shall work under the general guidance from the Management Committee and the direct supervision of the Nebraska Association of Resources Districts and the Department.

6.04.3 As a portion of their duties, the Coordinator will provide the day-to-day administration for the Coalition, including information dissemination to members and the public, scheduling and organization of meetings, record-keeping, coordination of study participants including consultants and legal counsel, and financial accounting.

6.05 Lead Party

6.05.1 The LLNRD shall serve as a Lead Party for the Coalition as required under Neb. Rev. Stat. § 13-804(4)(a).

6.05.2 As Lead Party, its responsibilities include serving as the financial administrator. The duties of financial administrator for the Coalition include:

6.05.2.1 Collecting and holding the contributions from Parties and other revenues, and making disbursements for expenses related to Coalition activities.

6.05.2.2 Grant applicant and administrator.

6.05.2.3 Contracting Party on behalf of the Coalition.

6.06 Any Party may withdraw from this Agreement and from representation on the Coalition upon written notification to the Chair of the Coalition Board. Such withdrawal shall be effective upon receipt of the written notification. There will be no financial reimbursement of remitted funds unless specifically authorized by the Board.

6.07 New members can be added to the Coalition with a vote of the Board. Eligible entities shall be limited to political subdivisions charged with responsibilities for planning, managing, and/or supplying water resources for public water systems in the Basin.

7. PROPERTY

7.01 The manner of acquiring, holding, and disposing of real and personal property pursuant to Neb. Rev. Stat. § 13-804 (4)(b) is as follows.

7.01.1 In the event it becomes necessary for the Coalition to purchase any property, either real or personal, the Board will vote to determine how the property will be acquired, held, and disposed of.

8. DURATION

8.01 The duration of this Agreement shall be for a period starting from the execution date of this Agreement by the last Party, and ending upon completion of this Agreement's purposes and objectives, unless terminated in accordance with Paragraph 10 of this Agreement.

9. PREVIOUS INTERLOCAL AGREEMENT

9.01 The Parties previously entered into the Interlocal Cooperation Agreement #2 for the Lower Platte River Basin Water Management Plan on January 10, 2018. Through execution and acceptance of this Agreement, the Parties acknowledge that the previous Interlocal Cooperation Agreement has terminated as a result of the completion of its purposes and objectives and this Agreement is a new and separate agreement among the Parties.

10. TERMINATION

10.01 The permissible method or methods to be employed in accomplishing the complete or partial termination of this Agreement under Neb. Rev. Stat. §13-804(3)(e) shall be as follows.

10.01.1 This Agreement and the Coalition created hereby shall be terminated upon the earlier of the completion of its purposes and objectives described herein or upon the vote of two-thirds of the then constituted Board for the complete or partial termination of the Coalition and this Agreement. Upon action to terminate the Coalition, all outstanding debts and obligations of the Coalition shall be paid and all unused funds and appropriations shall be returned to the remaining Parties in such proportions as represented by the pro rata share paid by each Party.

11. MISCELLANEOUS PROVISIONS

11.01 All of the Parties' books, records, and documents relating to work performed or monies received or spent under this Agreement shall be subject to audit at any reasonable time after reasonable notice by the NRDs, Department, and the State

Auditor or as required by any grant agreements, donations, or other source of funds. The Coordinator shall maintain all of such records throughout the existence of this Agreement and for a period of ten (10) full years from the date of termination of the Agreement, or until all issues related to an audit, litigation, or other action are resolved, whichever is longer. All records shall be maintained in accordance with generally accepted accounting principles and record retention as required by the Secretary of State, Records Management Division.

11.02 Any governing body as defined in Neb. Rev. Stat. § 13-503 which is a Party to this Agreement shall provide information to the Auditor of Public Accounts regarding this Agreement as required in Neb. Rev. Stat. § 13-513.

11.03 No Party may assign its contractual rights or obligations under this Agreement without the prior written consent of the Board.

11.04 Each Party shall have taken, prior to the execution of this Agreement by such Party, appropriate action by ordinance, resolution, or otherwise pursuant to the law of the governing body of such Party so that this Agreement may enter into force consistent with the provisions of Neb. Rev. Stat. § 13-804(2).

11.05 For all matters other than membership, this Agreement may be amended or modified upon the approval of written modifications by all current Parties hereto in writing, signed by and duly adopted and approved by each of the current Parties hereto.

11.06 This Agreement contains the entire agreement of the Parties. All prior and contemporaneous negotiations, discussions, memorandums of understanding and other writings are merged and incorporated herein, it being the intention of the Parties that this Agreement is a final and full expression of their agreement. No representations were made or relied upon by any Party other than those expressly set forth herein.

11.07 This Agreement is governed by the laws of the State of Nebraska.

11.08 This Agreement becomes effective upon execution by all Parties.

IN WITNESS WHEREOF, the Parties have signed and executed this Agreement on the dates shown below their respective signatures:

NEBRASKA DEPARTMENT OF NATURAL RESOURCES

BY:_____

DATE:_____

LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT

BY:_____

DATE:_____

LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT

BY:_____

DATE:_____

PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

BY:_____

DATE:_____

LOWER LOUP NATURAL RESOURCES DISTRICT

BY:_____

DATE:_____

LOWER ELKHORN NATURAL RESOURCES DISTRICT

BY:_____

DATE:_____

UPPER ELKHORN NATURAL RESOURCES DISTRICT

BY:_____

DATE:_____

UPPER LOUP NATURAL RESOURCES DISTRICT

BY:_____

DATE:_____

Lower Platte River Basin Coalition

Basin Water Management Plan - Second Increment (2022-2026) of Plan Implementation

APRIL
2022

Nebraska's Natural Resources Districts · LOWERLOUP · Lower Platte North Natural Resources District · Lower Platte South · Lower Elkhorn Natural Resources District · Papio-Missouri River Natural Resources District · Upper Elkhorn Natural Resources District · Upper Loup · NRD · NEBRASKA Good Life. Great Water. DEPT. OF NATURAL RESOURCES

HDR · The Flatwater Group, Inc.

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Contents

1.0 Background Information

The Lower Platte River Basin (Basin) is one of the state's most valuable resources and is integral to the state's development and sustainability - from an agricultural, social, industrial, and municipal perspective. The Basin is geographically large and diverse in its geology, hydrology, land use, ground and surface water supplies, and water uses. The water resources of the Basin are managed by the Nebraska Department of Natural Resources (NeDNR) and seven Natural Resources Districts (NRDs), including:

- Lower Platte South NRD
- Lower Platte North NRD
- Papio-Missouri River NRD
- Lower Loup NRD
- Lower Elkhorn NRD
- Upper Elkhorn NRD
- Upper Loup NRD

Together with the NeDNR, the seven NRDs entered into an Interlocal Cooperative Agreement in April 2013 to form the Lower Platte River Basin Water Management Plan Coalition (Coalition). The Nebraska Association of Resource Districts (NARD) serves as the coordinator on behalf of the members of the Coalition. The Coalition recognizes the interrelation of water resources inherent within the basin and has embarked on a critical mission to protect and sustain the long-term balance between the water uses and water supplies throughout the Basin within the seven represented NRDs. The first action taken by the Coalition was the development of a voluntary Basin Water Management Plan (Plan). The intent of the Plan was to inform and provide consistency of the individual NRD Integrated Management Plans (IMPs). The original plan was completed and adopted by Coalition members in 2017.

The Plan identified 3 primary goals:

1. Develop and maintain a water supply and use inventory based on the best available data and analysis
2. Collectively develop a water management plan that maintains a balance between current and future water supplies and demands
3. Develop and implement water use policies and practices that contribute to the protection of existing surface and groundwater uses, while allowing for future water development.

These goals were supported by identified Objectives and Action Items for Plan implementation. The plan also contained several key recommendations:

- Defined a first increment for plan implementation with a duration of five years that extended through 2021
- Track and account for uses using the Basin-Wide Accounting methodology developed as part of the planning process
- Conduct an annual meeting to discuss water management activities, coordinate NeDNR and NRD activities, and monitor progress towards goals and objectives of the plan
- The cumulative allowable development within the hydrologically connected areas of the Basin during the first five-year increment to be less than 10% of the 25 year (1988-2012) average annual excess during the peak season, defined as June through August[1].
- Cumulative allowable development to be based upon peak season depletions. Full consumptive use of new development to also be tracked and reported.

[1] For more information on the Basin-Wide Accounting methodology and the development of the cumulative allowable development, please refer to the original Plan document for a full description.

The cumulative allowable development for the Basin was apportioned by sub-basin, and ultimately by NRD, based on contributions to the total water supply of the Lower Platte Basin. Table 1 summarizes the allowable cumulative development by NRD for the first increment from the original Plan document.

TABLE 1. FIRST 5-YEAR INCREMENT ALLOWABLE NEW DEVELOPMENT

NRD	Sub-Basin	First 5-year Increment Allowable New Development (Depletions) – Peak Season	
		% Sub-Basin Supply	AF
Upper Loup NRD	Loup River	32%	2,768
Lower Loup NRD		68%	5,883
Upper Elkhorn NRD	Elkhorn River	25%	1,504
Lower Elkhorn NRD		75%	4,514
Papio-Missouri River NRD	Lower Platte River	21%	869
Lower Platte South NRD		24%	993
Lower Platte North NRD		55%	2,276

During the first increment of the Plan implementation, each Coalition member has tracked and reported the portions of their allowable depletions that have been allocated each year. Table 2 summarizes the new development by NRD that has been allocated during the first increment of Plan implementation.

TABLE2. SUMMARY OF FIRST 5-YEAR INCREMENT NEW DEVELOPMENT ALLOCATED AND REMAINING ALLOWABLE NEW USE

NRD	First 5-year Increment		
	Allowable New Use (AF)	Allocated New Use (AF)	Remaining Allowable New Use (AF)
Upper Loup NRD	2,768	703	2,065
Lower Loup NRD	5,883	1,133	4,750
Upper Elkhorn NRD	1,504	370	1,134
Lower Elkhorn NRD	4,514	1,661	2,853
Papio-Missouri River NRD	869	101	768
Lower Platte South NRD	993	103	890
Lower Platte North NRD	2,276	1,310	966
Total	**18,807**	**5,380**	**13,427**

2.0 Second Increment of Plan Implementation

The Plan document calls for a review by Coalition members at the end of the first increment and development of a second increment for Plan implementation. The Coalition initiated the development of the second increment in 2021 with a focus on the following elements:

- Update the analysis of Basin supplies and uses using the basin-wide accounting methodology
- Complete the allowable new depletions analysis and determine allowable new depletions by NRD for the second increment (including carryover from the first increment)
- Review of Plan's goals, objectives, and action items and update as necessary
- Consideration of the appropriateness of the five-year increment duration

Basin Supplies and Uses Update

The analysis conducted during the development of the original Plan utilized data from the 1988-2012 period as the best and most current dataset available. For development of the second increment of the Plan, water supply and use data was available through 2020. Using the basin-wide accounting methodology, the analysis was updated utilizing the available data through 2020. Two options were considered for evaluating the peak season excess flow within the Basin:

1. Extension of the period of analysis from the first increment through 2020 (1988-2020, a total of 33 years of data)
2. Extension of the period of analysis from the first increment through 2020 and truncating the data to the most recent 25 years of data - the same duration of analysis period used for the first increment (1996-2020, a total of 25 years of data)

An auto-correlation statistical analysis was conducted on each dataset, and both met the unbiased criteria. The Technical and Management Committees reviewed the analyses and ultimately recommended the use of the most recent 25 years of data for evaluating the peak season excess flow within the Basin. Rationale for this recommendation included:

- Consistency with the first increment analysis
- 25 years is an adequate duration to be statistically representative of conditions
- The most recent data includes the most accurate information (well meter data, land use data, etc.) and therefore is more representative of conditions today
- The most recent data better reflects current farm and tillage practices that have continued to evolve since the 1980's and 1990's

Second Increment Allowable New Depletions Analysis

Using the analysis of supplies and uses from the 1996-2020 period, the allowable new development for the second increment of Plan implementation was developed utilizing the same methodology as the first increment, namely:

1. The average annual excess flow during the peak season (June through August) for the analysis period was determined. The annual excess is defined as the total basin supply less the total basin demand, measured at the Louisville gage on the Platte River.
2. The cumulative allowable new development within the Basin during the second 5-year increment is limited to 10% of the 25-year (1996-2020) average annual excess flow during the peak season, adjusted by the unused first increment allowable development.
3. Apportion the second increment allowable new development to each NRD area using that areas contribution to total Basin supply using the same percentages as the first increment.
4. Add the first increment carryover of allowable new development of each NRD to the calculated second increment amounts.

Appendix A describes the analysis of Basin supplies and uses, and the calculations of the average annual excess flow during the peak season for the second increment. The average annual excess flow during the peak season for the 1996-2020 period was determined to be 242,319 acre-feet. Adjusting this value for the 13,427 acre-feet of carryover allowable new development from the first increment, yields 22,889 acre-feet of allowable new development for the second increment to be apportioned to the individual NRD areas ((242,319 AF - 13,427 AF) x 10%). Table 3 summarizes the total allowable new development by NRD for the second increment.

TABLE 3. TOTAL ALLOWABLE NEW DEVELOPMENT BY NRD FOR THE SECOND INCREMENT

NRD	Allowable Depletions by NRD		
	New 2nd Increment	Carryover from 1st Increment	Total
Upper Loup NRD	3,369	2,065	**5,435**
Lower Loup NRD	7,160	4,750	**11,910**
Upper Elkhorn NRD	1,831	1,134	**2,965**
Lower Elkhorn NRD	5,493	2,853	**8,346**
Papio-Missouri River NRD	1,058	768	**1,826**
Lower Platte South NRD	1,209	890	**2,098**
Lower Platte North NRD	2,770	966	**3,736**
Total	**22,889**	**13,427**	**36,316**

Currently the Plan does not limit the ultimate allowable new development within the Basin, rather the Plan calls for an evaluation to occur at the end of each increment to determine the average annual excess flow within the Basin during the peak season. This evaluation considers and accounts for the cumulative new development that has occurred within the previous increments and serves as a basis for determining the allowable new development for the next increment.

During this planning effort it was discussed and recognized by Coalition members that pending the findings of drought effects within the Basin (new objective discussed in next section), consideration may be given to developing an ultimate allowable new development limit within the Basin for the third and any subsequent increments.

Review of Plan Goals, Objectives, and Action Items

In the course of the development of the second increment of the Plan, the Technical Committee reviewed the goals, objectives, and action items of the Plan and found them to be applicable and appropriate for the second increment. During their review, Coalition members discussed potential drought impacts on water supplies, the effects of shortages on existing and new uses, and the need to consider drought conditions. Based on this discussion, an additional objective was added to consider drought conditions and its effects on the Lower Platte Basin. The specific objective - "Evaluate impacts of new development during drought conditions" – was added under Goal #2, with four action items identified to support this objective. Sections 2.0 and 3.0 from the original plan document, with the new objective and action items incorporated, is included in Appendix B.

Coalition members also considered the alternative durations of the second increment, including extending the duration to ten years. Other factors may include availability of new models or data, changes in precipitation patterns, and occurrences of drought. Ultimately Coalition members agreed to keep the five-year duration for the second increment of Plan implementation, but recognize there is some flexibility for the Coalition to adjust the duration during the implementation period.

3.0 Summary

Consistent with the original Plan document, Coalition members have reviewed the first increment of Plan implementation and have developed a second five-year increment Plan. The primary elements/additions of this Plan development included:

1. Evaluation of Basin supplies and uses, and annual average peak season excess flow, using the 1996-2020 period of record (Appendix A)
2. Development of allowable new depletions by NRD for the second increment, including first increment carryover (Table 3)
3. Added one objective and four action items to the Plan Goals, Objectives, and Action Items to address drought effects in the Basin (Appendix B)

Appendices

Appendix A -
Evaluation of Basin Supplies and Uses

MEMORANDUM

To: Lower Platte River Basin Coalition
From: The Flatwater Group, Inc.
Date: March 15, 2022

Subject: Updated INSIGHT Analysis

Overview

The Flatwater Group was tasked with providing the updated INSIGHT analysis for the Lower Platte River Basin Water Management Plan. The original analysis was done by HDR using the Nebraska Department of Natural Resources (NeDNR) INSIGHT data, as described in LPRBC_BWMP_AppendixC_TM_Basin_Accounting_20170911.pdf[1]. The DNR INSIGHT methods document was also used[2]. The goal of the updated analysis was to utilize the same methodology as the original analysis, including using the demand scenario that would maintain 40% of the average streamflow at Louisville (without hydropower considered) to calculate the water supplies available within the Lower Platte River Basin.

The original analysis used a period of 1988-2012 to estimate basin supply. The updated analysis added the years 2013-2020. The final updated spreadsheet was uploaded to DNR's Sharepoint on 11/9/2021[3].

The following sections will highlight the major points of the analysis and the differences between the original and updated analysis methodologies (which are minor).

[1] https://lprbc.nebraska.gov/MtgMaterials/LPRBC_BWMP_AppendixC_TM_Basin_Accounting_20170911.pdf
[2] https://dnr.nebraska.gov/sites/dnr.nebraska.gov/files/doc/water-planning/INSIGHT/2015INSIGHTMethods.pdf
[3] Spreadsheet titled 2017Mar24_LPBasin_Supply_and_Demands_Updateto2020_20211104.xlsm

Basin Water Supply

Streamflow

Daily stream gage values were compiled from the USGS and NeDNR for the water years 1988-2020. For each subbasin analyzed, the streamflow gain in each subbasin was calculated as was done in the original analysis[1].

The Loup River at Columbus gage was filled from 1988-2008 in the same manner as was done in the original analysis. Data from 2008-2020 is from NeDNR.

In the original analysis, the streamflow values in each subbasin were capped at the 5% exceedance value for 1988-2012 because those higher flow events often cannot be captured or used. To keep the 1988-2012 values consistent in the updated analysis, the same 5% exceedance value for 1988-2012 was used to cap the 2013-2020 data as well[4].

Surface Water Consumptive Use

Surface water consumptive use (SWCU) was split into four categories: irrigation, municipal, industrial, and evaporation from large reservoirs.

Irrigation:

Irrigation SWCU was calculated using the available data, in the same manner as the original analysis. Mirdan Canal, Fullerton Canal, and Farwell Main, Central, and South canals had diversion, delivery, and return information available (Type 1). Sargent Canal, Burwell-Sumter Canal, Ord-North Loup Canal, Taylor-Ord Canal, and Middle Loup Canals 1, 2, 3, and 4 had only diversion data available (Type 4). The rest of the surface water irrigated lands (mostly small pumpers) had no diversion records available (Type 5) so the SWCU for these lands was determined by calculating a surface water demand for those surface water irrigated acres. That demand was then adjusted by NeDNR administration records if there were shortages to junior surface water users. The calculation methods for each type are detailed in the DNR Methods documentation[2].

Note: any commingled irrigated acres were treated as surface water only so as not to double count any irrigation demands on these acres. For reference, Figure 1 displays the location of the irrigated acres in the CNEB model while the next two figures display the surface water only irrigated acres (Figure 2) and the commingled irrigated acres (Figure 3) for 2012-2020 in the CNEB model area[5].

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[4] The capped streamflow values by basin can be found in the final spreadsheet[3] on the FinalBasinData_20160314 tab in columns P:R

[5] The graphics come from a NeDNR presentation at a LPRBC meeting on 11/16/2021

Figure 1: Lower Platte Basin 2020 Irrigated Acres within the CNEB Model Domain

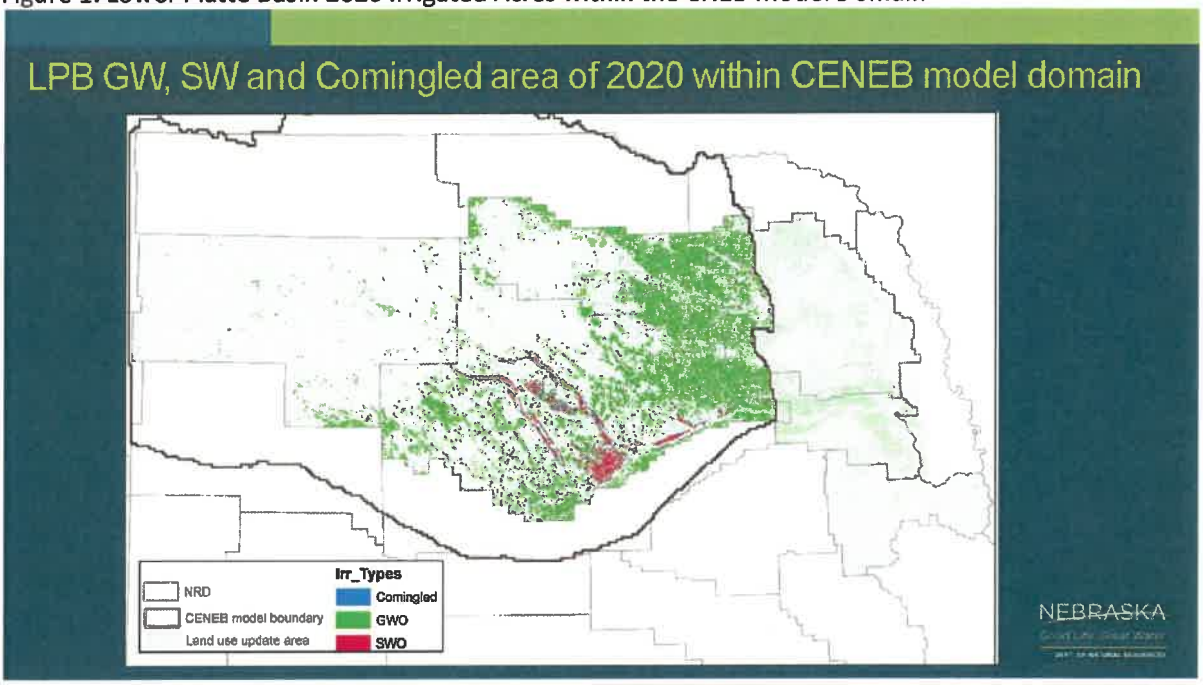
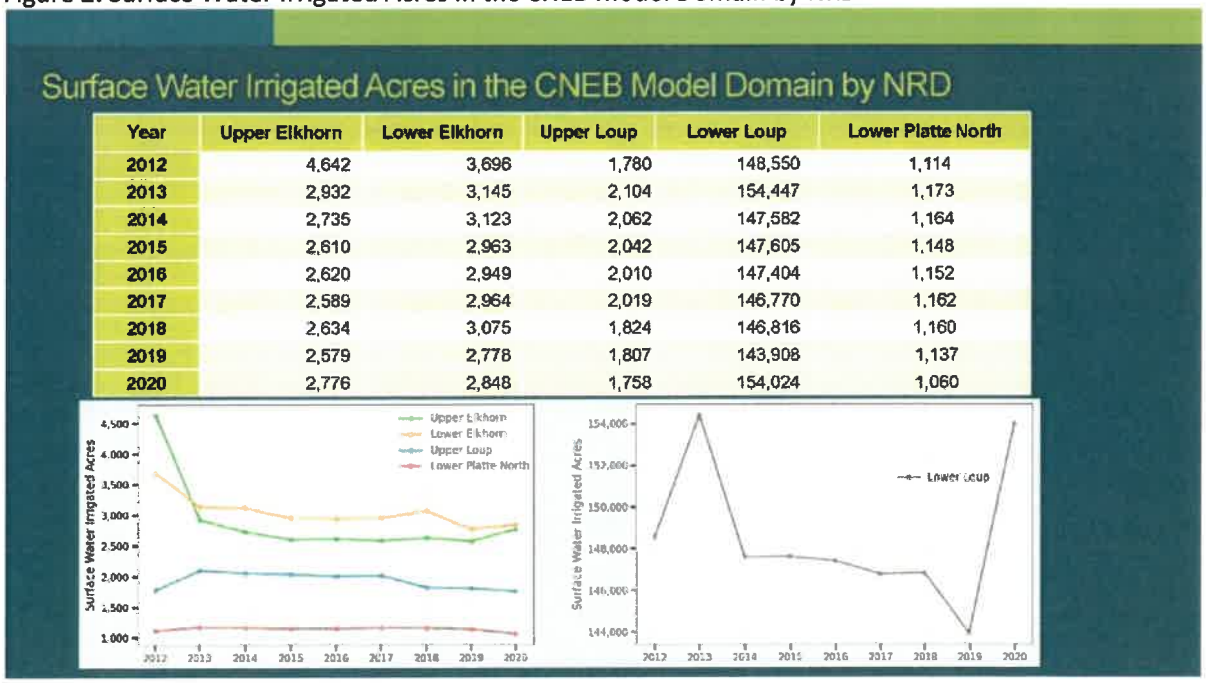
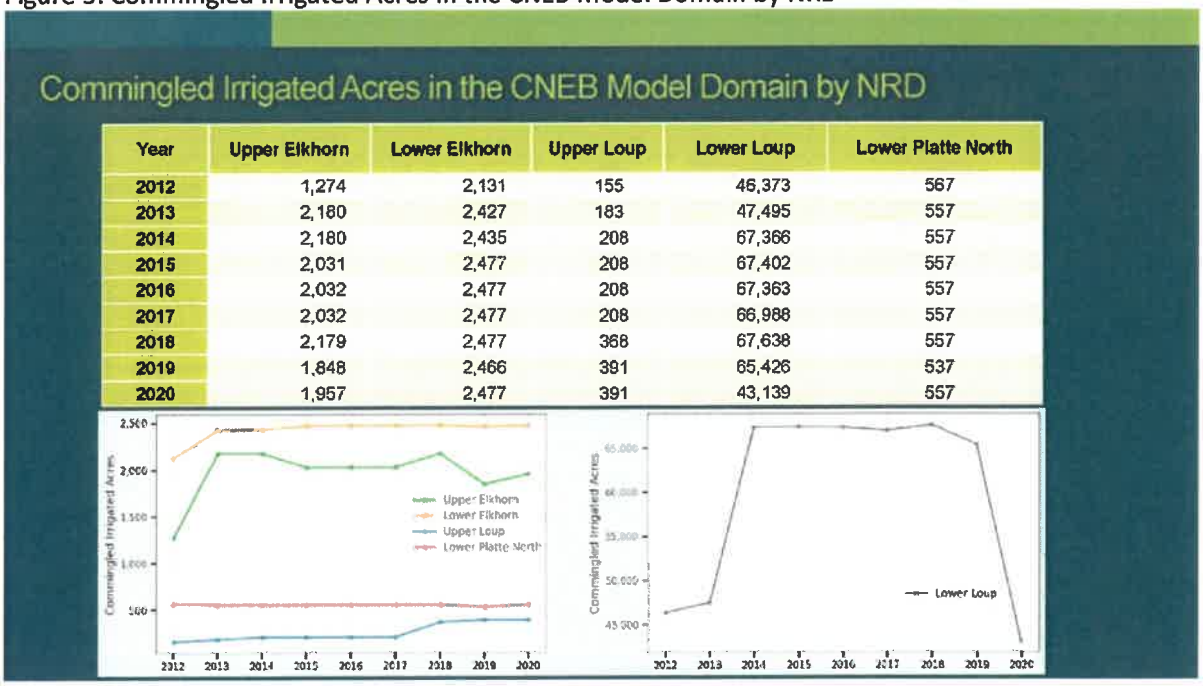


Figure 2: Surface Water Irrigated Acres in the CNEB Model Domain by NRD



Year	Upper Elkhorn	Lower Elkhorn	Upper Loup	Lower Loup	Lower Platte North
2012	4,642	3,696	1,780	148,550	1,114
2013	2,932	3,145	2,104	154,447	1,173
2014	2,735	3,123	2,062	147,582	1,164
2015	2,610	2,963	2,042	147,605	1,148
2016	2,620	2,949	2,010	147,404	1,152
2017	2,589	2,964	2,019	146,770	1,162
2018	2,634	3,075	1,824	146,816	1,160
2019	2,579	2,778	1,807	143,908	1,137
2020	2,776	2,848	1,758	154,024	1,060

Figure 3: Commingled Irrigated Acres in the CNEB Model Domain by NRD



Municipal:

As in the original analysis, consumptive uses from the Lincoln and Omaha well fields were calculated by NeDNR and included in the surface water consumptive use category.

Industrial:

As was done in the original analysis, no industrial surface water consumptive uses were included in this analysis.

Evaporation:

As in the original analysis, net evaporation for the large reservoirs with available data was calculated using the formula below:

Net Evaporation = ((Pan Evaporation * 0.7) – Precipitation) * Surface Area

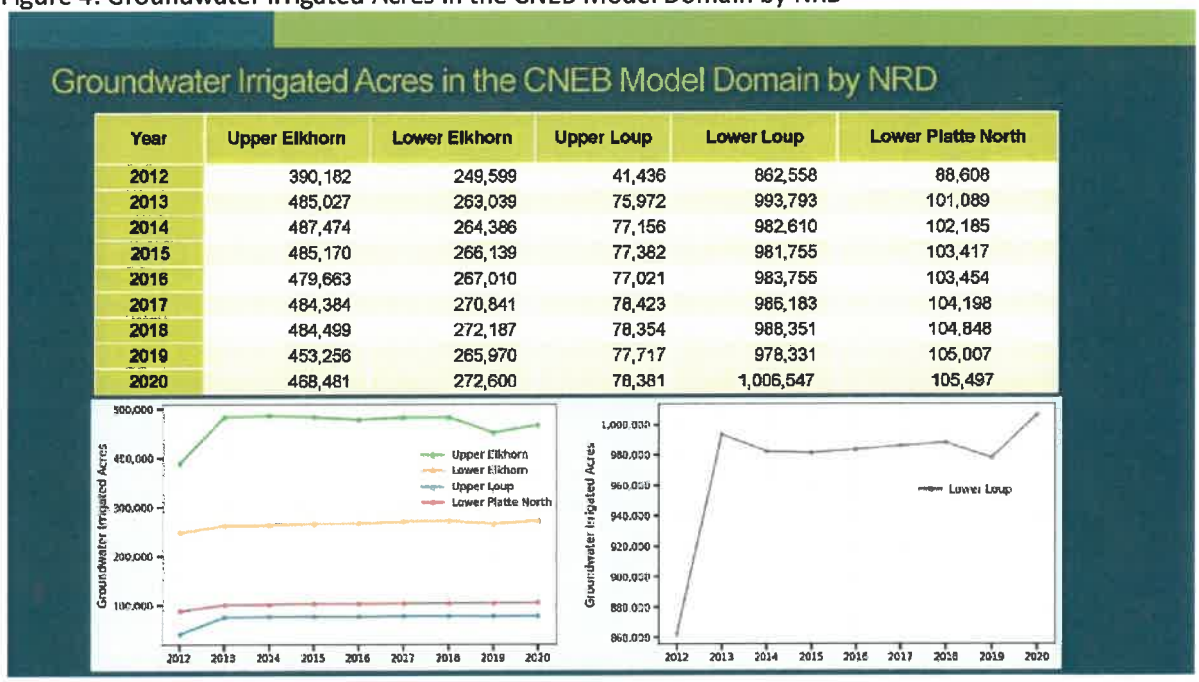
Groundwater Depletion

As in the original analysis, the groundwater depletion analysis was done in two parts because of the groundwater models available. The Central Nebraska (CNEB) model was used for the portions of the Elkhorn, Loup, and Lower Platte River Basins shown in the red boundary in figure 1, while an analytical

depletions model was used for portions of the Lower Elkhorn and Lower Platte River Basins outside the CNEB model domain.

Note: any commingled irrigated acres were treated as surface water only so as not to double count any irrigation demands on these acres. Figure 4 displays the groundwater only irrigated acres for 2012-2020 in the CNEB model area[5].

Figure 4: Groundwater Irrigated Acres in the CNEB Model Domain by NRD



The following five graphics (Figures 5 – 9) show how the modeled (identified as RSWB 2 on the graphics) groundwater pumping values compare to available metered pumping information and the corresponding groundwater irrigated acres by NRD, all within the CNEB model domain. The metered pumping graphics provide a summary of metered values displayed as annual bar and whisker plots (presenting the minimum and maximum recorded values as the extent of the whiskers and values between the 25th and 75th quartile in the highlighted section of the plot) with the average of the recorded values shown as a blue diamond. The average modeled value is shown as a green square.

The acreage plots provide a comparison between the total number of ground water irrigated acres in area (shown by the green bars) compared to the number of acres represented by the metering information (shown by the blue bars). At the top of each bar stack are the number of meter readings available for use in developing the previously discussed whisker plots.

Figure 5: Upper Elkhorn NRD Metered (Blue) and Modeled (Green) Pumping and Groundwater Irrigated Acres in the CNEB Model Domain

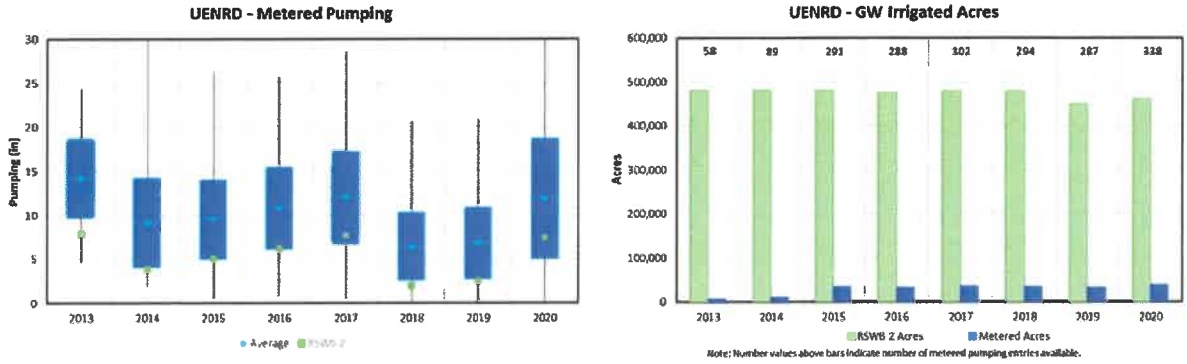


Figure 6: Lower Elkhorn NRD Metered (Blue) and Modeled (Green) Pumping and Groundwater Irrigated Acres in the CNEB Model Domain

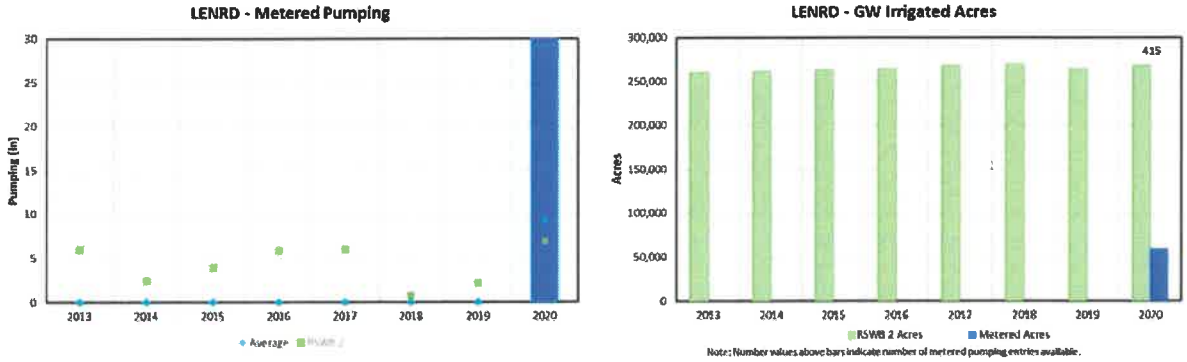


Figure 7: Upper Loup NRD Metered (Blue) and Modeled (Green) Pumping and Groundwater Irrigated Acres in the CNEB Model Domain

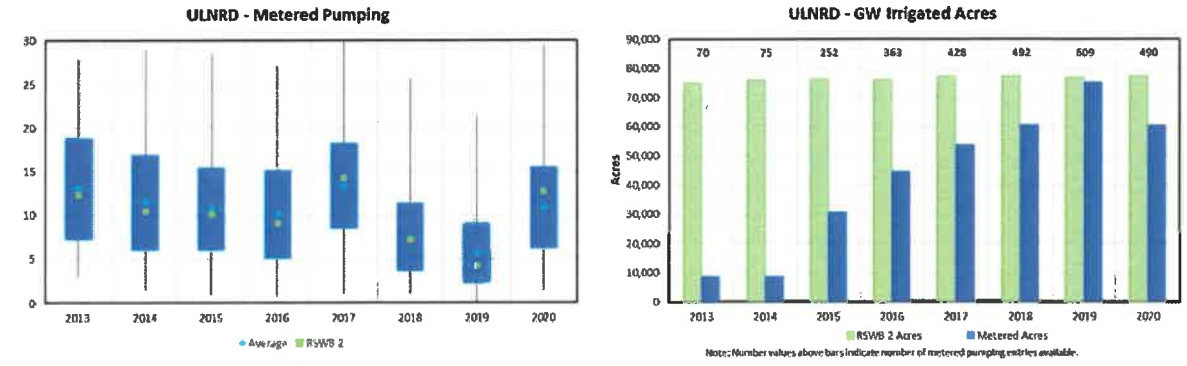


Figure 8: Lower Loup NRD Metered (Blue) and Modeled (Green) Pumping and Groundwater Irrigated Acres in the CNEB Model Domain

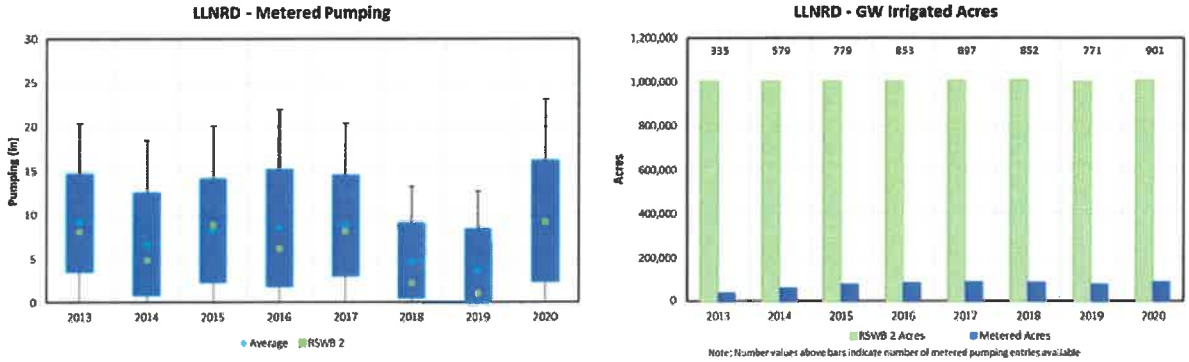
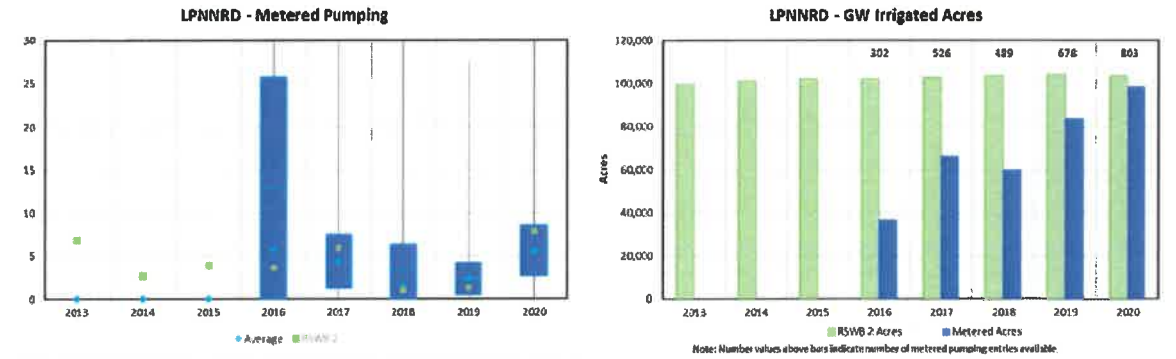


Figure 9: Lower Platte North NRD Metered (Blue) and Modeled (Green) Pumping and Groundwater Irrigated Acres in the CNEB Model Domain



Required Inflow

The required inflow term is used to recognize the historic contribution of the basin water supply from an upstream basin. It represents the portion of demand within a basin or subbasin that is reliant upon upstream sources for part of the water supply. The methodology used in the original analysis was used in the updated analysis and can be found in the original documentation[2].

Basin Water Demand

Surface Water Demand

As in the original analysis, surface water demand was calculated the same way as the surface water consumptive use except that no administrative adjustments were done so that the full demand was used even if junior water users were curtailed at certain times during the year. The other two differences are that surface water consumptive use is redistributed from the peak season to the non-peak season when the storage reservoirs could provide a portion of the supply, and that the full Lincoln and Omaha permitted extraction rates are used for the municipal surface water demand.

Groundwater Demand

As in the original analysis, groundwater demand was calculated using the same information that was used to calculate groundwater depletions for the supply calculation.

Groundwater withdrawal volumes were summed on an annual basis and then distributed 70 percent to the non-peak season and 30 percent to the peak season to match the observed seasonal pattern of groundwater depletions.

Non-Consumptive Use Demands

Non-consumptive use demands are demands on the water supply that are available to meet other demands as well. Examples of these demands include hydropower demands, instream flow, induced groundwater recharge, or downstream demands for consumptive uses. As these water demands can be for the "same" water, only the largest of the non-consumptive uses is considered. This is the same approach used in the original analysis.

In the updated 2013-2020 analysis, the largest non-consumptive use was the demand of 40% of the Louisville flows.

Net Surface Water Loss

As in the original analysis, net surface water loss is the water determined to be necessary to deliver streamflows to meet consumptive demands for surface water irrigation districts. This serves as an additional demand.

Net surface water loss = Canal diversion – SWCU

Net surface water loss is calculated for irrigation districts in the Middle Loup and North Loup River Basins.

Final Balances

The final balances are calculated by taking the difference between the basin water supply and the basin water demand.

The original 25 year analysis final peak season balances are displayed below:

Table 1: Original 25 year (1988-2012) Peak Season Balances

Original 25Yr Avg	Peak BWS						Peak Total Long Term Demand					Peak Balance	
	SWCU	GW Depl.	Streamflow	intrinsic supply	Req. Inflow	Total	SW demand	GWCU	NonCU	Net SW Loss	Total		
Loup	152,576	29,072	380,027	561,677	-	561,677	109,733	128,051	223,704	42,898	504,386	57,291	
Beaver Creek	2,777	7,266	(490)	9,555	2,686	12,241	2,999	30,199	5,393	-	38,591	(26,350)	
Elkhorn	16,849	59,246	357,354	433,450	-	433,450	17,476	98,209	180,260	-	295,945	137,506	
Lower Platte	32,073	54,184	238,210	324,468	408,454	732,922	116,646	56,713	539,934	-	713,293	19,630	
Total Lower Platte				1,329,150							1,552,215		
				BWS%	accounting for rounding in master spreadsheet and Beaver Creek not in Lower Platte						total	188,077	10%
			Loup	0.4226	0.44								
			Beaver Creek	0.0072	0.02						Loup Plus Beaver	86,515	8,652
			Elkhorn	0.3261	0.32						Elkhorn	60,185	6,018
			Lower Platte	0.2441	0.22						Lower Platte	41,377	4,138

The next two tables show the updated 25 year analysis (moving the dates from 1988-2012 to 1996-2020) and an updated 33 year analysis (1988-2020).

Table 2: Updated 25 year (1996-2020) Peak Season Balances

Updated 25Yr Avg	Peak BWS						Peak Total Long Term Demand					Peak Balance	
	SWCU	GW Depl.	Streamflow	intrinsic supply	Req. Inflow	Total	SW demand	GWCU	NonCU	Net SW Loss	Total		
Loup	154,173	35,631	402,685	592,490	-	592,490	110,841	131,971	242,273	40,810	525,896	66,595	
Beaver Creek	2,535	8,791	3,287	14,614	2,244	16,858	2,705	30,490	7,144	-	40,339	(23,481)	
Elkhorn	15,147	55,945	400,350	471,443	-	471,443	15,467	100,125	199,731	-	315,324	156,120	
Lower Platte	34,530	52,252	281,360	368,143	448,624	816,767	116,549	54,260	602,873	-	773,682	43,086	
Total Lower Platte				1,446,690							1,655,240	103,025	
				BWS%	accounting for rounding in master spreadsheet and Beaver Creek not in Lower Platte						total	242,319	10%
			Loup	0.4095	0.44								
			Beaver Creek	0.0101	0.02						Loup Plus Beaver	111,467	11,147
			Elkhorn	0.3259	0.32						Elkhorn	77,542	7,754
			Lower Platte	0.2545	0.22						Lower Platte	53,310	5,331

Table 3: Updated 33 year (1988-2020) Peak Season Balances

Updated 33Yr Avg	Peak BWS						Peak Total Long Term Demand					Peak Balance	
	SWCU	GW Depl.	Streamflow	intrinsic supply	Req. Inflow	Total	SW demand	GWCU	NonCU	Net SW Loss	Total		
Loup	147,907	32,596	398,135	578,639	-	578,639	107,935	125,818	237,609	40,851	512,213	66,425	
Beaver Creek	2,549	8,110	5,096	15,756	2,303	18,058	2,716	29,084	6,881	-	38,682	(20,623)	
Elkhorn	15,558	55,111	380,933	451,603	-	451,603	16,033	95,369	192,253	-	303,655	147,949	
Lower Platte	33,328	51,339	269,198	353,865	436,140	790,005	116,351	52,874	585,986	-	755,211	34,796	
Total Lower Platte				1,399,863							1,609,760		
				BWS%	accounting for rounding in master spreadsheet and Beaver Creek not in Lower Platte						total	228,547	10%
			Loup	0.4134	0.44								
			Beaver Creek	0.0113	0.02						Loup Plus Beaver	105,131	10,513
			Elkhorn	0.3226	0.32						Elkhorn	73,135	7,313
			Lower Platte	0.2528	0.22						Lower Platte	50,280	5,028

Appendix B –
Second Increment Goals, Objectives, and Action Items

2.0 Goals and Objectives

The Coalition Board initially developed draft Goals and Objectives for the Plan in April, 2013. These goals and objectives were refined and finalized through the collaborative planning process. The three final goals that were developed include:

1. Develop and maintain a water supply and use inventory based on the best available data and analysis.

2. Implement a water management plan for the Basin that maintains a balance between current and future water supplies and demands.

3. Develop and implement water use policies and practices that contribute to the protection of existing surface and groundwater uses while allowing for future water development.

These goals, as well as objectives for each, are presented in detail in Table 2.1. Specific action Items to support these goals and objectives are presented in Section 3.0.

TABLE 2.1. GOALS AND OBJECTIVES

Goal 1. Develop and maintain a water supply and use inventory based on the best available data and analysis.	
OBJECTIVES OF GOAL 1	1. **Develop a comprehensive inventory of the location and source of the Basin's current and future water supplies, water uses and outflows. Maintain and update on a schedule that is coincident with the 5-year update of the INSIGHT database.**
	1.1 Develop a better understanding of basinwide inflows/outflows to enable development of a more comprehensive water inventory.
	1.2 Project changes to water inventory due to changes in urban and rural population and land use.
	1.3 Evaluate potential effects on water inventory of coordination, innovation and technology.
	1.4 Refine the extent of hydrologically connected ground and surface waters in the Lower Platte River Basin.
	1.5 Evaluate variations in water inventory due to climate cycles.
	2. **Monitor current and future water demands in the Basin. Provide report at the annual Basin meeting that will be used for NeDNR's FAB analysis.**
Goal 2. Implement a water management plan for the Lower Platte River Basin that maintains a balance between current and future water supplies and demands.	
OBJECTIVES OF GOAL 2	1. **Collaborate with state and local governments to identify a minimum of three (3) opportunities to augment water supplies within the Lower Platte River Basin and, if necessary, identify opportunities to supplement with imported water from outside the Lower Platte River Basin.**
	2. **Monitor the instream flow needs in the Lower Platte River Basin to foster an understanding of the existing appropriation priorities and locations, and provide a basis for evaluating impacts of existing and future uses. Provide report at the annual Basin meeting that will be used for NeDNR's FAB analysis.**
	3. **Evaluate options for Basin water banking methodologies.**
	4. **Evaluate impacts of new development during drought conditions.**
Goal 3. Develop and implement water use policies and practices that contribute to the protection of existing surface and groundwater uses while allowing for future water development.	
OBJECTIVES OF GOAL 3	1. **Identify available water storage opportunities throughout the Lower Platte River Basin.**
	2. **Evaluate, understand, and develop policies to address impacts on stream flows of uses outside of management control.**
	3. **Expand public education programs on general awareness of water supplies and to encourage water conservation measures. Provide annual reporting and press release that includes, at a minimum, activities from previous year, supporting data, education statements and on-going work.**

3.0 Action Items

Action items to support implementation of the plan were developed through collaboration with Coalition members. The action items are tasks directly linked to the specific objectives, and ultimately the overarching goals they help to accomplish.

GOAL 1: Develop and maintain a water supply and use inventory based on the best available data and analysis.

OBJECTIVES

1. Develop and maintain a comprehensive inventory of the location and source of the Basin's current and future water supplies, water uses and outflows.

1.1 Develop a better understanding of basinwide inflows/outflows to enable development of a more comprehensive water inventory.

ACTION ITEMS

A. Compile a tabular summary of basinwide inflows and outflows using existing gage measurements where available, and estimates or calculated components where unavailable.

B. Evaluate and prioritize estimated components based on uncertainty and relative impact of water inventory.

C. Identify locations where additional gaging data or further study/modeling would reduce uncertainty in the basinwide water inventory.

1.2 Project changes to water inventory due to changes in urban and rural population and land use.

ACTION ITEMS

A. Develop projected municipal and industrial growth estimates, incorporating current city growth plans if available.

B. Develop projected agricultural land use trends to estimate future change in inventory.

C. Utilize existing tools to evaluate the impacts on water inventory due to changes in both urban and rural land use scenarios.

1.3 Evaluate potential effects on water inventory of coordination, innovation and technology.

ACTION ITEMS

A. Evaluate impacts of soil and water conservation practices on the water inventory.

B. Review scientific studies that quantify consumptive water use reductions that result from applying water saving conservation practices.

C. Evaluate potential new supply due to new or improved technology (deep aquifer recover, horizontal wells, etc.).

1.4 Refine the extent of hydrologically connected ground and surface waters in the Lower Platte River Basin.

ACTION ITEMS

A. Utilize best available data and tools to develop refined extents of the hydrologically connected ground and surface waters in the Lower Platte River Basin.

1.5 Evaluate variations in water inventory due to climate cycles.

ACTION ITEMS

A. Work with other state and federal agencies to develop a baseline climate scenario as well as a set of projected climate scenarios.

B. Utilize available tools to test and evaluate resiliency of water inventory under baseline and projected climate scenarios. Evaluation to consider delta between baseline and projected climate scenarios and consider both elements of use and supply.

2. Monitor current and future water demands in the Basin.

ACTION ITEMS

A. Develop a standard data collection and reporting system for all NRDs in Lower Platte River Basin for documenting water uses in Basin.

B. Identify significant unmeasured demands and develop and maintain a standard methodology for estimating. Unmeasured demands may include unmetered groundwater irrigation pumping, livestock use, riparian ET, unmeasured municipal and industrial use, environmental remediation.

GOAL 2: Implement a water management plan for the Lower Platte River Basin that maintains a balance between current and future water supplies and demands.

OBJECTIVES

1. Collaborate with state and local governments to identify opportunities to augment water supplies within the Lower Platte River Basin and, if necessary, identify opportunities to supplement with imported water from outside the Lower Platte River Basin.

ACTION ITEMS

- A. Utilize information from the water inventory to determine need, quantities, and locations of water shortages to define water augmentation needs and goals of augmentation projects.
- B. Identify potential excess surface water sources within the basin and determine locations, timing, quantities, and reliability of excess surface water sources.
- C. Identify potential groundwater sources within the basin and determine locations, timing, quantities, and reliability of groundwater sources.
- D. Based on potential supplies and goals, identify potential partners, develop and prioritize augmentation plans.
- E. Identify potential partners and collaborate to develop opportunities for imported water supplies, as necessary.

2. Monitor the instream flow needs in the Lower Platte River Basin to foster an understanding of the existing appropriation priorities and locations, and provide a basis for evaluating impacts of existing and future uses.

ACTION ITEMS

- A. Assess USGS and NeDNR gage flows as well as NeDNR administrative records and actions to identify change of use or location of existing appropriations, new appropriation applications, and priority calls within the basin.

3. Evaluate options for Basin water banking methodologies.

ACTION ITEMS

- A. Identify potential water banking methods that have applicability in the Lower Platte River Basin relative to current physical, administrative, legal and legislative framework.
- B. Establish uniform and consistent accounting methodology (depletions, offsets, etc.) for use in developing and maintaining a water bank.
- C. Develop an administrative framework (agreements, rules, etc.) for establishing a water bank in the Lower Platte River Basin.

4. Evaluate impacts of new development during drought condition.

ACTION ITEMS

- A. Evaluate the balance of water supplies and uses during droughts and the potential impacts of new uses on this balance.
- B. Evaluate the hydrologic impacts of drought planning activities in the basin (NRD drought plans and mitigation strategies and other plans).
- C. Evaluate the hydrologic impacts of surface water administration activities through examination of closing notices issued by NeDNR.
- D. Evaluate other management tools that may be available to mitigate impacts from new water uses during droughts.

GOAL 3: Develop and implement water use policies and practices that contribute to the protection of existing surface and groundwater uses while allowing for future water development.

OBJECTIVES

1. Identify available water storage opportunities throughout the Lower Platte River Basin.

ACTION ITEMS

A. Inventory past project studies (US Bureau of Reclamation, US Army Corps of Engineers, Natural Resource Conservation Service, individual NRDs) to assess if any opportunities exist to utilize those analyses, whole or in part, as potential projects for purposes of this Plan.

B. Inventory existing infrastructure to assess potential for rehabilitation/expanding/modifying physical or operational components for purposes identified in this Plan.

C. Identify potential new opportunities for water storage in consideration of proximity to available water, return flow options, physical site characteristics, etc.

2. Evaluate, understand, and develop policies to address impacts on stream flows of uses outside of management control.

ACTION ITEMS

A. Inventory and review existing studies/reports on uses outside management control (conservation measures , riparian uses, etc.) and determine impacts on water inventory.

3. Expand public education programs on general awareness of water supplies and to encourage water conservation measures .

ACTION ITEMS

A. Support and coordinate research, training, and incentive programs concerning invasive plant species in the Platte River system, and assist with information and education efforts to distribute research results.

B. Coordinate with public water systems to develop or expand educational materials and programs on water supplies, water quality, and best conservation practices.

C. Coordinate with cities, counties, and others to encourage water education and conservation.

D. Promote water use education that addresses both rural and urban water conservation efforts.

E. Support school environmental education programs focused on water.

F. Impose mandatory educational requirements designed to stabilize or reduce the incidence of groundwater depletion, or conflict between users and appropriators.

3.1 Action Items Completed During Plan Development

Several action items in support of objectives have been completed, wholly or in part, as part of the Plan development and are summarized below. Supporting documentation of these efforts can be found in the Plan appendices, as noted.

Evaluation and Application of NeDNR INSIGHT Methodology (Appendix C). Data and methodology used in the NeDNR's INSIGHT database was evaluated, modified as noted in Section 1.2, and applied to the Lower Platte River Basin as a whole, and to sub- basins where applicable. The sensitivity of water supply and use terms on the overall balance was evaluated. – Action items 1.1.11 (A) & 2.3 (B)

Development of a Basinwide Accounting Methodology (Appendix C). The NeDNR INSIGHT databases and methodology were also evaluated for appropriateness as a basin-wide accounting tool.

During the course of the project, the technical committee requested that alternative demand scenarios be investigated that are more conservative than the demands considered by the draft NeDNR methodology.[1] After considering the various demand scenarios and assessing the benefits and constraints on the individual subbasins, the management committee agreed to utilize the demand scenario that would maintain 40% of the 25-year average streamflow at Louisville (without hydropower considered) to calculate the volume of water within the Lower Platte River Basin that exceeds the long term demand.[2]

An additional variance between the INSIGHT methodology and the basin-wide accounting methodology, is the Above North Bend sub-basin was divided above and below Columbus to break out the Beaver Creek basin for inclusion in the Loup River Basin, consistent with basin topography.– Action items 1.1.1 (A) & 2.3 (B)

Summary of Existing Surface and Groundwater Controls (Appendix D). Existing ground and surface water control measures currently employed by each Coalition member, as well as control measures used in other portions of Nebraska and other states were summarized. – Supports Action Item 2.3 (C).

Data Collection Efforts (Appendix E). Existing available datasets for relevant water budget terms and on-going data collection efforts were summarized. On-going and completed study efforts within the basin were also compiled. Recommendations for additional data collection efforts were included. – Supports Action Item 1.1.1 (C).

[1] Section 2.4.5 and 3.0 of Appendix C describe these alternative demand scenarios in more detail.

[2] For reference, the draft NeDNR INSIGHT methodology considers the maximum of either the induced groundwater recharge demand or the adjusted instream flow demand in the North Bend to Louisville sub-basin. This adjusted instream flow demand corresponds to maintaining approximately 20% of the 25-year average streamflow in the Platte River at Louisville.

Evaluation of Potential Conjunctive Management and Water Banking Opportunities (Appendix F). A sampling of potential conjunctive management and water banking opportunities in the Basin were evaluated. Fundamental to this effort was development of a consistent water accounting methodology (Appendix C) for assessment, tracking, and accounting of accretions and depletions to the hydrologically connected streams and rivers within the Basin. – Supports Action Items 2.3 (A) and 3.1 (B) and 3.1 (C)

- ***Conjunctive Management Opportunities.*** Conceptual examples of several types of conjunctive management projects within the Basin were developed. These examples identified water sources, necessary infrastructure, functional operations and potential benefits of each conceptual example.
- ***Water Banking.*** Existing water banking systems and pertinent statutory and regulatory authorities available to establish a water banking system were summarized. Example water banking instruments from Nebraska and other states were identified and administrative and operational function summarized.

3.2 Plan Implementation Activities

The first increment implementation of the Plan will occur over a 5-year period. The Plan activities consist of identifying goals and objectives for implementation over the first 5-yr planning increment and include the following:

GOAL 1: DEVELOP AND MAINTAIN A WATER SUPPLY AND USE INVENTORY BASED ON THE BEST AVAILABLE DATA AND ANALYSIS.

OBJECTIVE 1: DEVELOP AND MAINTAIN A COMPREHENSIVE INVENTORY OF THE LOCATION AND SOURCE OF THE BASIN'S CURRENT AND FUTURE WATER SUPPLIES, WATER USES, AND OUTFLOWS.

During the planning effort, the NeDNR INSIGHT database was evaluated and verified at the basin and sub-basin level as an appropriate tool to quantify basin water supplies and uses. The Coalition has approved the use of the INSIGHT database and methodologies, as modified for development of this Plan, for inventorying of water supplies and uses in the basin and for basin- wide tracking and accounting of supplies and uses.

During the first planning increment, Coalition members will update the uses within the Basin as part of their annual reporting. Basinwide supplies will be updated approximately every 5 years, with the first update coincident with the end of the first planning increment.

Action items to enhance or supplement the basin-wide inventory of supplies and uses are planned during the first increment. These action items can loosely be grouped into three categories: 1) Supplemental information or refinements; 2) Forecasts and projections; and 3) Data collection efforts to fill data gaps. The individual Coalition members will implement action items.

1. **Supplemental information and refinements**
    a. Update basin-wide accounting with updated numerical modeling tools (ELM Phase III, CENEB, and Lower Platte and Missouri River Tributaries groundwater models) as they become available to refine the extent of the hydrologically connected ground and surface water in the Basin.

b. Develop and incorporate supplemental information to INSIGHT database as they become available. These include unmeasured uses such as riparian ET, unmetered M&I use, livestock use, and environmental remediation.

c. Refine the spatial extent of supplies and uses to better correspond to NRD boundaries.

2. **Forecasts and projections**

a. Project future municipal and industrial demands.

b. Project future land use and irrigation requirements, including innovations in technology.

c. Project variations in water supply and demand due to climate variability.

d. Project uses using both current depletive levels and the ultimate full consumptive use of current uses.

3. **Data collection**

To better align with NRD boundaries (and thus refine the estimate of demands and supplies within each NRD), it may be beneficial to include additional stream gage locations in the basin accounting to break the current INSIGHT sub-basins along NRD boundaries. Currently, approximations have been utilized to assign supplies and demands between multiple NRDs within a single sub-basin.

Suggestions for utilizing additional stream gage locations in the inventory and analyses or potential new stream gage locations include:

a. Existing USGS Station 0677500: Middle Loup River at Dunning, Nebraska or an additional gage on the mainstem Middle Loup above the Sargent Canal diversion to divide the Middle Loup sub-basin between the Upper Loup NRD and the Lower Loup NRD.

b. Existing USGS Station 06781600: South Loup River at Arnold, Nebraska to divide the South Loup sub-basin between the Upper Loup NRD and the Lower Loup NRD.

c. Existing USGS Station 06785500: North Loup River at Brewster, Nebraska or an additional gage on he mainstem North Loup River below this gage on the NRD boundary to divide the North Loup sub-basin between the Upper Loup NRD and the Lower Loup NRD.

d. A new gage on the Calamus River at the Upper Loup NRD/Lower Loup NRD boundary.

e. NeDNR gage Elkhorn River near Tilden better aligns with Upper Elkhorn NRD/Lower Elkhorn NRD boundary.

f. New gage at the confluence of the Platte River and Clear Creek to better match the divide between the Lower Loup NRD and the Lower Platte North NRD.

g. A new gage at the confluence of Wahoo Creek and the Platte River to better match the boundary between the Lower Platte South NRD and the Lower Platte North NRD.

h. A new gage at the confluence of the Elkhorn River and Maple Creek to better match the boundary of the Lower Elkhorn NRD and the Papio-Missouri River NRD.

i. A new gage at the confluence of the Elkhorn River and the Platte River to better isolate the reach of Elkhorn River in the Papio-Missouri River NRD.

OBJECTIVE 2: MONITOR CURRENT AND FUTURE WATER DEMANDS IN THE BASIN.

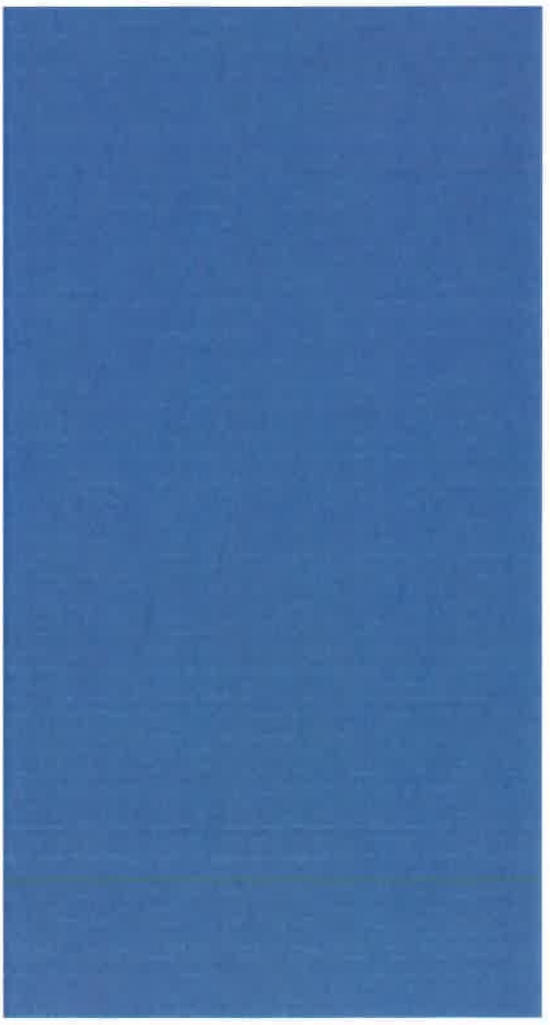
Coalition members will collaborate on consistent methods to be used in reporting annual uses. Estimates of uses will utilize the best available information and tools. Standard methodologies for estimating unmeasured uses of significance (unmetered pumping, riparian ET, livestock use, etc.) will be developed by the Coalition. This coordination of collecting and reporting uses will provide consistency within the basin as well as with INSIGHT database.

GOAL 2: IMPLEMENT A WATER MANAGEMENT PLAN FOR THE LOWER PLATTE RIVER BASIN THAT MAINTAINS A BALANCE BETWEEN CURRENT AND FUTURE WATER SUPPLIES AND DEMANDS.

OBJECTIVE 1: COLLABORATE WITH STATE AND LOCAL GOVERNMENTS TO IDENTIFY OPPORTUNITIES TO AUGMENT WATER SUPPLIES WITHIN THE LOWER PLATTE RIVER BASIN AND, IF NECESSARY, IDENTIFY OPPORTUNITIES TO SUPPLEMENT WITH IMPORTED WATER FROM OUTSIDE THE LOWER PLATTE RIVER BASIN.

During the planning effort, extensive evaluation of the balance of supplies and uses at the basin and sub-basin level were completed, primarily focused on surface water supplies. These evaluations identified timing, location, and relative frequency of surpluses and deficits in streamflow. The results generally indicate that shortages are likely to occur during the peak season (June, July, and August) and are amplified during drought conditions within the basin. Surpluses are likely to occur during the non-peak season and occasionally during the peak season during normal or wetter than normal conditions. Several types of conjunctive management projects aimed at retiming flows (from times of surplus to times of deficit) were identified throughout the basin and potential water supply benefits of each identified.

During the first increment, Coalition members will continue to investigate and pursue conjunctive management opportunities and potential partners to augment streamflows during times of shortage, with the intent of implementing at least one conjunctive management project in each of the three primary river basins.



OBJECTIVE 2: MONITOR THE INSTREAM FLOW NEEDS IN THE LOWER PLATTE RIVER BASIN TO FOSTER AN UNDERSTANDING OF THE EXISTING APPROPRIATION PRIORITIES AND LOCATIONS, AND PROVIDE A BASIS FOR EVALUATING IMPACTS OF EXISTING AND FUTURE USES.

As part of the annual meeting reporting, NeDNR will report changes to existing surface water appropriations or new appropriation applications. In addition, NeDNR will summarize a report on the streamflow conditions throughout the basin, shortages, and administrative calls during the previous year.

OBJECTIVE 3: EVALUATE OPTIONS FOR BASINWIDE WATER BANKING METHODOLOGIES.

During the planning effort, several examples of water banking instruments currently in operation in Nebraska and throughout the western United States were summarized with respect to administration, operation, and function. In addition, pertinent legislation and authorities from State statutes related to the formation of water banks in Nebraska were summarized. Finally, a basinwide accounting tool based on the NeDNR INSIGHT database was developed. This accounting system is needed to be able to fairly and consistently track water supplies and uses within the Coalition area, and to allow for water banking or transfer actions between different NRDs. The basinwide accounting system is designed to serve as the administrative backbone for future water management actions by the Coalition, and can be adapted to account for any form of water banking and conjunctive management projects that may be chosen by individual NRDs, or groups of NRDs.

As work on the water banking efforts commenced, it quickly became apparent that Coalition managers, and other stakeholders in the basin, were strongly against a "one-size-fits-all" approach, and that the goals and priorities of individual NRDs should be respected, and emphasized, as part of the water banking efforts. The geography, hydrology, and infrastructure within each NRD are clearly different, and suggest that multiple types of water banking projects would be more effective than attempting to force a single implementation strategy on all Coalition members. In addition, areas such as the Lower Loup NRD already have water-banking operations in place, and the need in that area appears to be not for a new implementation strategy, but instead for a way to ensure that banking operations conducted by the NRD are acknowledged, and protected, into the future.

As the Coalition moves forward and begins to consider setting up a collaborative or individual water bank, two useful sources should be consulted: a water banking "guidebook"[1] developed by Dr. Bonnie Colby at the University of Arizona in 2010, and an "Analysis of Water Banks in the Western States"[2] prepared by the Washington Department of Ecology and WestWater Research in 2004. In addition, Appendix F provides "checklist" summaries of several existing water banks and the administrative, operational, and financial characteristics of each.

[1] http://ag.arizona.edu/arec/sites/cals.arizona.edu.arec/files/publications/ewsr-Banks-final-5-12-10.pdf

[2] https://fortress.wa.gov/ecy/publications/publications/0411011.pdf

OBJECTIVE 4: EVALUATE IMPACTS OF NEW DEVELOPMENT DURING DROUGHT CONDITIONS

During the planning effort, evaluations of the balance of supplies and uses have been used to establish allowable levels of development. This allowable level of development has been based on limiting the total depletive effect of new surface water and groundwater uses to 10% of the average annual basinwide excess during the peak season (June, July, August). While this approach places limits on new depletions it also allows the Coalition to manage the growth of new uses while still providing a level of protection to current uses.

The Coalition also recognizes that these protections may become limited in times of drought when water supplies may not be in balance. Therefore, the Coalition members will continue to investigate the impacts of drought and use this information to inform future planning increments. The activities that will be evaluated during the second increment include:

- The balance of water supplies and uses during droughts and the potential impacts of new uses on this balance
- The hydrologic impacts of NRD drought plans and mitigation strategies
- The hydrologic impacts of surface water administration activities through examination of closing notices issued by NeDNR
- The hydrologic impacts of other drought planning activities in the basin
- Other management tools that may be available to mitigate impacts from new water uses during droughts

Evaluation of these activities will be used to inform subsequent increments of the plan and establish allowable depletion limits that work in conjunction with other mitigation strategies to protect existing users and mitigate the effects of drought.

GOAL 3: DEVELOP AND IMPLEMENT WATER USE POLICIES AND PRACTICES THAT CONTRIBUTE TO THE PROTECTION OF EXISTING SURFACE AND GROUNDWATER USES WHILE ALLOWING FOR FUTURE WATER DEVELOPMENT.

OBJECTIVE 1: IDENTIFY AVAILABLE WATER STORAGE OPPORTUNITIES THROUGHOUT THE LOWER PLATTE RIVER BASIN.

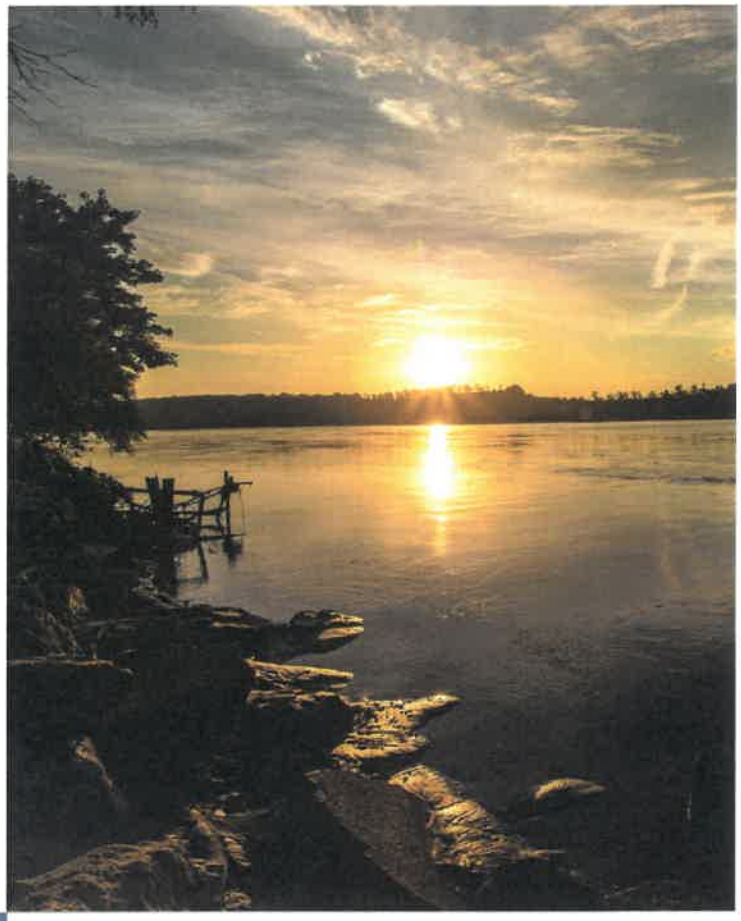
Previous planning efforts undertaken by the member NRDs, USACE, USBR, and NRCS had identified sites throughout the basin including Sherman Reservoir in the Loup Basin, Battle Creek in the Elkhorn Basin, and Skull Creek Reservoir in the Lower Platte Sub-basin. During the planning effort, water storage opportunities in each of the three primary basins were investigated and the most feasibly opportunities identified. These opportunities include new structures as well as the re-purposing of storage within existing structures. Available water for storage and operational characteristics were identified, and ultimately the impacts on streamflows were estimated. During the first increment, Coalition members will continue to investigate and pursue new storage as a conjunctive management opportunity to augment (both active and passive management) water supplies during times of shortage.

OBJECTIVE 2: EVALUATE, UNDERSTAND, AND DEVELOP POLICIES TO ADDRESS IMPACTS ON STREAM FLOW OUTSIDE OF MANAGEMENT CONTROL.

During the first increment, Coalition members will conduct a literature review of previous studies that estimate or quantify the impacts of significant uses outside of Coalition member jurisdictional control, including riparian uses and the effects of conservation measures. Using the findings of this literature review, Coalition members will apply the results in a consistent manner across the Basin to estimate impacts on the basin water inventory.

OBJECTIVE 3: EXPAND PUBLIC EDUCATION PROGRAMS ON GENERAL AWARENESS OF WATER SUPPLIES AND TO ENCOURAGE WATER CONSERVATION MEASURES.

During the first increment, the individual Coalition members will coordinate with public water systems, cities, counties, and others as appropriate to develop outreach and education materials that focus on water supply, water quality, and water conservation practices. The Coalition members will also coordinate with others, such as the Invasive Species Task Force, to support and coordinate research and incorporate results of the research into the outreach and education materials.



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