

SPNRD Stakeholder Meeting #4 Minutes

Project: 2nd Increment Stakeholder Process for South Platte NRD Integrated Management Plan (IMP)

Subject: Stakeholder Meeting #4

Date: Wednesday, February 27, 2019, from 1:00 p.m. – 4:00 p.m. MST

Location: Western Nebraska Community College, Sidney, NE

I. Welcome

- a. Stephanie White, HDR, opened the meeting at 1:00 p.m. MST. She noted everyone should have a copy of the agenda (Attachment A), the PowerPoint slides (Attachment B), and the draft integrated management plan (IMP) (Attachment C) and suggested the Stakeholders follow it throughout the meeting.

II. Administration

- a. Stephanie stated this is an open meeting, notice of the meeting was published (Attachment D), and a copy of the Open Meetings Act is present.
- b. Attendance sheet is attached to these minutes (Attachment E).

III. November meeting recap

- a. Stephanie reminded the group of the discussion at the last meeting. Stephanie introduced Jessie Strom, NeDNR and Jennifer Schellpeper, NeDNR.
- b. Jennifer, Nebraska Department of Natural Resources (NeDNR), further introduced Jessie and the NeDNR team in attendance. She noted that no part of the plan can be read alone and should be read as a whole. She noted the plan is a draft version, not final, and today we are looking for input on the concepts of this plan and eventually vote on the concepts make sense, realizing there are still editorial changes to be made and changes based on the feedback heard today.

IV. Review Draft Integrated Management Plan (IMP)

- a. Jessie, NeDNR, discussed the IMP's table of contents and noted the structure of the plan has changed from the first increment, and she will try to point out the new things added.

The effective date will be added once the plan is adopted. Chapter 2 references the statutory authority that the SPNRD and Department have to develop and implement this plan.

Background information is in Chapter 3, which reports the administrative and legal history of the basin and the South Platte Natural Resources District (SPNRD). Next is a section about the process used to develop the first increment plan and its implementation. Included is information on the Robust Review. Then a description of the second increment IMP process, which is what the stakeholders, SPNRD and NeDNR are currently developing.

Chapter 4 contains a required map and management area boundaries, shown on the PowerPoint (refer to Attachment B). First is the overappropriated area and the fully appropriated boundary, which is the entire NRD. The controls and information, goals and objectives in the IMP apply to the entire District – not separated out between the overappropriated and fully appropriated areas.

Chapter 5 is the vision statement, which gives an overview of the intent.

Chapter 6 is about the funding. The SPNRD and NeDNR will use available funds and pursue new funding. An overview of the various funding sources that are available and discuss what the funding priorities are.

Chapter 7 is the science and methods section. This chapter outlines the best available science, tools, and models that were used in the implementation of the first increment IMP. Information on the original COHYST model and the split into the Western Water Use Management Model (WWUMM) and the COHYST 2010 model. Section 7.2 is about the science, methods, and data we are going to use in ongoing increments – this increment and future. Outlined are nine basin-wide tenets, which are new in this plan. Section 7.3 lists the information considered in development of the IMP.

Question: Stakeholder noted concern about second increment BWP, INSIGHT, and Robust Review reports not being available and asked when they would be available for review.

Jessie: All data has been presented at previous meetings and none of the numbers will change. The final reports will be completed and made available prior to the public hearing, so everyone will have time to review. They will be made available sometime in June, at least thirty days prior to the July hearings.

Stakeholder: Voiced concern about approving the plan without seeing the data.

Stakeholder: Stated similar concern about wanting to see the final reports and the tools used before being okay with the IMP.

Jessie: Stated drafts of the reports are going through final internal review and NeDNR should be able to get them out shortly.

Jennifer: We are looking for agreement on the concepts of the plan – understanding that you don't have all the background information available to you right now.

Stakeholder: This has been a repeat of the BWP; we had six months of meetings wanting answers with no information.

Stephanie: We have been having this conversation for a long time, but the difference today, is that we have the data and that won't change.

Stakeholder: Reiterated that the data underlying data within the reports is important.

Question: The Robust Review is on data from 2013. Is there any way you can do the Robust Review one year before these meetings, so the data isn't six years old – it's only one year old?

Jessie: We will cover that. That's outlined in the monitoring section of the plan.

Stephanie: I'll take a note about the timeliness of the analysis.

Stakeholder: Voiced concern that there is no definition for fully appropriated.

Stephanie: Are we working on a definition of fully appropriated? In the BWP?

Jennifer: We are working on it. That is part of the analyses we will work on during the second increment. For this second increment, what we're getting to is defined in the BWP which is maintaining the offsets and progress we've accomplished in the first increment.

Stephanie: I have that noted. Are there any other comments?

- b. **Jessie:** Section 8 is about first increment accomplishments. 8.1 is an outline about studies conducted in the first increment, information and data obtained, and what we learned from the research done in the first increment. Assessment of available water, conservation measure studies, conjunctive management study, inventory of sandpits

and small reservoirs, Lodgepole Creek flow evaluation. Section 8.2 discusses the management actions taken in the first increment including formal moratorium on new surface water uses, the conjunctive management projects done, the actions the SPNRD took with requiring meters, requiring certification of uses and large user permits, etc. Section 8.3 is about our assessment of the first increment including the Robust Review analysis.

Stakeholder: It is very important we are looking at offsets matching depletions in timing and location. The assessment of the first Robust Review provides annual numbers – it is important that we’re not only offsetting the annual depletions with annual accretions, but also evaluating those depletions and accretions on their seasonal distribution, so you’re not replacing a summertime depletion with a winter time offset or vice versa – those won’t impact and benefit the same.

Stakeholder: Suggested looking at location and timing of the offsets rather than just the river as a whole. Supported seeing additional locations and seasonality in the future.

Jessie: Yes, that is something we can add, and the results do come in monthly timescales. Another thing stated throughout the plan is that depletions need to be offset in time and location, while that is not broken down in the plan document, we do that in our modeling analyses and as we are evaluating projects.

- c. **Jessie:** Looking at the Robust Review Results, Figure 4 displays the impacts of management activities in the SPNRD has on the North Platte River. In the Robust Review analysis, we’re looking at changes in groundwater-only irrigated acres since 1997 and municipal and industrial water use changes along with the impacts of management actions such as conjunctive management actions. Those were analyzed up through 2013. Figure 4 is confusing the way it is right now – there is a big chart with a lot of white area with a smaller chart inside of it. They show the same data – the small chart shows it at a more zoomed in scale to see the variability through time. We’re looking at results from 2014 – 2063. The reason for the larger scale is that these were pulled out of the Robust Review document, so we were able to compare across NRDs. In addition to the chart of impacts to the North Platte River, are charts for the South Platte River impacts and the Lodgepole Creek impacts. There is a lot of variability in the model results, primarily due to the climate inputs used for the future projections. There is a trendline that has been added through the model results that represents the average values and grey bands surrounding the modeled results show the variability from year to year. At the end of the Robust Review section we state that we recognize that we analyzed activities beginning in 1997 through 2013 and when we consider activities that have happened after that, these charts will change, but this is what we have right now.

Stakeholder: For consistency, why don't you use the same scale on the charts?

NeDNR: The large scale is the same, but the smaller ones are zoomed in so you can see the variability.

Stephanie: Noted a request for general consistency throughout the plan with regard to scale.

Section 8.4 is about the assessment of a fully appropriated (FA) condition. We outline the different analyses we've done that have helped to narrow in on what fully appropriated really means since there's not a definition. The results of our Total Depletions analysis are shown and a chart for each of the basins. These results were presented earlier to the group and here we have a brief write up in the plan that describes the analysis that was done.

Stakeholder: Could all-depletions and total depletions be an indicator of what FA is?

Jennifer: It's a piece of the question, yes.

- d. **Jessie: Section 8.4.2** details the INSIGHT analysis, which is an analysis of basin water supplies and demands. The INSIGHT method looks at water supplies in the basin before any use, and all the demands within the basin. This is another way of looking at what fully appropriated might be and the balance point between supplies and demands. This graphic indicates the total water supply as we add in different demands, their effects on supplies in the Basin.

Stakeholder: On page 18, it says there's a 5% growth built into this. Where is this growth at on the INSIGHT model?

Jessie: The INSIGHT model numbers do not have that projected 5% growth in it for the Upper Platte Basin. The figure shows just the long-term balance, not the projected long-term demand. In the report, we have a projected long-term balance, so this is just a little bit out of context. We are working on better describing this graphic.

- e. **Jessie:** Section 8.5 is a summary about our basin-wide coordination in the first increment with the Department and the NRDs working together. We have an interlocal cooperative agreement, the Platte Basin Coalition, used as a funding vehicle and technical group, which takes care of modeling analyses and making sure we follow the basin-wide tenets.

Stakeholder: If the 5% was taken out of that chart, how close is it?

Jessie: This chart does not have the 5% in it. The figure does not show the projected long-term demand or balance, so it does not have that 5% growth in it. It is just the demand. Not just for SPNRD, this is the basin-wide figure.

Stakeholder: You might want to think about taking out this entire graphic then. What you're looking at is not what we're reading here.

Stephanie noted that the figure was confusing, and we would work on revising it or consider taking it out.

- f. **Jessie:** Chapter 9 details the plan's goals and objectives.

Goal 1 is to reach and maintain a fully appropriated condition. To incrementally achieve and sustain a fully appropriated condition while maintaining economic viability, social and environmental health, safety, and welfare of the basin. This is out of statute, what we have to do through this IMP. It also mirrors the BWP.

Objective 1.1 is, within this increment, to offset all post-97 depletions, meaning any impacts that have happened from uses initiated after 1997. SPNRD has already achieved that objective and we state that here in the plan that this was part of the goals of the previous IMP and we've achieved that.

Objective 1.2 is, within this second increment, to maintain progress made in the first increment. There are tables for each of the three basins of short-term targets for each year 2019-2029 and long-term targets for the period 2059-2063. These are the accretions that need to be maintained. These targets for the second increment are based on the trendline of current robust review model results, which are shown on the graphs in the robust review section of the IMP.

Question: In the long-term for the South Platte River requirements would go down, but Lodgepole Creek would go up?

Jessie: Yes, that is the way the modeling numbers came out. In Lodgepole Creek, we're seeing activities that will have a longer positive impact, as the impacts reach the stream, whereas in the South Platte River there might be some accretions that will be dropping off – those impacts change over time depending on when things reach the stream. Overall, we have this positive balance to maintain, as post-97 depletions have been offset, so maintain that positive impact and in the next increment, we'll start making more progress toward fully appropriated.

Objective 1.3 is to make progress toward a fully appropriated condition. If we do exceed our accretions in this table – that’s getting us toward a fully appropriated condition, but main focus for this increment is to maintain where we’re at.

Objective 1.4 is to review the implementation of the plan to make sure it’s adequate to sustain progress we’re making and help the SPNRD get to a fully appropriated condition.

Objective 1.5: If we reach a fully appropriated condition, we need to maintain that through the IMP.

Goal 2 is about interstate compliance. Making sure the state complies with the Platte River Recovery and Implementation Plan (PRRIP) through the Nebraska New Depletions Plan (NNDP).

Objective 2.1 is to ensure no act or omission by the SPNRD (we will add ‘and the Department’ here) would cause noncompliance by Nebraska with the NNDP included within PRRIP, for as long as PRRIP exists.

Objectives 2.2-2.4 are to make sure we’re offsetting any new uses, and that we’ve offset post-1997 depletions.

Goal 3: is regarding consistency and updates. Keeping the IMP current, maintaining consistency with the BWP, and keeping water users informed.

Objective 3.1 is to amend the IMP as necessary, if there are changes to the BWP

Objective 3.2 is to participate in BWP activities

Objective 3.3 is to improve information sharing with interested parties.

Objective 3.4 is to conduct planning for a subsequent increment if necessary

Objective 3.5 is if appropriate and necessary, follow the dispute resolution process in the BWP.

- g. **Jennifer:** Pointed out there has been some discussion in this stakeholder group about communication and coordination with the State of Wyoming to make sure we’re up to date and staying on top of what they’re doing with water management and how that impacts downstream here. That could be worked into another Goal 3 Objective or in the action items in the next chapter.

Jessie: Chapter 10 includes the action items. The first part includes information and education programs and development of potential future programs. 10.3 is about establishing a water bank to keep track of non-use of water. 10.4 is about conjunctive management. 10.5 is about the drought plan and consists of an outline of the elements that the plan will include, and it will be developed to be consistent with the basin-wide

drought plan. There was lots of discussion on this at the last meeting. The feedback will be included in the language of this plan and will continue to be used as we move forward with the drought planning process.

Stakeholder: Suggested some language acknowledging that you might consult with stakeholders in the development of the drought plan.

- h. **Jessie:** Section 10.6 is about regulatory actions. First, groundwater regulatory actions are the same as the first increment except for the municipal and industrial accounting, due to a statute that changes the 2026 and beyond accounting requirements. Section 10.6.2 is about the triggers and target numbers that will be tracked to ensure we are still making progress or maintaining those numbers.

Stakeholder: Suggested it would be valuable for those checks on meeting triggers to not just be the annual, but the seasonal distributions.

Question: Here it says if the objectives aren't met, you can enforce alternative crop mix. Who's going to make the farmer plant something else? Who's going to buy the equipment to do other crops?

Jessie: That would be determined by the NRD with consultation with the Department. Not sure how that process would be carried out.

Jessie: Clarified that this is only if those triggers aren't met and this is an option that has to be listed as a potential control. There would be an opportunity for public input and there would be a change to the IMP if there was consideration to initiate that control.

Stakeholder: Since this is a draft, can we just remove that?

Ryan Reisdorff, Water Resources Specialist, SPNRD: We basically just listed the three options from statute.

Jessie: Removing this control as an option would require a statute change, so it is not us who would change it.

Ryan Reisdorff: If we don't meet our triggers and we're not maintaining, these are the three options that could be forced upon us going forward. Allocations, reduction in acres, or alternative crop mix. If we do get to that point, which we hope we never do, then we'd have meetings and figure out which way to go. If we delete it, we would be taking a tool out of the toolbox that we might need down the road. It was in the last IMP.

Stakeholder: Could we re-word it to make it clearer to explain that process?

Stephanie: I will note the discussion on section 10.6.2.

- i. **Jessie:** We have a schedule for when we will be conducting the next Robust Reviews with a flowchart in Section 10.6.2. A Robust Review analysis will be run in 2023, and again in 2027 to check the targets.

10.6.3 is our surface water regulatory actions. New section (H) gives a summary of the variance process, application process, transfer process, and considerations if the Department would receive an application for a new surface water right. Section 10.7 is about monitoring. 10.7.2 is about our reporting. We will write a report annually that contains the things we're tracking, also a simple analysis to see if any of the permits or actions the impact they've had on stream flows, which would not be considered a full model run analysis. Those reports are exchanged at the annual basin-wide meeting. 10.7.3 is about the evaluation and how are we going to use those tools, data, and models that we have to check where we're at in terms of meeting our target. This includes the simple annual review, the Robust Review, and explanation of the different model runs, and data considered in the Robust Review. In 10.7.3.4 there is information about the allocations analysis done by the NRD. Allocations are not part of the IMP, but the impact does affect the streams, so we take that into account. 10.7.4 is about measuring the success of reaching a fully appropriated condition. 10.7.5 is about measuring the success of maintaining a fully appropriated condition. 10.7.6 is about evaluating the need for a subsequent increment.

- j. **Jessie:** Section 10.8 is about studies for the current increment. We have priority studies outlined from the BWP. To collect data on comingled acres, to collect more information on drought, also a study to look at the potential for water markets and water transfers, studies about how to optimize water storage in reservoirs and in the aquifer. 10.8.2 is some potential studies. 10.9 is about the review and modifications of the IMP and the process we will go through if the IMP needs to be modified. We outline the process we would go through if there are any basin-wide disputes. Also, included is a brief outline of the process we will use if we decide we need an additional ten-year increment.

Stakeholder: Suggested there be similar language about creating a stakeholder group in 10.9.1 or 10.9.2 to what is later regarding the BWP.

- k. Jessie called for stakeholder questions:

Question: On the first page, it states the SPNRD was fully appropriated in 2004, is that true?

Jennifer: It means that the NRD has overappropriated and fully appropriated areas in the NRD.

l. Stephanie discussed what happens going forward from this point and referred to a slide in the PowerPoint. In June, the SPNRD board will meet for their initial agreement of the draft BWP as well as the draft IMP to take to hearing. On July 17th, there will be public hearings to take testimony, for either document. On August 6th, the board will meet again for final agreement to adopt the IMP and its adoption of the BWP as well.

m. Stephanie's notes and stakeholder discussion:

- **Concern regarding available reports – conservation studies, BWP, Robust Review, background data for WWUM**

- **Stephanie:** Final reports will be published mid-June and there will be time to consider them before the next step of this process.
- **Stakeholder:** Our meeting is June 11th, so will we get it before mid-June?
- **Jennifer:** If we can finalize the BWP at our meeting in April, it can go to the board member's after that April PBC meeting (April 10th), as well as the Robust Review Report. The Total Depletions Report is a little further behind. It depends on how many comments we get back.
- **Jessie:** We should be able to wrap up the INSIGHT Analysis Report before then.
- **Stakeholder:** Noted the people in the District need access to the final reports.
- **Stephanie:** Reminded that the data and results included in this draft won't change.
- **Stakeholder:** If we feel there wasn't enough time to review, do we have to stick to this deadline or can we extend this?
- **Jennifer:** There's a statutory deadline with the ten years, so given the way the board schedules are with meetings, the schedule you see up here on the PowerPoint is what we need to stick to. Questions and comments can be brought to the hearing as well. We are planning to have informational sessions before the hearings – planning for thirty-minute sessions immediately preceding the hearing.

- **2013 data may no longer be relevant in this District and the request for current numbers for relevance**

- **Stephanie:** That is built into the plans moving forward, but it is not data that we have right now, and it can't be part of the IMP today

- **Jessie:** Yes, the first increment's required Robust Review covers activities through 2013, but we've been doing our non-modeling analysis to check in that the projects we're doing, and other actions are keeping us going in the way we need to be going, and that information is available in the annual basin-wide reports.
 - **The definition of fully appropriated**
 - **Stephanie:** Working on that continuously, but that is not something that will be defined for this IMP and we're working on it for the BWP.
 - **About exploring time and location and seasonality**
 - **Stephanie:** Noted that it should be part of the 2023 Robust Review process
 - **Question about the INSIGHT graphic and the need for the explanation to be clarified or removed**
 - **Stephanie:** That is possible and will be accomplished for this IMP
 - **To add 'and the Department' to the language in Goal 2**
 - **Stephanie:** This will be accomplished in this IMP
 - **Add increased coordination with Wyoming**
 - **Stephanie:** That was an oversight and will be added as well
 - **Inclusion of stakeholders in the drought planning process**
 - **Stephanie:** That will be added
 - **More clarity in the write-up in 10.6.2.3**
 - **Stephanie:** We will make that write-up clearer about where that language came from and the history of it in the first IMP as well
 - **General formatting, labeling, cleaning up**
 - **Stephanie:** That will be addressed
 - **Consistency in table scales, clarify, and reformatting**
 - **Stephanie:** That will be taken care of and we have noted the confusion.
 - **10.9.1 and 10.9.2 acknowledgement for stakeholder involvement regarding any substantive changes to the IMP**
 - No objections
- n. Stephanie called for Stakeholder comments:
- **Stakeholder:** Noted that his location in the District mirrors the TPNRD more than the SPNRD and discussed petitioning putting this area into the TPNRD. Wants to talk with some people about this.
 - **Stephanie:** Reminded the group that they are agreeing to the concepts and making sure the concepts are appropriate for the board to manage the District as it is right now. There are only two big differences: 1) they have written in some objective language to increase the measurement and the data collected, and 2) greater education and information for stakeholders. The plan is the same otherwise.

- **Jessie:** The SPNRD has required measuring and in TPNRD they don't yet, but they are moving toward that.
 - **Rod:** I can understand your concern, but we are looking at the three watersheds. The monitoring, evaluation, we've met the post-97 goals, we've mitigated that, so it's showing accretions, which is to the benefit of the water users and producers in those areas. Right now, we're meeting those post-97 depletions and we're showing accretions.
 - **Stakeholder:** Question about the drought plan. When the BWP is adopted, does the drought mitigation plan get adopted with that or are they separate?
 - **Stephanie:** There will be individual drought plans for each District, and there will be a drought plan for the basin. They won't be the exact same things.
 - **Jennifer:** Yes, and there isn't one yet, the BWP just calls for the development of one.
- o. Stephanie called for Stakeholder vote (thumbs up: I approve all concepts in the plan; thumbs sideways: I approve concepts, but uneasy about a few things; thumbs down: I do not agree with these concepts and we need to spend more time on it):
- Thumbs up: 13
 - Thumbs sideways: 7
 - Thumbs down: 1
 - Stakeholder explanation for thumbs down vote: The data used for the reports is six years old.
- p. **Stephanie:** If the group does not reach consensus, the state and District will work on a resolution for the plan, and at this point it won't come back to the stakeholders for review.
- Stakeholder changed thumbs down vote to thumbs sideways – okay with the concepts, but not okay with underlying data.
 - **Final vote to agree on the concepts contained in the draft SPNRD IMP:**
 - Thumbs up: 13
 - Thumbs sideways: 8
 - Thumbs down: 0
 - **Rod:** The NRD is fine with that but would like to consider what the board thinks.
 - **SPNRD Board Member:** Yes, but I do want to see the information as soon as possible.
 - **Stakeholder:** My understanding is, the stakeholder votes are not supposed to include the directors of the NRD, I think you took votes from directors as well.
 - **Stephanie:** For this stakeholder group, the directors are full participators and have votes for this group.

- q. **Rod:** Thanked stakeholders for participation and welcomed questions and feedback in the future. Thanked NeDNR for their work in this process.

 - r. **Jennifer:** Thanked the Stakeholders for their involvement in the process.
- V. **Public comment:** No public comment.
- VI. **Meeting adjourned:** 2:55 p.m. MST
- VII. **Attachments:**
- **Attachment A - Agenda**
 - **Attachment B- Copies of all presentations**
 - **Attachment C- Draft IMP**
 - **Attachment D- Affidavit of Publication of Notice of Meeting**
 - **Attachment E – Copy of attendance sheet**



Agenda

Project: 2nd Increment Stakeholder Process for South Platte NRD Integrated Management Plan (IMP)

Subject: Stakeholder Meeting #4

Date: Wednesday, February 27, 2019 from 1:00 p.m. – 4:00 p.m.

Location: Western Nebraska Community College, Sidney, NE

Topics:

1. Welcome
2. Administration
 - a. November meeting recap
3. Review Draft Integrated Management Plan (IMP)
4. Public Comment



SPNRD IMP

Meeting 4

February 27, 2019

TODAY'S AGENDA

1. Welcome
2. Administration
 - a. November Meeting Recap
3. Review of Draft Integrated Management Plan (IMP)
4. Public Comment

WELCOME

- Open Meeting Notice
- Safety & Logistics



ADMINISTRATION

November Meeting Recap

November Meeting Recap

- Adjacent States Issue
- Overview of Basin-Wide Plan
 - Total Depletions
- 2nd Increment Discussion
 - Municipal and Industrial
 - Drought Mitigation Plan



REVIEW OF DRAFT IMP

Integrated Management Plan (Draft)

1. EFFECTIVE DATE
2. AUTHORITY
3. BACKGROUND
4. MAPS AND MANAGEMENT AREA BOUNDARIES

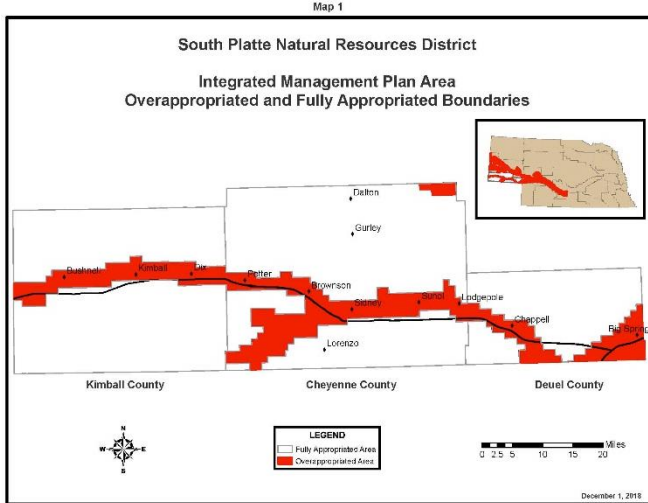


Figure 1

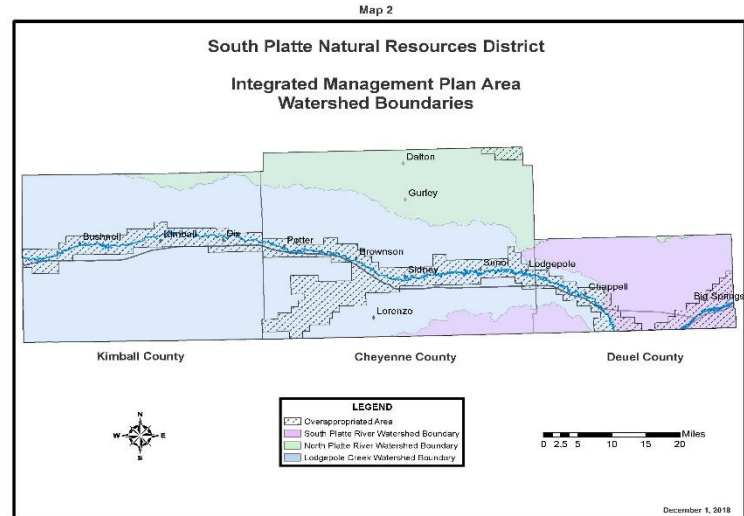


Figure 2

Integrated Management Plan (Draft)

5. VISION STATEMENT

The overarching vision of this IMP, is to work together for the greater good of all citizens of the District to cooperatively develop and implement a local Integrated Surface Water/Ground Water Plan that has an acceptable degree of certainty of 1) maintaining a sufficient water supply for use by present and future generations, 2) maintaining, enhancing and protecting the region's agricultural economy and the viability of its cities and villages and 3) promoting the growth of economic activities while seeking to avoid adverse impacts on the environment.

Integrated Management Plan (Draft)

6. FUNDING

7. SCIENCE AND METHODS

7.1 Best Available Science, Methods, Data, and Tools to be Used in the First Increment

7.2 Best Available Science, Methods, Data, and Tools to be Used in the Ongoing Increments

7.3 Information Considered in Developing this IMP

Integrated Management Plan (Draft)

8. FIRST INCREMENT ACCOMPLISHMENTS

- 8.1 Studies Conducted and Information Obtained in First Increment
- 8.2 Summary of Management Actions Taken in the First Increment
- 8.3 Assessment of First Increment (Robust Review)

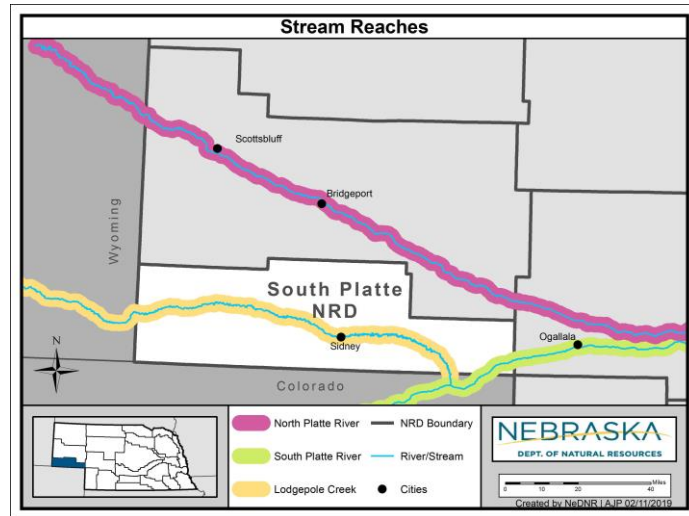


Figure 3

Linear Trend and Interannual Variability of Modeled Impacts
SPNRD to North Platte River

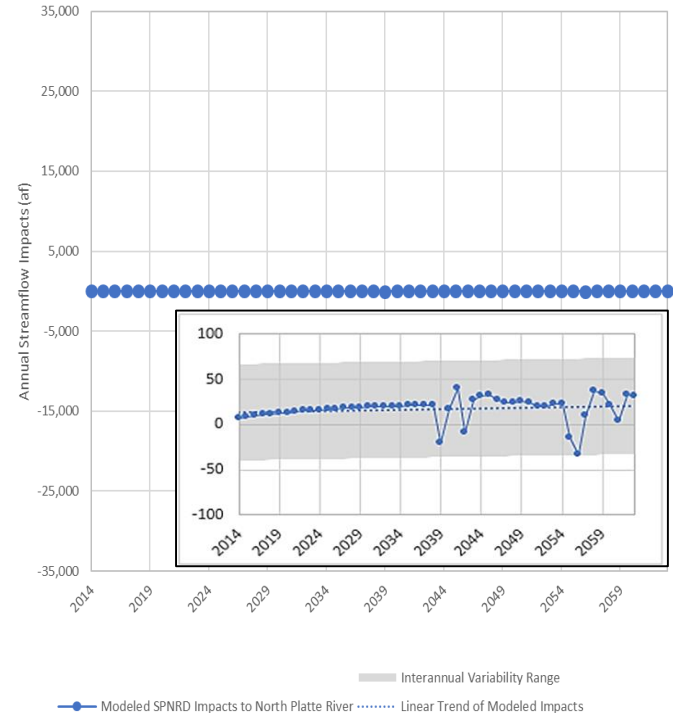


Figure 4

Integrated Management Plan (Draft)

8. FIRST INCREMENT ACCOMPLISHMENTS

8.3 Assessment of First Increment (Robust Review)

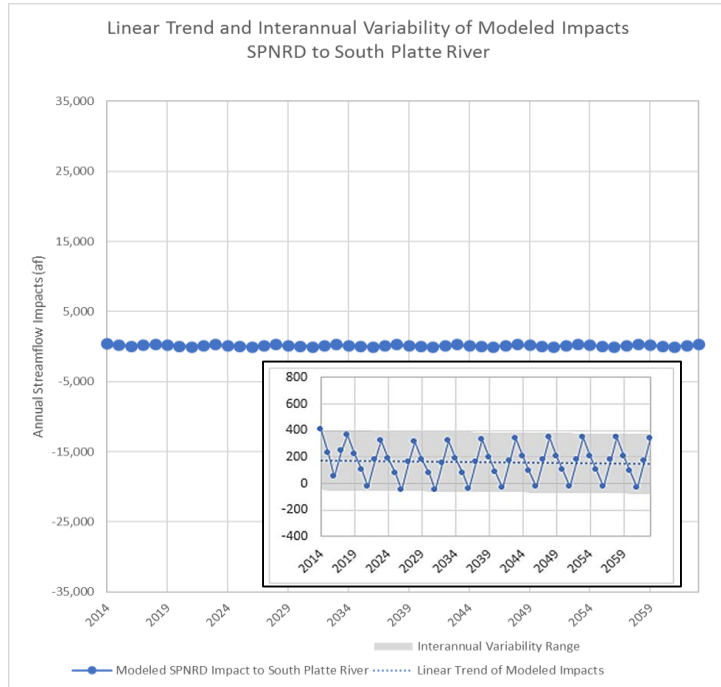


Figure 5

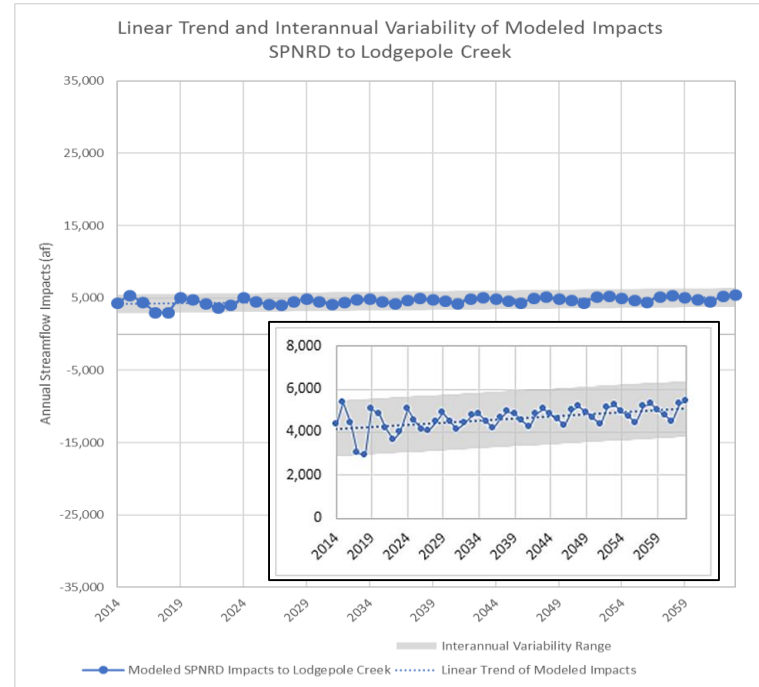


Figure 6

Integrated Management Plan (Draft)

8. FIRST INCREMENT ACCOMPLISHMENTS

8.4 Assessment of Fully Appropriated Condition

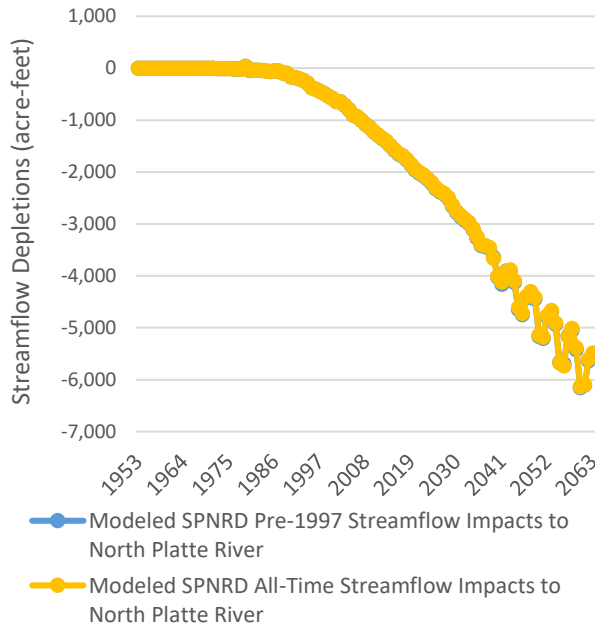


Figure 7

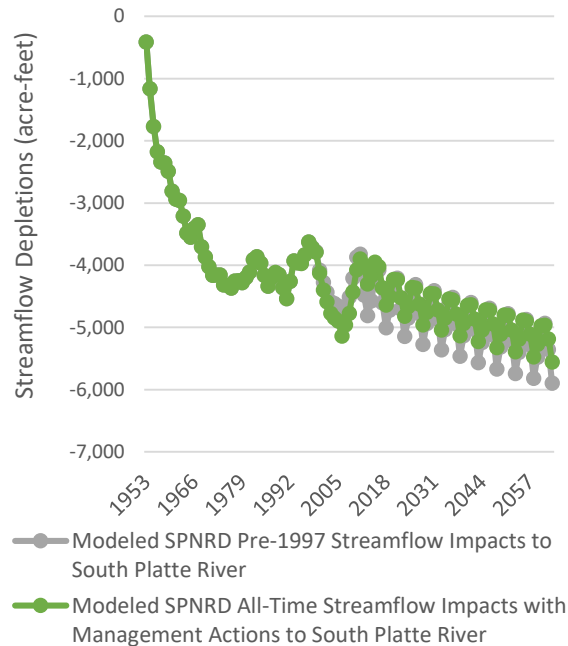


Figure 8

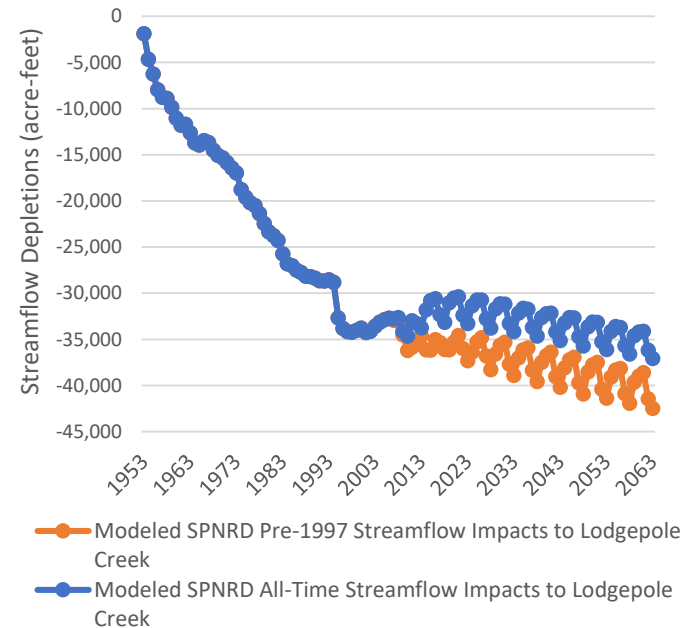


Figure 9

Integrated Management Plan (Draft)

8. FIRST INCREMENT ACCOMPLISHMENTS

8.4 Assessment of Fully Appropriated Condition

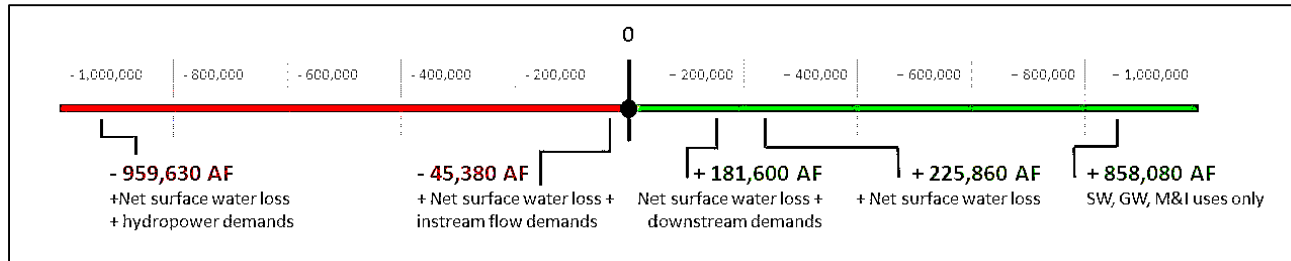


Figure 10

8.5 Basin-Wide Coordination in the First Increment

Integrated Management Plan (Draft)

Goal 1: Reach and Maintain a Fully Appropriated Condition

To incrementally achieve and sustain a fully appropriated condition while maintaining economic viability, social and environmental health, safety, and welfare of the basin.

Objective 1.1 Within this increment of this IMP, implement measures to address impacts of streamflow depletions to surface water appropriations and water wells constructed in aquifers dependent upon recharge from streamflow to the extent those depletions are due to water use initiated after July 1, 1997.

Objective 1.2 Maintain previous increment mitigation progress

SPNRD Short Term Trend Accretions to Maintain			
Year	South Platte River	Lodgepole Creek	North Platte River
2019	200	4,300	0
2020	200	4,300	0
2021	200	4,300	0
2022	200	4,300	0
2023	200	4,300	0
2024	200	4,400	0
2025	200	4,400	0
2026	200	4,400	0
2027	200	4,400	0
2028	200	4,400	0
2029	200	4,500	0

SPNRD Long Term Trend Accretions			
Year	South Platte River	Lodgepole Creek	North Platte River
2059 - 2063 Average	100	5,000	0

Integrated Management Plan (Draft)

Goal 1: Reach and Maintain a Fully Appropriated Condition

To incrementally achieve and sustain a fully appropriated condition while maintaining economic viability, social and environmental health, safety, and welfare of the basin.

Objectives:

- Objective 1.3 Make progress toward a fully appropriated condition.
- Objective 1.4 Review the implementation of this IMP to ensure that the IMP provisions are adequate to sustain progress toward and/or maintain a fully appropriated condition.
- Objective 1.5 Once a fully appropriated condition is achieved, maintain such condition through the implementation of the IMP.

Integrated Management Plan (Draft)

Goal 2: Interstate Compliance

Prevent or mitigate human-induced reductions in the flow of a river or stream and ensure that no act or omission of the SPNRD would cause noncompliance by Nebraska with any interstate decree, compact, or other formal state contract or agreement pertaining to any ground water or surface water use or supplies.

- Objective 2.1** To ensure that no act or omission of the SPNRD would cause noncompliance by Nebraska with the NNDP included within PRRIP, for as long as PRRIP exists.
- Objective 2.2** Ensure that the groundwater and surface water controls adopted in the individual NRD IMPs are sufficient to ensure that the state will remain in compliance with the Nebraska New Depletion Plan.
- Objective 2.3** Collectively, as defined in the Nebraska New Depletion Plan, offset the new depletions caused by new uses within the Platte River Basin NRDs.
- Objective 2.4** Ensure that for post-1997 new or expanded uses, including irrigation, municipal, industrial, rural domestic and other new water related activities are assessed and offset for compliance with the NNDP. This assessment will be part of the Robust Review, explained in chapter 10.7.3 of this plan.

Integrated Management Plan (Draft)

Goal 3: Consistency and Updates

Keep the IMP current, maintain consistency with the Basin-Wide Plan, and keep water users informed.

Objective 3.1 Amend this IMP as needed to remain consistent with the Basin-Wide Plan.

Objective 3.2 Participate in basin-wide planning activities.

Objective 3.3 Improve information sharing with interested parties.

Objective 3.4 Conduct planning for subsequent increments of the plan, as necessary.

Objective 3.5 If appropriate and necessary, follow the dispute resolution process in the Basin-Wide Plan.

Integrated Management Plan (Draft)

10. ACTION ITEMS

10.1 Information and Education Programs

10.2 Incentive Programs

10.3 Water Banking

10.4 Conjunctive Management

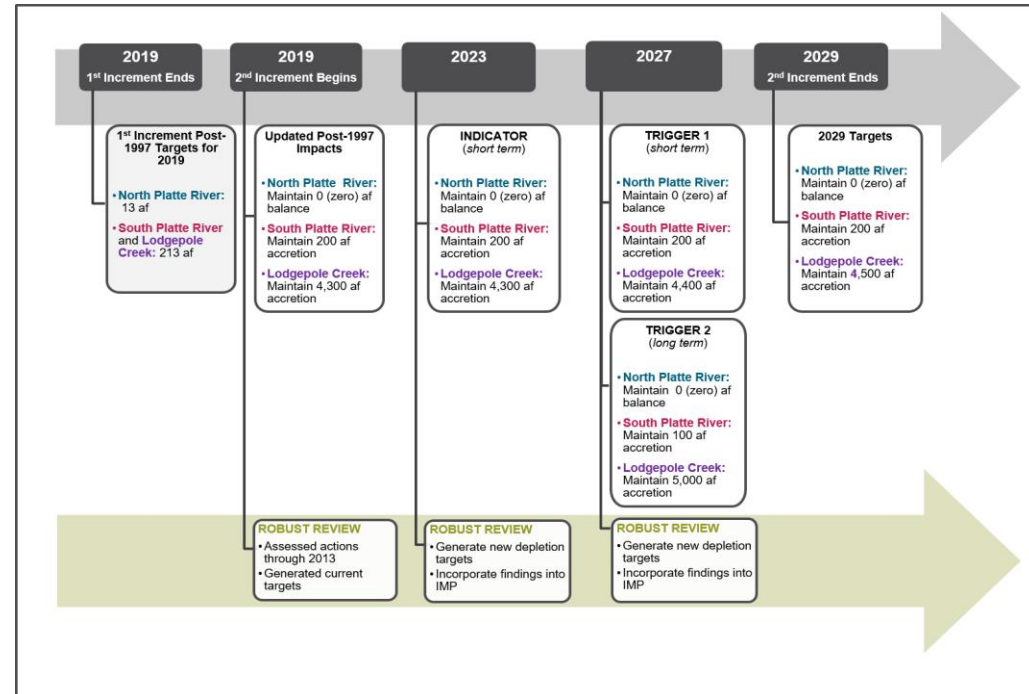
10.5 Drought Plan

10.6 Regulatory Action Items (Controls)

10.6.1 Ground Water Regulatory Action Items

10.6.2 Triggers

10.6.3 Surface Water Regulatory Action Items



Integrated Management Plan (Draft)

10. ACTION ITEMS (continued)

10.7 Monitoring

10.7.1 Data and Tracking of Water Use Activities

10.7.3 Evaluation: Measuring the Success of Meeting the Goals and Objectives of this IMP

10.8 Studies for Current Increment

10.9 Review of and Modifications to the IMP



NEXT STEPS



PUBLIC COMMENT

Thank you

DRAFT INTEGRATED MANAGEMENT PLAN



Cooperatively Developed by the South Platte Natural Resources District
And the Nebraska Department of Natural Resources

SOUTH PLATTE



NATURAL RESOURCES DISTRICT

P.O. Box 294, 551 Parkland Drive
Sidney, Nebraska 69162-0294
Telephone: 308-254-2377
spnrd.org

NEBRASKA

Good Life. Great Water.

DEPT. OF NATURAL RESOURCES

301 Centennial Mall South
4th Floor, PO Box 94676
Lincoln, Nebraska 68509-4676
Telephone: 402-471-2363
dnr.nebraska.gov

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1.0 EFFECTIVE DATE

This Second Increment Integrated Management Plan was adopted by the South Platte Natural Resources District on _____, 2019, and by the Nebraska Department of Natural Resources on _____, 2019.

The effective date of this IMP is _____, 2019.

2.0 AUTHORITY

This Integrated Management Plan (IMP) was prepared by the Board of Directors of the South Platte Natural Resources District (SPNRD), the Department of Natural Resources (NeDNR), and an Integrated Management Plan Stakeholder Work Group in accordance with *Neb. Rev. Stat. §§ 46-715, 46-716, 46-717, 46-718, and 46-720*.

3.0 BACKGROUND

In 1993, the NeDNR (then the Department of Water Resources) imposed a moratorium on the issuance of new surface water appropriations in the Platte River Basin upstream of Columbus, Nebraska.

Prior to the enactment of LB 962 in 2004, the SPNRD had realized the need to regulate the use of ground water. On November 7, 2002, the SPNRD Board was one of the first NRDs, under the authority of the Nebraska Ground Water Management and Protection Act, to place a moratorium on permits for new wells in the Lodgepole Creek Integrated Ground Water Management Subarea. In 2004, the Board, working with the ground water advisory committees and the public, ordered a temporary suspension of well construction for all the SPNRD, except for the Lodgepole Creek Integrated Ground Water Management Subarea. This action was later repealed because of the passage of LB 962 (2004).

On July 16, 2004, when LB 962 took effect, and pursuant to *Neb. Rev. Stat. § 46-720*, the NeDNR issued a notice of preliminary determination that the SPNRD was fully appropriated.

On September 15, 2004, the NeDNR designated the Platte River Basin above the Kearney Canal diversion as overappropriated and identified the area in which the surface water and ground water are considered to be hydrologically connected for purposes of the overappropriated designation. A specifically defined portion of the SPNRD was included in this designation. The criteria used to make the determination included: 1) the South Platte River and North Platte River Areas within the then defined stream depletion factor line representing a cumulative depletion to stream baseflow of 28% of a hypothetical pumping volume in a 40-year period (“28/40” areas); and 2) to the extent not included as a result of the “28/40” areas, the integrated ground water management subarea of the Lodgepole Creek Subbasin.

On September 30, 2004, the NeDNR issued an order of final determination that the hydrologically connected ground water and surface water within the entire geographic area of the SPNRD was fully appropriated.

Because of the fully appropriated and overappropriated designations made by the NeDNR, stays were placed on new water uses. The stays transitioned into moratoriums on large capacity wells and expansion of irrigated acres. An additional automatic stay on the issuance of new surface water appropriations and on the use of existing appropriations to increase irrigated acres also took effect in accordance with *Neb. Rev. Stat. § 46-714* on September 30, 2004.

State statute requires that the impact of streamflow depletions to surface water appropriations and water wells constructed in aquifers dependent on streamflow due to water use initiated after July 1, 1997 be addressed within ten (10) years of the adoption of an IMP and requires that the overappropriated areas be returned to fully appropriated in an incremental manner as described in subsection (d) of *Neb. Rev. Stat. § 46-715(5)*. In order to accomplish this requirement, this IMP incorporates the steps for an incremental approach to achieve the goals and objectives identified in this IMP as required under subdivision (2)(a) of *Neb. Rev. Stat. § 46-715* of the Nebraska Ground Water Management and Protection Act.

First Increment Planning Development Process

In areas that were designated as overappropriated, a first Increment Upper Platte River Basin-Wide Plan was developed and eventually adopted by the SPNRD on August 11, 2009, with an effective date of September 11, 2009. Likewise, the NeDNR issued an Order that the Basin-Wide Plan for Joint Integrated Water Resources Management of Overappropriated Portions of the Platte River Basin, Nebraska be adopted with an effective date of September 11, 2009.

The Overappropriated Basin-Wide Stakeholders Group held meetings beginning in 2005 with the final meeting held December 16, 2008. This group was developed using the consultation and collaboration process described in *Neb. Rev. Stat. § 46-715(4)(b)* and was developed concurrently with the development of the IMP required pursuant to *Neb. Rev. Stat. § 46-715(1)(2)*.

An agreement was not reached by the Stakeholder Group on the contents of the Basin-Wide Plan. Consequently, the Upper Platte River Basin NRDs and the NeDNR continued to work on the Basin-Wide Plan. Agreement between the Upper Platte River Basin NRDs and the NeDNR was reached on the proposed goals, objectives, and other components of the Basin-Wide Plan pursuant to *Neb. Rev. Stat. § 46-715(4)(b)*.

The SPNRD and NeDNR jointly developed recommendations for the 1st Increment IMP that are required to sustain a balance between water uses and water supplies so that the economic viability, social and environmental health, safety and welfare of the river basin, subbasin, or reach can be achieved and maintained for both the near term and long term. This was accomplished by working with the SPNRD/NeDNR IMP Work Group, which was consistent with the consultation and Collaboration requirements in *Neb. Rev. Stat. § 46-715*. The IMP Work Group held its first meeting August 26, 2004.

Initially, the SPNRD and the NeDNR jointly adopted the IMP on June 20, 2008, which became effective on July 20, 2008. At that time, the Overappropriated Area and Nebraska New Depletion Plan (NNDP)¹ requirements component (Rule 9) to the IMP was incomplete because the

¹ The Nebraska New Depletion Plan can be found at <https://dnr.nebraska.gov/water-planning/platte-river-recovery-implementation-program>

Overappropriated Basin-Wide Plan had not yet been adopted. Subsequently, when the Basin-Wide Plan was completed, the SPNRD amended its Rule 9 to remain consistent with the elements of the Overappropriated Basin-Wide Plan. The SPNRD and NeDNR held a public hearing on the proposed amendment to Rule 9 and the changes, without modifications, went into effect on September 14, 2009.

The SPNRD exceeded expectations to implement measures within the first ten (10) year increment to offset average annual depletion rates of 150-acre-feet to the North Platte River, 400-acre-feet to the South Platte River, and 150 acre-feet to Lodgepole Creek for the long term of period of 2043 to 2048. The SPNRD also reached the first increment target of offsetting 13 acre-feet in the North Platte River Basin; and 213 acre-feet in the combined South Platte River and Lodgepole Creek Basins of depletions from uses initiated after July 1, 1997.

The SPNRD's robust review analysis, conducted in 2019, which includes management actions taken up to 2013, indicates that for 2019 the SPNRD has zero acre-feet depletion to the North Platte River, 200 acre-feet accretion to the South Platte River and 4,300 acre-feet accretion to Lodgepole Creek (Table 1, in Chapter 8). The robust review estimates that at the end of the 2nd ten (10) year increment in 2029 the balance will be zero acre-feet depletion to the North Platte River, 200 acre-feet accretion to the South Platte River and 4,500 acre-feet accretion to Lodgepole Creek (Table 1). The robust review long-term analysis looking out 50 years indicates the SPNRD will need to maintain a balance of zero (0) acre-feet depletion to the North Platte River, 100 acre-feet accretion to the South Platte River and 5,000 acre-feet accretion to Lodgepole Creek (Table 2).

Second Increment Planning Development Process

A committee representing the Upper Platte Basin groundwater and surface water interests met from August 2015 through January 2016 to prepare a guidance document titled *Public Participation Plan for the Second Increment - Upper Platte Basin-Wide Plan Development*. This document outlines the process for developing the second increment Basin-Wide Plan. "It was expected that a second increment will be necessary in order to meet the goals and objectives of the Upper Platte Basin-Wide Plan and to reduce the difference between current and fully appropriated levels of development," stated Nancy Shank, PhD, MBA, and at the time, Acting Director of the University of Nebraska Public Policy Center, who facilitated the committee meetings and compiled the participation plan.

Beginning on June 16, 2016 the development of the second increment of the Upper Platte River Basin-Wide Plan began with the gathering of the stakeholder-planning group. The group achieved nearly 100 percent consensus on the Basin-Wide Plan goals and objectives at its final meeting on September 19, 2018. An agreement between the Upper Platte River Basin NRDs and the NeDNR was reached on the proposed goals, objectives, and other components of the 2nd Increment Basin-Wide Plan pursuant to [Neb. Rev. Stat. § 46-715\(4\)\(b\)](#). The final plan is required to be adopted by the NRDs and NeDNR by September 2019.

A second Increment Upper Platte River Basin-Wide Plan adopted by the SPNRD on _____, 2019, with an effective date of _____, 2019. The NeDNR adopted the same Upper Platte River Basin-Wide Plan for Joint Integrated Water Resources Management of Overappropriated Portions of the Platte River Basin, Nebraska, with an effective date of _____, 2019.

In May 2018, the SPNRD began forming the second Increment IMP Work Group. The group met four (4) times with the last meeting on February , 2019. The second Increment IMP goals and objectives are required to be consistent with the Basin-Wide Plan goals and objectives but tailored to meet the SPNRD’s obligation toward the Basin-Wide Plan.

This Second Increment IMP was developed and adopted by Order by the SPNRD Board of Directors at its public meeting held on _____, 2019 with an effective date of _____, 2019. The NeDNR issued an Order, pursuant to **Neb. Rev. Stat. § 46-718(2)** that the IMP be adopted with an effective date of _____, 2019.

4.0 MAPS AND MANAGEMENT AREA BOUNDARIES

- 4.1 The area subject to this IMP is the entire geographic area of the SPNRD. The goals, objectives, and action items described in this IMP pertain to the entire District.
- 4.2 Figure 1, depicts the area within the boundaries of the SPNRD determined to be fully appropriated and the area designated as overappropriated.
- 4.3 Figure 2, depicts areas that drain into the North Platte River, the South Platte River and the Lodgepole Creek.
- 4.4 The stratigraphic boundaries subject to this IMP include all sediments from ground level downward through all aquifer units.

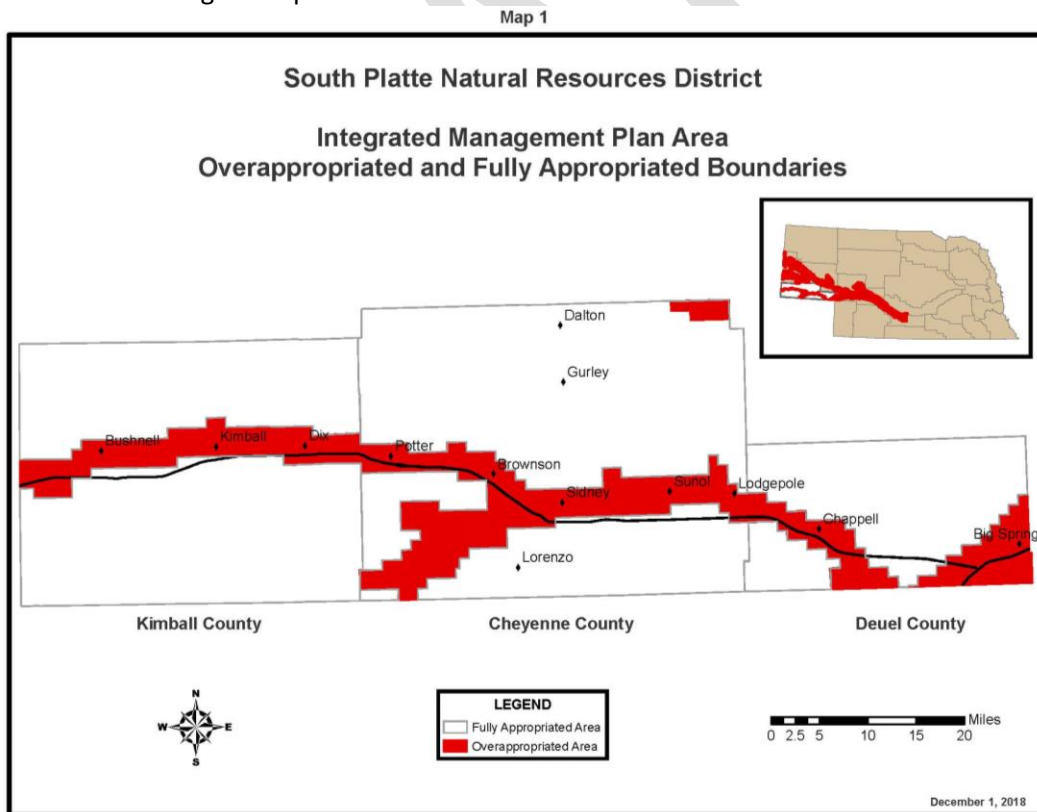


Figure 1. Map 1, SPNRD IMP area, illustrating the overappropriated and fully appropriated boundaries.

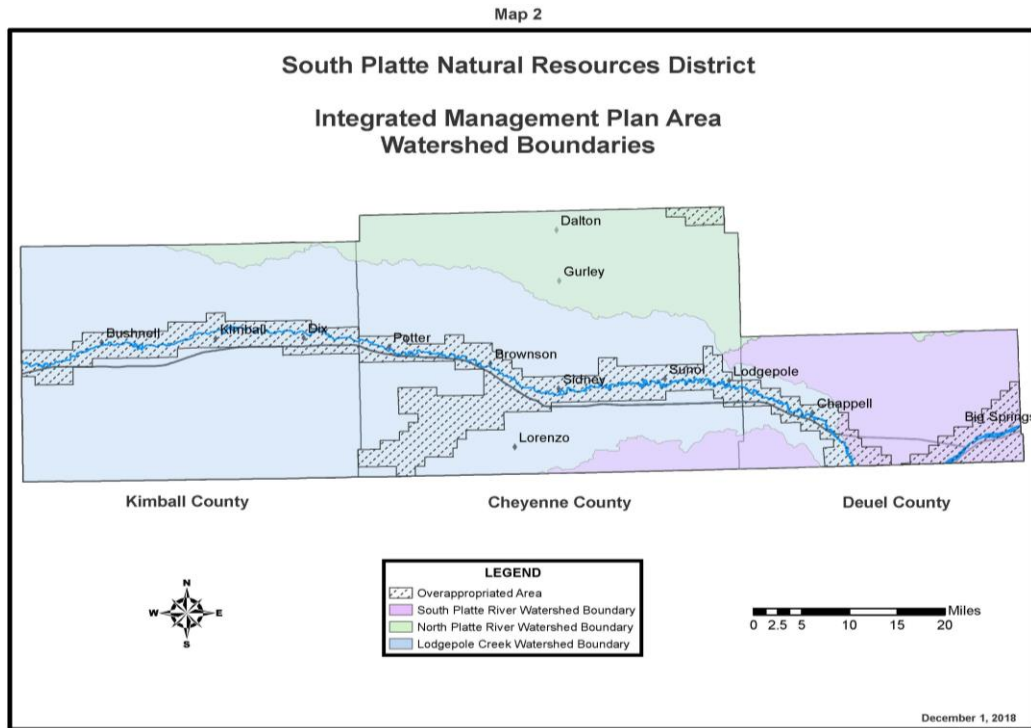


Figure 2. Map 2, illustrating SPNRD watershed boundaries.

5.0 VISION STATEMENT

The overarching vision of this IMP, is to work together for the greater good of all citizens of the District to cooperatively develop and implement a local Integrated Surface Water/Ground Water Plan that has an acceptable degree of certainty of 1) maintaining a sufficient water supply for use by present and future generations, 2) maintaining, enhancing and protecting the region’s agricultural economy and the viability of its cities and villages and 3) promoting the growth of economic activities while seeking to avoid adverse impacts on the environment.

6.0 FUNDING

6.1 NeDNR and SPNRD will use available funds and actively pursue new funding opportunities to cost effectively offset depletions as well as to develop, maintain, and update data and analytical tools needed to implement this IMP. Funding for regulatory and non-regulatory activities described in this IMP will derive from several sources. The NeDNR receives funds appropriated by the Nebraska Unicameral for water resources management and administration. The primary funding source for natural resources districts is property taxes. Both entities also seek out and utilize grants from various federal, state, local and private entities. The Nebraska Environmental Trust has been a generous supporter of water management activities in the Upper Platte River Basin. The Platte Basin Coalition, described in more detail below, is another mechanism for funding projects and studies in the basin. Additionally, NRDs have various taxing authorities they may use to fund projects and studies, including the occupation tax provided in *Neb. Rev. Stat. § 2-3226.05*, funds granted to the SPNRD by the State or Federal government, or the levy authority authorized by *Neb. Rev. Stat. § 2-3225*.

Funding priorities identified in this IMP include:

- Reduction in consumptive use
- Enhancement of water supplies
- Maintenance of existing projects and implementation of proposed projects to meet the goals of this IMP
- Data acquisition and maintenance, and model improvements for IMP implementation

- 6.2 The ability of NeDNR and SPNRD to implement the goals, objectives, and action items for this IMP, including their ability to meet the implementation timeline and intermediate deadlines set forth herein, may be limited by the availability of resources, including (but not limited to) funding or staff resources.
- 6.3 If limited resources prohibit completion or initiation of a specific management action, or if they delay the ability of NeDNR or SPNRD to complete a task by an established deadline, such limitations and delays will be discussed by NeDNR and the NRDs. If such a delay results in the need for revisions to this IMP, the necessary revisions will be made following the procedures set forth in section 10.9 of this IMP.

7.0 SCIENCE AND METHODS

NeDNR, South Platte NRD, Central Platte NRD, North Platte NRD, Tri-Basin NRD and Twin Platte NRD (Upper Platte River Basin NRDs) will utilize the best readily available science, data, and methods when implementing and reviewing the second increment Upper Platte Basin IMPs. This maintains consistency with state statute and the first increment processes and methodologies. Consistency in the science, data, and methods used to evaluate water management actions across the basin is paramount to provide a consistent basis for comparison of the effectiveness of various water management actions, regardless of location. Statutes and prudent scientific practices call for clear and transparent procedures to track depletions and accretions. The NeDNR and Upper Platte Basin NRDs will jointly develop and agree to all of the data, science, and methods utilized for the implementation, review, and evaluation of this IMP. The methodologies may be revised upon review of any new information, data, and science by the NeDNR and NRDs. The action items in Chapter 10 reference actions outlined within this Chapter that are instrumental to the implementation and review of the IMP. This Chapter provides a brief overview of the first increment data, science, and methods with a comparison of how these aspects pertain to the current increment of the NNDP of the Platte River Recovery Implementation Program (PRRIP).

7.1 Best Available Science, Methods, Data, and Tools Used in the First Increment

The first increment and associated implementation of the NNDP utilized the Cooperative Hydrology Study (COHYST)² model as the best available tool to both determine groundwater depletions and set mitigation targets for each NRD. The analysis used to determine the targets for the first increment is described in the 2008 COHYST report³. This analysis set the basis for the

² More information on the COHYST 2010 model can be found at <http://cohyst.nebraska.gov/>

³ Luckey, R.R. (2008). *Estimated Stream Baseflow Depletion by Natural Resources District in the Nebraska Platte Basin due to Gained and Lost Groundwater Irrigated Land after July 1, 1997*. [referred to in this IMP as the 2008 COHYST report] Aurora, CO: High Plains Hydrology, LLC. Retrieved from

procedures for the Upper Platte NRDs and NeDNR to perform consistent, ongoing analysis throughout the first increment. Consistency in evaluation is crucial in order to compare the results from the analysis used to determine targets with the results of the analysis to determine how particular management actions meet those targets.

The Upper Platte Basin NRDs and the NeDNR developed an annual protocol to evaluate IMP progress⁴ toward the targets using analytical methods, coupled with COHYST 2010 model data, to assess annual changes in permit activity regarding changes in consumptive use and streamflow depletions. The annual protocol methods are consistent with the IMP targets derived from the 2008 COHYST report to provide a valid comparison. The annual process was utilized each year and results of those analyses can be found on the NeDNR website⁵.

Evaluation of the initial COHYST model led to two major areas of scientific understanding. First, the massive expanse of the COHYST model area would be best modelled as two separate areas, the Western Water Use Management Model (WWUM) Model area and the COHYST 2010 Model area, due to distinct and significant differences in geology, climate, land use, and water management. Second, splitting the COHYST model area required a reconstruction and rebuilding of the groundwater models. This fundamental rebuild of the models meant that neither model is currently consistent with the original 2008 COHYST report modeling analysis and results. Therefore, these models are not an appropriate tool to use as a direct comparison with the targets as described within the first increment IMP. Modifications to the original 2008 COHYST report analysis are necessary to redefine the targets for a true comparison with the newer modelling tools.

COHYST 2010

The COHYST 2010 Model includes a portion of the Platte River Basin, extending westward from Chapman to the upstream end of Lake McConaughy. This model is used for the CPNRD, TPNRD, and TBNRD. The goal of COHYST 2010 is to support water management to maintain the region's extensive irrigation economy and protect river habitats used by endangered species. This goal is accomplished through reasonable and replicable model analysis to determine depletions and accretions that result from various water management actions.

WWUM Model

The WWUM Model covers the Upper Platte Basin from upstream of Lake McConaughy to the Wyoming and Colorado state lines. This model is used for the North Platte Natural Resources District (NPNRD) and SPNRD. It provides a detailed and holistic view of water resources in the region. The purpose of the effort is to provide a set of crop consumptive use, ground water, and surface water modeling tools to aid in management of river, stream, and aquifer systems within the modeling area. The goal of WWUM Model is to create data centered decision support information to assist the NPNRD, SPNRD, and the NeDNR

<https://dnr.nebraska.gov/water-planning/upper-platte-river-publications>. [In this IMP, this report is referred to as the "2008 COHYST report"]

⁴ The protocol document, *Basin-wide Technical Committee Guidance Document – Procedures for Annual Accounting Review and Robust Review to Assist Integrated Management Planning and Facilitate Reporting to the Platte River Recovery Implementation Program*, can be found at

<https://dnr.nebraska.gov/water-planning/other-upper-platte-river-documents>

⁵ Annual reports for the Upper Platte River Basin can be found at <https://dnr.nebraska.gov/water-planning/upper-platte-basin-wide-meetings-and-annual-reports>

The revised models improve the overall understanding of basin hydrology during implementation of the first increment this IMP. The first increment robust review utilized this updated understanding and science for all aspects of the analysis. Application of these tools and understanding resulted in refined estimates of post-1997 depletions that are typically greater than the original estimates included in the first increment plan. The robust review also provided estimates of the first increment offsets achieved by each of the NRDs. A description of the Robust Review can be found in Chapter 10 of this IMP.

7.2 Best Available Science, Methods, Data, and Tools to be Used in the Ongoing Increments

There are several basin-wide tenets regarding best available science, data, and methods that the SPNRD and the NeDNR will follow while implementing this IMP:

1. Maintain, improve, or acquire data and modeling tools, such as the COHYST 2010 and WWUM Models, land-use, climate data, and other programs and projects needed to implement and assess the progress of this IMP.
2. Use the models or data and tools derived from the COHYST 2010 and WWUM models to analyze potential management actions, conduct an annual review of progress of the IMP, perform the next robust review, and carry out any relevant studies identified in this IMP or the BWP uniformly across the basin. The concept 'uniformly across the basin' in this IMP means using consistency in analysis, and is not intended to dictate that same methods be used throughout the basin. Rather, the intention is to indicate methodologies must be scientifically-based and proven as conceptually consistent equivalents through either the scientific literature or independent evaluation of NeDNR and the NRDs.
3. Maintain and expand model applications through collaboration of model user groups.
4. Substantial changes to the model, for example changes to the hydrologic properties or refinements of model grids, will be agreed to by the NeDNR and NRDs before using those changes to evaluate the IMP and management actions.
5. All Basin-Wide Plan or Integrated Management Plan compliance-based analysis must utilize conceptually consistent methods such that stream depletion estimates or calculations performed in one area of the basin are comparable to stream depletion estimates or calculations in another area of the basin.
6. Any analysis that evaluates progress towards achieving IMP targets will be consistent with the original analysis or tools used to develop the targets. If necessary, new tools will be used to re-evaluate targets as well as progress toward those targets; in either case both the targets and the values estimating progress will be developed in a conceptually consistent manner so that they can be compared.
7. Continue to evaluate and refine stream depletion and accretion analysis methods by gathering and evaluating data for potential incorporation into these analyses upon agreement by NeDNR and NRDs. As new tools, information, and understanding is applied, it is anticipated that the values for depletions presented in section 8.3 may change.
8. As updates to data, models, analysis tools, or hydrologic understanding occur, NeDNR, and the NRDs will share these advances with the public. Methods, tools, and data used will be made available to the stakeholders and the public, as described in the Basin-Wide

Plan. The process for incorporating new information and results into this IMP document and/or supporting appendices will include a public hearing at the annual meeting.

9. The depletions estimates will be reviewed periodically using agreed upon modeling tools as the models, supporting data, information, and the understanding of the Basin's hydrology continue to evolve.

7.3 Information Considered in Developing this IMP

Information used in the preparation of this IMP and subsequent implementation of this IMP can be found in the resources listed below. These materials can be obtained by contacting either the SPNRD or NeDNR.

- Order Designating Overappropriated River Basins, Subbasins, or Reaches, and Describing Hydrologically Connected Geographic Area in the Matter of the Platte River Basin upstream of the Kearney Canal Diversion, the North Platte River Basin, and the South Platte River Basin (Appendix E)
- Order of Final Determination of River Basins, Subbasins, or Reaches as Fully Appropriated, and Describing Hydrologically Connected Geographic Area in the Matter of the Portion of the Platte River Basin Upstream of the Loup River Confluence, the North Platte River Basin, and the South Platte River Basin within the South Platte Natural Resources District, the Twin Platte Natural Resources District, and the Central Platte Natural Resources District (Appendix F)
- Applicable Nebraska Revised Statutes
- The items listed in *Department of Natural Resources Rules for Process and Procedures, Title 454, Neb. Admin. Code*
- *Department of Natural Resources Rules for Groundwater, Title 456, Neb. Admin. Code*
- *Department of Natural Resources Rules for Surface Water, Title 457, Neb. Admin. Code*
- *SPNRD's Districtwide Groundwater Management Area Rules and Regulations*
- *SPNRD's Groundwater Management Plan*
- SPNRD's first increment IMP
- First increment Upper Platte Basin-Wide Plan
- Second increment Upper Platte Basin-Wide Plan
- COHYST, COHYST 2010, and WWUM models
- Upper Platte Basin Robust Review analysis
- The Nebraska New Depletion Plan
- Upper Platte Basin INSIGHT analysis
- Additional data on file with the SPNRD and NeDNR

8.0 First Increment Accomplishments

8.1 Studies Conducted and Information Obtained in First Increment

The Upper Platte Basin NRDs and NeDNR conducted several studies in the first increment, which were specifically identified by the IMPs. Large amounts of information and data were collected and used in these studies and other analyses. The purpose was to help evaluate the potential effectiveness of various strategies in achieving the goals and objectives of that IMP and to help gage progress during the first increment.

8.1.1 Assessing Available Water

A. Surface Water

A study of unappropriated surface water, its availability in time and location, was conducted during the first increment; see reports by HDR and The Flatwater Group, Inc. (2010⁶, 2013⁷). A list of existing surface water appropriations within the basin was compiled as part of the study of unappropriated surface water (HDR and The Flatwater Group, Inc. 2010). It was determined that there are times when unappropriated surface water is available in the basin for relocation or retiming projects. Specifically, the NeDNR determined that between 1954 and 2008 there were excess flows available in some years. Most excess flow events occurred in May and June, and some events were in excess of 30,000 AF. A planning tool was developed to estimate amount, duration, and frequency of excess flow by reach.

B. Groundwater

To assist in assessing available groundwater the SPNRD certified all groundwater irrigated acres and other uses of groundwater. This data continues to be maintained in a GIS database of the certified acres which tracks transfers, retirements and other changes to certified acres.

The SPNRD implemented groundwater metering. This data was input into the WWUM for tracking groundwater supplies and demand.

To assist in assessing changes in available groundwater, SPNRD tracked all consumptive use changes due to transfers, variances, offsets, and expanded municipal and industrial uses.

8.1.2 Conservation Study Phases I and II

The Flatwater Group, Inc. completed Phase I of a conservation study in 2013 and provided the results in a Final Technical Memorandum⁸. The purpose of the Phase I study was to assess which

⁶ HDR and The Flatwater Group, Inc. (2010). *Evaluation of Historic Platte River Streamflow in Excess of State Protected Flows and Target Flows*. Retrieved from <https://dnr.nebraska.gov/water-planning/upper-platte-river-publications>

⁷ HDR and The Flatwater Group, Inc. (2013). *Evaluation of Historic Platte River Streamflow in Excess of State Protected Flows and Target Flows, Technical Memorandum*. Retrieved from <https://dnr.nebraska.gov/water-planning/upper-platte-river-publications>

⁸ The Flatwater Group, Inc. (2013). *Final Technical Memorandum of Conservation Study*. Retrieved from <https://dnr.nebraska.gov/water-planning/upper-platte-river-publications>

conservation measures⁹ the Platte Basin Coalition should consider implementing and also to assess potential methods for developing basin-wide estimates of impacts to streamflow of the conservation measures in the fully and overappropriated areas of the basin.

Phase I provided a Matrix which assessed the assumed magnitude of impact to streamflow of varying intensity for each conservation measure, as well as the required resources and cost of each method. The Matrix also provided information on the effect to overland runoff, recharge, and net effect on evapotranspiration (ET) of each conservation measure of varying intensity. Conservation measures assessed included structural (e.g., terraces, dams, canals, etc.) and non-structural (e.g., tillage, irrigation management and efficiency, crop rotation, soil monitoring, buffers, etc.) measures.

Phase II, which is a technical assessment of impacts from changes in tillage practices and irrigation efficiencies, is in progress. (Waiting on summary)

8.1.3 Conjunctive Management Study

In 2011, HDR and The Flatwater Group, Inc. published the Conjunctive Management Study¹⁰. The objectives of this study were to identify general elements, potential approaches, and constraints necessary in the planning and evaluation of conjunctive management projects, and to evaluate several hypothetical conjunctive management strategies involving the Western Canal to illustrate the application of these concepts.

Briefly, conjunctive management¹¹ involves managing surface and groundwater together to maximize storage, timing, and use of the resource. For successful conjunctive management projects, surface water and groundwater supplies and uses need to be identified. Projects generally include three components, 1) diversion of surface water, 2) recharge facilities, and 3) use of the water. Project impacts (e.g., water yield, water quality, economics, the environment, etc.) and alternatives must be considered, as well as legal constraints. A monitoring plan should also be developed to assess project performance. All of these components were then used in a case study to evaluate several hypothetical projects on the Western Canal, a 20-mile canal, which diverts South Platte River flows downstream of the Julesburg gage through farmland toward Ogallala, NE.

8.1.4 Inventory of Sandpits and Small Reservoirs

As part of Nebraska's commitment to PRRIP, the NeDNR has been charged with estimating the cumulative impacts of new or expanded, unregulated surface water activities. Therefore, in 2013, the NeDNR conducted an inventory and analysis of sandpits and reservoirs with capacity below 15 acre-feet throughout Upper Platte River Basin¹². This analysis used multi-temporal

⁹ The Final Technical Memorandum defines conservation measures as “practices designed to control or prevent soil erosion, enhance the beneficial use of precipitation and irrigation water, or reduce non-beneficial water consumption.”

¹⁰ HDR and The Flatwater Group, Inc. (2011). *Conceptual Design of a Conjunctive Management Project*. Retrieved from <https://dnr.nebraska.gov/water-planning/upper-platte-river-publications>

¹¹ The Conjunctive Management Study defines conjunctive management as “the coordinated and planned use and management of both surface water and groundwater resources to maximize the availability and reliability of water supplies in a region to meet various water needs.”

¹² Zoller, A. (2014). *2005 – 2010 Consumptive Use of Small Man-made Water Bodies in the Platte Surface Water Basin Above Columbus* [PowerPoint Presentation]. Retrieved from <https://dnr.nebraska.gov/water->

aerial imagery from 2005 and 2010, and implemented remote sensing techniques to delineate and compare the number, size, and distribution of these water bodies. Baseline data generated from 2005 imagery were compared to 2010 imagery in order to identify changes in the overall surface areas of these unregulated water bodies within the basin. Once these new or expanded water bodies were identified, the Natural Resources Conservation Service (NRCS) Evapo-Transpiration (ET) calculator was used to estimate the resulting change in consumptive use due to ET.

The inventory component of the study was extremely labor intensive and required approximately 2,500 labor hours to identify, measure, and categorize over 13,000 remotely sensed features. After comparing data from both years, the study found 94 new or expanded sandpits and 9 new reservoirs. New and expanded sand pits represented a cumulative increase in open water surface area of 728 acres and new reservoirs were responsible for a cumulative increase of 19 acres for a total of 747 new acres of unregulated surface water throughout the basin from 2005 to 2010.

Once the change in open water acreage attributed to unregulated surface water was determined, the NRCS calculator was used to estimate the resulting change in consumptive use due to ET. The results of the NRCS analysis found a pronounced decrease in consumptive use due to ET during the growing season with a modest increase in consumptive use during the non-growing season. Additionally, the NRCS analysis identified a very slight increase in consumptive use due to new reservoirs, which was consistently distributed across all months. Ultimately, the NRCS analysis estimated that the increase in unregulated surface water acreage from 2005 to 2010 resulted in a net decrease in consumptive use of 678 acre-feet per year throughout the basin. The results of this study were presented to the PRRIP's Water Advisory Committee on May 6, 2014.

8.1.5 Lodgepole Creek Flow Evaluation

The Flatwater Group conducted a flow evaluation of Lodgepole Creek for South Platte NRD, with assistance from NeDNR. This involved two tasks, both of which are available by request from SPNRD.

Task 1 focused on historical creek conditions and gaging stations, including a description of the point of diversion on Lodgepole Creek. Legal constraints regarding the point of diversion and the South Platte River Compact were described, particularly Article III and V. Julesburg Irrigation District ditches were also mentioned including potential stored water runs options with Peterson Ditch.

Task 2 focused on the development of a stream routing model to estimate the ability to carry water through Lodgepole Creek and the South Platte River. The modeled area included three reaches from the Ralton gage to the Julesburg gage. Gage records were compiled but were sparse, leading to several assumptions and estimates being incorporated into the model. Diversion records and estimated returns were incorporated, and estimated gains and losses for each of the three reaches. Routing scenarios were developed to allow the user to designate

[planning/upper-platte-river-publications](#)

augmentation flows into the creek. The ultimate model output was the calculated flow at the Julesburg gage.

Sensitivity analysis was conducted on four parameters: 1) the percentage values for canal spills on Lodgepole Creek, with a change in this percentage making a large impact on augmentation flows reaching the Julesburg gage; 2) the loss to augmentation flows in the South Platte River, with higher loss percentages resulting in smaller amounts of augmentation flows reaching the Julesburg gage, and caution expressed to the user; 3) the capacity constraint of the culvert under Peterson Canal, which is less important in dry years and more important in wet years when there is a greater chance of the culvert running full; and 4) the Little Ditch diversion demand multiplier, with higher increases reducing augmentation flows reaching the Julesburg gage at a lesser rate.

Task 2 also provided findings on Wyoming's Crow Creek and the Platte River Recovery Implementation Program, stating there may be a level of hydrologic connectivity to the South Platte River based on historic flow analysis. A User's Guide was included for use and interpretation of the model. The Flatwater Group provided potential future projects as options for SPNRD or NeDNR.

8.2 Summary of Management Actions Taken in the First Increment

8.2.1 The NeDNR continued the formal moratorium on all new surface water appropriations for the North Platte River Basin including the South Platte NRD.

The SPNRD and NeDNR conducted a conjunctive management project in cooperation with Western Irrigation District. Excess streamflows were diverted into irrigation canals, pits, and reservoirs for intentional recharge to retine and augment baseflows.

8.2.2 Additionally, the following is a summary of the management actions carried out by the SPNRD:

- A. Required wells to have a flow meter installed.
- B. Facilitated groundwater users in signing up for EQIP program.
- C. Required offsets for all new or expanded uses after 1997 of by municipal and industrial groundwater users.
- D. Placed a moratorium on the issuance of water well construction permits and on new or expanded ground water uses.
- E. Implemented rules and regulations that:
 - i. Required certification of irrigation uses.
 - ii. Limited transfers, either in location or in purpose, of consumptive use of ground water so that it would not cause an increase in depletions to the river or cause a negative impact to existing surface water or ground water users.
 - iii. Required "Large Users" to obtain a permit.
 - iv. Required non-municipal industrial users to obtain a permit.

8.3 Assessment of First Increment (Robust Review)

As required by statute, NeDNR and the Upper Platte Basin NRDs conducted a Robust Review of the progress being made toward achieving the goals, objectives, and targets of the first increment. The previous IMP outlined the process for the Robust Review in order to compare the results of that analysis with the 2008 COHYST report (Section 7.1). This Robust Review was an update of that study. The evaluation used data and information from the annual reports and updates developed in support of BWP and NNDP implementation.

This evaluation provides summarized estimates of the streamflow impacts resulting from gained and lost irrigated land, controls (allocations and transfers), expansion and contraction of municipal and industrial uses, managed recharge, stream augmentation, and permitted uses that occurred through 2013. The report is a synthesis of all of these efforts and provides summarized updates of new targets that will be used to guide second increment planning goals and objectives.

The Upper Platte River Basin Robust Review report outlines the methods, limitations, and results of the most recent robust review and represents the best available science to support second increment planning. Figures 3-6 below illustrate the results for the SPNRD for the period of 2019-2029 (second increment). Positive values for stream flow impacts indicate accretions and negative values indicate depletions.

Figure 3, illustrates the geographic extent of the stream reaches that are impacted by actions within the SPNRD. That data in the figures correspond to the stream reaches.

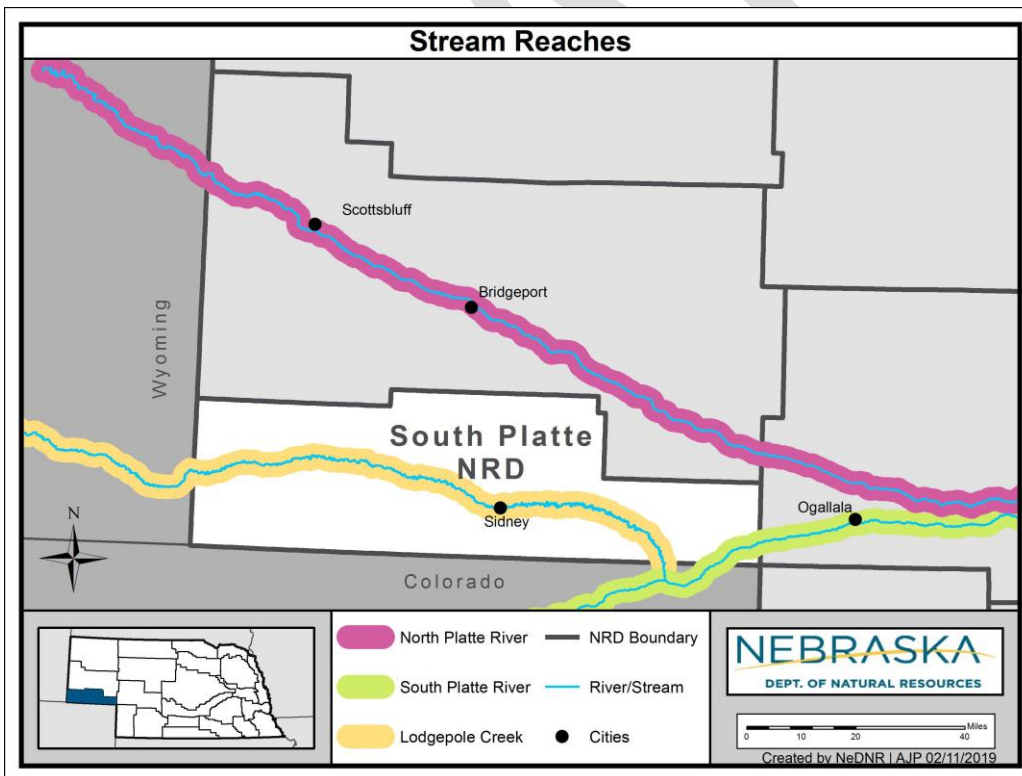


Figure 3. Stream Reaches for Robust Review Analysis for SPNRD

Figure 4 displays the modeled post-1997 impacts of SPNRD to the North Platte River (including groundwater-only irrigation, municipal and industrial development, allocations, and groundwater irrigated acres retirements). The impacts of changes, activities, and actions take through 2013 are reflected in the data. A linear trend line has been added to the modeled impacts from 2014 – 2063, and the inter-annual variability range of modeled impacts across the trend shown by the grey band. The inset in Figure 4 shows the same data at a smaller scale. Positive values for streamflow impacts indicate accretions and negative values depletions.

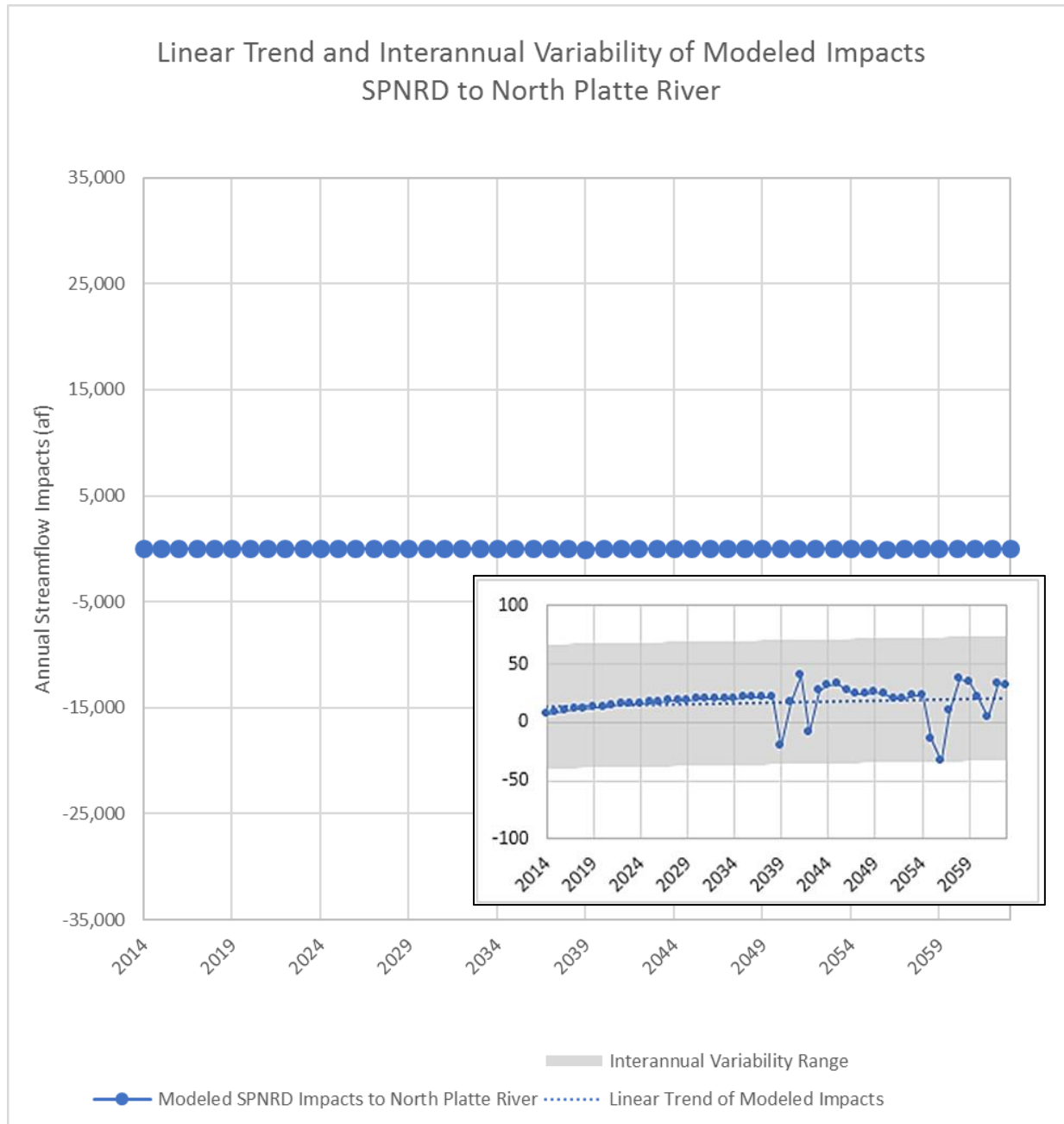


Figure 4. Modeled SPNRD Post-1997 impacts to the North Platte River, the linear trend line of the modeled impacts from 2014-2063, and the inter-annual variability range of modeled impacts across the trend.

Figure 5 displays the modeled post-1997 impacts to the South Platte River from (including groundwater-only irrigation, municipal and industrial development, allocations, groundwater irrigated acres retirements, and SPNRD’s share of recharge projects with Western Irrigation District), and a linear trend line of the modeled impacts from 2014-2063, and the inter-annual variability range of modeled impacts across the trend. The inset in Figure 5 shows the same data at a smaller scale. Positive values for streamflow impacts indicate accretions and negative values depletions.

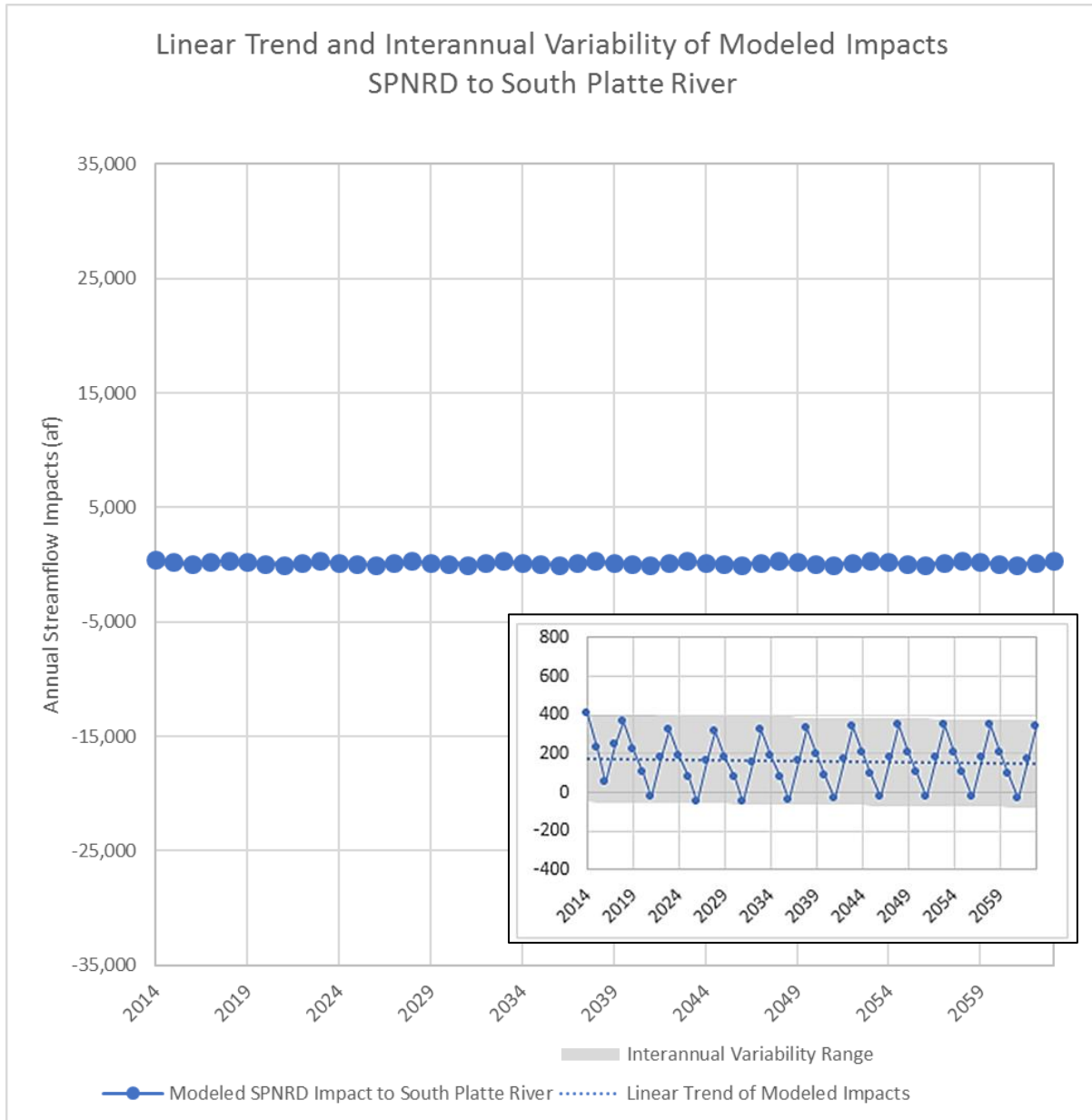


Figure 5. Modeled SPNRD post-1997 impacts to the South Platte River, the linear trend line of the modeled impacts from 2014-2063, and the inter-annual variability range of modeled impacts across the trend.

Figure 6 displays the modeled post-1997 impacts to Lodgepole Creek (including groundwater-only irrigation, municipal and industrial development, allocations, groundwater irrigated acres retirements, and SPNRD’s share of recharge projects with Western Irrigation District), and a linear trend line of the modeled impacts from 2014-2063, and the inter-annual variability range of modeled impacts across the trend. The inset in Figure 6 shows the same data at a smaller scale. Positive values for streamflow impacts indicate accretions and negative values depletions.

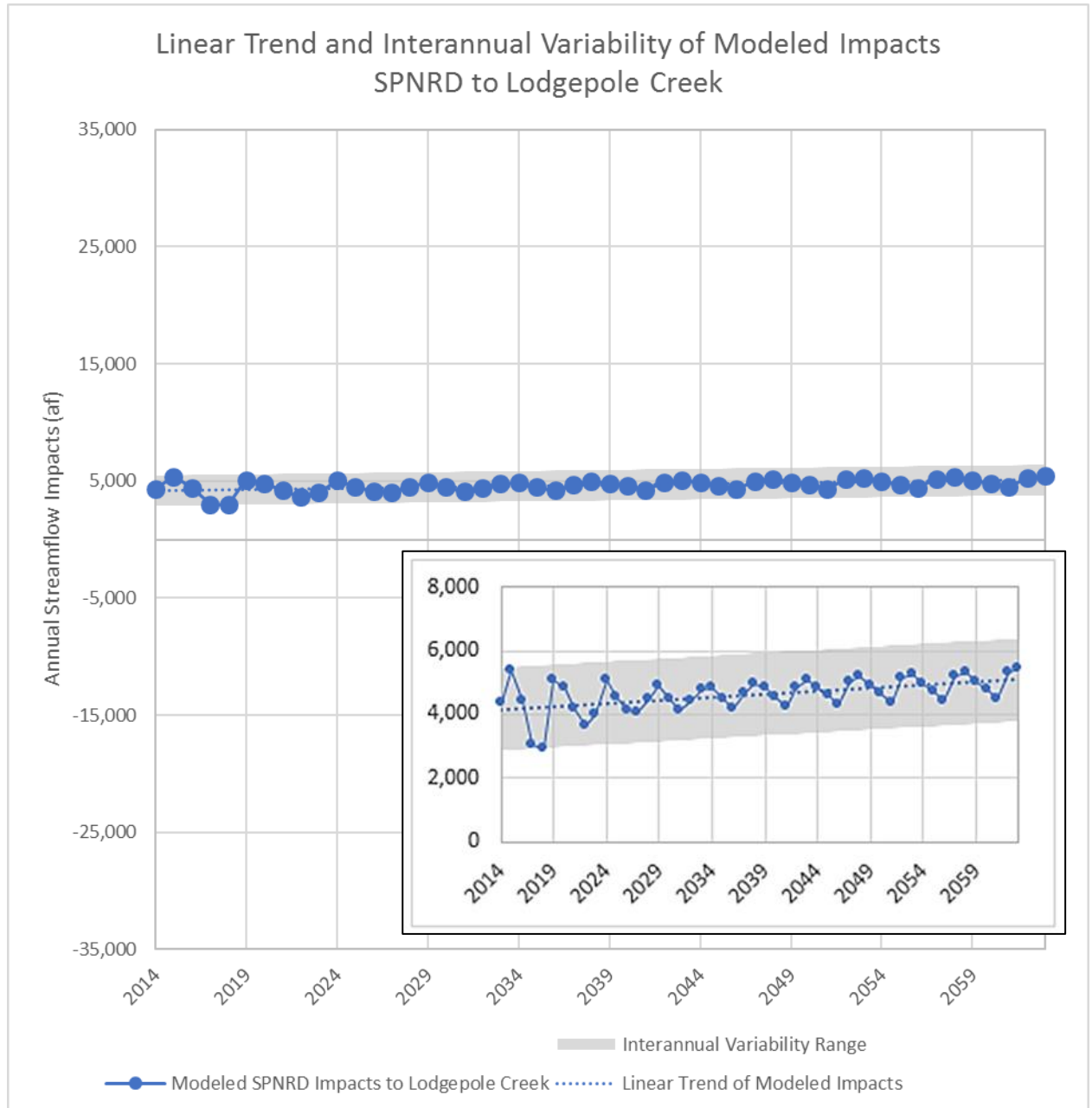


Figure 6. Modeled SPNRD post-1997 impacts to Lodgepole Creek, the linear trend line of the modeled impacts from 2014-2063, and the inter-annual variability range of modeled impacts across the trend.

The charts show the range of uncertainty around the trend line of the modeled data. Potential future offsets are impacted by the variability in climate, therefore a trendline is shown to smooth out the potential future effects of climate variability. Values are the result of the most recent robust review conducted by NeDNR. Details on the analysis are (in the Robust Review report).

It is recognized that while they were not analyzed during this robust review, several canal diversions for recharge occurred after 2013 during the first increment which would also provide accretions to the stream. Other actions, such as the continued implementation of allocations, provided additional accretions but were not part of this Robust Review analysis.

8.4 Assessment of Fully Appropriated Condition

There are several potential approaches to assessing the difference between the current level of development in the Upper Platte River Basin and a fully appropriated condition. Identifying this difference is critical in making progress toward a fully appropriated condition in the basin.

8.4.1 Total Depletions

Waiting on write-up

8.4.2 INSIGHT

The INSIGHT methodology is an approach to assessing the balance between water supplies and water demands within a basin. INSIGHT consolidates data from several sources, including NeDNR, the United States Geological Survey (USGS), the United States Bureau of Reclamation (USBR), and local NRDs. That hydrologic data is used to conduct an analysis of the following items at the basin- and subbasin-level:

- 1) streamflow water supplies available for use,
- 2) the current amount of demand on these supplies,
- 3) the long-term demand on these water supplies due to current uses,
- 4) the projected long-term demand on these water supplies due to five percent growth in total use, and
- 5) the balance between these water supplies and demands.

If a basin's near-term demand and/or the long-term demand of hydrologically connected groundwater and surface water exceeds the basin water supplies, then supplies may not be sufficient to sustain the demands over the long term.

Figure 7 below, shows the average balance of water supplies in the basin compared to the various levels of demands. When all demands in the basin are considered, the demands outweigh the supplies by approximately 960,000 acre-feet. This means that there may be years when the supplies are not adequate to meet all the demands

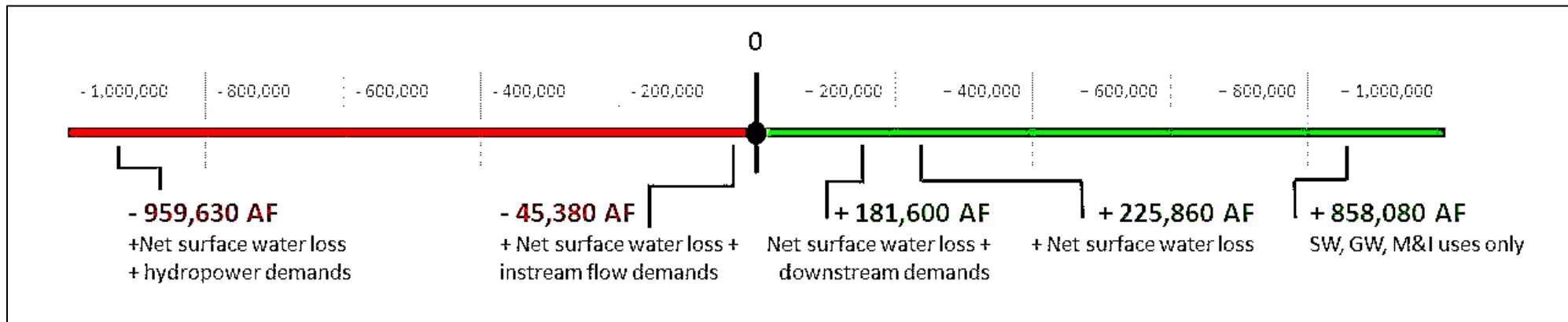


Figure 7. Water Supplies and Demands in the Upper Platte River Basin using INSIGHT Methodology

8.5 Basin-Wide Coordination in the First Increment

The first increment IMP called for the development of a list of criteria to evaluate the potential to use available surface water and groundwater supplies as management projects to meet the goals and objectives of the IMP. In order to create a unified approach across the basin the NeDNR and the Upper Platte River NRDs established an interlocal cooperative agreement (ILCA).

8.5.1 Interlocal Cooperative Agreement (Platte Basin Coalition)

The Upper Platte River Basin NRDs and the NeDNR have established an interlocal cooperative agreement (ILCA), the Platte Basin Coalition (PBC or Coalition), which can provide funding for incentive programs aimed at reducing consumptive use within the overappropriated portion of the Platte River Basin.

8.5.1.1 Protocols

The NRDs and NeDNR have developed, through the Coalition, a protocol that will be followed to evaluate potential projects including the retirement of water uses and the implementation of other offset projects. This protocol will be used to evaluate potential projects to assess the appropriate amount of funding that will be allocated toward that project from the Coalition. The evaluation incorporates data from the COHYST 2010/WWUM models and tools, which include consideration of cyclical water supplies, to evaluate the potential impact of the project on streamflows. Projects with a greater or quicker impact on the stream are given preference over those, which do not have as much an impact. Project costs, benefits, permitting and regulatory constraints are also considered.

8.5.1.2 Funding

The ILCA is partially financed by the Water Resources Cash Fund (WRCF). This fund receives monies from both the general fund and the Nebraska Environmental Trust (NET). Under statute, the WRCF may be used for the reduction of consumptive uses or the enhancement of streamflows or groundwater recharge. These funds may be used in overappropriated or fully appropriated areas for projects to study, develop, and implement management actions taken to reduce consumptive uses or water or to enhance streamflows or groundwater recharge. Funding of projects through the PBC is shared between the NRDs and the NeDNR. Expenditures are approved by all members of the Coalition.

The NeDNR and the NRDs, through federal program such as CREP, seek additional sources of funding. EQIP, etc. Other outside sources of funding will continue to be sought to increase the leveraging ability of the local dollars spent on projects.

8.5.1.3 Technical Work

The Five Upper Platte NRDs and NeDNR have a technical working group to address technical issues and statutory aspects of the BWP and IMPs. NRD managers and NeDNR will agree to technical analyses prior to beginning any work, and the PBC will approve any reimbursed expenditures for technical work.

The technical working group evaluates all aspects of analysis, including the conceptual design, data evaluation, analysis, and evaluation of the results. It is then the responsibility of the technical group to translate the results of any analyses to the administrators for either incorporation into this IMP or evaluation towards meeting the IMP goals.

During the next increment, the technical group will evaluate various aspects of data and models that may include the effects of conservation measures on depletion results, more efficient methods to track changes regarding irrigated lands, or areas where analyses may be simplified. The technical group will follow the basic tenets outlined in Section 7.2 while carrying out any work necessary for the implementation of this IMP.

9.0 Goals and Objectives

The NeDNR and the five Upper Platte River Basin NRDs conducted a robust review as part of the actions required in the first increment. This Analysis provided each NRD with the information necessary to assess their progress in meeting the goals and objectives of their individual IMPs as well as the progress for the Upper Platte River Basin. The outcome of the robust review showed that the SPNRD met their IMP targets as defined in the first increment. The Robust review also indicated that a second increment would be necessary to continue to meet the goals and objectives. The Robust review results have provided IMP targets for this second increment.

Actions to support the successful implementation of the Goals and Objectives in this Chapter can be found in the Chapter 10.0, Action Items.

Goal 1: Reach and Maintain a Fully Appropriated Condition

To incrementally achieve and sustain a fully appropriated condition while maintaining economic viability, social and environmental health, safety, and welfare of the basin.

Objective 1.1: Within this increment of this IMP, implement measures to address impacts of streamflow depletions to surface water appropriations and water wells constructed in aquifers dependent upon recharge from streamflow to the extent those depletions are due to water use initiated after July 1, 1997.

Since this goal was part of the previous Platte IMP, SPNRD has already taken several actions to achieve it. A summary of these actions can be found in section 8.2 of this IMP. The results of the robust review indicate that the SPNRD has achieved offsetting Post-1997 depletions. Therefore, the NRD will need to maintain the progress they have made in the first increment. This is covered in Objective 1.2.

Objective 1.2: Maintain previous increment mitigation progress.

It is recognized that some actions undertaken in the first increment are temporary projects, which may end during the second increment.

1. NeDNR and the NRD will keep policies, projects, and practices in place, as appropriate that provide offsets or supply equivalent offsets so that the current level of depletions is not exceeded.
2. Targets
 - A. Short-term planning target

Table 1. 2019, Robust Review Modeled Short-Term Target Accretions to Maintain

SPNRD Short Term Trend Accretions to Maintain			
Year	South Platte River	North Platte River	Lodgepole Creek
2019	200	4,300	0
2020	200	4,300	0
2021	200	4,300	0
2022	200	4,300	0
2023	200	4,300	0
2024	200	4,400	0

SPNRD Short Term Trend Accretions to Maintain			
Year	South Platte River	North Platte River	Lodgepole Creek
2025	200	4,400	0
2026	200	4,400	0
2027	200	4,400	0
2028	200	4,400	0
2029	200	4,500	0

Table 1 above shows the best estimate of accretion targets for the next increment of the IMP. The methods used to develop the post-1997 targets for the SPNRD are described in the robust review Document and in Chapter 8. A graph of the complete robust review Results can be found in Chapter 8. The values shown in Table 1 are from the trend in modeled depletions and accretions from the 2019 Robust Review analysis of groundwater only irrigation development after 1997, expansion of municipal and industrial uses after 1997, and management activities through 2013 in SPNRD. The depletion amounts shown in Table 1 are subject to change based upon the robust review update in four years, while using the best scientific data and information available. The methodology for accessing the targets and a description of triggers to maintain current progress can be found in Chapter 10, Action Items.

B. Long-term planning target

Within the current ten (10) year increment, maintain current levels of accretions to the Platte, and seek opportunities to further reduce impacts to Platte streamflows for the period 2059-2063. The accretion to be maintained for the North Platte River is 100 acre-feet; 5,000 acre-feet for the South Platte River and zero acre-feet for Lodgepole Creek. This rate is the current best estimate and is subject to change based upon new data and information.

Table 2. 2019, Robust Review Modeled Long Term Target Accretions to Maintain

SPNRD Long Term Trend Accretions			
Year	North Platte River	South Platte River	Lodgepole Creek
2059 - 2063 Average	100	5,000	0

Objective 1.3: Make progress toward a fully appropriated condition.

Impacts of streamflow depletions to surface water appropriations and water wells constructed in aquifers dependent upon recharge from streamflow to the extent those depletions are due to water use initiated prior to July 1, 1997, may be addressed prior to a subsequent increment with the intent of achieving a fully appropriated condition.

During the first increment, two analyses were performed to estimate the balance of water supplies and demands within the Upper Platte Basin. This included an estimate of all groundwater depletions to streamflow (Total Depletions) and the INSIGHT analysis. Both are described in Chapter 7.

- Continue to evaluate total depletions
- Continue to evaluate water supply and demands
- Continue to develop an estimate for a fully appropriated condition

Objective 1.4: Review the implementation of this IMP to ensure that the IMP provisions are adequate to sustain progress toward and/or maintain a fully appropriated condition.

Objective 1.5: Once a fully appropriated condition is achieved, maintain such condition through the implementation of the IMP.

Goal 2: Interstate Compliance

Prevent or mitigate human-induced reductions in the flow of a river or stream and ensure that no act or omission of the SPNRD would cause noncompliance by Nebraska with any interstate decree, compact, or other formal state contract or agreement pertaining to any ground water or surface water use or supplies.

Objective 2.1: Ensure that no act or omission of the SPNRD would cause noncompliance by Nebraska with the NNDP included within PRRIP, for as long as PRRIP exists.

Objective 2.2: Ensure that the groundwater and surface water controls adopted in the individual NRD IMPs are sufficient to ensure that the state will remain in compliance with the Nebraska New Depletion Plan.

Objective 2.3: Collectively, as defined in the Nebraska New Depletion Plan, offset the new depletions caused by new uses within the Platte River Basin NRDs.

Objective 2.4: Ensure that for post-1997 new or expanded uses, including irrigation, municipal, industrial, rural domestic and other new water related activities are assessed and offset for compliance with the NNDP. This assessment will be part of the robust review, explained in chapter 10.10 of this plan.

Goal 3: Consistency and Updates

Keep the IMP current, maintain consistency with the Basin-Wide Plan, and keep water users informed.

Objective 3.1: Amend this IMP as needed to remain consistent with the Basin-Wide Plan.

Objective 3.2: Participate in basin-wide planning activities

Objective 3.3: Improve information sharing with interested parties.

Objective 3.4: Conduct planning for subsequent increments of the IMP, as necessary.

Objective 3.5: If appropriate and necessary, follow the dispute resolution process in the Basin-Wide Plan.

10.0 ACTION ITEMS

Chapter 10 contains the action items that will be carried out to accomplish the goals and objectives of the IMP. The action items described in this section are intended to be consistent with the requirements of Neb. Rev. Stat. §46-715(3). These actions range from ongoing non-regulatory actions such as information and education efforts, to maintenance of current regulatory actions, and the potential for future increased controls if certain targets cannot be maintained through the other actions taken by the NRDs or DNR. As described within this Chapter, more details on the statutes or rules followed by the NRDs or DNR can be found at the offices of each respective

agency. For purposes of transparency/simplicity, the full length of those documents are not repeated herein, so the reader is directed to each agency to read the full details on how any particular action item may be carried out.

10.1 Information and Education Programs

The SPNRD and the NeDNR will provide educational materials to the public and/or carry out educational activities that may include, but not be limited to, the following:

- The fully appropriated determination
- The overappropriated designation
- The IMP
- The Nebraska New Depletion Plan (NNDP)
- The Platte River Recovery and Implementation Program (PRRIP)
- Hydrologically connected ground water and surface water
- Invasive species management
- Conversion of irrigated acres to dryland agriculture or wildlife habitat
- Limited irrigation cropping systems
- Soil residue and tillage management
- Alternative crops
- Water use measurement techniques
- Eco-tourism, crop diversification, changes in land use, to support diversity in revenue streams of water users within the basin, as a means of maintaining economic viability
- Educational programs to support the implementation of incentive programs
- Funding sources for programs that enhance water supply.

These educational materials and/or activities may include, but not be limited to, joint public meetings, pamphlets, and website information.

10.2 Incentive Programs

The NeDNR and/or the SPNRD intend to establish, implement, and/or continue financial or other incentive programs to reduce consumptive use of water within the SPNRD to meet the goals and objectives of this IMP.

10.2.1 State or Federal Programs

Incentive programs include any program authorized by state law and/or federal programs such as the Conservation Reserve Enhancement Program (CREP), and the Environmental Quality Incentive Program (EQIP).

10.2.2 Other State or NRD Programs

The SPNRD and the NeDNR may investigate opportunities to reduce the consumptive use of water in order to enhance water supply as well as other water supply improvement projects. The SPNRD and the NeDNR may develop an incentive-based program if such an opportunity exists. All projects and programs will:

- Use the best science readily available. **This will follow the basin-wide tenets outlined in section 7.2.** These will be consistently evaluated according to the protocol developed by the PBC. Benefits will be assessed using the agreed upon methods and tools.
- Enhance ground water quantity, ground water quality, and recognition of the value of return flows.

- Remain in compliance with any state or federal laws, contracts, interstate compacts, or decrees that govern the water use of the irrigation districts

The general process will be:

For existing surface water appropriations, contact the appropriators to determine willingness to cooperate, lease and/or sell those appropriations. If willing, develop and execute contract(s) with appropriator(s).

- A. Working with irrigation districts, not just individual landowners served by the irrigation district, when potential projects affect the operation of the irrigation district.
- B. Retirement of surface water rights (permanent or temporary). Retired surface water rights are still viable rights under statute. While typically a surface water right which has not been used for more than five years may be cancelled due to nonuse, under *Neb. Rev. Stat. § 46-2229.04*, if the appropriation is not being used because it is part of a acreage reserve program, or other state or federal program, there is sufficient cause for nonuse and the right is still valid. If the land is no longer under a program, this applies for up to 15 years as long as there are not more than 5 consecutive years of nonuse while the land is not under a program.
- C. For existing ground water uses, contact the landowner(s) to determine willingness to cooperate with the proposed project(s). If willing, develop and execute contract(s) with such landowner(s).
- D. Submit the required permit application(s).
- E. Implement the approved projects.

10.2.3 Other identified potential programs

At this time, the specific other programs that have been identified are:

- i. Potential purchase or lease of surface water irrigation district appropriations in order to transfer those appropriations to intentional recharge appropriations, and
- ii. Exploration of water supply opportunities on the South Platte River.

10.3 Water Banking

The SPNRD will establish a water bank. The SPNRD will purchase or otherwise acquire certified ground water irrigated acres or other ground water uses or surface water use appropriations. NRD's are the only entities that may create a water bank. The SPNRD will hold the water in its water bank for the purposes of:

- Offsetting new or expanded consumptive uses,
- Saving water to meet statutory requirements or interstate agreement obligations,
- Saving water to meet future incremental targets toward achieving a fully appropriated condition, or
- Future sales to individuals as offsets for development of new consumptive uses of ground water within the SPNRD.

The SPNRD and the NeDNR will follow the basic tenets from Chapter 7 Section 2 while implementing the water bank.

The SPNRD will contact the NeDNR prior to purchasing or acquiring surface water appropriations for deposit in the water bank. The NeDNR will conduct a field investigation of the surface water appropriation and notify the

SPNRD of the results of that investigation within 90 days. The SPNRD will work collaboratively with the NeDNR in performing the analysis to evaluate the bankable volume of water resulting from the retirement of the surface water appropriation. The SPNRD will follow the appropriate statutes, rules, and regulations of the NeDNR for approval if the surface water appropriation is to be transferred to another use.

The SPNRD will obtain and maintain permanent easements, lease agreements or other agreements on all property from which surface water or ground water uses have been retired for purposes of the water bank.

The SPNRD shall annually report all water-banking deposits, withdrawals, and other activities according to the specifications described in Section 10.7 of this IMP.

When carrying out any water banking activity, the SPNRD shall follow the procedures for any ground water regulatory action (e.g. transfers, certification, or municipal and non-municipal industrial accounting) applicable to such activity. When carrying out any surface water related water banking activity, the TPRND shall follow the appropriate state statute and NeDNR rules and regulations.

10.4 Conjunctive Management

Conjunctive management projects^[1] allow for the optimum use of hydrologically connected surface water and groundwater supplies, so that the variability seen in surface water supplies can be smoothed out over time, allowing water users to wisely store water during periods of surplus and, in a managed fashion, withdraw that stored water in times of shortage, overall increasing the available supply through time. Conjunctive management projects can also create benefits such as, mitigating groundwater level declines and offsetting depletions. The Department and the NRD will identify conjunctive management opportunities and implement such projects with the purpose of meeting the goals and objectives of this IMP.

Conjunctive Management may include, but is not limited to:

- Surface water appropriations that encourage recharge during either the irrigation or non-irrigation season, or temporary excess flow appropriations for recharge
- Develop new infrastructure (e.g. dams or canals) that may include groundwater recharge projects, and recovery when appropriate
- Temporarily transfer surface water appropriations within the NRD to streamflow augmentation, instream flow appropriations, or an instream use^[2]
- Develop other groundwater projects for the purpose of providing net accretions to the river
- Facilitate contractual agreements between water users
- Reduce consumptive use by permanently or temporarily retiring irrigated land

The NRDs and NeDNR will mutually develop procedures to determine when and where projects can be carried out (for example determining and communicating when and where excess flows are available), procedures for carrying out projects (permitting, contracting, and payment procedures), tracking projects and maintaining data records, sharing data, cooperating with other entities wishing to utilize excess flows, and methods for determining

^[1] See Section 8.1.3: Conjunctive Management Study for more information and a definition of “conjunctive management.”

^[2] *Neb. Rev. Stat.* § 46-290(5) in part states that “For any transfer or change approved [to augment flow in a specific stream reach for any instream use determined by the Department to be a beneficial use,] the Department shall be provided with a report at least every five years [...] to indicate whether the beneficial instream use for which the flow is maintained or augmented continues to exist”. Title 457 of the Department Rules for Surface Water Chapter 9 Section 002.01 states “For purposes of 46-290(5) R.R.S. 1943, as amended, beneficial use for instream uses shall include: a. Water Quality Maintenance b. Water necessary for compliance with compacts, decrees or other state contracts.”

benefits from projects (annually for IMP/BWP/PRRIP reporting and for Robust Review purposes). Techniques which can be actively managed and returned to the stream do have benefits over those that are passive (timing and volume of return is uncontrolled, unmanaged, unknown). Conjunctive management projects can be passively managed or actively managed. Actively managed projects, such as storage of excess water, can be returned to the stream at a specific time in controlled volumes, Passively managed, such as recharge of groundwater through excess flow diversions, return to the stream gradually over time and the rate and volume depends on the underlying aquifer material and proximity to the stream.

The ability to capture and use excess flows is dependent on advanced notice of the availability of excess flows. NeDNR will develop a protocol for assessing, predicting, and communicating 1) the potential of excess flows to basin water users, and 2) notice of actual availability of excess flows. The CPNRD and NeDNR will work collaboratively to record the excess flows diverted, the excess flows diverted into recharge sites, and the amount of water returning to the river at canal return flow structures. Additionally, CPNRD and NeDNR will collaboratively review and analyze the data from the excess flow diversions to determine the amount of recharge that occurred during the event within the canal and recharge pits. Data on canal recharge and conjunctive management projects will be shared as part of the annual reporting process, described in Section 10.7.2. The recharge will be analyzed in future Robust Review or other analyses.

In order to optimize the implementation of various conjunctive management projects where diversions of excess streamflow will occur, operational plans for each project should be developed. These operational plans should include enhanced monitoring and flow of information and data to effectively manage and utilize any available water. These operational plans will provide the Department with objective criteria by which various projects may be prioritized in order to most effectively utilize available excess flows. The public interest will be best served when the most effective projects are selected for diversion during excess flow periods. In addition, such plans and operational attributes will be useful in establishing good cause and passing public interest tests when petitions and applications are filed with the Department.

10.5 Drought Plan

The basin drought contingency plan will serve as a guide for plans developed by each individual Upper Platte River NRD. District-level mitigation measures and response actions corresponding to the drought conditions will be identified and implemented at the individual NRD level.

Elements of the NRD plan include:

- Vulnerabilities (Per Action Item 1.3.1 of the Upper Platte Basin-Wide Plan)
- Monitoring protocols (Upper Platte Basin-Wide Plan)
- Triggers (Individual NRD Plans)
- Mitigation actions (Individual NRD plans – potentially basin-wide activities)
- Response actions (Individual NRD plans – potentially basin-wide activities)
- Plan administration (Individual NRD plans and Upper Platte Basin-Wide Plan)

The SPNRD and NeDNR believe that the most significant impact on the economic viability of users in the SPNRD occurs during times of drought. Therefore, the SPNRD's Second Increment Integrated Management Plan will recognize that a focus on drought planning and mitigating the effects of depletions will be an important step toward consistently achieving a fully appropriated condition.

This action item is a focused effort to address drought preparedness during short and long-term drought conditions. Thus, the SPNRD will participate and support the development of a basin drought contingency plan for management of water supplies during times of shortages. Subsequently, the basin drought contingency plan will serve as a guide for a plan jointly developed by the SPNRD and NeDNR. Elements of a basin drought contingency plan may be considered for purposes of developing a Districtwide Drought Management Plan to define drought locally and identify processes for policy development to mitigate the impacts of future drought events. The timeline for planning and developing a Districtwide Drought Management Plan shall be completed, adopted and implemented no later than one year following the completion of the basin drought contingency plan unless the NeDNR and the SPNRD jointly agree to an extension of not more than one additional year.

10.6 Regulatory Action Items (Controls)

10.6.1 Ground Water Regulatory Action Items (Controls) for the Current Increment

These controls apply to the fully and overappropriated areas of the SPNRD. Within both the fully appropriated and overappropriated areas of the District, the SPNRD is currently implementing the following controls as authorized by *Neb. Rev. Stat. § 46-739*, and will continue to do so in the future for purposes of implementing this IMP:

The specifics of the processes for controls, including the evaluation criteria, can be found in the SPNRD's *Districtwide Ground Water Management Area Rules and Regulations*. Items covered in these rules which have additional information above and beyond what is in the IMP include: 1) Certification of Irrigated Acres, 2) Transfers (all types), 3) Large User Permit, and 4) Variances. The latest version of the Rules and Regulations is available by contacting the SPNRD office or can be found on its website at www.spnrd.org.

The SPNRD will periodically review the controls being implemented to carry out the goals and objectives of this IMP. The SPNRD may adjust, modify, expand, or add controls, based on the annual review of the progress being made toward achieving the goals of this IMP, and pursuant to *Neb. Rev. Stat. § 46-715(5)(d)(ii)*. No controls may be removed, however, unless and until the SPNRD and the NeDNR amend this IMP. The controls may not be modified in such a manner as to conflict with the goals and objectives of this IMP.

The evaluation criteria for all NRD actions (e.g. transfers, large user permits, municipal, industrial or variances, a transfer permit) that affect the amount of consumptive use of water and impacts to stream depletion will include, but not be limited to the consideration of the following:

- whether the proposed action will cause an impact to existing ground water or surface water users,
- whether the proposed action will cause an increase in depletions to the river,
- whether the proposed action will result in an increase in consumptive use,
- the amount, location and timing of any changes in depletions or accretions to the river due to the proposed action,
- whether the proposed action will cause adverse effects on the state's ability to comply with PRRIP or other interstate compacts, decrees or agreements,
- whether the proposed action is consistent with the purpose for which the Integrated Management Area was designated, and
- whether the proposed action will protect the public interest and prevent detriment to the public welfare.

The NeDNR and the SPNRD will continue to coordinate with the Central Platte NRD, Tri-Basin NRD, Twin Platte NRD and North Platte NRD to implement a consistent method of calculating depletions or accretions to the stream following the basin-wide tenets outlined in Chapter 6 Section 2, when such calculations are necessary to implement ground water regulatory actions.

The SPNRD and the NeDNR shall use the methodology for calculating depletions and accretions consistent with the other Upper Platte River Basin NRDs when evaluating proposed actions to ensure that the criteria for compliance with PRRIP, including the timing, location and amount of the depletion and corresponding offset, are met. Any actions taken by the SPNRD related to the approval of actions through a permitting process will be documented and shared with the NeDNR pursuant to subsection 10.7.1.

10.6.1.1 Moratorium

The SPNRD has implemented a moratorium on the issuance of water well construction permits and on new or expanded ground water uses. The SPNRD may grant a variance from the moratorium if there is an offset for any new or expanded use, or if there will be no increase in consumptive use due to the new or expanded use. In granting a variance, the SPNRD will consider the timing, location, and amount of the depletion, and the corresponding offset, in order to prevent adverse impacts on existing ground water or surface water users.

10.6.1.2 Metering

Meters are used to measure the amount of ground water being withdrawn from certain regulated wells in order to track water usage under allocations

10.6.1.3 Certification of Irrigation Uses

All ground water irrigation uses have been certified by the SPNRD. The SPNRD will consider the timing, location, and amount of any depletion associated with any modification to certified irrigated acres, as well as any associated offset in order to prevent adverse impacts to existing ground water or surface water users.

10.6.1.4 Transfers of Groundwater

The purpose of a ground water transfer is to allow for the consumptive use of ground water to be changed either in location or in purpose without causing an increase in depletions to the river or an impact to existing surface water or ground water users. The SPNRD may permit, regulate, or take action on the following types of ground water transfers: (1) physical transfer of ground water off of the overlying land, (2) transfer of the type of use or addition of use, (3) transfer of certified irrigated acres, (4) transfers of ground water from outside the District to inside the District, (5) municipal transfer permit (if the applicant does not have a municipal transfer permit from the NeDNR), (6) industrial transfer permit (if the applicant does not have an industrial municipal transfer permit from the NeDNR), and (7) transfers out of state.

10.6.1.5 Large User Permit

- a. Any industrial or commercial user, any non-transient non-community public water supplier, or any transient non-community public water supplier who desires to withdraw and/or consumptively use ground water in amounts greater than twenty-five (25) million gallons per year shall, prior to commencing use, expanding use in amounts greater than twenty-five (25) million gallons per year, changing the use of

an existing ground water well(s), commencing construction of a new or replacement ground water well(s), or modifies an existing well to consumptively use greater than twenty-five (25) million gallons per year must receive from the SPNRD a large user permit to authorize such withdrawal and/or use of ground water.

- b. If the user is supplied by a municipality, an agreement must be in effect between the SPNRD and the municipality regarding understandings, commitments, and joint responsibilities related to the large user permit before the issuance of a large user permit.
- c. Additional information regarding a large user permit can be found in the SPNRD Districtwide Rules and Regulations.

10.6.1.6 Variances

The SPNRD may grant a variance for good cause shown for any of the above listed controls. Any variance granted by the SPNRD must consider the timing, location, and amount of any depletion associated with the variance and any associated offset in order to prevent adverse impacts to existing ground water or surface water users, or on the state's ability to comply with PRRIP.

Additional information regarding variances can be found in the SPNRD Districtwide Rules and Regulations.

10.6.1.7 Municipal and Industrial Accounting Required for the Calculations of Baselines and the Determination of Allocations

- A. For purposes of compliance with the PRRIP, new or expanded M&I uses, calculated as part of the WWUM or COHYST 2010 models, will be evaluated each time a new Robust review is performed. At such time, the SPNRD and NeDNR will agree on any additional management actions that may be required at that time to provide necessary offsets to maintain compliance with the NNDP.

The following controls regarding municipal and industrial uses are in regards to *Neb. Rev. Stat. § 46-740*, are not specified in the SPNRD's Districtwide Ground Water Management Area Rules and Regulations, and are not related to the obligations under PRRIP.

- B. Municipal Use and Accounting prior to January 1, 2026

- i. The SPNRD has calculated a baseline consumptive use for each municipality in the SPNRD based on historic consumptive use data for the interval August 1, 2001, through July 31, 2006. Consumptive use was determined from ground water pumping volumes and, where applicable, wastewater discharge volumes, and converted to a per capita volume. A municipal baseline was determined as the total amount of ground water pumped minus the total amount of wastewater discharged, if applicable. Annual changes in consumptive use will be tracked annually for each municipality through a reporting and database system administered by the SPNRD.
- ii. The difference between each subsequent annual calculation of consumptive use and baseline will be recorded. The total above or below the baseline will be evaluated once every five (5) years beginning December 31, 2011. If at the end

of each five (5) year increment the total consumptive use exceeds five times the annual baseline, the SPNRD will be responsible for offsetting all increases from the baseline consumptive use as estimated by population growth except under either of the following events: (1) a municipality's water use exceeds the amount of ground water authorized by a permit that was issued pursuant to the Municipal and Rural Domestic Ground Water Transfers Permit Act, or (2) the increase is related to any new or expanded single commercial/industrial consumptive uses of more than twenty-five (25) million gallons per year.

- iii. Once every five (5) years beginning December 31, 2011, the municipality shall be responsible for reporting to the SPNRD and offsetting to the river, any ground water use that exceeds the amount authorized by a permit that was issued pursuant to the Municipal and Rural Domestic Ground Water Transfers Permit act, and any new or expanded single commercial/industrial consumptive use if that new or expanded consumptive use is greater than twenty-five (25) million gallons per year.
- iv. Any permanent reduction in consumptive use of water associated with municipal growth including governmental, industrial, and commercial growth (e.g., by taking irrigated acres out of production), between July 14, 2006 and January 1, 2026, shall accrue to the SPNRD's water bank to be used in whole or in part to offset increased consumptive use within the SPNRD. Acres taken out of production must be decertified and transferred to the SPNRD's water bank.

C. Municipal Use and Accounting on or after January 1, 2026

- i. In accordance with *Neb. Rev. Stat. § 46-740*, SPNRD will set an allocation for a municipality, based upon development of their baseline, which shall be determined as the greater of either (a) the amount of water authorized by a permit, or (b) the municipalities greatest annual use for governmental, commercial, and industrial use prior to January 1, 2026, plus a per capita allowance.
- ii. After the allocation (baseline) is established on or after January 1, 2026, all tracking, reporting, and offsetting will continue as described above in Chapter 5, a., sections one through 4.

D. Non-Municipal Industrial Use and Accounting prior to January 1, 2026

- i. The SPNRD will calculate baseline consumptive use for each non-municipal commercial/ industrial user in the SPNRD based on historic consumptive use data for the interval of August 1, 2001, through July 31, 2006. Consumptive use will be determined from ground water pumping volumes and, where applicable, wastewater discharge volumes. The baseline will be used to determine changes in consumptive use annually.
- ii. These changes in consumptive use will be tracked for each non-municipal commercial/ industrial user annually through a reporting and database system administered by the SPNRD.

- iii. The difference between each subsequent annual calculation of consumptive use and baseline will be recorded. The total above or below the baseline will be evaluated once every five (5) years beginning December 31, 2011. If at the end of each five (5) year increment the total consumptive use exceeds five times the annual baseline, of any new or expanded single commercial/industrial use that is less than or equal to twenty-five (25) million gallons per year, the SPNRD will be responsible for offsetting any reduction to streamflow or up to the amount of an industrial transfer permit, if applicable.
 - iv. Once every five (5) years beginning in 2011, if any new or expanded non-municipal commercial/industrial use exceeds twenty-five (25) million gallons per year and they do not have a transfer permit, the user will be responsible for offsetting all new or expanded consumptive uses. If the new or expanded non-municipal commercial/industrial use has a transfer permit, the user is responsible for offsetting all new or expanded uses above the amount granted in the industrial transfer permit.
 - v. Any permanent reduction in consumptive use of water associated with a new non-municipal commercial or industrial use of less than twenty-five million gallons (e.g., by taking irrigated acres out of production), between July 14, 2006, and January 1, 2026, shall accrue to the SPNRD's water bank to be used in whole or in part to offset increased consumptive use within the SPNRD. Acres taken out of production must be decertified and transferred to the SPNRD's water bank.
- E. Non-Municipal Industrial Use and Accounting on or after January 1, 2026
- i. The base amount for an annual allocation to a nonmunicipal commercial or industrial water user shall be the amount specified above in Chapter 5, c., section 1. As the baseline.
 - ii. Any increases in the consumptive use of water by a nonmunicipal commercial or industrial water user that result in a decrease in streamflow shall be offset by the user.

10.6.2 Triggers

In order to determine whether additional groundwater regulatory actions are needed, the annual stream accretion amounts shown in Table 1 under Goal 1 Objective 1.2. will be compared to the stream accretions resulting from the ongoing and future actions taken by SPNRD and any new depletions resulting from new uses and increased depletions resulting from existing uses. Based on the information shown in Table 1, the stream accretions from existing management actions, projects, or programs have been provided in amounts necessary to obtain a net sum of accretions of greater than or equal to zero in the next increment. As long as the annual net sum of the accretions resulting from the actions taken by SPNRD are greater than or equal to the values show in Table 1, additional regulatory actions will not be required. At this time, it is anticipated that annual progress and maintenance will be measured using a checkbook accounting of new accretions and depletions as compared to the values in the Table 1.

The NeDNR and SPNRD recognize the potential for implementation of voluntary programs, incentive measures, or other projects to provide stream accretions that will help maintain post-1997 depletions and accretions to a net sum of greater than or equal the values shown in Table 1 in the next increment, and will work diligently to implement measures to provide additional stream accretions in a timely manner. The NeDNR and SPNRD also recognize that the current Robust Review results have limitations which will be addressed throughout the IMP increment and that as Robust Review results are updated to address those limitations that the target values described within the IMP section 10.7 below may need to be updated. A net sum of accretions and depletions of greater than or equal to the results of the Robust Review must be maintained. Regular progress will be determined by the following indicator and triggers

10.6.2.1 To determine if an accretion to the Lodgepole Creek, North Platte River, and South Platte River equal to or exceeding the values in Table 1 has been sustained and to determine progress toward meeting the goals and objectives of this IMP, the NeDNR and the SPNRD will jointly perform a new Robust Review analysis in 2023 and 2027 to evaluate the overall affects to streamflow and assess the indicator and triggers below. The New Robust Review analyses may change the values found in Table 1 under Goal 1 Objective 1.2 and therefore may change the target values the indicator and triggers.

1. Indicator: If, by the end of 2023, an accretion to the Lodgepole Creek, North Platte River, and South Platte River equal to or exceeding the values in Table 1 throughout the first ten (10) year increment has not been sustained, the NeDNR and SPNRD will jointly determine whether any additional regulatory actions will need to be put in place by the beginning of the 2025 irrigation season.
2. Trigger 1: If, by the end of 2027, an accretion to the Lodgepole Creek, North Platte River, and South Platte River equal to or exceeding the annual values resulting from the most recent robust review that year and every year thereafter throughout the ten (10) year increment has not been met, the NeDNR and SPNRD will jointly determine what steps need to be taken to ensure that the agreed upon regulatory actions will be in place by the beginning of the 2028 irrigation season.
3. Trigger 2: By the end of 2027, measures will be in place to achieve an accretion to the Lodgepole Creek, North Platte River, and South Platte River equal to or exceeding the 50-year long-term planning target. If this trigger has not been met, the NeDNR and SPNRD will jointly determine what steps need to be taken to ensure that the agreed upon regulatory actions will be in place by the beginning of the 2028 irrigation season.

Chapter 10.7 describes how progress toward achieving the indicator and triggers will be measured.

At this time, the NeDNR and the SPNRD have identified the following ground water controls as potential regulatory actions that may be implemented in response to triggers:

10.6.2.2 Prior to implementation of any of the ground water controls listed below, the SPNRD and the NeDNR will agree to the method of implementation and the methods used to measure the success of the control(s) in reaching the goals and objectives of Chapter 8 of this IMP.

10.6.2.3 In order to reach these goals and objectives, a limit on the amount of consumptive use on certified irrigated acres within the boundaries of the NRD may be implemented. The methods by which a limit on the amount of consumptive use would be implemented include, but are not limited to, the following:

- i. Alternative Crop Mixes (*Neb. Rev. Stat. § 46-739(b)*)

Alternative crop mix would mean planting a mix of crops over a specified period of years for the certified irrigated acres within the overappropriated area for which there would be an upper limit on the consumptive use allowed. The amount of consumptive use allowed would be determined by the SPNRD after consultation with the NeDNR.

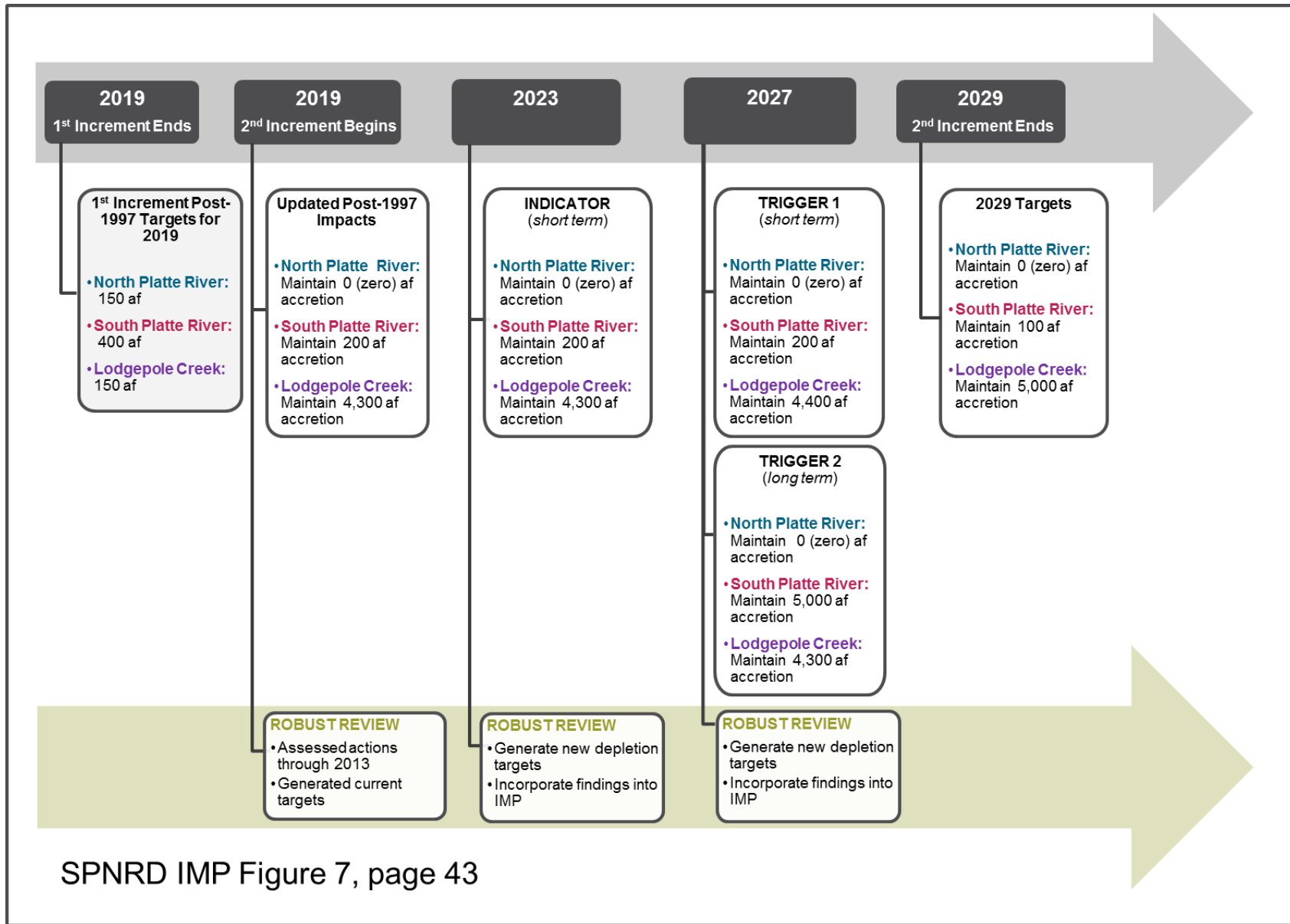
ii. Reduction of Certified Irrigated Acres

A reduction of certified irrigated acres would mean a set percentage reduction in certified irrigated acres within the overappropriated area. The amount of the reduction would be determined by the SPNRD and the NeDNR.

iii. Allocation

An allocation would mean a uniform allotment of the withdrawal of ground water to be applied to certified irrigated acres during a specified period within the overappropriated area. The amount of the allocation would be determined by the SPNRD and the NeDNR.

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10.6.3 Surface Water Regulatory Actions

10.6.3.1 The following surface water controls as authorized by *Neb. Rev Stat. § 46-716* will be implemented and/or continued by the NeDNR:

- A. The NeDNR will continue the moratorium on new surface water appropriations in the portion of the Upper Platte River Basin within the boundaries of the SPNRD, unless a variance is granted by the NeDNR according to its rules.
- B. Transfers of surface water appropriations will be in accordance with statutes and NeDNR rules.
- C. The NeDNR shall continue to administer surface water appropriations according to the provisions of the permit, statute, NeDNR rules and regulations, and any applicable interstate compact decree or agreement.
- D. The NeDNR shall continue to monitor the use of surface water to prevent unauthorized uses.
- E. For conjunctive management projects as described in Chapter 10 Section 4, the NeDNR may, via the permit approval process, require additional monitoring, measurements, and reporting of diversions, returns, seepage, and/or evaporation.
- F. Except as provided in (a) below, the NeDNR will not require surface water appropriators to apply or use conservation measures.
 - i. If, at some point in the future, the NeDNR requires surface water appropriators to apply or use conservation measures, in accordance with *Neb. Rev. Stat. §46-716(2)*, the surface water appropriators will be allowed a reasonable amount of time, not to exceed one hundred eighty (180) days unless extended by the NeDNR, to identify conservation measures to be applied or used and to develop a schedule for such application and use.
- G. Except as provided in (a) and (b) below, the NeDNR will not require any other reasonable restrictions on surface water use.
 - i. If, at some point in the future, the NeDNR requires other reasonable restrictions on surface water use, such restrictions must be consistent with the intent of *Neb. Rev. Stat. §46-716* and the requirements of *Neb. Rev. Stat. §46-231*.
 - ii. If, at some point in the future, the NeDNR requires other reasonable restrictions on surface water use, in accordance with *Neb. Rev. Stat. §46-716(2)*, the surface water appropriators will be allowed a reasonable amount of time, not to exceed one hundred eighty (180) days unless extended by the NeDNR, to comment on the proposed restrictions.
- H. Summary of Variance, Application, and Transfer Process Considerations

- i. The goals and objectives of this IMP will be considered when vetting petitions and applications for diversion of excess flows (unappropriated water). In fully and over-appropriated areas projects designed to meet the goals and objectives of the IMP are of primary importance. In addition to showing good cause in support of the goals and objectives, the effectiveness of each project will be considered. Operational plans that show effective use of water along with measuring and monitoring will be required. In assessing the public interest and whether a project should receive an appropriation, the NeDNR must consider reasonable conditions that may be imposed upon prospective appropriations to ensure that the best use is made of available water. The public interest will best be served when projects are selected for diversion during excess flow periods, which are most effective at meeting plan goals. Administering appropriations that are issued for the purpose of achieving these goals and objectives will require more scrutiny than assessing when the application was filed. Ranking projects according to performance and benefits will be required.
- I. Variance Process for new surface water appropriations
 - ii. *Department Rules for Surface Water, Title 457*, provides a process in which a person may request permission to file an application for a new surface water right in a moratorium area.
 - iii. Prior to filing an application in a moratorium area, a person must first petition the NeDNR for leave (request permission) to file an application in a moratorium area. These petitions are called a “variance,” or a “variance petition.”
 - iv. Because the Platte River Basin is currently undergoing integrated management for the purposes of reducing depletions to streamflow, any new consumptive use or retiming of stream base flow must be examined for its potential effects on extant surface and groundwater users and upon all matters of significant public interest and concern. This includes assessing both positive and negative impacts on the State’s ability to comply with interstate agreements, programs, decrees and compacts, including PRRIP. Thus, any proposed project must be scrutinized to prevent conflict with (a) the goals and actions necessary to implement the IMPs adopted by the Platte River Basin NRDs and the NeDNR and (b) the water needs of projects that will be implemented under PRRIP. Applications for potential beneficial uses that are not clearly non-consumptive will be presumed to be at least partially consumptive.
 - v. Therefore, an analysis of the effects of a proposed new diversion on existing uses and responsibilities is required in

order to determine whether sufficient good cause exists to grant a variance to apply for a new use.

- vi. Within the process for granting a variance the NeDNR shall review the information provided with the petition and shall make a determination as to whether it is sufficient to indicate good cause for allowing further consideration of the application.
- vii. *Neb. Rev. Stat. §46-706* defines “good cause shown” as, “a reasonable justification for granting a variance for a consumptive use of water that would otherwise be prohibited by rule or regulation and which the granting agency, district, or organization reasonably and in good faith believes will provide an economic, environmental, social, or public health and safety benefit that is equal to or greater than the benefit resulting from the rule or regulation from which a variance is sought;”
- viii. If the NeDNR grants the variance petition, the petitioner may then file the application for the project. The decision to grant the petition shall not bind the Director to approve any application to which it relates, or in any way be used as evidence of prejudice for the Director’s future decisions concerning the specific approval requirements of such an application. The NeDNR will specify the conditions under which an application may be filed in order to protect the public interest.

J. Application Review Process

- i. The NeDNR’s application review process is driven by Nebraska statutes, including but not limited to *Neb. Rev. Stat. §§46-233 to 46-235*. The following is not an exhaustive list of all factors used to reach a decision on approval or denial of an application.
- ii. There must be unappropriated water available in the source of supply and requirements of a variance petition approval must be met.
- iii. The proposed use must be determined to be beneficial.
- iv. An appropriation must not be detrimental to the public welfare.
- v. Denial of the application is not demanded by the public interest.
- vi. If the application will be approved, the NeDNR will impose conditions to protect other appropriators and the public interest.

K. Transfer Review Process

- i. Pursuant to Chapter 46 transfer statutes, the Director shall review an application for a transfer proposing a change in the location of use; type of appropriation; and or purpose of use, including but not limited to the following:
- ii. The proposed use of water after the transfer or change will be a beneficial use of water;
- iii. A request to transfer the location of use is within the same river basin;
- iv. The change will not diminish the supply of water available or otherwise adversely affect any other water appropriator;
- v. The quantity of water that is transferred for diversion or other use at the new location may be the historic consumptive use;
- vi. The appropriation is not subject to termination or cancellation;
- vii. If the transfer is to be permanent the preference category may not change;
- viii. If the transfer is to be temporary, it will be for no less than one year;
- ix. The transfer or change will not be inconsistent with any applicable state or federal law and will not jeopardize the state's compliance with any applicable interstate water compact or decree or cause difficulty in fulfilling the provisions of any other formal state contract or agreement;
- x. The transfer will be in the public interest.
- xi. Consistent with *Neb. Rev. Stat. §46-294*, the director's considerations relative to the public interest shall include, but not be limited to, (1) the economic, social, and environmental impacts of the proposed transfer or change and (2) whether and under what conditions other sources of water are available for the uses to be made of the appropriation after the proposed transfer or change.
- xii. Transfers subject to *Department Rules for Surface Water, Title 457, Neb. Admin. Code, Chapter 9, § 002*, are required to be determined to be in the public interest, "... the Director shall determine whether the benefits of the proposed transfer outweigh any adverse impacts that might occur giving consideration to the economic, social and environmental impacts and whether and under what conditions other sources of water are available for the uses to be made of the appropriation after the proposed transfer or change."
- xiii. The director may impose any reasonable conditions deemed necessary to protect the public interest.

10.7: MONITORING

The overarching purpose of the monitoring and studies section is to ensure that the SPNRD reach and/or maintain a fully appropriated condition. The objective of the monitoring and studies section of this IMP is to gather and evaluate data, information, and methodologies that could be used to increase understanding of the surface water and hydrologically connected ground water system, to test the validity of the conclusions and information upon which this IMP is based, and to assist decision makers in properly managing the water resources within the SPNRD. The described monitoring and studies actions are also important in ensuring the state remains in compliance with the NNDP and in keeping the IMP current.

Various methods will be employed to monitor the implementation and progress of this IMP. Sections 10.7.1 and 10.7.2 describe the tracking and reporting of water use activities within the District by SPNRD and the NeDNR. Section 10.7.3 describes the analyses that will evaluate the progress that has been made toward: addressing streamflow depletions due to new uses begun subsequent to July 1, 1997 (Section 10.7.3.1); reaching a fully appropriated condition (Section 10.7.3.2); maintaining a fully appropriated condition (Section 10.7.3.3); and evaluating whether a subsequent increment is necessary to meet the goals and objectives of this IMP (Section 10.7.3.4). Statute describes both an annual review (*Neb. Rev. Stat. § 46-715(5)(d)(ii)*) and a second more robust review of new and expanded uses and associated mitigation actions (*Neb. Rev. Stat. § 46-715(5)(d)(iii)*), covered in Section 10.7.3.1. The monitoring section describes the analyses that will evaluate the progress that has been made toward: (1) addressing streamflow depletions due to new uses begun subsequent to July 1, 1997; (2) reaching a fully appropriated condition; (3) sustaining a fully appropriated condition; and (4) evaluating whether a subsequent increment is necessary to meet the goals and objectives of this IMP.

10.7.1 Data and Tracking of Water Use Activities

Data from the five NRDs will be reported in a consistent format across the basin and from year to year to simplify the process of compiling data for the annual review and the robust review. A database will be developed to house this data. This database will facilitate the updating of model datasets.

Occasionally, actions for which permits are issued may not actually be implemented. For example, a well permit may be issued but the well not actually drilled. Because of this, in order to maintain accurate records of actual land use, annual permit and land use data should be updated within the database at the end of the next calendar year to reflect which actions did and did not take place. This includes NeDNR sharing information on any surface water permits cancelled in the calendar year (including temporary permits that expired one year after they are issued). This will help in creating yearly land use datasets when it is time to conduct the robust review. Ideally, the permit data should reflect an annual snapshot of changes in land use for that year. This will help update annual land use datasets for the models which will be used for the robust review

10.7.1.1 NRD Tracking

The SPNRD will be responsible for annually tracking the following activities within the SPNRD:

- A. Certification of ground water uses and any changes to these certifications;
- B. Approved transfers, including all of the information provided with the application and used in the approval of the transfer, the location of the land area or well that is being transferred, and the location of the land area or well that will replace the original;
- C. Relevant flow meter data collected by SPNRD staff on ground water certified acres, by physical inspection or inspection using telemetry equipment and calculated water used on those acres; data is collected at the end of the water year so reporting may not align with other annual tracking;
- D. Any water well construction permits issued;
- E. Any other permits issued by the SPNRD;
- F. Any conditions associated with any permits issued;
- G. Information gathered through the municipal and non-municipal industrial accounting process;
- H. Any variances issued, including the purpose, the location, any required offset, the length of time for which the variance is applicable, and the reasoning behind approval of the variance;
- I. Any retirements of irrigated acres or other activities by the SPNRD for the purpose of returning to a fully appropriated condition;
- J. Information related to any water banking transactions;
- K. Offsets provided for depletions resulting from increased consumptive use related to the above listed items;
 - i. This includes reporting on offsets and mitigation activities for the purpose of addressing post-1997 depletions and for the purpose of sustaining previous increment progress and reaching a fully appropriated condition. Such activities to be reported include canal diversions for the purpose of groundwater recharge, operation of stream augmentation projects, and irrigated acre retirements.
- L. Summary of available conservation plans of municipalities and industries within the basin including strategies that could be applied to other municipalities in the basin (at annual meeting).

10.7.1.2 NeDNR Tracking

The NeDNR will be responsible for annually tracking the following activities within the SPNRD:

1. Any surface water permits issued;
2. Any dam safety permits issued;
3. Any ground water permits issued; and
4. The associated offsets for any new permits issued.

5. Any retirements of irrigated acres or other activities by the NeDNR for the purpose of returning to a fully appropriated condition.

As new data would show a need for further analysis and to the extent that SPNRD meter data or other methods of estimation are not available to determine the consumptive use of water due to livestock, human water use, sandpits and reservoirs less than fifteen (15) acre-feet, the NeDNR will be responsible for tracking and reporting on the following activities within the SPNRD in the current increment:

1. National Agricultural Statistics Service livestock data;
2. US Census Bureau population data;
3. Inventory of sandpits;
4. Inventory of reservoirs of less than fifteen (15) acre-feet;
5. Offsets provided for depletions resulting from increased consumptive use related to the above listed items.

10.7.2 Reporting

- 10.7.2.1 An annual review of the progress being made toward achieving the goals and objectives of the ten (10) year increment will include annual reporting by the NeDNR and the SPNRD of the information being shared as described above. The reports from the SPNRD and the NeDNR should include information on the location, amount and timing of the depletions caused by each permitted new or expanded water use, as well as the associated offset and the location, amount and timing of the offset's accretions to the river. The depletions and/or the accretions should be reported for each year throughout the ten (10) year increment.
- 10.7.2.2 These reports should be made available at least four (4) weeks prior to each basin-wide annual meeting. The format of the reports will be standardized as agreed to by the NeDNR and the Upper Platte Basin NRDs.
- 10.7.2.3 Data from all NRDs and the NeDNR will be analyzed by the NeDNR to assess the collective amount, timing, and locations of the depletions to streamflows resulting from new or expanded uses and the collective amount, timing, and locations of all mitigations put in place. This will involve a simple analysis of impacts to streamflows resulting from permitted changes, which will not require model runs. These analyses will be done using the agreed upon methods and tools. Methods and tools used will be available to the stakeholders and the public. The data collected will then be trimmed to the relevant Platte River Recovery Implementation Program area, analyzed, and used for required annual and periodic reporting for the Nebraska New Depletion Plan, helping facilitate Nebraska's compliance with the Nebraska New Depletion Plan. The NeDNR will

generate these reports and will coordinate with the SPNRD to ensure the accuracy of data within any final report.

- 10.7.2.4 The data and the analysis will be presented at the basin-wide annual meeting. The reported information will be used as appropriate in the evaluation process as described below.

10.7.3 Evaluation: Measuring the Success of Meeting the Goals and Objectives of this IMP.

Measuring the success of this IMP in addressing streamflow depletions due to new uses begun subsequent to July 1, 1997 (Goal 1 from Chapter 9).

10.7.3.1 Annual Review:

In order to meet the requirements of *Neb. Rev. Stat.* § 46-715(5)(d)(ii), the data contained in the annual reports submitted by the SPNRD and the NeDNR will be reviewed and analyzed annually to assess the progress being made toward achieving the goals and objectives of Chapter 6 of this IMP for the first ten (10) year increment. The annual review will consider both the near-term and long-term effects of any permitted new consumptive uses. A 50-year stream depletion curve may be used to assess the impacts of any new uses contained within the annual reports to show the long-term potential impacts of annual changes.

10.7.3.2 Robust review:

In addition to the annual review, a more robust review of the progress being made toward achieving the goals and objectives of Chapter 6 of this IMP for the first ten (10) year increment will be carried out periodically. This study will be developed to meet the requirements of reporting for the NNDP as well as *Neb. Rev. Stat* § 46-715(5)(d)(iii) to determine whether the measures adopted in this IMP are sufficient to offset depletions due to post-July 1, 1997, water uses and sustain progress toward a fully appropriated level of water use (Robust review). A robust review will be conducted in 2023 and 2027. The purpose of these robust reviews will be to address the indicator and triggers outlined in section 10.6.2 of this IMP, which helps measure progress toward reaching the targets from Chapter 9. The process for this review is described below. The previous robust review will also serve as guidance for conducting the next one.

The general method for conducting the robust review will be as follows:

- A. The groundwater models used for this process will be calibrated to streamflows/baseflows and groundwater levels in the area with the ability to assess the impacts on a monthly basis. The groundwater models will be updated periodically to simulate the management practices that have been implemented to date. The evaluation period of these models will be 50 years into the future.
- B. The following groundwater model runs will be conducted to measure the success toward reaching Objective 1.2:

- i. The 1997 Development Level Run. A model run that simulates holding the number of irrigated acres and crop types or mix in 1997 constant through the current date and the fifty-year projection period. Unless more accurate data is available, to estimate 1997 levels of consumptive use, it will assume the full crop irrigation requirement for the crop types or mix. The run will be conducted using climate data through the current date and will include a fifty-year projection using an agreed to climate pattern.
- ii. The Historical Run. A model run that simulates the actual annual changes of the irrigated acres, excess flow recharge events, retirements, allocation effects, augmentation projects, and other water management regulations or projects throughout the evaluation period starting in 1997 through the current date and the fifty-year projection period. The fifty-year projection period will repeat an agreed to land use, regulation, or project dataset. The model will use available flow meter data or, in the absence of flow meter data, assume the full crop irrigation requirement was met at all times. The run will be conducted using data through the current date and will include a fifty-year projection using an agreed to climate pattern.
- iii. Difference between the 1997 Development Level Run and the Historical Run. The simulated output from each model run will be compared to determine the difference in the streamflow/baseflow that has resulted from post-1997 development. Effects on streamflows/baseflows from allocations and landuse changes are reflected in this comparison as both the meter data and landuse changes are incorporated to determine groundwater pumping for the two Runs.
- iv. Other Management Actions Analyses not covered by the Models. If other management actions are taken to offset streamflow depletions due to new uses begun subsequent to July 1, 1997, accretions resulting from those retirements will be determined using agreed upon methodologies. This would include conjunctive management activities that are not otherwise captured in the models.
- v. Evaluation Results. For Objective 1.2 to be considered achieved, the results of combining the difference between the 1997 Development Level Run and the Historical Run with the addition of management action accretions not covered by the models must be greater than or equal to zero.

$$(F_h - F_d) + (S_a) = D_{net}$$

Where:

F_h = Simulated streamflow/baseflow from the Historical Run

F_h = Simulated streamflow/baseflow from the 1997 Development Level Run

S_a = Other Management Action Accretions

D_{net} = Net Depletions

*Note: In equation above, streamflow/baseflow is a positive

10.7.3.3 An additional groundwater model run will be conducted to measure total depletions. This will be the Pre-Development Run. The Pre-Development Run will compare the Historical Model Run with a simulation of no groundwater development to determine the total depletions associated with all ground water only land use development. The run will be conducted using climate data through the current date and will include a fifty-year projection using the historical Run's agreed-to climate pattern.

A. Total Depletions Evaluation

$$(F_h - F_p) = D_t$$

Where:

F_h = Simulated streamflow/baseflow from the Historical Run

F_p = Simulated streamflow/baseflow from the 1997 Development Level Run

D_t = Total Depletions

*Note: In equation above, streamflow/baseflow is a positive

B. If integrated models are used to assess impacts to the total streamflow, the methods to be used will be developed jointly between NeDNR and the Upper Platte River Basin NRDs to properly design and constrain those analyses so that the results can be used to assess progress toward the goals and objectives of the IMP.

C. Municipal, Industrial, Domestic and Livestock use will be evaluated as part of the Robust review

- i. Data will continue to be collected on the water use of municipalities and industries within the basin.
- ii. Gather information on total pumping, consumptive use, and timing of any return flows and collect data on water use efficiency and conservation methods being employed

10.7.3.4 Allocations analysis

A. While the effects of the allocations at offsetting post-97 depletions and providing additional accretions is captured in the Robust Review modeling described above, the NPNRD conducts an annual allocations analysis at a more frequent interval for the purpose of assessing the effectiveness of the allocations This will allow the

SPNRD to closely monitor whether their allocation continues to be effective. The general outline for the analysis is:

1. Incorporate Meter data
2. Conduct historical model run, which includes the groundwater only metered pumping records,
3. Conduct modified run, which replaces the groundwater only metered pumping records with estimated pumping simulating full irrigation crop consumptive use of the crops grown on each parcel or certification.
4. Compare the stream baseflow of the historical model to the stream baseflow of a modified version. The comparison in stream baseflow between the two model runs determined the additional flow that is present in the North Platte River and tributaries as a result of the allocations and the subsequent reduction in consumptive use.
 - i. For planning purposes, the model is run for 50 years into the future by repeating an average or another representative climate pattern.
 - ii. In the current increment variations of this analysis may also be completed to determine if there are any benefits from the allocations on commingled lands or other appropriate model runs.

10.7.4 Evaluation: Measuring the Success of Reaching a Fully Appropriated Condition.

A technical analysis to support and evaluate effectiveness of this IMP and adequacy in sustaining progress toward a fully appropriated level of water use must be conducted.

10.7.4.1 Because a fully appropriated condition is not currently determined, the NeDNR and the SPNRD will work on outlining the process that will measure the success of reaching the fully appropriated condition once that condition has been determined. The NeDNR and SPNRD will continue to refine the methodology used to determine the difference between the current and fully appropriated levels of development in each NRD.

10.7.4.2 The evaluation of the difference between current and fully appropriated levels of development is tied to Statute and the current rules of the NeDNR for declaring a basin fully appropriated. Statute requires that this evaluation will:

- Take into account cyclical supply, including drought,
- Identify the portion of the overall difference that is due to conservation measures,
- Identify the portion of the overall difference that is due to water use initiated prior to July 1, 1997, and
- Identify the portion of the overall difference that is due to water use initiated or expanded on or after July 1, 1997.

The current NeDNR rules for determining fully appropriated status includes evaluation of the most junior appropriator's access to water, adjustments for lag effect of groundwater depletions and accretions on water supplies, and consideration of instream flows, among other guidance for conducting

the analysis. The rules also provide flexibility for NeDNR to “...utilize a standard of interference appropriate for the use, taking into account the purpose for which the appropriation was granted...”¹³ for uses which are not defined in the rule. These include storage and hydropower appropriations, which are significant appropriators in the Upper Platte River Basin. NeDNR and the NRDs have and will continue to work with impacted water users on the process for determining the difference between the current and fully appropriated condition of the basin.

The assessment of total depletions is one approach to assist in identifying what a fully appropriated condition may be. The INSIGHT analysis of supplies and demands is another possible approach to help identify this.

10.7.5 Evaluation: Measuring the Success of Maintaining a Fully Appropriated Condition.

- 10.7.5.1 Fully Appropriated Area - Monitor and analyze uses in the fully appropriated area to determine the change in stream depletions due to such uses.
- 10.7.5.2 Overappropriated Area - Because a fully appropriated condition is not currently determined, the NeDNR and the SPNRD will work on outlining the process that will measure the success of maintaining a fully appropriated condition once that condition has been determined.

10.7.6 Evaluating the Need for a Subsequent Increment

- 10.7.6.1 The NeDNR and the SPNRD will carry out the studies and the technical analysis as specified in *Neb. Rev. Stat. § 46-715(5)(d)(iii)* to determine whether or not a subsequent ten (10) year increment is necessary. This will include a process to test the validity of the conclusions and information upon which this IMP is based, as required by *Neb. Rev. Stat. § 46-715(2)(e)*.
- 10.7.6.2 Within the second ten (10) year increment, the NeDNR and the SPNRD will continue to refine the estimation methodology used to calculate the difference between the current and fully appropriated levels of development in accordance with *Neb. Rev. Stat. §46-715(5)(c)*. Fully appropriated levels of development will be determined through the following process:
 - A. Determine the changes in recharge from surface water diversions and the impacts of those changes on streamflow using readily available data.
 - B. Determine the changes in ground water irrigation, municipal, industrial, domestic, livestock and other uses and the streamflow depletions caused by those changes using readily available data.
 - i. Determine the effects of conservation measures on streamflows.

¹³ Title 457, Chapter 24, Section 001.01B of the Nebraska Administrative Code, dated June 27, 2008.

- ii. Determine the timing and location of the net changes in streamflow.
 - iii. Determine when streamflow changes impact existing users, taking into account the effects of cyclical supply (e.g. drought).
1. If significant changes in either the timing or location of streamflow have impacted existing users, the SPNRD and the NeDNR will work collaboratively with affected parties to determine subsequent ten (10) year increment goals. These goals will include consideration of the socioeconomic benefits derived from the various uses impacted by such changes in streamflow.
 2. The NeDNR and the SPNRD will review other data and/or methodologies relevant or significant to the process.

10.7.6.3 The process described above in Section 10.7.6.2 focuses on uses initiated prior to July 1, 1997, and their impacts on hydrologically connected streamflows. All uses initiated subsequent to July 1, 1997, will be evaluated using the process described in Section 10.7.3.

10.8 STUDIES FOR CURRENT INCREMENT

10.8.1 Second Increment Priority Studies

The Basin-Wide Plan calls for several studies and collection of information within the basin. Those studies and information are also critical to the successful implementation of this IMP. The studies include:

- a. Collect data on commingled acres to identify, quantify, and proportion the source and quantity of water used on acres irrigated with both surface water and groundwater. Gather data on water use on such lands (both why and when irrigators use surface water or groundwater).
- b. Conduct a study that identifies water users that are affected during cyclical variations in water supply. This hydrologic element analysis will be conducted by NeDNR and the Upper Platte River Basin NRDs by evaluating data such as stream gage and diversion records, and well hydrograph data. Focused surveys of, as well as meetings with basin water users can be used to build on stakeholder input gathered throughout the planning process. Once impacted water users who are hydrologically affected by water supply variability are identified, economic impacts can be estimated.
- c. NeDNR and the NRDs will collaborate with impacted water users and other entities to gather relevant economic data. Potential partners include economists and other subject matter experts familiar with the economic drivers of the basin who can help identify data needs and formulate the tools and methodologies for assessing economic impacts. The tools and methodologies will be used to not only evaluate impacts of supply variability, but also evaluate human-made depletion impacts,

management actions, regulatory actions, and potential projects or other activities considered during implementation that may affect water availability.

- d. Study economic impacts of drought, which will be a component of the drought plan
- e. Study potential for developing markets and transfer protocols for annual surface water and groundwater supplies.
- f. Study management options of storage water (both surface water reservoirs and aquifer storage, and existing and potential new storage) to provide flexibility and increase resiliency of water supplies.

10.8.2 Increment Potential Studies

There are many other factors that have the ability to impact streamflows. It is important to investigate these things to assess their potential effectiveness in achieving the goals and objectives of this IMP and identify new potential management actions. Pursuit of these studies will be contingent upon budget and staff resources.

The NeDNR and the SPNRD have identified the following potential studies:

- a. Crop rotation,
- b. Vegetation management,
- c. Irrigation scheduling,
- d. A survey of the type and location of irrigation systems throughout the SPNRD,
- e. Tillage practices,
- f. Other best management practices,
- g. Conjunctive management – continue to investigate effects of projects within the SPNRD and look for new opportunities,
- h. Water budget analysis,
- i. Invasive species, and
- j. Conservation measures – continue to investigate the effects of the implementation of these measures and their level of use within the NRD.

10.9: REVIEW OF AND MODIFICATIONS TO THE IMP

10.9.1 During implementation of the IMPs, NeDNR and the NRDs will monitor IMP actions consistent with the analyses and methods contained in the basin-wide plan and amend the IMP if activities are determined by the parties to not be capable of meeting goals. If NeDNR and an Upper Platte River Basin NRD determine that management actions have not provided the offsets required to meet the goals of the Upper Platte River Basin-Wide Plan, they will agree to increase offset activities to the extent possible and revise the individual SPNRD IMP if necessary. These revisions may include additional controls, if needed, to meet goals of the IMP.

10.9.2 The SPNRD and the NeDNR will jointly determine whether amendments need to be made to this IMP as necessary. Any proposed modifications will be discussed at the annual basin-wide meeting.

- A. Situations that may prompt revision or modification of this IMP are described below.
- i. The SPNRD and the NeDNR may amend this IMP after the annual review of progress being made toward achieving the goals and objectives of Chapter 9 of this IMP
 - ii. If published results of WWUMM or other model or tool developed as part of the monitoring effort, indicate annual depletion values different from those in table 1, the NeDNR and the SPNRD how this IMP may need to be revised.
 - iii. DNR and the SPNRD may amend this IMP as more data and information become available, as provided in *Neb. Rev. Stat. §46-715(5)(d)(ii)*.

10.9.4 If the Basin-Wide Plan is revised and results in the need for this IMP to be revised to be consistent with the Basin-Wide Plan, this IMP will be revised accordingly, in accordance with *Neb. Rev. Stat. §46-715(5)*.

10.9.5 The above items will be discussed at the annual basin-wide meeting and it will be decided if modification is needed. An advisory or stakeholder group may be convened, if the affected NRD(s) and DNR determine that the proposed changes warrant the formation of such a group. If the Platte River Basin NRD(s) and DNR agree on revisions to an IMP, then a hearing will be held to solicit formal comment. The IMPs for each of the five Upper Platte River Basin NRDs shall be provided to all other NRDs in the overappropriated basin for comment before revisions are approved.

A. Basin-Wide Plan Disputes

1. If a dispute is presented at the annual meeting as described in the Basin-Wide Plan, the Upper Platte River Basin NRDs and the NeDNR will make a determination of whether or not the dispute has hydrologic impact. If it is determined that the dispute does have hydrologic impact, then the Upper Platte River Basin NRDs and the NeDNR will determine whether the dispute pertains to all of the Upper Platte River Basin NRDs or just too individual NRD(s).
2. If the dispute pertains to all of the Upper Platte River Basin NRDs, the Upper Platte River Basin NRDs will conduct an investigation and the NeDNR to determine what management actions will address the dispute(s) in the Basin-Wide Plan and/or the IMPs. If the management action pertains to this IMP, it will be revised accordingly.
3. If the dispute is not a basin-wide issue, but pertains to the SPNRD, the NeDNR, the SPNRD and any other affected Platte River Basin NRD(s), working with the affected water user(s), shall develop management solutions as appropriate to address the issue(s).
4. Disputes related to the implementation of the IMP will also be discussed

B. Additional Ten (10) Year Increment

1. Based on the results of the technical analyses described in Section 10.7.3, the SPNRD and the NeDNR will evaluate the need for a subsequent increment. This includes determining whether post-July 1, 1997, depletions have been offset and the progress made toward achieving a fully appropriated condition or maintaining such a condition.
2. If it is determined from this technical analysis that a subsequent ten (10) year increment is needed to meet the goals and objectives of this IMP, then pursuant to *Neb. Rev. Stat. §46-715(5)(d)(iv)*, the goals and objectives for the subsequent ten (10) year increment will be developed using the consultative and collaborative process described in *Neb. Rev. Stat. §46-715(5)(b)*. The subsequent ten (10) year increment shall be completed, adopted and take effect not more than ten (10) years after adoption of this IMP.
3. NeDNR and the individual NRDs will engage stakeholders in a collaborative process in the development of goals and objectives for subsequent increments (beyond the second increment) of the individual IMPs if necessary. The need for subsequent increments will be determined through the robust review process completed at the end of the second increment and described in section 10.7. Should a subsequent increment be necessary, the planning process will be initiated by NeDNR and each NRD developing a public participation plan that outlines the stakeholder engagement process for the NRD's IMP, including identification of participants/parties, definition of roles, decision making protocols, planning processes, and timelines. This public participation plan serves as a reference guide for participants as well as the public throughout the planning process. This effort is analogous to the basin-wide collaborative process described in the basin-wide plan, but focused on the individual NRD stakeholder collaboration. The public participation plan developed for the second increment basin-wide plan development can be found as an appendix to the second increment Upper Platte River Basin-Wide Plan.

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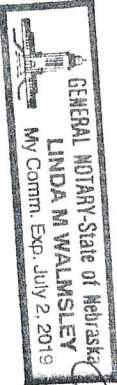
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NOTARY PUBLIC

PUBLIC NOTICE

The South Platte NRD and the Nebraska Department of Natural Resources (NeDNR) will hold a Stakeholders Advisory Committee meeting on Wednesday, February 27, 2019, beginning at 1:00 PM (Mountain Time) at Western Nebraska Community College, 371 College Drive, Sidney, Nebraska. The purpose of the meeting is to discuss and develop goals and objectives to support the second increment of the jointly developed integrated management plan. The public is welcome to attend this stakeholder meeting; there will be opportunity for public comment toward the end of the meeting. Individuals with disabilities may request auxiliary aids and services necessary for participation by contacting Beth Eckles at the Nebraska Department of Natural Resources, telephone 402-471-0661 or by email at beth.eckles@nebraska.gov, before 5 pm Central Time, Thursday, February 21, 2019.

AFFIDAVIT OF PUBLICATION

The undersigned, being duly sworn deposes and says that he is Principal Clerk of the SIDNEY SUN-TELEGRAPH, a bi-weekly newspaper of general circulation in Cheyenne County, State of Nebraska, and that a notice entitled:

Stakeholders Meeting

a true copy of which is hereto attached and made a part hereof, was published in said newspaper 1 consecutive week(s) the first publication having been made the

30 day of February 2019

and the last publication having been made the 30 day of February 2019

that said newspaper has been published bi-weekly in the English language at the City of Sidney, within said county and state for more than fifty-two consecutive weeks, immediately prior to the first date of publication above, and twice every week successively since that day, and during all said times has had and now has a bona fide circulation of more than 300 copies weekly and during all said time has been and now is printed in whole or in part in an office maintained by the Publishers at the said place of publication.

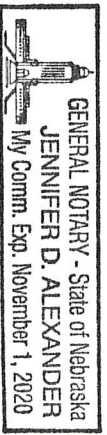
John Powell

Subscribed in my presence and sworn to before me this 30 day of February 2019

Jennifer D. Alexander
Notary Public

My commission expires 11-1-20

(SEAL)



L19-140
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[Published in the Sidney Sun-Telegraph on February 20, 2019]

NOTICE OF MEETING

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AFFIDAVIT OF PRINTER

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COUNTY OF KIMBALL

I, Nichole L O'Brien, being duly sworn and under oath, say that I am an employee of Western Nebraska Observer, Company (a corporation), publishers of Western Nebraska Observer, an English Language weekly newspaper published in Kimball, Nebraska, with general circulation in both Kimball and Banner Counties, among others. I certify that said newspaper is a legal newspaper under the statutes of Nebraska, has a bona fide weekly circulation of at least 300, has been published at least 52 weeks prior to publication of this notice, that it holds a second class postage permit; and that to my personal knowledge, the attached clipping was printed in the regular and entire issue of the Western Nebraska Observer for one (1) week(s), beginning with the issue dated:

February 21, 2019
and ending with the issue dated:

Nichole L O'Brien, 2019

Signed

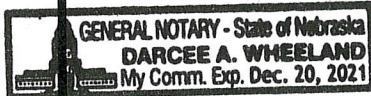
Subscribed and sworn to before me this:

2nd day of February, 2019
Darcee A Wheeland

Notary Public

Printer's Fees:

\$14.51



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1 - 25 - 2019
SOUTH PLATTE NRD

IMP Stakeholder Meeting June 20, 2018

Present	Name	Email	Best Contact Phone Number	Corrections
✓	Bill Halligan	bill.halligan@pwcbank.com	308-235-5900	
	Jim Johnson	jim.johnson@outlook.com	308-241-1742	
✓	Tim Maas	maasfam@vistabeam.com	308-249-0103	
✓	Phil Grabowski	grabow65@gmail.com	308-249-6460	
✓	Chris Meyer	meyerc673@hotmail.com	308-250-1745	
✓	Kathy Narjes	rodekohr@hotmail.com	308-874-4371	
✓	Larry Rutt	llrutt78@vistabeam.com	308-874-4107	
	Alan Adamson	a_dch@hotmail.com	308-235-9400	
✓	Carson Sisk	KimballWater@kimballne.org	308-241-1636	
✓	John Perry	jpperry@embarqmail.com	308-235-5035	
✓	Rick Dickinson	bvfd@daltontel.net	308-235-7093	
✓	Rol Rushman	RolRushman@Daltontel.net	308-249-1384	
✓	Marc Sprenger	sprengermarc@hotmail.com	308-249-4783	
✓	Randy Horst		308-250-2431	
	Mike Behrends	behrends30@hotmail.com	308-483-5367	
✓	Bernie Fehringer	bfehringer@icloud.com	308-249-3116	
✓	Nathan Knobbe	nathank@dinklagfeedyards.com	308-249-5404	
✓	Ed Sadler	esadler@cityofsidney.org	308-254-4444	
✓	Randy Faessler	tfasss@yahoo.com	308-249-5534	
✓	Dave Weiderspon	wbvet@yahoo.com	308-254-2704	
✓	Kevin Derry	derrykbb@embarqmail.com	308-874-4240	

Attachment E - Attendance Sheet

✓	Jared Derry	jared.derry32@gmail.com	308-874-4477	
✓	Mark McGreer	mcreermark51@hotmail.com	308-289-0252	
	Don Kraus	dkraus@cnppid.com	retired/do not call	
✓	Jeff Shafer	jshafer@nppd.com	402-362-7360	
	Tim McCoy	tim.mccoy@nebraska.gov	replaced by Michelle Koch	
	Al Hanson	al.hanson@nebraska.gov	308-763-2940	
✓	John Flint	john.flint@nebraska.gov	308-641-7273	
✓	Kaitlyn Steinwart	kaitlyn.steinwart@nebraska.gov	308-765-9293	
	Kristin Dickinson	kristin.dickinson@ne.usda.gov	308-249-2766	
	Steve Sibray	ssibray@unhnotes.unl.edu	308-632-1382	
✓	Thad Kuntz	thad@adaptiveresourcesinc.com	308-633-2890	
✓	Rod Horn	rlhorn@spnrd.org	308-254-2377	
✓	Ryan Reisdorff	rreisdorff@spnrd.org	308-254-2377	
✓	Travis Glanz	tglanz@spnrd.org	308-254-2377	
✓	Melissa Mosier	melissa.mosier@nebraska.gov	402-471-3948	
✓	Beth Eckles	beth.eckles@nebraska.gov	402-471-0661	
✓	Jennifer Schellpeper	jennifer.schellpeper@nebraska.gov	402-471-2899	
✓	Mike Drain	mldrain@cnppid.com	308-995-8601	
	Randy Zach	rrzach@nppd.com		
	Devin Brundage	dbrundage@cnppid.com	308-529-1621	
	Jeff Buettner	jbuettner@cnppid.com	308-995-3559	
✓	Michelle Koch	michelle.koch@nebraska.gov	402-471-5438	