

Platte Basin Coalition Committee

DRAFT Minutes

October 12, 2016, 1:30 p.m. Central Time
TPNRD Office, Great Western Bank Building, North Platte, NE

Call to order and attendance: Miller called the meeting to order at 1:30 p.m., Central Time. Sponsors and partners in attendance (Attachment A) were:

Duane Woodward	CPNRD	John Berge	NPNRD
Jesse Mintken	CPNRD	Tracy Zayac	NPNRD
Jennifer Schellpeper	NeDNR	Elizabeth Miller	NPNRD
Kayla Crowe	NeDNR	Ryan Reisdorf	SPNRD
Jessie Winter	NeDNR	John Thorburn	TBNRD
Melissa Mosier	NeDNR	Kent O. Miller	TPNRD
Kathy Benson	NeDNR	Ann Dimmitt	TPNRD
Rod L. Horn	SPNRD		

Guests in attendance:

Rick Wilson	JEO	Jeff Shafer	NPPD
Thad Kuntz	ARI	John Engel	HDR
Kevin Boyd	CNPPID	Simone Rock	HDR
Jesse Bradley	The Flatwater Group	Stephanie White	HDR

- 1. Welcome and Open Meetings Act:** Miller noted that a copy of the Open Meetings Act was available in the meeting room.
- 2. Publication of Meeting Notices:** The NeDNR published a public notice (Attachment B) of the PBC meeting in the Grand Island Independent on October 1, 2016, the North Platte Telegraph on October 4, 2016, and the Scottsbluff Star Herald on October 2, 2016.
- 3. Agenda Modifications:** No revisions were made to the agenda (Attachment C).
- 4. Approval of the August 2, 2016, PBC Meeting Minutes:**

Motion: To approve the August, 2016, PBC meeting minutes (Attachment D).
Woodward motioned to approve and Berge seconded. Motion passed with all ayes.
- 5. Budget Update (NeDNR) (Attachment E):**
 - A. First three-year increment funding:**

- i. **Cow Camp:** The long-term retirement agreement is final. Schellpeper proposed that the remaining Cow-Camp funds be moved into years 4-6. The change will be made onto the budget sheet.
- ii. **N-CORPE:** The contract will be amended, and remaining money will be moved to years 4-6.

B. Second three-year increment funding (years 4-6):

- i. **NPNRD Long-Term reimbursement Contract:** The contract was drafted and awaiting final signatures.
- ii. **Excess Flow Projects (Attachment F):** Schellpeper referred to the attached memo on E65/Elwood Reservoir and Phelps Canal wherein there is a request for approval of funds for the diversion of excess flows. The Tri-Basin NRD board and NeDNR are working together on the numbers in this proposal. NeDNR, PRRIP, and CNPPID are moving forward to take advantage of excess flows on Phelps Canal. Those budget dollars will be coming from the general fund, but is mentioned here for informational purposes. The correct amount will be entered into the budget sheet.

Motion: To approve the E65 and Elwood Reservoir proposal on funding for excess flows.

Thorburn motioned to approve, Woodward seconded. Motion was passed with all ayes.

C. Studies:

i. Conservation Measures Study:

a. Invoices:

1. The Conversation Studies Phase II invoice (Attachment G) in the amount of \$18,780.00 is to be split 50/50 between the NRDs and NeDNR (\$1,878.00 x 5 NRDs; \$9,390 x NeDNR).
2. The OA/FA Refinement Invoice (Attachment H) in the amount of \$990.99 to be split between the NRDs and NeDNR (\$99.90 x 5 NRDs; \$495.45 x NeDNR).
3. 2nd Increment Facilitation has two invoices (Attachments I & J) in the amounts of \$34,993.30 (\$3,499.33 x 5 NRDs; \$17,496.65 x NeDNR), and \$3,894.00 (\$389.45 x 5 NRDs; \$1947.33 x NeDNR).

Motion: To approve all invoices for payment. **Berge motioned to approve and Thorburn seconded. Motion passed with all ayes.**

Action: NeDNR will send individual invoices to the NRDs.

ii. Robust Review:

- a. The contract between the Platte Basin Water Project Coalition and Flatwater (Attachment K) for the Robust Review was drafted and needs an action for approval.

Motion: To approve the Robust Review contract with Flatwater. **Horn motioned to approve and Schellpeper seconded. Motion passed with all ayes.**

iii. Difference Between Current and Fully Appropriated:

a. The invoice was approved in a motion with the other invoices.

iv. 2nd Increment Planning Facilitation:

a. Two invoices were approved in one motion with the other invoices.

6. Project Updates

A. N-CORPE (TPNRD):

i. Miller stated the outlet structure construction is underway for the north pipeline into the NPPD canal. Bids will be taken in the next few months.

B. J-2 Regulating Reservoir (NeDNR):

i. Schellpeper referred to the quarterly report from CNPPID (Attachment L). The Governance Committee is still moving to put the project on hold contractually. There are some activities yet to be completed which will take approximately \$2,000 to complete. The land purchase is the biggest question at this time and is still to be determined.

C. North Platte NRD Leases and Retirements (NPNRD):

i. Contracts have been drawn. The remaining groundwater well on the Hardt property has been decommissioned. The Tighe property has an option for an additional 440 acres which is being looked at for a Water Sustainability Fund project.

D. Tri-Basin NRD Phase II Augmentation-North Dry Creek (TBNRD):

i. No new report. The wells have not been running since July 2016.

E. South Platte NRD Industrial Baseline Offset (SPNRD):

i. A reimbursement request was submitted in September and the contract should be completed by the end of the year. Horn deemed this a successful project, and no longer a necessary agenda item.

F. Oliver Reservoir Streamflow Enhancement (SPNRD):

i. A contract has been signed with NeDNR. The project is moving forward and a possible augmentation well or dam dike is being looked into.

G. Excess Flow Diversion Updates:

i. There are some excess flows being diverted at this time. Woodward gave some feedback as well as Dimmit in their respective areas.

7. 2017 PBC Meeting Dates: Meeting dates decided on for 2017 are in the table below.

8. Public Comments: There were no public comments.

9. Adjourn: The meeting adjourned at 1:57 p.m. The next meeting is December 16, 2016, at 1:30 p.m. at the Twin Platte NRD office.

Action Item Summary:

- 1) NeDNR will send individual invoices to the NRDs on the Conservation Measures Study.

The PBC meeting schedule is as follows:

December 16, 2016	1:30 p.m.	TPNRD Office, Great Western Bank Building, North Platte, NE
February 2, 2017	1:30 p.m.	TPNRD Office, Great Western Bank Building, North Platte, NE
April 3, 2017	1:30 p.m.	TPNRD Office, Great Western Bank Building, North Platte, NE
June 5, 2017	1:30 p.m.	TPNRD Office, Great Western Bank Building, North Platte, NE
August 7, 2017	1:30 p.m.	TPNRD Office, Great Western Bank Building, North Platte, NE
October 2, 2017	1:30 p.m.	TPNRD Office, Great Western Bank Building, North Platte, NE
December 4, 2017	1:30 p.m.	TPNRD Office, Great Western Bank Building, North Platte, NE

Meeting times may adjust depending on the Agenda

PLATTE BASIN COALITION MEETING

Meeting Date: October 12, 2016

Place/Room: TPNRD Office

Name:	Representing:	E-Mail:
Jessie Winter	NEONR	jessie.winter@nebraska.gov
Melissa Mosier	NEONR	melissa.mosier@nebraska.gov
Kathy Benson	NEONR	Kathy.Benson@nebraska.gov
Duane Woodward	CPNRD	woodward@cpnrd.org
Thad Kuntz	NPNRD / SPNRD	thad@ari-water.com
John Zeuge	NPNRD	jzeuge@nprnd.org
Rod L. Horn	SPNRD	rlhorn@spnrd.org
Kevin Boyd	CNPPID	
Jeff Shafer	NPPD	jtshafe@nppd.com
Rick Wilson	JEO	rwilson@jeo.com
Kayla Crane	NEONR	kayla.crane@nebraska.gov
Simone Rock	HDR	Simone.rock@hdrinc.com
John Engel	HDR	john.engel@hdrinc.com
Jesse Bradley	TFG	
Elizabeth Miller	NPNRD	emiller@nprnd.org
Ryan Reisdorf	SPNRD	rreisdorf@spnrd.org
Jesse Mintken	CPNRD	mintken@cpnrd.org
Tracy Zayac	NPNRD	tzayac@nprnd.org
Ann Dimmitt	TPNRD	afisher@tpnrd.org

PUBLIC NOTICE MEETING OF THE PLATTE BASIN COALITION

The Central Platte Natural Resources District, North Platte Natural Resources District, South Platte Natural Resources District, Tri-Basin Natural Resources District, Twin Platte Natural Resources District (collectively, the Platte Basin NRDs), and the Nebraska Department of Natural Resources (Department) hereby provide notice that a public meeting of the Platte Basin Coalition will be held on Tuesday, October 12, 2016, at 1:30 p.m. Central Time, at the Twin Platte Natural Resources District office, 111 South Dewey Street, North Platte, Nebraska.

The Platte Basin Coalition purpose is to create a cooperative body to assist the Platte Basin NRDs and the Department with resource management and efficient implementation of the basin-wide management plan and the individual integrated management plans for the overappropriated area of the Platte River Basin.

An agenda of the meeting is being kept continually current and is available for public inspection during normal business hours at the offices of the Platte Basin NRDs and the Department and at the following website: www.dnr.nebraska.gov. Please refer to the websites and phone numbers listed below for further information.

- CPNRD: <http://www.cpnrd.org> or phone (308) 385-6282
215 Kaufman Avenue, Grand Island, NE 68803
- NPNRD: <http://www.npnrd.org> or phone (308) 632-2749
100547 Airport Road, Scottsbluff, NE 69363
- SPNRD: <http://www.spnrd.org> or phone (308) 254-2377
551 Parkland Drive, Sidney, NE 69162
- TBNRD: <http://www.tribasinprd.org> or phone (308) 995-6688
1723 Burlington Street, Holdrege, NE 68949
- TPNRD: <http://www.tpnrd.org> or phone (308) 535-8080
111 S Dewey Street, North Platte, NE 69101
- Department: <http://www.dnr.nebraska.gov> or phone (402) 471-2363
301 Centennial Mall South, 4th Floor, Lincoln, NE 68508

Individuals with disabilities may request auxiliary aids and services necessary for participation by contacting Melissa Mosier at the Nebraska Department of Natural Resources, 301 Centennial Mall South, PO Box 94676, Lincoln, NE 68509-4676, telephone (402) 471-3948 or e-mail melissa.mosier@nebraska.gov.

Agenda
Platte Basin Coalition Committee Meeting
October 12, 2016, 1:30 p.m. Central Time
TPNRD Office, Great Western Bank Building, North Platte, NE

1. Welcome and Open Meetings Act
2. Publication of Meeting Notices
3. Agenda Modifications
4. Approval of August 2, 2016, PBC Meeting Minutes
5. Budget Update (NeDNR)
 - A. First three-year increment funding
 - i. Cow Camp
 - ii. N-CORPE
 - B. Second three-year increment funding
 - i. NPNRD Long-Term Reimbursement Contract
 - ii. Excess Flow Projects
 - C. Studies
 - i. Conservation Measures
 - ii. Robust Review
 - iii. Difference Between Current and Fully Appropriated
 - iv. 2nd Increment Planning Facilitation
6. Project Updates
 - A. N-CORPE (TPNRD)
 - B. J-2 Regulating Reservoir (NeDNR)
 - C. North Platte NRD Leases and Retirements (NPNRD)
 - D. Tri-Basin NRD Phase II Augmentation - North Dry Creek (TBNRD)
 - E. South Platte NRD Industrial Baseline Offset (SPNRD)
 - F. Oliver Reservoir Streamflow Enhancement (SPNRD)
 - G. Excess Flow Diversion Updates
7. 2017 PBC Meeting Dates
8. Public Comments
9. Adjourn

The next PBC meeting is scheduled for **December 16, 2016**, and will be held at **1:30** p.m. Central Time at the Twin Platte NRD office.

Platte Basin Coalition Committee Minutes

August 2, 2016, 1:30 p.m. Central Time
TPNRD Office, Great Western Bank Building, North Platte, NE

Call to order and attendance: Miller called the meeting to order at 1:30 p.m., Central Time.
Sponsors and partners in attendance (Attachment A) were:

Duane Woodward	CPNRD	Tracy Zayac	NPNRD
Jennifer Schellpeper	NeDNR	Elizabeth Miller	NPNRD
Kayla Crowe	NeDNR	Ryan Reisdorf	SPNRD
Jessie Winter	NeDNR	Travis Glanz	SPNRD
Melissa Mosier	NeDNR	John Thorburn	TBNRD
Kathy Benson	NeDNR	Kent O. Miller	TPNRD
Rod L. Horn	SPNRD		
John Berge	NPNRD		

Guests in attendance:

Marc Groff	The Flatwater Group	Jeff Shafer	NPPD
Thad Kuntz	ARI	Dean Edson	NARD
Kevin Boyd	CNPPID		

- 1. Welcome and Open Meetings Act:** Miller noted that a copy of the Open Meetings Act was available in the meeting room.
- 2. Publication of Meeting Notices:** The NeDNR published a public notice (Attachment B) of the PBC meeting in the Grand Island Independent on July 25, 2016, the North Platte Telegraph on July 26, 2016, and the Scottsbluff Star Herald on July 21, 2016.
- 3. Agenda Modifications:** No revisions were made to the agenda (Attachment C).
- 4. Approval of the June 2, 2016, PBC Meeting Minutes:**
 - Motion:** To approve the June 2, 2016, PBC meeting minutes (Attachment D).
Thorburn motioned to approve and Schellpeper seconded. Motion passed with all ayes.
- 5. Budget Update (NeDNR) (Attachment E):**
 - A. First three-year increment funding:**
 - i. Cow Camp:** NeDNR and NPNRD are drafting a new contract.

- ii. **SPNRD Industrial Baseline Offset:** SPNRD and NeDNR are working on drafting a new contract.
- iii. **N-CORPE:** NeDNR and TPNRD are working on re-allocating remaining funds. Estimates on project costs and detailed plans are forthcoming.

B. Second three-year increment funding (years 4-6): Contracts are currently being drafted for Cow Camp, Hardt/Tighe retirements, and N-CORPE. One invoice was accounted for in this budget period for E-65 Canal. The only remaining uncommitted dollars are allocated with Tri-Basin NRD in the amount of \$684,858.88. All other monies are committed to projects. Horn asked about the Oliver Reservoir contract. NeDNR did communicate with Ryan Reisdorf about edits being made to the operations agreement and when that has been completed the contract will be resent to SPNRD.

- i. **E-65 Canal:** Crowe reported that a payment was made with \$2,419.44 remaining. Currently, no acre-feet remain.

Action: NeDNR will send the edited Oliver Reservoir contract to SPNRD.

C. Studies:

i. Conservation Measures Study:

- a. **Invoice:** There were two Flatwater Group invoices in this budget period that need approval (Attachment F). April through May, 2016 totalling \$25,035.00, and June 2016 totalling \$26,361.71

Motion: To approve both invoices for payment. **Woodward motioned to approve and Schellpeper seconded. Motion passed with all ayes.**

Action: NeDNR will send individual invoices to the NRDs.

ii. Robust Review:

- a. A final draft of the scope of work and cost estimate (Attachment G) was sent out. There are budget estimates from ARI on the WWUM, and from the Flatwater Group on the WWUM and the CoHYST models. The budget amounts are broken down by model area with an estimated total of \$297,000.00.

Motion: To approve the scope of work and approve the Robust Review budget by model area. **Thorburn motioned to approve and Woodward seconded. Discussion included Schellpeper pointing out that ARI has two options in their estimate. The Option 2 estimate is what is being voted on. Motion passed with all ayes.**

iii. Difference Between Current and Fully Appropriated:

- a. The current contract for the OA/FA study expires at the end of 2016, therefore, a new agreement has been drafted (Attachment H) to extend the work and account for additional costs. The maximum dollar amount on the new contract is \$42,250.00. The other contract

(Attachment I) includes a draft contract, scope of work that has been reviewed by the technical committee for additional work in the amount of \$40,000.00 with HDR, and costs from ARI in the amount of \$12,000.00.

Motion #1: To approve the OA/FA contract for current work done. **Moved by Schellpeper, seconded by Horn. Motion passed with all ayes.**

Motion #2: To approve the contract for the future work with ARI and HDR on OA/FA in the total amount of \$52,000.00. **Thorburn motioned to approve, seconded by Woodward. Motion passed with all ayes.**

6. Project Updates

A. N-CORPE (TPNRD):

- i. The current estimated timeline for construction of the north pipeline is set for late fall or early winter of 2016.

B. J-2 Regulating Reservoir (NeDNR):

- i. Schellpeper reported that the Governance Committee took action to put J-2 on hold while pursuing other water action plan options that could be implemented more quickly. The quarterly report will be available in September.

C. North Platte NRD Leases and Retirements (NPNRD):

- i. On the Cow-Camp project, options are being looked into due to the recharge pit plan not being feasible. Discussions are being had with NeDNR to use the well on the property to make up for historic return flows. Hardt & Tighe are in retirement and language is pending for reimbursement with PBC on the easements.

D. Tri-Basin NRD Phase II Augmentation-North Dry Creek (TBNRD):

- i. Both augmentation wells ran for 10 days. North Dry Creek was below target flows and it was a good time to test the wells.

E. South Platte NRD Industrial Baseline Offset (SPNRD):

- i. The contract is close to completion. The project will be completed by the end of 2016, and it has turned out well.

F. Oliver Reservoir Streamflow Enhancement (SPNRD):

- i. A contract with NDNR is forthcoming. Kick-off and public meetings have been held.

G. Excess Flow Diversion Updates:

- i. No further comments were made.

8. Public Comments: There were no public comments.

9. Adjourn: The next meeting is October 12th, 2016, at 1:30 p.m. at the Twin Platte NRD office. The meeting adjourned at 2:00 p.m.

Action Item Summary:

- 1) NeDNR will send the edited Oliver Reservoir contract to SPNRD this week.
- 2) NeDNR will send individual invoices to the NRDs on the Conservation Measures Study.

The PBC meeting schedule is as follows:

October 12, 2016	1:30 p.m.	TPNRD Office, Great Western Bank Building, North Platte, NE
December 16, 2016	1:30 p.m.	TPNRD Office, Great Western Bank Building, North Platte, NE

Meeting times may adjust depending on the Agenda

PBC Budget Years 1 to 3 Review and Amendments
Updated 10/11/2016

Table 1

PBC Budget Summary	CPNRD	NPNRD	SPNRD	TBNRD	TPNRD	Total NRD	DNR (NET Transfer)	DNR General Fund	Total by Year
Budget Year 1	\$ 301,400.00	\$ 708,400.00	\$ 61,600.00	\$ 444,400.00	\$ 684,200.00	\$ 2,200,000.00	\$ 3,300,000.00	\$ 2,200,000.00	\$ 7,700,000.00
Budget Year 2	\$ 301,400.00	\$ 708,400.00	\$ 61,600.00	\$ 444,400.00	\$ 684,200.00	\$ 2,200,000.00	\$ 3,300,000.00	\$ 2,200,000.00	\$ 7,700,000.00
Budget Year 3	\$ 301,400.00	\$ 708,400.00	\$ 61,600.00	\$ 444,400.00	\$ 684,200.00	\$ 2,200,000.00	\$ 3,300,000.00	\$ 2,200,000.00	\$ 7,700,000.00
Total 3 Year Budget	\$ 904,200.00	\$ 2,125,200.00	\$ 184,800.00	\$ 1,333,200.00	\$ 2,052,600.00	\$ 6,600,000.00	\$ 9,900,000.00	\$ 6,600,000.00	\$ 23,100,000.00
Amendment 1 Total (Dec-13) [NPNRD lease & Easement]	\$ -	\$ 121,788.00	\$ -	\$ -	\$ -	\$ 121,788.00	\$ -	\$ 9,432.00	\$ 131,220.00
Amendment 2 Total (Dec-13) [fall 2013 gw recharge]	\$ 6,000.00	\$ -	\$ 2,970.00	\$ 112,199.34	\$ 10,930.00	\$ 132,099.34	\$ -	\$ 198,149.00	\$ 330,248.34
Amendment 3 Total (Aug-14) [spring 2014 gw recharge]	\$ -	\$ -	\$ 600.00	\$ 258,121.50	\$ 3,600.00	\$ 262,321.50	\$ -	\$ 264,421.50	\$ 526,743.00
Amendment 4 Total (Feb-15) [spring-winter 2014-2015, phelps gw recharge]	\$ -	\$ -	\$ -	\$ 239,435.90	\$ -	\$ 239,435.90	\$ -	\$ 295,595.75	\$ 535,031.65
Total 3 Year Budget & Amendments	\$ 6,000.00	\$ 121,788.00	\$ 3,570.00	\$ 609,756.74	\$ 14,530.00	\$ 755,644.74	\$ -	\$ 767,598.25	\$ 1,523,242.99
								\$ 7,367,598.25	
PBC Budget Summary									
Revised Budget Years 1 - 3*	\$ 3,782,442.00	\$ 203,046.00	\$ 7,866.00	\$ 1,802,256.66	\$ 1,564,330.00	\$ 7,359,940.66	\$ 9,900,000.00	\$ 7,374,042.25	\$ 24,633,982.83

Feb 2015 Meeting

Feb 2015 Meeting

PBC Project	Cnt #	CPNRD	NPNRD	SPNRD	TBNRD	TPNRD	Total NRD	DNR (NET Transfer)	DNR General Fund	Total by Project	NDNR Amount Paid	Project Status - Notes	NDNR Remaining
North Platte NRD Lease/Recharge - Cow Camp	see status	\$ -	\$ 196,758.00	\$ -	\$ -	\$ -	\$ 196,758.00	\$ 121,887.00	\$ 173,250.00	\$ 491,895.00	\$ -	Draft Contract	\$ 295,137.00
Phase II North Dry Creek	488	\$ -	\$ -	\$ -	\$ 23,348.78	\$ -	\$ 23,348.78	\$ 25,603.36	\$ -	\$ 48,952.14	\$ 25,603.36	Paid - January 21, 2015	\$ -
J-2 Reregulating Reservoir	574	\$ 1,168,500.00	\$ -	\$ -	\$ 1,168,500.00	\$ 934,800.00	\$ 3,271,800.00	\$ 4,907,700.00	\$ 6,426,750.00	\$ 14,606,250.00	\$ 11,334,450.00	Paid - June 30, 2016	\$ -
N-CORPE	778	\$ -	\$ -	\$ -	\$ -	\$ 615,000.00	\$ 615,000.00	\$ 922,500.00	\$ -	\$ 1,537,500.00	\$ 900,000.00	Partial Paid - September 4, 2014; draft amend	\$ 22,500.00
Industrial Baseline Offset SPNRD	894	\$ -	\$ -	\$ 4,296.00	\$ -	\$ -	\$ 4,296.00	\$ -	\$ 6,444.00	\$ 10,740.00	\$ 2,148.00	Partial Payment - June 16, 2015	\$ 4,296.00
Grandview Permanent Retirement	571	\$ -	\$ 6,288.00	\$ -	\$ -	\$ -	\$ 6,288.00	\$ -	\$ 9,432.00	\$ 15,720.00	\$ 9,432.00	Paid - October 28, 2015	\$ -
Orchard-Alfalfa Canal Rehabilitation	615	\$ 1,665,578.40	\$ -	\$ -	\$ -	\$ -	\$ 1,665,578.40	\$ 2,498,367.60	\$ -	\$ 4,163,946.00	\$ 2,498,367.60	Paid - June 10, 2015	\$ -
Re-Use Pits Recharge Project Spring 2014	N/A	\$ -	\$ -	\$ 600.00	\$ -	\$ 3,600.00	\$ 4,200.00	\$ -	\$ 6,300.00	\$ 10,500.00	\$ 6,300.00	Paid - April 17, 2015	\$ -
Thirty-Mile & Orchard Transfer from CPNRD easement package	616 & 615	\$ 118,682.40	\$ -	\$ -	\$ -	\$ -	\$ 118,682.40	\$ 178,023.60	\$ -	\$ 296,706.00	\$ 178,023.60	Paid - January 21, 2015	\$ -
CPNRD conservation easement package*	618	\$ 623,681.20	\$ -	\$ -	\$ -	\$ -	\$ 623,681.20	\$ 935,521.80	\$ -	\$ 1,559,203.00	\$ 935,521.80	Paid - October 8, 2014	\$ -
2014 E65 Canal and Elwood Reservoir Recharge Project (spring 2014)	771	\$ -	\$ -	\$ -	\$ 258,121.50	\$ -	\$ 258,121.50	\$ -	\$ 258,121.50	\$ 516,243.00	\$ 258,121.50	Paid - August 6, 2014	\$ -
Fall 2013 GW recharge	585-588/622-624	\$ 6,000.00	\$ -	\$ 2,970.00	\$ 112,199.34	\$ 10,930.00	\$ 132,099.34	\$ 198,149.00	\$ 198,149.00	\$ 330,248.34	\$ 198,149.00	Paid - December 12, 2013	\$ -
Cozad & Thirty-Mile (PBHEP Overruns)	592 & 616	\$ 200,000.00	\$ -	\$ -	\$ -	\$ -	\$ 200,000.00	\$ 300,000.00	\$ -	\$ 500,000.00	\$ 300,000.00	Paid - September 24, 2014	\$ -
Spring 2014 E65 Canal and Elwood Reservoir Recharge Project	771	\$ -	\$ -	\$ -	\$ 34,378.65	\$ -	\$ 34,378.65	\$ -	\$ 34,378.50	\$ 68,757.15	\$ 34,378.50	Paid - February 26, 2015	\$ -
Fall/Winter 2014-2015 E65 Canal and Elwood Reservoir Recharge Project	800	\$ -	\$ -	\$ -	\$ 205,057.25	\$ -	\$ 205,057.25	\$ -	\$ 205,057.25	\$ 410,114.50	\$ 205,057.25	Paid - March 31, 2015	\$ -
Phelps Canal Diversion Project (DNR/PRRIP)	799	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 56,160.00	\$ 56,160.00	\$ 56,160.00	Paid - March 31, 2015	\$ -
Fall/Winter 2014-2015 E65 Canal and Elwood Reservoir Recharge Project	800	\$ -	\$ -	\$ -	\$ 651.14	\$ -	\$ 651.14	\$ 10,396.56	\$ -	\$ 11,047.70	\$ 10,396.56	Paid - March 15, 2016	\$ -
Totals by Contributor		\$ 3,782,442.00	\$ 203,046.00	\$ 7,866.00	\$ 1,802,256.66	\$ 1,564,330.00	\$ 7,359,940.66	\$ 9,899,999.92	\$ 7,374,042.25	\$ 24,633,982.83			
DNR Total													\$ 321,933.00
Budget Difference from Original 3 year budget		\$ (2,878,242.00)	\$ 1,922,154.00	\$ 176,934.00	\$ (469,056.66)	\$ 488,270.00	\$ (759,940.66)	\$ 0.08	\$ (774,042.25)	\$ (1,533,982.83)			

Additional funding committed in years 4-6

Specific Project Amendments	Cnt #	CPNRD	NPNRD	SPNRD	TBNRD	TPNRD	Total NRD	DNR (NET Transfer)	DNR General Fund	Total by Project
J-2 Reservoir (original)	574	\$ 1,168,500.00	\$ -	\$ -	\$ 1,168,500.00	\$ 934,800.00	\$ 3,271,800.00	\$ 4,907,700.00	\$ 6,426,750.00	\$ 14,606,250.00
J-2 Reservoir (revised; Aug-2013)	574	\$ 1,571,662.00	\$ -	\$ -	\$ 1,571,662.00	\$ 1,257,328.00	\$ 4,400,652.00	\$ 7,125,086.16	\$ 8,120,026.70	\$ 19,645,764.86
Phase II North Dry Creek (original)	488	\$ -	\$ -	\$ -	\$ 39,000.00	\$ -	\$ 39,000.00	\$ 58,500.00	\$ -	\$ 97,500.00
Phase II Augmentation North Dry Creek (revised; Apr-2014)	488	\$ -	\$ -	\$ -	\$ 24,000.00	\$ -	\$ 24,000.00	\$ 36,000.00	\$ -	\$ 60,000.00
CPNRD Conservation Easement Package (original)	618	\$ 742,364.00	\$ -	\$ -	\$ -	\$ -	\$ 742,364.00	\$ 1,113,545.00	\$ -	\$ 1,855,909.00
CPNRD Conservation Easement Package (revised; Aug-2014)	618	\$ 623,681.28	\$ -	\$ -	\$ -	\$ -	\$ 623,681.28	\$ 935,521.80	\$ -	\$ 1,559,203.08
Thirty-Mile (original)	616	\$ 2,021,592.80	\$ -	\$ -	\$ -	\$ -	\$ 2,021,592.80	\$ 3,032,389.21	\$ -	\$ 5,053,982.01
Thirty-Mile (revised; Aug-2014)	616	\$ 2,140,275.20	\$ -	\$ -	\$ -	\$ -	\$ 2,140,275.20	\$ 3,210,412.81	\$ -	\$ 5,350,688.01
N-CORPE (original)	778	\$ -	\$ -	\$ -	\$ -	\$ 600,000.00	\$ 600,000.00	\$ 900,000.00	\$ -	\$ 1,500,000.00
N-CORPE (revised; Oct-2014)	778	\$ -	\$ -	\$ -	\$ -	\$ 615,000.00	\$ 615,000.00	\$ 922,500.00	\$ -	\$ 1,537,500.00

PBC Years 4 to 6 Budget Review
 Updated 10/11/2016

PBC Budget Summary	CPNRD	NPNRD	SPNRD	TBNRD	TPNRD	Total NRD	DNR (NET Transfer)	DNR General Fund	Total by Year
Budget Year 4	\$ 301,400.00	\$ 708,400.00	\$ 61,600.00	\$ 444,400.00	\$ 684,200.00	\$ 2,200,000.00	\$ 3,300,000.00	\$1,693,277	\$ 7,193,276.70
Budget Year 5	\$ 301,400.00	\$ 708,400.00	\$ 61,600.00	\$ 444,400.00	\$ 684,200.00	\$ 2,200,000.00	\$ 3,300,000.00		5,500,000.00
Budget Year 6	\$ 301,400.00	\$ 708,400.00	\$ 61,600.00	\$ 444,400.00	\$ 684,200.00	\$ 2,200,000.00	\$ 3,300,000.00		5,500,000.00
Total 3 Year Budget	\$ 904,200.00	\$ 2,125,200.00	\$ 184,800.00	\$ 1,333,200.00	\$ 2,052,600.00	\$ 6,600,000.00	\$ 9,900,000.00	\$ 1,693,276.70	\$ 18,193,276.70

PBC Project	Cnt #	CPNRD	NPNRD	SPNRD	TBNRD	TPNRD	Total NRD	DNR (NET Transfer)	DNR General Fund	Total by Project	NDNR Amount Paid	Project Status	NDNR Remaining	AF Remaining	Meeting Motion Ref.
North Platte NRD Lease/Recharge - Cow Camp	see status	\$ -	\$ 221,197.00	\$ -	\$ -	\$ -	\$ 221,197.00	\$ 331,795.50	\$ -	\$ 552,992.50	\$ -	(Draft Contract)	\$ 331,795.50		Jun 2013 pg 2 #7 C
Orchard-Alfalfa Canal Rehabilitation	615	\$ 501,038.88	\$ -	\$ -	\$ -	\$ -	\$ 501,038.88	\$ 488,106.29	\$ -	\$ 520,786.00	\$ 488,106.29	Paid - March 9, 2016	\$ -		Jun 2013 Pg 2 #7 B
N-CORPE	778	\$ -	\$ -	\$ -	\$ -	\$ 1,730,071.10	\$ 1,730,071.10	\$ 2,595,106.66	\$ -	\$ 4,325,177.76	\$ -	Under Contract	\$ 2,595,106.66		Aug 2013 pg 3 #8 B
J-2 Reregulating Reservoir	574	\$ 403,161.12	\$ -	\$ -	\$ 403,161.12	\$ 322,528.90	\$ 1,128,851.14	\$ 2,217,386.16	\$ 1,693,276.70	\$ 5,039,514.00	\$ 3,910,662.86	Paid June 30, 2016	\$ -		Aug 2013 Pg 3 #8 A
Platte Valley Irrigation District	588	\$ -	\$ -	\$ -	\$ -	\$ 2,000.00	\$ 2,000.00	\$ 3,000.00	\$ -	\$ 5,000.00	\$ -	Under Contract	\$ 3,000.00		June 2015 Pg 2 #5 C
Western Irrigation District	587	\$ -	\$ -	\$ 1,800.00	\$ -	\$ 4,200.00	\$ 6,000.00	\$ 9,000.00	\$ -	\$ 15,000.00	\$ -	Under Contract	\$ 9,000.00		June 2015 Pg 2 #5 C
Suburban Irrigation District	586	\$ -	\$ -	\$ -	\$ -	\$ 2,000.00	\$ 2,000.00	\$ 3,000.00	\$ -	\$ 5,000.00	\$ -	Under Contract	\$ 3,000.00		June 2015 Pg 2 #5 C
Fall/Winter 2015 E65 Canal and Elwood Reservoir Recharge Project	800	\$ -	\$ -	\$ -	\$ 148,928.00	\$ -	\$ 148,928.00	\$ 148,928.00	\$ -	\$ 297,856.00	\$ 148,928.00	Paid - October 14, 2015	\$ -		Aug 2015 Pg 2 #5 C
NPNRD Retirement Agreement - Hardt and Tighe	see status	\$ -	\$ 1,904,003.00	\$ -	\$ -	\$ -	\$ 1,904,003.00	\$ 1,989,157.50	\$ -	\$ 3,893,160.50	\$ -	(draft contract)	\$ 1,989,157.50		June 2015 Pg 4 #7 A
E65 Canal and Elwood Reservoir (4,500 acre ft) amd (5,000 acre ft)	571	\$ -	\$ -	\$ -	\$ 96,252.00	\$ -	\$ 96,252.00	\$ 96,252.00	\$ -	\$ 192,504.00	\$ 93,832.56	Partial Paid March 15, 2016	\$ 2,419.44		Dec 2015 Pg 3 #5 C
Phelps Canal (7,000 acre ft)	571	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 51,100.00	\$ 51,100.00	\$ 39,874.90	Partial Payment March 15, 2016	\$ 11,225.10	1,423	Dec 2015 Pg 3 #5 C
Oliver Reservoir Streamflow Enhancement Project	887	\$ -	\$ -	\$ 184,800.00	\$ -	\$ -	\$ 184,800.00	\$ 277,200.00	\$ -	\$ 462,000.00	\$ -	Under Contract	\$ 277,200.00		Dec 2015 Pg 4 #7 A
Phelps Canal (10,666 acre ft) - State (2,666)	924	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 20,050.00	\$ 20,050.00	\$ -	Under Contract	\$ 20,050.00	10,666	
Totals by Contributor		\$ 904,200.00	\$ 2,125,200.00	\$ 186,600.00	\$ 648,341.12	\$ 2,060,800.00	\$ 5,925,141.12	\$ 8,158,932.11	\$ 1,764,426.70	\$ 15,380,140.76					

Remaining Financial Commitments by Contributor	\$ -	\$ -	\$ (1,800.00)	\$ 684,858.88	\$ (8,200.00)	\$ 674,858.88	\$ 1,741,067.89	\$ (71,150.00)	\$ 2,813,135.94	\$ 5,241,954.20
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New Projects but no mataching dollars	Cnt #	CPNRD	NPNRD	SPNRD	TBNRD	TPNRD	Total NRD	DNR (NET Transfer)	DNR General Fund	Total by Project	Meeting Motion Ref.
Western Irrigation District	587	\$ -	\$ -	\$ 600.00	\$ -	\$ 1,400.00	\$ 2,000.00		\$ 3,000.00	\$ 5,000.00	Dec 2015 Pg 3 #5 C

Facilitation for 2nd Increment

HDR Engineering Facilitator	CPNRD	NPNRD	SPNRD	TBNRD	TPNRD	NRD Total	NDNR	Total
Upper Platte Basinwide Plan	\$ 43,440.90	\$ 43,440.90	\$ 43,440.90	\$ 43,440.90	\$ 43,440.90	\$ 217,204.50	\$ 217,204.50	\$ 434,409.00
Invoice #1 (May 29 - July 23)	\$ 3,499.33	\$ 3,499.33	\$ 3,499.33	\$ 3,499.33	\$ 3,499.33	\$ 17,496.65	\$ 17,496.65	\$ 34,993.30
Invoice #2 (July 24 - Aug 20)	\$ 389.45	\$ 389.45	\$ 389.45	\$ 389.45	\$ 389.45	\$ 1,947.25	\$ 1,947.33	\$ 3,894.58
Remaining totals by Contributor	\$ 39,552.12	\$ 39,552.12	\$ 39,552.12	\$ 39,552.12	\$ 39,552.12	\$ 197,760.60	\$ 197,760.52	\$ 395,521.12

To: PBC Administrators
From: Jennifer Schellpeper, NeDNR; John Thorburn, TBNRD
Date: October 12, 2016
Subject: Update and Request for Funds for Phelps Canal, E65 Canal & Elwood Reservoir

E65/Elwood Reservoir:

TBNRD, NeDNR, and CNPPID, are in contract negotiations for the diversion of excess Platte River flows for the purpose of groundwater recharge in E65 Canal and Elwood Reservoir. Final amounts of acre-feet and contract limits have not been agreed upon at this time. The TBNRD and NeDNR will not contract for more than the remaining amount of budget available to TBNRD under the current 4-6 year budget sheet, \$648,341. Totals are to be split 60/40 between the TBNRD and NeDNR. The Platte River Recovery Implementation Program is also contracting separately with CNPPID for 50% of the total water diverted.

Request PBC Funds:

TBNRD, NeDNR, and CNPPID for the diversion of excess Platte River flows for the purpose of groundwater recharge. Totals are to be split 60/40 between the TBNRD and NeDNR.

Phelps Canal:

NeDNR and Platte River Recovery Implementation Program entered into a contract on September 20, 2016, for the diversion of excess Platte River flows for the purpose of groundwater recharge. Up to 10,666 of total acre feet of water are contracted for diversion into the Phelps Canal. Totals are to be split between PRRIP at 75% (8,000 af) and the State at 25% (2,666 af), totaling \$320,833 or \$240,640 for PRRIP and \$80,193 NeDNR.

New State Commitment of General Fund Dollars from WRCF:

NeDNR for the diversion of excess Platte River flows for the purpose of groundwater recharge. Totals are to be split proportionally between the Platte River Recovery Implementation Program and NeDNR, totaling \$320,833 or \$240,640 for PRRIP and \$80,193 for NeDNR.

PBC:

The total cost for the E65 Canal and Elwood Reservoir projects total for TBNRD is \$648,341 and NeDNR's 60% match. The total cost for Phelps Canal project is \$320,833 or \$240,640 for PRRIP and \$80,193 NeDNR. The cost for the E65 Canal and Elwood Reservoir project and Phelps Canal are being submitted to PBC for approval.



8200 Cody Drive, Suite A
Lincoln, Nebraska 68512-9550

Phone: 402.435.5441
Fax: 402.435.7108

MEMORANDUM

To: Ms. Jessie Winter
Nebraska Department of Natural Resources
P.O. Box 94676
Lincoln, NE 68509-4676

From: Marc Groff

Date: 14 September 2016

Re: Progress Report – Contract #571

Period: 1 July 2016 through 31 August 2016 – TFG Labor
Subcontractor Invoices received through 13 September 2016

Work Completed this Period:

1. Efforts this period were focused on
 - a. Completing the model runs for the Tillage Scenario in the WWUM area.

Billings for this period are \$18,780.00 -- for a billing-to-date of \$155,549.96.

Deliverables

1. TFG delivered to ARI pumping and recharge results from the watershed model on 15 August 2016.

Concerns: Landuse information from 2006 through 2010 within the COHYST model area has not yet been finalized. Modeling efforts beyond initial structural setup in that area are currently on hold pending the availability of that information.

Work Projected for Next Period:

1. ARI to complete ground water model runs for the Tillage Scenarios.
2. Results from the Tillage Scenarios to be presented to the POAC technical committee following ARI's completion of the ground water modeling runs.



Tax ID# 47-0833338
 8200 Cody Dr Ste A
 LINCOLN, NE 68512-9550

PBC Meeting
 October 12, 2016
 Attachment G

Invoice

Date	Invoice #
9/14/2016	16-1956

Bill To
Department of Natural Resources 301 Centennial Mall South PO Box 94676 Lincoln, NE 68509-4676

PROJECT DESCRIPTION		BILLING PERIOD		TERMS
POAC Conservation Study		7/1/2016 - 8/31/2016		Net 30
Employee Class	Work Description	Qty	Rate	Amount
Designer/GIS Specialist	General GIS/Database Support	41	95.00	3,895.00
Water Resources Special...	Dataset Development and Model Execution; Development of Modeling Results Presentation	54	110.00	5,940.00
Senior Engineer	Project Coordination; Development, Review and Presentation of Modeling Results	27	165.00	4,455.00
	TFG LABOR SUBTOTAL			14,290.00
Subs	Subcontractors Fee - ARI Invoice 1830	1	4,490.00	4,490.00
			Total	\$18,780.00
			Balance Due	\$18,780.00



Adaptive Resources, Inc.
 229 E Kiowa Ave
 FORT MORGAN, CO 80701-3109

(970)370-2481
 chelli@adaptiveresourcesinc.com, kimberly@ari-
 http://www.adaptiveresourcesinc.com

PBC Meeting
 October 12, 2016
 Attachment G
Adaptive Resources, Inc.
Invoice

Date	Invoice #
08/29/2016	1830
Terms	Due Date
Net 30	09/28/2016

Bill To

The Flatwater Group, Inc.
 8200 Cody Dr, Ste A
 Lincoln, NE 68512-9550

Amount Due	Enclosed
\$20,066.25	

Please detach top portion and return with your payment.

Date	Account Summary	Amount
07/26/2016	Balance Forward	\$18,996.25
	Payments and credits between 07/26/2016 and 08/29/2016	-3,420.00
	New charges (details below)	4,490.00
	Total Amount Due (activity through 08/29/2016)	20,066.25

Date	Activity	Quantity	Rate	Amount
	Conservation Measures Study			
	Week starting 07/25/2016			
07/28/2016	Send out presentation on conservation measures., 15 mins @ \$150.00/hr	0:15	150.00	37.50
07/28/2016	Load additional information for tillage runs, 3 hrs 30 mins @ \$150.00/hr	3:30	150.00	525.00
	Week starting 08/08/2016			
08/09/2016	Review of irrigation efficiency runs/discussion of recharge model set corrections for canal leakage; creation of graphs., 30 mins @ \$105.00/hr	0:30	105.00	52.50
08/09/2016	Converting difference graphs to total graphs for Analyses., 1 hr @ \$95.00/hr	1:00	95.00	95.00
08/10/2016	Review of irrigation efficiency runs/discussion of recharge model set corrections for canal leakage; creation of graphs., 30 mins @ \$105.00/hr	0:30	105.00	52.50
08/10/2016	Converting difference graphs to total graphs for Analyses., 4 hrs 30 mins @ \$95.00/hr	4:30	95.00	427.50
08/11/2016	High and Low Efficiency Analysis work., 2 hrs @ \$150.00/hr	2:00	150.00	300.00
	Week starting 08/15/2016			
08/16/2016	Review information about comingled pumping from Kara, start split of pumping to wells for Wel file, 2 hrs @ \$150.00/hr	2:00	150.00	300.00

Continue to the next page

Date	Activity	Quantity	Rate	Amount
08/17/2016	Review information about comingled pumping from Kara, start split of pumping to wells for Wel file, 1 hr 30 mins @ \$150.00/hr Week starting 08/22/2016	1:30	150.00	225.00
08/22/2016	Ground water file import for No-Till and Historic tillage to database., 2 hrs 30 mins @ \$150.00/hr	2:30	150.00	375.00
08/22/2016	Created Comingled pumping information for the No Till and historical tillage modeling runs, 2 hrs 30 mins @ \$150.00/hr	2:30	150.00	375.00
08/23/2016	Well File creation import of data, update of database components, changes to coding, changes to table design for size limitations, 2 hrs 30 mins @ \$150.00/hr	2:30	150.00	375.00
08/23/2016	Created Comingled pumping information for the No Till and historical tillage modeling runs, 1 hr 30 mins @ \$150.00/hr	1:30	150.00	225.00
08/24/2016	Well File creation import of data, update of database components, changes to coding, changes to table design for size limitations, 3 hrs @ \$150.00/hr	3:00	150.00	450.00
08/24/2016	Ground water file import for No-Till and Historic tillage to database., 1 hr 30 mins @ \$150.00/hr	1:30	150.00	225.00
08/24/2016	Created Comingled pumping information for the No Till and historical tillage modeling runs, 1 hr @ \$150.00/hr	1:00	150.00	150.00
08/25/2016	Ground water file import for No-Till and Historic tillage to database., 1 hr @ \$150.00/hr	1:00	150.00	150.00
08/25/2016	Well File creation import of data, update of database components, changes to coding, changes to table design for size limitations, 1 hr @ \$150.00/hr	1:00	150.00	150.00
SUBTOTAL - Conservation Measures Study = \$4,490.00				

We appreciate your business.

Total Of New Charges	\$4,490.00
Total Amount Due	\$20,066.25





Invoice

Reference Invoice Number with Payment

HDR Engineering Inc.
Omaha, NE 68114
Phone: (402) 399-1000

HDR Invoice No. 1200013045
Invoice Date 23-SEP-2016
Invoice Amount Due \$990.99
Payment Terms 30 NET

Platte Basin Coalition
Kayla Crowe
Nebraska Department of Natural Resources
301 Centennial Mall South
4th Floor State Office Building
PO Box 94676
Lincoln, NE 68509-4676

Remit To PO Box 74008202
Chicago, IL 60674-8202
Wire Transfer To Bank of America ML US
ABA# 081000032
Account# 355004076604

For services related to the OA/FA Refinements of estimates developed to establish overall difference between over-appropriated and fully appropriated.

Professional Services
From: 16-AUG-2016 To: 20-AUG-2016

Professional Services Summarization	Hours	Billing Rate	Amount
GIS Specialist	9.00		990.99
	9.00		\$990.99
Total Professional Services			\$990.99

Amount Due This Invoice (USD) \$990.99

Fee Amount	\$40,000.00
Fee Invoiced to Date	\$990.99
Fee Remaining	\$39,009.01

HDR Internal Reference Only	
Client Number	20165
Cost Center	10134
Project Number	10041696

RECEIVED
SEP 26 2016
DEPARTMENT OF
NATURAL RESOURCES

Invoice

HDR Invoice No. 1200013045
Invoice Date 23-SEP-2016

Professional Services and Expense Detail

Project Number: 10041696 Project Description: PBC - OA/FA Refinements
Task Number: 200 Task Description: Development of New Summaries

Professional Services		Hours	Billing Rate	Amount
GIS Specialist	Rock, Simone A	9 00	110.11	990.99
		9.00		\$990.99
		Total Professional Services		\$990.99
			Total Task	\$990.99

Status Report

Project: OA/FA Refinements

Subject: Monthly Status Report

Date: Efforts for August 16 – August 20, 2016

HDR Job Number: 10041696

1.0 Meetings and Administration

- Project initiation activities.

2.0 Development of New Summaries

- Began analysis and preparation of new summaries.

3.0 Project Balance Changes in Next Increment

- No activity.

4.0 Summary Report

- No activity.

Subconsultant Activities

The Flatwater Group

- No activity.

Schedule Status

- Project is on schedule.
- POAC meeting scheduled for September 15, 2016

Budget Status

- Project is estimated to be 5% complete.
- Estimated earned value is tracking above actual costs to date.



Invoice

Reference Invoice Number with Payment

HDR Engineering Inc.
Omaha, NE 68114
Phone: (402) 399-1000

HDR Invoice No. 1200007769A
 Invoice Date 19-AUG-2016
 Invoice Amount Due \$35,738.29
 Payment Terms 30 NET

Platte Basin Colaition
Kayla Crowe
Nebraska Department of Natural Resources
301 Centennial Mall South
4th Floor State Office Building
PO Box 94676
Lincoln, NE 68509-4676

Remit To PO Box 74008202
 Chicago,IL 60674-8202
 Wire Transfer To Bank of America ML US
 ABA# 081000032
 Account# 355004076604

For services in connection with the Basinwide Plan Facilitation and Engineering Support for the Overapprpriated Area of the Platte River.

Professional Services
 From: 29-MAY-2016 To: 23-JUL-2016

Professional Services Summarization	Hours	Billing Rate	Amount
Facilitation Coordinator	123.00		10,069.65
Facilitator	34.00		7,231.80
GIS Analyst	21.50		2,322.90
Project Controller	2.00		189.66
Project Manager	46.00		9,644.36
Water Resource Engineer	31.50		3,670.22
	258.00		\$33,128.59
	Total Professional Services		\$33,128.59

Expense Summarization	Quantity	Billing Rate	Amount
Technology Charge	258.00		954.60
			\$954.60
Printing/Reprographics			910.11
		Total Expenses	\$1,864.71

Amount Due This Invoice (USD)	\$34,993.30
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Fee Amount	\$434,409.00
Fee Invoiced to Date	\$34,993.30
Fee Remaining	\$399,415.70

HDR Internal Reference Only	
Client Number	20165
Cost Center	10134
Project Number	10034266

Invoice

HDR Invoice No. 1200007769
 Invoice Date 19-AUG-2016

Professional Services and Expense Detail				
Project Number:	10034266	Project Description:	PBC-UpperPlatteBasinPlanDevel	
Task Number:	1.0	Task Description:	Project Management	
Professional Services		Hours	Billing Rate	Amount
Project Controller	Clifton, Rachel M	2.00	94.83	189.66
Project Manager	Engel, John J	5.00	209.66	1,048.30
Water Resource Engineer	Schillerberg, Justin C	4.50	92.09	414.41
Water Resource Engineer	Williams, Ann E	2.00	141.83	283.66
		13.50		\$1,936.03
		Total Professional Services		\$1,936.03
Expense		Qty	Billing Rate	Amount
Technology Charge		13.50	3.70	49.95
				\$49.95
Printing/Reprographics	ARC Document Solutions LLC			0.04
		Total Expense		\$49.99
		Total Task		\$1,986.02

Invoice

HDR Invoice No. 1200007769
 Invoice Date 19-AUG-2016

Professional Services and Expense Detail				
Project Number:	10034266	Project Description:	PBC-UpperPlatteBasinPlanDevel	
Task Number:	2.0	Task Description:	Meeting Coordination and Facilitation	
Professional Services		Hours	Billing Rate	Amount
Facilitation Coordinator	Bundy, Scott W	1.00	50.82	50.82
Facilitation Coordinator	DesRosiers, Gisele R	5.25	96.99	509.20
Facilitation Coordinator	Molacek, Julie M	6.00	56.06	336.36
Facilitation Coordinator	Obermueller, Kristen L	52.50	60.28	3,164.70
Facilitation Coordinator	Wiese, Joanne C	1.00	62.96	62.96
Facilitation Coordinator	Hatfield Edstrom, Katherine L	51.25	105.09	5,385.87
Facilitation Coordinator	Rief, Matthew C D	6.00	93.29	559.74
GIS Analyst	Schillerberg, Justin C	1.00	92.09	92.09
Facilitator	White, Stephanie L	34.00	212.70	7,231.80
GIS Analyst	Sorensen, Amy R	6.00	108.82	652.92
Project Manager	Engel, John J	41.00	209.66	8,596.06
Water Resource Engineer	Rock, Simone A	16.00	105.98	1,695.68
Water Resource Engineer	Williams, Ann E	9.00	141.83	1,276.47
		230.00		\$29,614.67
		Total Professional Services		\$29,614.67
Expense		Qty	Billing Rate	Amount
Technology Charge		230.00	3.70	851.00
				\$851.00
Printing/Reprographics	ARC Document Solutions LLC			0.48
		Total Expense		\$851.48
		Total Task		\$30,466.15

Invoice

HDR Invoice No. 1200007769
Invoice Date 19-AUG-2016

Professional Services and Expense Detail				
Project Number:	10034266	Project Description:	PBC-UpperPlatteBasinPlanDevel	
Task Number:	3.0	Task Description:	Basin Wide Water Management Plan	
Professional Services		Hours	Billing Rate	Amount
GIS Analyst	Sorensen, Amy R	14.50	108.82	1,577.89
		14.50		\$1,577.89
		Total Professional Services		\$1,577.89
Expense		Qty	Billing Rate	Amount
Technology Charge		14.50	3.70	53.65
				\$53.65
Printing/Reprographics	ARC Document Solutions LLC			909.59
		Total Expense		\$963.24
		Total Task		\$2,541.13



Invoice

Reference Invoice Number with Payment

HDR Engineering Inc.
Omaha, NE 68114
Phone: (402) 399-1000

HDR Invoice No. 1200013043
 Invoice Date 23-SEP-2016
 Invoice Amount Due \$3,894.58
 Payment Terms 30 NET

Platte Basin Coalition
Kayla Crowe
Nebraska Department of Natural Resources
301 Centennial Mall South
4th Floor State Office Building
PO Box 94676
Lincoln, NE 68509-4676

Remit To PO Box 74008202
 Chicago, IL 60674-8202
 Wire Transfer To Bank of America ML US
 ABA# 081000032
 Account# 355004076604

For services in connection with the Basinwide Plan Facilitation and Engineering Support for the Overappropriated Area of the Platte River.

Professional Services
 From: 24-JUL-2016 To: 20-AUG-2016

Professional Services Summarization	Hours	Billing Rate	Amount
Project Controller	1.50		142.25
Project Manager	21.00		3,560.29
Water Resource Engineer	1.00		105.09
	23.50		\$3,807.63
	Total Professional Services		\$3,807.63

Expense Summarization	Quantity	Billing Rate	Amount
Technology Charge	23.50		86.95
			\$86.95
	Total Expenses		\$86.95

Amount Due This Invoice (USD)	\$3,894.58
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Fee Amount	\$434,409.00
Fee Invoiced to Date	\$39,632.87
Fee Remaining	\$394,776.13

HDR Internal Reference Only	
Client Number	20165
Cost Center	10134
Project Number	10034266

RECEIVED
SEP 26 2016
 DEPARTMENT OF
 NATURAL RESOURCES

Invoice

HDR Invoice No 1200013043
 Invoice Date 23-SEP-2016

Professional Services and Expense Detail

Project Number: 10034266 Project Description: PBC-UpperPlatteBasinPlanDevel
 Task Number: 1.0 Task Description: Project Management

Professional Services		Hours	Billing Rate	Amount
Project Controller	Clifton, Rachel M	1.50	94.83	142.25
Project Manager	Engel, John J	8.00	209.66	1,677.28
		9.50		\$1,819.53
		Total Professional Services		\$1,819.53
Expense		Qty	Billing Rate	Amount
Technology Charge		9.50	3.70	35.15
				\$35.15
		Total Expense		\$35.15
		Total Task		\$1,854.68

Professional Services and Expense Detail

Project Number: 10034266 Project Description: PBC-UpperPlatteBasinPlanDevel
 Task Number: 2.0 Task Description: Meeting Coordination and Facilitation

Professional Services		Hours	Billing Rate	Amount
Project Manager	DesRosiers, Gisele R	1.00	96.99	96.99
Project Manager	Engel, John J	5.00	209.66	1,048.30
Project Manager	Obermueller, Kristen L	4.50	60.28	271.26
Project Manager	Rider, Melissa K B	0.50	82.11	41.06
Project Manager	White, Stephanie L	2.00	212.70	425.40
Water Resource Engineer	Hatfield Edstrom, Katherine L	1.00	105.09	105.09
		14.00		\$1,988.10
		Total Professional Services		\$1,988.10
Expense		Qty	Billing Rate	Amount
Technology Charge		14.00	3.70	51.80
				\$51.80
		Total Expense		\$51.80
		Total Task		\$2,039.90



Upper Platte River Basin-Wide Plan Development

Status Report

Project: Upper Platte River Basin-Wide Plan Development

Subject: Monthly Status Report

Date: Efforts for July 24 – August 20, 2016

HDR Job Number: 10034266

1.0 Project Management and Coordination

- Managed ongoing project activities.
- Conducted weekly team meetings.
- Completed invoicing, status report and earned value report.

2.0 Meeting Coordination and Facilitation

- Follow-up from July 20, 2016 SPG meeting
- Prepared meeting minutes for July 20, 2016 SPG meeting
- Preparation and attendance at August 2, 2016 POAC/PBC meeting
- Began preparations for Single Planning Group Meeting on September 21, 2016.

3.0 Basin-Wide Water Management Plan

- No activity.

4.0 Basin-Wide Water Management Plan Document

- No activity.

Subconsultant Activities

The Flatwater Group

- No activity.

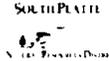
JEO

- No activity

Schedule Status

- Project is on schedule.
- Third SPG meeting is scheduled for September 21, 2016
- POAC/PBC meeting scheduled for October 12, 2016

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NATURAL RESOURCES



Upper Platte River Basin Wide Plan Development

Budget Status

- Project is estimated to be 13% complete.
- Estimated earned value is tracking above actual costs to date.

**Contract
Between
THE PLATTE BASIN WATER PROJECT COALITION
AND
THE FLATWATER GROUP INC.**

THIS AGREEMENT, made as of Month Day, 2016, is by and between the Platte Basin Water Project Coalition, hereinafter (“Basin Coalition”) or (“Client”), and the Flatwater Group Inc., hereinafter (“Consultant”), with offices located at 8200 Cody Dr., Ste. A, Lincoln, NE 68512-9550, either or both of which may be referred to as (“Party”) or (“Parties”) respectively.

1. Scope of Services

Consultant will provide professional services relating to an evaluation of management actions taken as part of the Basin-Wide Plan and Integrated Management Plans to assess the impacts on streamflows of the Platte River and its tributaries. The project consists of the Scope of Work that was prepared by the Client and the assumptions as notated in the fee estimates, included in Exhibits A, B, and C. Specific responsibilities for the Scope of Work for the Consultant and its subcontractors (“SUBS”) are detailed in Exhibit A.

2. Performance of Services

All services hereunder shall be performed in accordance with sound and generally accepted industry practices. Consultant shall exercise all reasonable skill, care, and diligence in the performance of the services covered by this Agreement, including, if appropriate, the selection and evaluation of data and the interpretation of test results, samples, and other technical or commercial information. In the event that there shall be any defect in the work actually performed by Consultant, such defective work shall be replaced or rectified by Consultant repeating the appropriate service at its sole expense.

Client desires to engage Consultant to provide professional engineering, consulting and related services ("Services") in connection with the Project; and Client desires Consultant to retain Adaptive Resources, Inc. as a subcontractor (“SUBS”) to provide professional engineering, consulting and related services ("Services") in connection with the Project.

3. Compensation Details and Billing Procedures

Included in Exhibit A is a Scope of Work developed by the Client. Consultant represents that it has sufficient qualified personnel experienced to perform the services contracted for hereunder and that it shall complete the services in accordance with the terms of this Agreement. Consultant shall be responsible for payment of all income taxes and other taxes on the total income received by Consultant hereunder. Except for such additional equipment, materials, and/or personnel as Client either herein or subsequently agrees in writing to provide for Consultant’s use, all equipment, materials and/or personnel required by Consultant to perform and complete the work herein specified shall be provided by Consultant at its sole cost and expense.

Consultant shall submit monthly itemized invoices with substantiating documents for all expenses. Consultant shall provide Client with at least thirty (30) days advance notice of any changes in such schedule. Subsequent to approval of each invoice submitted by Consultant pursuant to this Agreement and within thirty (30) days following Client’s receipt of invoices pursuant to this Agreement, client shall pay the amount thereof.

Compensation for Consultant’s services under this Agreement shall be on a time and materials basis and shall not exceed \$297,000 without prior written authorization from Client. A breakdown of estimated

compensation by task is provided in Exhibits B and C. The amount of any sales tax, excise tax, value added tax (VAT), or gross receipts tax that may be imposed on this Agreement shall be added to the Consultant's compensation as Reimbursable Expenses.

Unless otherwise stated in this Agreement, the rates of compensation for Consultant's services have been agreed to in anticipation of the orderly and continuous progress of the project through completion.

4. Term of Agreement

This Agreement is effective when the last of the parties has executed it (Month Day, 2016). The term of the Agreement is from Month Day, 2016 through December 31, 2017. All services shall be completed during this term.

If any specified dates for the completion of Consultant's services are exceeded through no fault of the Consultant, the time for performance of those services shall be automatically extended for a period which may be reasonably required for their completion and all rates, measures and amounts of Consultant's compensation shall be equitably adjusted.

5. Changes

Client, without invalidating this Agreement, may order changes in the services within the general scope of this agreement consisting of additions, deletions, or other revisions, and the contract sum and the contract time shall be adjusted accordingly. All such changes shall be authorized in writing executed by Client and Consultant. The cost, if any, to Client resulting from changes in the services shall be determined by prior mutual agreement.

6. Access to Records

Client shall have the right to audit all records accounts of Consultant relating to any materials, supplies, and services actually furnished hereunder by the Consultant. This right of Client to audit shall survive the termination of this Agreement for a period of one year following the end of the calendar year in which this Agreement is terminated.

7. Termination

This Agreement may be terminated at any time by Client by furnishing thirty (30) days written notice to Consultant. In the event of such termination, Client shall be liable to pay only the amounts that have accrued and are owed as of the date of termination.

8. Confidentiality

All information and data developed or received by Consultant or prepared by Consultant in connection with its performance hereunder, from whatever source, including third parties, relating to its activities hereunder shall be the property of the Client and shall be kept strictly confidential by Consultant and shall not be copied or given, delivered, or revealed by Consultant to any other person, firm, corporation, or other entity except with prior written permission of Client. This obligation shall survive termination of this Agreement.

9. Independent Contractor

In rendering its services hereunder, Consultant shall be an independent contractor and not an employee, agent, or representative Client, and Consultant shall not hold itself out as any such employee, representative, or agent or make any representations to create such an impression. Consultant shall have no authority to make any contract or agreement for or on behalf of, or otherwise commit the Client or its members. All additions of project staff and subcontractors, not specifically identified in the attached Exhibits, must receive prior approval of Client before being employed on the project.

10. Indemnification

Consultant shall be responsible for all work performed under this Agreement, whether performed with its own personnel or by approved subcontractors. To the fullest extent permitted by law, each party shall defend, indemnify, and hold harmless the other party, its officers, directors, shareholders, partners, members, and employees from and against any and all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) caused by the acts or omissions of the other party or any of its officers, directors, shareholders, partners, members, employees, subconsultants, and/or lower-tier subcontractors in the performance and furnishing of services under this Agreement.

11. Force Majeure

There shall be no liability on either party for any damage or delay beyond the reasonable control of the party sought to be charged, including damages for failure to meet the anticipated completion date. By way of illustration and not by way of limitation, the following shall be deemed to be beyond the reasonable control of a party: war, revolution, insurrection, riot, or other act by public enemies; flood, hurricanes, lightning and acts of God; strikes, lockouts, and similar labor problems; interruptions in all reasonable transportation facilities; and restrictions, restraints, and other changes in the laws, rules, and regulations of governmental authorities.

12. Insurance

Consultant shall, during the term of this Agreement, comply with the following policies and classifications of insurance and shall deliver copies of said policies, or Certificates of Insurance, to Client upon execution of this Agreement.

- a. Commercial General Liability Insurance. Consultant shall provide coverage during the entire term of the Agreement against claims arising out of bodily injury, death, damage to or destruction of the property of others, including loss of use thereof, and including products and completed operations in an amount not less than Five Hundred Thousand Dollars (\$500,000) per claimant, One Million Dollars (\$1,000,000) per occurrence, and Two Million Dollars (\$2,000,000) General Aggregate.
- b. Automobile Liability Insurance. Consultant shall maintain, during the entire term of the Agreement, automobile liability insurance in an amount not less than One Million Dollars (\$1,000,000) per occurrence for any automobile (including owned, hired, and non-owned autos).
- c. Worker's Compensation or Employer's Liability Insurance. The Consultant shall take out and maintain during the life of this Agreement the statutory Worker's Compensation and Employer's Liability Insurance for all of the Consultant's employees to be engaged in work under this Agreement. The amounts of such:
 - i. Coverage A Statutory
 - ii. Coverage B
 - iii. Bodily Injury by Accident \$1,000,000 each accident
 - iv. Bodily Injury by Disease \$1,000,000 policy limit
 - v. Bodily Injury by Disease \$1,000,000 each employee
- d. Professional Liability Insurance or Errors and Omissions Insurance. Shall include without limitation, coverage for claims of financial loss due to error, act, or omission of Consultant or Consultants employees, officers, equity owners, subcontractors at any tier, or agents, with

a limit of not less than One Million Dollars (\$1,000,000) per claim and Two Million Dollars (\$2,000,000) General Aggregate.

- e. All insurance policies required by this Contract, except Professional Liability, and worker's compensation and unemployment compensation policies, shall name Client as an additional insured.

13. Non-Assignment

The rights and obligations hereunder are deemed to be personal to each party and shall not be delegated, subcontracted, or assigned to any other person or entity without the prior written approval of each party.

14. Binding Agreement

This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

15. Official Addresses

All notices, consents, and communications required or permitted under this Agreement shall be in writing and shall be deemed effective when hand delivered or sent by certified mail, return receipt requested, or sent by electronic communication (facsimile), and correctly addressed as follows:

If to Client:

Ms. Jessie Winter
Platte Basin Water Project Coalition
301 Centennial Mall South
4th Floor Nebraska State Office Building
c/o Department of Natural Resources
Lincoln, NE 68509-4676
(402) 471-0376
jessie.winter@nebraska.gov

If to Consultant:

Mr. Thomas Riley
The Flatwater Group, Inc.
8200 Cody Dr., Ste. A
Lincoln, NE 68512-9550
(402) 435-5441x2232
triley@flatwatergroup.com

All notices shall be effective and shall be deemed delivered on the day of the actual receipt.

16. Arbitration

This Agreement shall be construed and interpreted under the laws of the State of Nebraska, United States of America. Any disputes that the parties are unable to resolve shall be settled by arbitration pursuant to the rules of the American Arbitration Association. Any award rendered pursuant thereto shall be final and binding on the parties and may be entered in any court having jurisdiction.

17. Entire Agreement

This Agreement constitutes the entire agreement between the parties related to its subject matter. It supersedes all prior proposals, agreements, understandings, representations, and conditions. It may not be changed or amended except in writing signed on behalf of both parties.

In no event will the terms of any purchase order, work order or any other document provided by Client modify or amend this Agreement, even if it is signed by the Consultant, unless the Consultant signs a written statement expressly indicating that such terms supersede the terms of this Agreement. Any such terms are expressly rejected by the Consultant.

18. Validity

If any provision of this Agreement is declared by any court of competent jurisdiction to be invalid for any reason, such invalidity shall not affect the remaining provisions. In witness whereof, the parties accept and approve this Agreement in their respective names by their duly authorized representatives.

FOR CONSULTANT-The Flatwater Group, Inc.

By: _____
Mr. Thomas Riley, President

Date: _____

FOR CLIENT-Platte Basin Water Project Coalition

By: _____
Mr. Kent Miller, Chairman

Date: _____

Memo

To: POAC Technical Committee
From: Thad Kuntz (ARI) and Duane Woodward (CPNRD)
Date: 8/2/2016
Re: FINAL – Robust Review Project Analysis Scope of Work

Introduction

The Platte Overappropriated Area Committee (POAC) Technical Committee tasked Thad Kuntz from Adaptive Resources Inc. (ARI) and Duane Woodward from CPNRD to develop a scope of work for the Robust Review Analysis. The Districts included in this analysis are NPNRD, SPNRD, TPNRD, CPNRD, and TBNRD.

Robust Review General Scope of Work Description

A “change modeling” technique will be utilized for this analysis; this technique compares a baseline or reference model run (either the Western Water Use Management (WWUM) Model or Cooperative Hydrology Study (COHYST) Model) to a modified model run. The modified run introduces a change to a specific dataset in the baseline run and, when compared to the baseline, the difference is reflected in the stream baseflow, heads, or aquifer storage. The results from this technique do not represent actual estimates of future stream baseflow, streamflow, heads, or aquifer storage, but rather provide the estimated change in the stream baseflow, streamflow, heads, or aquifer storage.

Two phases of modeling will be completed to provide information for each District on post-1997 irrigated acreage development impacts, mitigation measures completed to offset those impacts, and effects of other water management actions each District has completed. Phase 1 modeling will encompass mitigation measures and management actions completed through 2013 while Phase 2 modeling will address additional analysis on surface water only and commingled acres, projects after 2013, and future water management planning for each District.

Phase 1 Modeling

The Phase I Robust Review modeling encompasses the post-1997 irrigated acreage development depletions and the management actions to mitigate these depletions. These actions include: excess flow canal recharge, ground water pumping allocations, certified acreage retirements, certified acreage transfers, surface water recharge projects, crop type changes, and municipal/industrial baseline changes. To complete Phase 1 Modeling, the POAC Technical Committee has identified the following baseline simulation and 7 individual analyses:

Baseline Run:

1. Existing Models
 - a. WWUM Modeling
 - i. Utilize the 1953 through 2014 Model
 - ii. Only use 1997 through 2013 for the analysis
 - iii. Modification to the Baseline Simulation
 1. Temporary retirements and transfers of certified ground water only irrigated acres occur in several NRDs and as a consequence the baseline simulation will need to be modified to

Memo

incorporate the reactivation or movement of these acres. To account for this affect, the baseline model will add these acres or move them to the original location, represented as irrigated corn, in the simulation when their temporary location expires.

- iv. Repeat 2009 through 2013 climate into the future through 2063
- v. Repeat the 2009 through 2013 pumping and recharge into the future through 2063
- b. COHYST Modeling
 - i. Utilize the 1950 through 2013 Model
 - ii. Only use 1997 through 2013 for the analysis
 - iii. Repeat 1988 through 2013 climate through 2063
 1. Hold the 2013 land use dataset (this is the 2010 land use dataset repeated through 2013) constant for the projection
- c. Municipal, Industrial, and Livestock Pumping
 - i. To complete the municipal, industrial, and livestock transfer and baseline analyses, both modeling efforts may need to revise the current estimates and locations of pumping and if not already in place, revise with actual pumping estimates for each category.
- d. Canal Recharge Projects from Excess Flow
 - i. The baseline models will need modified to incorporate the excess flow diversions for recharge.
 - ii. To determine the amount of recharge from the diversion of excess flows a similar calculation to the NDNR Technical Memorandum for the 2011 Ground Water Recharge Demonstration Projects will need completed.

For all modified modeling analyses described below, each District will need to have separate analyses to determine their individual effects and compared to the baseline run described above. For the WWUM Modeling, each analysis using the regionalized soil water balance modeling will have only one run for both NPNRD and SPNRD. Post processing will split the run for each District.

Land Use Analysis:

1. *Increase in Post-1997 Irrigated Ground Water Only Acres*
 - a. WWUM Modeling
 - i. A set of model runs have been completed by ARI and the only additional work is two ground water model runs to separate out the effects of each NRD. No additional regionalized soil water balance modeling work will need to be completed. ARI will coordinate with NDNR, allowing NDNR to conduct the same analysis of increases in post-1997 irrigated groundwater only acres. NDNR will use the same input files and the same model version used by ARI to replicate the analysis, and the results of the two will be compared and evaluated to determine if the methods used meet the goals and objectives of the IMPs. This activity will take place as part of the Robust Review process.

Memo

- b. COHYST Modeling
 - i. To complete the analysis for CPNRD, TPNRD, and TBNRD individually, within each District the irrigation portion of the irrigated acres developed after 1997 will be removed from the land use dataset and ran through the watershed and ground water models to provide a streamflow value.
- 2. *Certified Irrigated Acreage Retirements (PBHEP, AWEF, CREP, EQUIP, NRD, etc.)*
 - a. The retirement analyses will be completed separate from the Post-1997 depletions analysis. However, the effects from the retirements can be incorporated into the depletions analysis to provide the overall combined results.
 - b. WWUM Modeling Area
 - i. The retirement analysis will pump water at the retired parcel in the modified model each year using the projected pumping described in the baseline run.
 - 1. There is the possibility of double accounting for retirement effects if the lands were post-1997 developed lands. To mitigate this issue, the lands that were retired and developed after 1997 will not be analyzed in the retirement analysis. (SPNRD has no post-1997 retired acres, NPNRD estimates that 130 retired acres were post-1997 lands.)
 - c. COHYST Modeling Area
 - i. The retirement analysis will pump water at the retired parcel in the modified model each year as if the parcel grew corn from the retirement date to the end of the analysis.
 - 1. There is the possibility of double accounting for retirement effects if the lands were post-1997 developed lands. To mitigate this issue, the lands that were retired and developed after 1997 will not be analyzed in the retirement analysis.
- 3. *Certified Irrigated Acreage Transfers*
 - a. The transfer analyses will also be completed separate from the Post-1997 depletions analysis. However, the effects from the transfers can be incorporated into the depletions analysis to provide the overall concept of combining the results.
 - b. WWUM and COHYST Modeling Areas
 - i. In the modified model:
 - 1. Water will be pumped at the pre-transferred location using the crop type and pumping amount of the post-transferred location. New irrigation recharge will be estimated will be provided for each pre-transferred location. The future projection will be completed as described in the baseline run.
 - 2. The post-transferred location will be converted to dryland pasture in the WWUM Modeling and dryland crop in the COHYST Modeling.
 - 3. If the transfer is to an industrial use, then the efficiency of that new use must be estimated for the simulation.
- 4. *Variances Granted Since July 1, 1997*

Memo

- a. Each variance will need individually conceptualized and an analysis will need to be completed.
- b. NDNR has compiled a list of the variances provided by the NRDs that have occurred over this timeframe. It is anticipated that each individual variance can be categorized into one of the previous categories: Increase in acres, retirements, or transfers.

Change in Crop Mix Analysis:

1. *Changes in Crop Consumptive Use from Changes in Crop Mix as Compared to 1997 Crop Mix*
 - a. This phase of the project will investigate the changes in crop consumptive use since 1997. This will be completed by determining the annual total consumptive use and comparing it to the 1997 annual consumptive use.

Canal Recharge Projects Analysis:

1. *2011 Ground Water Recharge Demonstration Project*
 - a. In the modified model, this will be completed by removing the amount of excess flow diversions and associated recharge.
2. *2013 South Platte River Flood Flow Diversion and Recharge*
 - a. In the modified model, this analysis can be completed by removing the recharge from the diversion of excess flows.
3. *Phelps County Canal Recharge Project*
 - a. In the modified model, this analysis can be completed by removing the recharge from the diversion of excess flows into Phelps canal during the winter months.
4. *Elwood Reservoir Ground Water Recharge Project*
 - a. In the modified model, this analysis can be completed by removing the recharge from the diversion of excess flows into Elwood Reservoir.

Augmentation Project Analysis:

1. *North Dry Creek Augmentation Project*
 - a. In the modified model, this analysis can be completed by removing the pumping into dry creek during the time period water was pumped.

Allocation Analysis (NPNRD and SPNRD Only):

1. *Ground Water Allocations (North Platte and South Platte NRDs Only)*
 - a. A set of model runs have been completed by ARI and the only additional work is two ground water model runs to separate out the effects of each NRD. No additional regionalized soil water balance modeling work will need to be completed. ARI will coordinate with NDNR, allowing NDNR to conduct the same analysis evaluating the allocations. NDNR will use the same input files and the same model version used by ARI to replicate the analysis, and the results of the two will be compared and evaluated to determine if the methods used meet the goals and objectives of the IMPs. This activity will take place as part of the Robust Review process.

Memo

Municipal, Industrial, and Confined Livestock Feeding Operation Baseline and Transfer Analysis:

1. *Changes in Municipal, Industrial, and Confined Livestock Feeding Operations Consumptive Use and Location of Pumping as Compared to Their Baseline*
 - a. In the modified model:
 - i. For municipal baseline pumping from 1998 through 2013, the calculated baseline annual per capita consumptive use will be multiplied by the annual population of 1997 and will be compared to the baseline run's actual pumping amount.
 - ii. For industrial baselines from 1998 through 2013, the 1997 estimates of pumping for each industry will be fixed to compare against the actual pumping in the baseline run.
 - iii. For livestock baselines from 1998 through 2013, the average gallons/head/day will be multiplied against the 1997 cattle of feed for each NRD tracked livestock facility and compared to the baseline run's actual pumping.
 - b. To determine the effect of municipal, industrial, or livestock transfers, in the modified model, the pre-transferred pumping locations will be used. The post-transferred pumping locations will be removed from the modified model.

Overall Robust Review Analysis:

1. Overall analysis will combine each analysis into a single run.
 - a. The overall analysis will encompass the following changes:
 - i. Land Use Analysis
 - ii. Canal Recharge Projects Analysis
 - iii. Augmentation Projects Analysis
 - iv. Allocation Analysis (NPNRD and SPNRD Only)
 - v. Municipal Baseline and Transfer Analysis
 - b. **Some of these changes may not be able to be analyzed together so a composite of the combined and individual analyses may need to be utilized in order to complete this analysis.**

Documentation for All Analyses

The change results will be determined and presented for each of the individual analysis listed above (e.g. Land Use Analysis, Change in Crop Mix Analysis, etc.) and by District. Additionally, complete overall documentation for the process, assumptions, and results will be presented in a single document for the Platte Basin area.

Project Timeline

The Phase 1 modeling analyses need completed by December 31st, 2016. In early 2017, the information and draft documentation will be provided to the POAC Technical Committee and Administrators for review and discussion.

Memo

Phase 2 Modeling

The Phase II modeling will be completed to provide each District with information on the post-1997 irrigated acre development impacts, projects, and management actions that are in the development after 2013 that will effect stream baseflow or streamflow through the first increment and into the future. The future projects and management actions include canal recharge, allocations, certified acreage retirements, certified acreage transfers, surface water recharge projects, idled certified acres, crop type changes, and municipal/industrial baseline changes. Additionally, different climatic conditions may exist in the future that may include wet and dry scenarios and modeling can be completed to help inform each District's water resource management planning. Additionally, commingled pumping will be addressed in Phase 2 Modeling. The Phase 1 Modeling will be used as the modeling or a template of the modeling needed for this phase of the Robust Review Analysis.

Below is a list of potential projects being considered for Phase II modeling:

- Temporary Surface Water Only and Commingled Land Retirements
- Climatic Conditions
- Change in Crop Mix (If Needed)
- Commingled Acres
- Canal Rehabilitation: Cozad, Orchard-Alfalfa, Thirty-Mile
- Nebraska Cooperative Republican Platte Enhancement Project
- J-2 Regulating Reservoir
- Elm Creek Reservoir Potential Excess Flow Storage
- Surface Water Transfer Recharge/Stream Augmentation Projects (NPNRD)
- Future High Flow Canal Recharge Projects (Similar to the 2011 and 2013/2014 Recharge Projects)
- Planned Projects (after 2013)
- Conversion from Surface Water Only Irrigation to Commingled Irrigation
- Conversion from Surface Water Only Irrigation to Ground Water Only Irrigation (CPNRD)

Exhibit B

Platte Basin Water Project Coalition

TFG's Response to the Proposed Scopes of Work for

Robust Review Modeling

July 2016

TFG is pleased to provide this response to the Scope of Work (SOW) prepared by Duane Woodward and Thad Kuntz on behalf of the Platte Overappropriated Area Committee (POAC). As part of preparing this response, TFG participated in several conference calls and meetings involving Duane and Thad along with representatives from the Nebraska Department of Natural Resources (DNR), the North Platte Natural Resources District (NRD), the South Platte NRD, and the Twin Platte NRD that were intended to clarify certain modeling approaches and details related to the concepts discussed within the SOW. This response reflects our understanding of the decisions that were arrived at during those calls and meetings culminating with the most recent meeting held on 6 June 2016.

Project Purpose:

The purpose of Phase 1 of this project, which is the focus of this response, is to conduct COHYST and WWUM model runs to evaluate how the post-1997 irrigated acres development, projects, and management actions completed through 2013 will affect stream baseflow or streamflow historically and into the future. The projects and management actions include canal recharge, augmentation, allocations, certified acreage retirements, certified acreage transfers, surface water recharge projects, idled certified acres, crop type changes, and municipal/industrial baseline changes.

Project Approach:

To complete the analyses, the modeling technique that will be used is described as “change modeling” or modeling that compares a baseline model run to a modified model run. For the purposes of this project, the baseline model run will reflect current conditions while the modified model run will reflect changes to a specific dataset or datasets of the baseline model run. The difference between the baseline model run and the modified model run is the effect of the changed dataset.

Developing the baseline model runs will be the first task to accomplish for this project. Subsequent tasks will then be completed to modify various input files to the baseline model to reflect the various modified model run scenarios. The specific changes, and the grouping of these changes, are as specified in the SOW and as decided through the process of follow up conference calls and meetings previously discussed.

Project Role:

Accomplishing this project will require the coordinated efforts of several firms who have developed and currently operate the models to be used for this effort. Modeling teams and roles are summarized below in Table 2.

Table 2: Modeling Team Members and Roles

Model Team	Firm Name	General Modeling Role Summary
COHYST	TFG	Operation and analysis of results from the COHYST watershed Model
COHYST	DNR	Operation and analysis of results from the COHYST ground water model
WWUM	TFG	Operation and analysis of results from the WWUM watershed Model
WWUM	ARI	Operation and analysis of results from the WWUM ground water model

TFG's role in this effort is generally to:

1. Conduct model runs using the watershed model developed as part of COHYST 2010 and the WWUM projects.
2. Prepare, analyze, and report watershed modeling results
3. Documentation of watershed modeling activities and coordination of final technical memorandum assembly.
4. Coordinate project efforts with other technical consultants and the project sponsors.

The watershed model runs will consist of a single change run for each scenario. To evaluate potential impacts on an NRD by NRD basis, the ground water modeling teams will create NRD specific inputs by mixing the desired baseline and change run input files to isolate changes to each NRD of concern.

Fee Estimate:

TFG’s estimated fee for accomplishing the tasks requested in the provided SOW is summarized below in Table 3. Appendix A provides additional detail regarding TFG’s proposed effort for each task. Appendix B provides a detailed breakdown of the costs in Table 3.

Table 3. TFG Cost Estimate

TASK	FEE ESTIMATE		
	COHYST Area	WWUM Area	Total
Task 100 – Develop Baseline Watershed Modeling Simulations	\$23,340.00	\$15,160.00	\$38,500.00
Task 200 – Land Use Analyses	\$19,910.00	\$14,940.00	\$34,850.00
Task 300 – Changes in Crop Mix Analysis	\$1,000.00	\$1,000.00	\$2,000.00
Task 400 – Canal Recharge Project Analyses	\$14,910.00	\$9,940.00	\$24,850.00
Task 500 – Augmentation Project Analyses	\$4,970.00	\$0.00	\$4,970.00
Task 600 – Allocation Analysis	\$0.00	\$0.00	\$0.00
Task 700 – Municipal Baseline and Transfer Analyses	\$4,970.00	\$4,970.00	\$9,940.00
Task 800 – Overall Robust Review Analyses	\$12,310.00	\$12,310.00	\$24,620.00
Task 900 – Final Technical Memorandum	\$13,400.00	\$13,400.00	\$26,800.00
Task 1000 – Project Coordination	\$8,250.00	\$8,250.00	\$16,500.00
Other Direct Costs	\$1,000.00	\$1,000.00	\$2,000.00
Total Estimated Fee	\$104,060.00	\$80,970.00	\$185,030.00

APPENDIX A: DETAILED TFG SCOPE

TFG's Proposed Scope of Services:

Task 100: Develop Baseline Watershed Modeling Simulations

Task 100: COHYST

Generate Baseline Model Run. TFG's initial task within the COHYST 2010 area will be to develop a baseline watershed model run covering the period 1985 through 2063 against which scenario comparisons will be made. The baseline watershed model will be modified from the current COHYST 2010 version as follows:

Run Construction: The baseline model run will cover the period 1985 – 2063. The baseline land use information will be run with climate from 1985 – 2013 followed by climate from 1988 – 2012 being run through two additional times with the land use fixed at the 2013 baseline condition. Following is a more detailed discussion of select model inputs.

Land Use: The land use information will be built off of the land use file currently being developed for the Conservation Measures Impact Study project. That effort will extend the COHYST 2010 land use dataset from 2005 through 2010. For this project, the land use information will then be extended from 2010 to 2013 using 2010 as a base, but being updated to reflect annual acreage retirements, map transfers, certified acreage transfers, and approved variances. From this 1985-2013 dataset (referred to as the 1985 – 2013 actual land use dataset), the baseline modeling land use file will be built. For the period 2014 – 2063, land use will be held constant at 2013 levels. It is anticipated that this dataset will be developed cooperatively by Duane Woodward with the Central Platte NRD, Landon Shaw with the Twin Platte NRD, personnel from the Nebraska Department of Natural Resources (DNR), and TFG.

Irrigation Volumes: The ground water pumping volumes for all years on all lands irrigated with ground water will be computed within the watershed model using the same methodology as in the current model (the volume pumped will be the result of meeting a computed irrigation demand at a specified application efficiency). For lands irrigated with surface water, the delivery volumes used in the extended COHYST 2010 model will be used for the years 1985 – 2013. For the years 2014 – 2063, the volumes delivered in the representative climate years will be used (e.g. in 2014, the volume of surface water delivered in 1988 will be used; in 2015, the volume from 1989 will be used). The percentage of commingled land irrigated with surface water will match the percentages from 2013.

Canal Seepage: From 1985 – 2013, canal seepage volumes will match those in the extended COHYST 2010 model. For the years 2014 – 2063, the volume of seepage in the representative climate years will be used (e.g. in 2014, the volume of seepage in 1988 will be used; in 2015, the volume from 1989

will be used).

In addition, effects from intentional recharge projects conducted within the modeling area will be reflected in the model by use of a second canal recharge file. It is anticipated that the recharge volumes specified in the file will be developed by NRD and DNR personnel. TFG will provide the input file format and make the necessary code modifications to read a second recharge file into the watershed model.

Augmentation Projects: Effects from stream augmentation projects conducted within the modeling area will be reflected in the model as appropriate. For projects which pump ground water to augment stream flow, the specified pumping and recharge volumes, timing, and locations will be incorporated either within the existing input file structure or through additional pumping and recharge input files.

M&I Information: As part of Task 100, updates to the M&I pumping information currently being used in the COHYST 2010 models will be incorporated. These updates are anticipated to be related to both new/revised well locations and pumping volumes. It is anticipated that the NRDs and DNR will take the lead in identifying and quantifying necessary changes and that TFG will incorporate those changes into the modeling input files. M&I pumping beyond 2013 will be held at 2013 levels.

Climate Inputs: The climate input files to extend operation of the Watershed Model from 2010 (developed for the Conservation Measures Impact Study project) to 2013 have already been developed as part of a Statewide modeling support contract TFG maintains with DNR. Those inputs will be used for this project, therefore, there are no cost impacts to this project for extending the climate inputs.

Task 100: Western Water Use Model (WWUM)

Generate Baseline Model Run. TFG's initial task within the WWUM area will be to develop a baseline watershed model run covering the period 1997 through 2063 against which scenario comparisons will be made. The baseline watershed model will be modified from the current WWUM version as follows:

Run Construction: The baseline watershed model run will cover the period 1997 – 2063. The land use information developed by ARI will be run with historical climate from 1997 – 2013. For the years 2014 – 2063, inputs from 2009-2013 will be repeated ten times. Available records of historical surface water diversions and metered ground water pumping will be incorporated into this run as is done in the current version of the WWUM. Following is a more detailed discussion of select model inputs.

Land Use: The land use information for the baseline model will be built from the land use information in the current WWUM model. The years 1997 through 2013 from the existing WWUM model will be the base from which the land use for the baseline model will be built. This existing information will be updated to reflect annual acreage retirements, map transfers, and certified acreage transfers which occurred after development of the current WWUM land use dataset. For the period 2014 – 2063, land use will be 2009 through 2013 levels repeated ten times.

Irrigation Volumes: For the years 1997 through 2006, the ground water pumping volumes on all lands irrigated with ground water will be computed within the watershed model whereby the volume pumped will be the result of meeting a computed irrigation demand at a specified application efficiency. Beginning in 2007 (the first year metered information was collected in the South Platte NRD) and continuing through 2013, available actual metered pumping volumes will replace computed volumes to the extent that recorded pumping volume information is available. For the years 2014 – 2063, the ground water pumping within the North and South Platte NRD areas will be equal to the values from 2009 through 2013 repeated ten times (e.g. in 2014, the volume pumped will equal the pumping recorded in 2009; in 2015, the volume from 2010 will be used; etc.).

For lands irrigated with surface water, the delivery volumes used in the current WWUM model will be used for the years 1997 – 2013. For the years 2014 – 2063, the volumes delivered in the years 2009 through 2013 will be repeated (e.g. in 2014, the volume of surface water delivered in 2009 will be used; in 2015, the volume from 2010 will be used).

Canal Seepage: From 1997 – 2013, canal seepage volumes will match those in the current WWUM model. For the years 2014 – 2063, the volume of seepage in the

years 2009 through 2013 will be repeated (e.g. in 2014, the volume of seepage in 2009 will be used; in 2015, the volume from 2010 will be used).

In addition, effects from intentional recharge projects conducted within the modeling area will be reflected in the model via the use of injection wells within the ground water model to simulate additional recharge. It is anticipated that the recharge volumes specified will be developed by NRD and DNR personnel. ARI will make the necessary modifications to the ground water model to reflect these projects.

Augmentation Projects: Effects from stream augmentation projects conducted within the modeling area will be reflected in the model as appropriate. For projects which pump ground water to augment stream flow, the specified pumping and recharge volumes, timing, and locations will be incorporated either within the existing input file structure or through additional pumping and recharge input files.

M&I Information: As part of Task 100, updates to the M&I pumping information in the existing WWUM model will be incorporated into input files for the baseline model. These updates are anticipated to be related to both new/revised well locations and pumping volumes. It is anticipated that the NRDs and DNR will take the lead in identifying and quantifying necessary changes and that ARI will incorporate those changes into the modeling input files. M&I pumping beyond 2013 will be held at 2013 levels.

Climate Inputs: Currently within the WWUM climate files extend through 2013. No additional work is anticipated in this area for this project.

200 Series Tasks: The 200 Series tasks cover modified modeling analyses focused on changes to Land Use. For each task in the 200 series, a total of four model runs will be made in the COHYST area. Three of the four runs will be designed to isolate the impacts from each NRD (the Twin Platte NRD, the Central Platte NRD, and the Tri-Basin NRD). This will be accomplished by modifying one of the districts as described below while maintaining Task 100 (baseline) conditions in the remaining model area. The fourth run will be developed to analyze the effects of modifying all areas of the modeling domain simultaneously as described below. In a similar manner, a total of three model runs will be made in the WWUM area for each 200 series task to represent individual and simultaneous impacts for the North and South Platte NRDs. As previously discussed, impacts to each NRD will be isolated by the ground water modeling team by creating new input files from the baseline and change model run outputs from the watershed model.

Task 201: Land Use Analysis - Increase in Post 1997 Irrigated Ground Water Only Acres

Task 201: COHYST

Generate COHYST Modified Model Run 1. COHYST Modified Model Run 1 is a scenario run that will be developed to estimate the impact to streamflow resulting from irrigation on acreage brought into production after 1997 that was irrigated only with ground water. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 201 model run will again cover the period 1985 – 2063; however, the land use information from the Task 100 model run will be modified for all years after 1997. The amount of land irrigated only with ground water will remain equal to the area irrigated in 1997 for the years 1998 through 2063. The amount of land receiving surface water (either exclusively or in combination with ground water (i.e. commingled lands)) will match the Task 100 model inputs (i.e. changes in the amount of land receiving surface water will be allowed to occur after 1997). Following is a more detailed discussion of select model inputs.

Land Use: For the Task 201 run, the amount of land irrigated only with ground water will remain equal to the area irrigated in 1997 of the Task 100 model for the years 1998 through 2063. The amount of land receiving surface water (either exclusively or in combination with ground water (i.e. commingled lands)) will match the baseline model inputs (i.e. changes in the amount of land receiving surface water will be allowed to occur after 1997). Lands which were not irrigated in 1997, but are modeled as being irrigated after 1997, will be assigned a crop type of non-irrigated corn for this change run. It is anticipated that TFG will develop this dataset.

Irrigation Volumes: No changes will be made to the approach used in the Task 100

model to estimate irrigation supplies; however, changes made to the land use files for the Task 201 model will result in a change in pumping volumes after 1997.

Canal Seepage: No change is anticipated between the Task 100 and Task 201 canal seepage information.

Augmentation Projects: No change is anticipated between the Task 100 and Task 201 augmentation project information.

M&I Information: No change is anticipated between the Task 100 and Task 201 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 201 climate information.

Task 201: WWUM

An analysis to evaluate the impact to streamflow resulting from irrigation on acreage brought into production after 1997 that was irrigated only with ground water in the North and South Platte NRDs was previously conducted by. Additional work on this analysis as part of this project is not anticipated.

Task 202: Land Use Analysis - Certified Acreage Retirements

Task 202: COHYST

Generate COHYST Modified Model Run 2. COHYST Modified Model Run 2 is a scenario run that will be developed to estimate the impact to streamflow resulting from retirements of irrigation on acreage brought into production after 1997 that was irrigated only with ground water. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 202 model run will again cover the period 1985 – 2063; however, the land use information from the Task 100 model run will be modified for all years after 1997. Irrigated acreage that was retired after 1997 will be “unretired” in the Task 202 model. Following is a more detailed discussion of select model inputs.

Land Use: For the Task 202 run, irrigated acreage that was retired after 1997 will be “unretired.” Lands which were retired in the Task 100 model will be unretired to corn irrigated only with ground water. It is anticipated that TFG in coordination with the NRDs will develop this dataset.

Irrigation Volumes: No changes will be made to the approach used in the Task 100 model to estimate irrigation supplies; however, changes made to the land use files for the Task 202 model will result in a change in pumping volumes after 1997.

Canal Seepage: No change is anticipated between the Task 100 and Task 202 canal seepage information.

Augmentation Projects: No change is anticipated between the Task 100 and Task 202 augmentation project information.

M&I Information: No change is anticipated between the Task 100 and Task 202 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 202 climate information.

Task 202: WWUM

Generate WWUM Modified Model Run 2. WWUM Modified Model Run 2 is a scenario run that will be developed to estimate the impact to streamflow resulting from retirements of irrigation on acreage brought into production after 1997 that was irrigated only with ground water. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 202 model run will again cover the period 1997 – 2063; however, the land use information from the Task 100 model run will be modified for all years after 1997. Irrigated acreage that was retired after 1997 will be “unretired” in the Task 202 model. Following is a more detailed discussion of select model inputs.

Land Use: For the Task 202 run, irrigated acreage that was retired after 1997 will be “unretired.” Lands which were retired in the Task 100 model will be unretired to corn irrigated only with ground water. It is anticipated that ARI in coordination with the NRDs will develop this dataset.

Irrigation Volumes: No changes will be made to the approach used in the Task 100 model to estimate irrigation supplies; however, changes made to the land use files for the Task 202 model will result in a change in pumping volumes after 1997. Modifications related to the metered pumping information are anticipated to be made by ARI.

Canal Seepage: No change is anticipated between the Task 100 and Task 202 canal seepage information.

Augmentation Projects: No change is anticipated between the Task 100 and Task 202 augmentation project information.

M&I Information: No change is anticipated between the Task 100 and Task 202 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 202 climate information.

Task 203: Land Use Analysis - Certified Irrigated Acreage Transfers

Task 203: COHYST

Generate COHYST Modified Model Run 3. COHYST Modified Model Run 3 is a scenario run that will be developed to estimate the impact to streamflow resulting from “irrigation transfers” occurring on acreage brought into production after 1997 that was irrigated only with ground water. The term “irrigation transfers” refers to the practice of discontinuing irrigation on one parcel while initiating irrigation on another parcel. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 203 model run will again cover the period 1985 – 2063; however, the land use information from the Task 100 model run will be modified for all years after 1997. Irrigation transfers that occurred after 1997 will be “untransferred” in the Task 203 model. Following is a more detailed discussion of select model inputs.

Land Use: For the Task 203 run irrigation transfers that occurred after 1997 will be “untransferred”. Acreage that was transferred will be transferred back as corn irrigated only with ground water and the location from which the land was transferred in the Task 100 model will be re-set to non-irrigated corn. It is anticipated that TFG in coordination with the NRDs will develop this dataset.

Irrigation Volumes: No changes will be made to the approach used in the Task 100 model to estimate irrigation supplies; however, changes made to the land use files for the Task 203 model will result in a change in pumping volumes after 1997.

Canal Seepage: No change is anticipated between the Task 100 and Task 203 canal seepage information.

Augmentation Projects: No change is anticipated between the Task 100 and Task 203 augmentation project information.

M&I Information: No change is anticipated between the Task 100 and Task 203 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 203 climate information.

Task 203: WWUM

Generate WWUM Modified Model Run 3. WWUM Modified Model Run 3 is a scenario run that will be developed to estimate the impact to streamflow resulting from “irrigation transfers” occurring on acreage brought into production after 1997 that was irrigated only with ground water. The term “irrigation transfers” refers to the practice of discontinuing irrigation on one parcel while initiating irrigation on another parcel. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 203 model run will again cover the period 1997 – 2063; however, the land use information from the Task 100 model run will be modified for all years after 1997. Irrigation transfers occurring after 1997 will be “untransferred” in the Task 203 model. Following is a more detailed discussion of select model inputs.

Land Use: For the Task 203 run irrigation transfers that occurred after 1997 will be “untransferred”. Acreage that was transferred will be transferred back corn irrigated only with ground water and the location from which the land was transferred in the Task 100 model will be re-set to pasture. It is anticipated that ARI in coordination with the NRDs will develop this dataset.

Irrigation Volumes: No changes will be made to the approach used in the Task 100 model to estimate irrigation supplies; however, changes made to the land use files for the Task 203 model will result in a change in pumping volumes after 1997. Modifications related to the metered pumping information are anticipated to be made by ARI.

Canal Seepage: No change is anticipated between the Task 100 and Task 203 canal seepage information.

Augmentation Projects: No change is anticipated between the Task 100 and Task 203 augmentation project information.

M&I Information: No change is anticipated between the Task 100 and Task 203 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 203 climate information.

Task 204: Variances Granted Since July 1, 1997

Variances granted within the two respective modeling areas, COHYST and WWUM, will be conceptualized individually and analysis developed on a case by case basis. For costing purposes, a dollar amount of \$5,000 per model area was assumed. This amount is subject to change depending upon the complexity of the variance's representation in the models.

Task 300: Changes in Crop Mix Analysis

Task 300 will cover investigating the changes in crop consumptive use since 1997. Annual estimates of evapotranspiration by NRD will be compiled for the years 1997 through 2013. The years 1998 through 2013 will be compared to values from 1997 which will serve as a baseline for the analysis. It is assumed that a compilation of previous modeling results will suffice for this task. For costing purposes, a dollar amount of \$1,000.00 per model area was assumed.

400 Series Tasks: The 400 Series tasks cover modified modeling analyses focused on analyzing the impacts of selected canal recharge projects. For each task in the 400 series, only a single run will be conducted using the model covering the project area. The run will be developed to analyze the effects of the appropriate modeling domain as described below.

Task 401: Canal Recharge Project Analysis - 2011 Ground Water Recharge Demonstration Project

Task 401: COHYST

Generate COHYST Modified Model Run 4. COHYST Modified Model Run 4 is a scenario run that will be developed to estimate the impact to streamflow resulting from ground water recharge projects undertaken in 2011. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 401 model run will again cover the period 1985 – 2063; however, the canal recharge associated with the 2011 Ground Water Recharge Demonstration Project will be removed from the Task 401 model. Following is a more detailed discussion of select model inputs.

Land Use: No change is anticipated between the Task 100 and Task 401 land use information.

Irrigation Volumes: No change is anticipated between the Task 100 and Task 401 irrigation volume information.

Canal Seepage: Canal recharge related to the 2011 Ground Water Recharge Demonstration Project will be removed from the Task 401 model.

Augmentation Projects: No change is anticipated between the Task 100 and Task 401 augmentation project information.

M&I Information: No change is anticipated between the Task 100 and Task 401 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 401 climate information.

Task 401: WWUM

Generate WWUM Modified Model Run 4. WWUM Modified Model Run 4 is a scenario run that will be developed to estimate the impact to streamflow resulting from ground water recharge projects undertaken in 2011. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 401 model run will again cover the period 1985 – 2063; however, the canal recharge associated with the 2011 Ground Water Recharge Demonstration Project will be removed from the Task 401 model. Following is a more detailed discussion of select model inputs.

Land Use: No change is anticipated between the Task 100 and Task 401 land use information.

Irrigation Volumes: No change is anticipated between the Task 100 and Task 401 irrigation volume information.

Canal Seepage: Canal recharge related to the 2011 Ground Water Recharge Demonstration Project will be removed from the Task 401 model.

Augmentation Projects: No change is anticipated between the Task 100 and Task 401 augmentation project information.

M&I Information: No change is anticipated between the Task 100 and Task 401 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 401 climate information.

Task 402: Canal Recharge Project Analysis - 2013/2014 South Platte River Flood Flow Diversion and Recharge

Task 402: COHYST

Given the location of this canal recharge project, no modifications to the COHYST model are anticipated for this task.

Task 402: WWUM

Generate WWUM Modified Model Run 5. WWUM Modified Model Run 5 is a scenario run that will be developed to estimate the impact to streamflow resulting from ground water recharge projects undertaken in 2013/2014. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 402 model run will again cover the period 1985 – 2063; however, the canal recharge associated with the 2013/2014 South Platte River Flood Flow Diversion and Recharge Project will be removed from the Task 402 model. Following is a more detailed discussion of select model inputs.

Land Use: No change is anticipated between the Task 100 and Task 402 land use information.

Irrigation Volumes: No change is anticipated between the Task 100 and Task 402 irrigation volume information.

Canal Seepage: Canal recharge related to the 2013/2014 South Platte River Flood Flow Diversion and Recharge Project will be removed from the Task 402 model.

Augmentation Projects: No change is anticipated between the Task 100 and Task 402 augmentation project information.

M&I Information: No change is anticipated between the Task 100 and Task 402 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 402 climate information.

Task 403: Canal Recharge Project Analysis – Phelps Canal Recharge Project

Task 403: COHYST

Generate COHYST Modified Model Run 5. COHYST Modified Model Run 5 is a scenario run that will be developed to estimate the impact to streamflow resulting from ground water recharge projects undertaken between 2011 and 2013 on the Phelps Canal. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 403 model run will again cover the period 1985 – 2063; however, the canal recharge associated with the Phelps Canal Recharge Project will be removed from the Task 403 model. Following is a more detailed discussion of select model inputs.

Land Use: No change is anticipated between the Task 100 and Task 403 land use information.

Irrigation Volumes: No change is anticipated between the Task 100 and Task 403 irrigation volume information.

Canal Seepage: Canal recharge related to the Phelps County Recharge Project will be removed from the Task 403 model.

Augmentation Projects: No change is anticipated between the Task 100 and Task 403 augmentation project information.

M&I Information: No change is anticipated between the Task 100 and Task 403 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 403 climate information.

Task 403: WWUM

Given the location of this canal recharge project, no modifications to the WWUM model are anticipated for this task.

Task 404: Canal Recharge Project Analysis – Elwood Reservoir Recharge Project

Task 404: COHYST

Generate COHYST Modified Model Run 6. COHYST Modified Model Run 6 is a scenario run that will be developed to estimate the impact to streamflow resulting from ground water recharge projects undertaken between 2011 and 2013 using Elwood Reservoir. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 404 model run will again cover the period 1985 – 2063; however, the canal recharge associated with the Elwood Reservoir Ground Water Recharge Project will be removed from the Task 404 model. Following is a more detailed discussion of select model inputs.

Land Use: No change is anticipated between the Task 100 and Task 404 land use information.

Irrigation Volumes: No change is anticipated between the Task 100 and Task 404 irrigation volume information.

Canal Seepage: Canal recharge related to the Elwood Reservoir Ground Water Recharge Project will be removed from the Task 404 model.

Augmentation Projects: No change is anticipated between the Task 100 and Task 404 augmentation project information.

M&I Information: No change is anticipated between the Task 100 and Task 404 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 404 climate information.

Task 404: WWUM

Given the location of this canal recharge project, no modifications to the WWUM model are anticipated for this task.

Task 500: Augmentation Project Analysis - North Dry Creek Augmentation Project

Task 500: COHYST

Generate COHYST Modified Model Run 7. COHYST Modified Model Run 7 is a scenario run that will be developed to estimate the impact to streamflow resulting from an augmentation project on North Dry Creek. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 500 model run will again cover the period 1985 – 2063; however, the pumping associated with the North Dry Creek Augmentation Project will be removed from the Task 500 model. Following is a more detailed discussion of select model inputs.

Land Use: No change is anticipated between the Task 100 and Task 500 land use information.

Irrigation Volumes: No change is anticipated between the Task 100 and Task 500 irrigation volume information.

Canal Seepage: No change is anticipated between the Task 100 and Task 500 canal seepage information.

Augmentation Projects: Pumping related to the North Dry Creek Augmentation Project will be removed from the Task 500 model.

M&I Information: No change is anticipated between the Task 100 and Task 500 M&I information.

Climate Inputs: No change is anticipated between the Task 100 and Task 500 climate information.

Task 500: WWUM

Given the location of this augmentation project, no modifications to the WWUM model are anticipated for this task.

Task 600: Allocation Analysis

Analyses to evaluate the allocations in the North and South Platte NRDs were previously conducted. Additional work on these analyses is not anticipated.

700 Series Tasks: The 700 Series tasks cover modified modeling analyses focused on analyzing streamflow impacts resulting from changes to pumping and consumptive use related to Municipal, Industrial, and Livestock uses. For each task in the 700 series, a total of four model runs will be made in the COHYST area. Three of the four runs will be designed to isolate the impacts from each NRD (the Twin Platte NRD, the Central Platte NRD, and the Tri-Basin NRD). This will be accomplished by modifying one of the districts as described below while maintaining Task 100 (baseline) conditions in the remaining model area. The fourth run will be developed to analyze the effects of modifying all areas of the modeling domain simultaneously as described below. In a similar manner, a total of three model runs will be made in the WWUM area for each 700 series task to represent individual and simultaneous impacts for the North and South Platte NRDs. As previously discussed, impacts to each NRD will be isolated by the ground water modeling team by creating new input files from the baseline and change model run outputs from the watershed model.

Task 701: Municipal Baseline and Transfer Analysis – Comparison to 1997 Baseline

Task 701: COHYST

Generate COHYST Modified Model Run 8. COHYST Modified Model Run 8 is a scenario run that will be developed to estimate the impact to streamflow resulting from changes related to Municipal, Industrial, and Livestock water use. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 701 model run will again cover the period 1985 – 2063; however, the effects on streamflow of current Municipal, Industrial, and Livestock water use will be compared to effects from 1997 levels of usage. The analysis will evaluate both changes in volumes and locations of water usage. Following is a more detailed discussion of select model inputs.

Land Use: No change is anticipated between the Task 100 and Task 701 land use information.

Irrigation Volumes: No change is anticipated between the Task 100 and Task 701 irrigation volume information.

Canal Seepage: No change is anticipated between the Task 100 and Task 701 canal seepage information.

Augmentation Projects: No change is anticipated between the Task 100 and Task 701 augmentation project information.

M&I Information: For the Task 701 model:

- Municipal pumping for the years 1998 through 2063 will be

computed as the calculated historic average annual per capita consumptive use for the interval August 1, 2001 through July 31, 2006 multiplied by the annual population of 1997.

- Industrial pumping for the years 1998 through 2063 will be assumed to be the 1997 estimate of pumping from the Task 100 model.
- Livestock water use for the years 1998 through 2063 will be computed as the calculated average historic water use in gallons/head/day for cattle from 1998 through 2013 multiplied by the number of cattle on feed in each facility in 1997.

Effects from these changes will be quantified by comparing results from the Task 701 model to results from the Task 100 model.

Climate Inputs: No change is anticipated between the Task 100 and Task 701 climate information.

Task 701: WWUM

Generate WWUM Modified Model Run 6. WWUM Modified Model Run 6 is a scenario run that will be developed to estimate the impact to streamflow resulting from changes related to Municipal, Industrial, and Livestock water use. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 701 model run will again cover the period 1985 – 2063; however, the effects on streamflow of current Municipal, Industrial, and Livestock water use will be compared to effects from 1997 levels of usage. The analysis will evaluate both changes in volumes and locations of water usage. Following is a more detailed discussion of select model inputs.

Land Use: No change is anticipated between the Task 100 and Task 701 land use information.

Irrigation Volumes: No change is anticipated between the Task 100 and Task 701 irrigation volume information.

Canal Seepage: No change is anticipated between the Task 100 and Task 701 canal seepage information.

Augmentation Projects: No change is anticipated between the Task 100 and Task 701 augmentation project information.

M&I Information: For the Task 701 model:

- Municipal pumping for the years 1998 through 2063 will be computed as the calculated historic average annual per capita consumptive use for the interval August 1, 2001 through July 31, 2006 multiplied by the annual population of 1997.
- Industrial pumping for the years 1998 through 2063 will be assumed to be the 1997 estimate of pumping from the Task 100 model.
- Livestock water use for the years 1998 through 2063 will be computed as the calculated average historic water use in gallons/head/day for cattle from 1998 through 2013 multiplied by the number of cattle on feed in each facility in 1997.

Effects from these changes will be quantified by comparing results from the Task 701 model to results from the Task 100 model.

Climate Inputs: No change is anticipated between the Task 100 and Task 701 climate information.

800 Series Tasks: The 800 Series tasks cover modified modeling analyses focused on analyzing streamflow impacts resulting from the cumulative changes modeled in Tasks 200 – 700. For each task in the 800 series, a total of four model runs will be made in the COHYST area. Three of the four runs will be designed to isolate the impacts from each NRD (the Twin Platte NRD, the Central Platte NRD, and the Tri-Basin NRD). This will be accomplished by modifying one of the districts as described below while maintaining Task 100 (baseline) conditions in the remaining model area. The fourth run will be developed to analyze the effects of modifying all areas of the modeling domain simultaneously as described below. In a similar manner, a total of three model runs will be made in the WWUM area for each 800 series task to represent individual and simultaneous impacts for the North and South Platte NRDs. As previously discussed, impacts to each NRD will be isolated by the ground water modeling team by creating new input files from the baseline and change model run outputs from the watershed model.

Task 801: Overall Robust Review Analysis – Cumulative Effects

Task 801: COHYST

Generate COHYST Modified Model Run 9. COHYST Modified Model Run 9 is a scenario run that will be developed to estimate the impact to streamflow resulting from changes made in Tasks 200 - 700. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 801 model run will again cover the period 1985 – 2063; however, the cumulative effects of all activities modeled in Tasks 200 – 700 will be evaluated together. At present, it is assumed that the allocation analyses previously conducted will be analyzed. Following is a more detailed discussion of select model inputs.

Land Use: Refer to the changes discussed under Tasks 201 through 204.

Irrigation Volumes: Refer to the changes discussed under Tasks 201 through 204.

Canal Seepage: Refer to the changes discussed under Tasks 401 through 404.

Augmentation Projects: Refer to the changes discussed under Task 500.

M&I Information: Refer to the changes discussed under Task 700.

Climate Inputs: No change is anticipated between the Task 100 and Task 701 climate information.

Task 801: WWUM

Generate WWUM Modified Model Run 7. WWUM Modified Model Run 7 is a scenario run that will be developed to estimate the impact to streamflow resulting from changes made in Tasks 200 - 700. To develop this model run, the Task 100 baseline model will be modified as follows:

Run Construction: The Task 801 model run will again cover the period 1985 – 2063; however, the cumulative effects of all activities modeled in Tasks 200 – 700 will be evaluated together. At present, it is assumed that the allocation analyses previously conducted will be analyzed. Following is a more detailed discussion of select model inputs.

Land Use: Refer to the changes discussed under Tasks 201 through 204.

Irrigation Volumes: Refer to the changes discussed under Tasks 201 through 204.

Canal Seepage: Refer to the changes discussed under Tasks 401 through 404.

Augmentation Projects: Refer to the changes discussed under Task 500.

M&I Information: Refer to the changes discussed under Task 700.

Climate Inputs: No change is anticipated between the Task 100 and Task 701 climate information.

Task 900: Final Technical Memorandum

For each of the watershed modeling runs conducted, the modeling approaches and results will be summarized into a technical memorandum whose costs have been included in the individual task cost estimates. In addition to documenting each run, a final technical memorandum will be assembled that includes copies of the documentation created for all modeling activities and provides an overall summary of results. The cost for assembling the final technical memorandum is covered under this task, Task 900.

Task 1000: Project Coordination – Meetings, Conference Calls

Coordination and communication with other entities involved in this project will be essential for a successful execution of this project. For budgeting purposes, it is assumed that bi-weekly conference calls with additional sponsor meetings will be conducted over the course of a projected six month timeframe.

APPENDIX B: TFG COST DETAIL

**ROBUST REVIEW COST ESTIMATE FOR TFG
BASED ON JULY 2016 TFG RESPONSE**

PBC Meeting
October 12, 2016
Attachment K

Task Description	COHYST					Number of Runs - WWUM	WWUM					PM 175				
	Jr Engineer 90	GIS/DB 95	Mid-Engineer 110	Sr Engineer 165	PM 175		Jr Engineer 90	GIS/DB 95	Mid-Engineer 110	Sr Engineer 165	PM 175					
Task 100: Develop Baseline Scenario														23,340.00		15,160.00
1 Input File Development	10	40	40	24	\$13,060.00	1	5	20	20	12			6530			
1 Model Setup and Execution			30		\$3,300.00	1			15				1650			
1 Results Review & QC			8	8	\$2,200.00	1			8	8			2200			
1 Documentation		4	8	8	\$2,580.00	1		4	8	8			2580			
1 Task Coordination			8	8	\$2,200.00	1			8	8			2200			
Task 201: Increase in Post 1997 GW Only Acres														4,970.00		0.00
1 Input File Development		2	4	2	\$960.00	0							0			
1 Model Setup and Execution			8		\$880.00	0							0			
1 Results Review & QC			4	4	\$1,100.00	0							0			
1 Documentation		4	4	4	\$1,480.00	0							0			
1 Task Coordination			2	2	\$550.00	0							0			
Task 202: Certified Acreage Retirements														4,970.00		4,970.00
1 Input File Development		2	4	2	\$960.00	1		2	4	2			960			
1 Model Setup and Execution			8		\$880.00	1			8				880			
1 Results Review & QC			4	4	\$1,100.00	1			4	4			1100			
1 Documentation		4	4	4	\$1,480.00	1		4	4	4			1480			
1 Task Coordination			2	2	\$550.00	1			2	2			550			
Task 203: Certified Acreage Transfers														4,970.00		4,970.00
1 Input File Development		2	4	2	\$960.00	1		2	4	2			960			
1 Model Setup and Execution			8		\$880.00	1			8				880			
1 Results Review & QC			4	4	\$1,100.00	1			4	4			1100			
1 Documentation		4	4	4	\$1,480.00	1		4	4	4			1480			
1 Task Coordination			2	2	\$550.00	1			2	2			550			
Task 204: Variances														5,000.00		5,000.00
0 Input File Development					\$0.00	0							0			
0 Model Setup and Execution					\$0.00	0							0			
0 Results Review & QC					\$0.00	0							0			
0 Documentation					\$0.00	0							0			
0 Task Coordination					\$0.00	0							0			
Task 300: Crop Mix Analysis														1,000.00		1,000.00
0 Input File Development					\$0.00	0							0			
0 Model Setup and Execution					\$0.00	0							0			
0 Results Review & QC					\$0.00	0							0			
0 Documentation					\$0.00	0							0			
0 Task Coordination					\$0.00	0							0			
Task 401: 2011 GW Recharge Demo Proj														4,970.00		4,970.00
1 Input File Development		2	4	2	\$960.00	1		2	4	2			960			
1 Model Setup and Execution			8		\$880.00	1			8				880			
1 Results Review & QC			4	4	\$1,100.00	1			4	4			1100			
1 Documentation		4	4	4	\$1,480.00	1		4	4	4			1480			
1 Task Coordination			2	2	\$550.00	1			2	2			550			
Task 402: 2013/2014 South Platte Flood Flow Diversions														0.00		4,970.00
0 Input File Development					\$0.00	1		2	4	2			960			
0 Model Setup and Execution					\$0.00	1			8				880			
0 Results Review & QC					\$0.00	1			4	4			1100			
0 Documentation					\$0.00	1		4	4	4			1480			
0 Task Coordination					\$0.00	1			2	2			550			
Task 403: Phelps Canal Recharge Project														4,970.00		0.00
1 Input File Development		2	4	2	\$960.00	0							0			
1 Model Setup and Execution			8		\$880.00	0							0			
1 Results Review & QC			4	4	\$1,100.00	0							0			
1 Documentation		4	4	4	\$1,480.00	0							0			
1 Task Coordination			2	2	\$550.00	0							0			
Task 404: Elwood Reservoir Recharge Project														4,970.00		0.00
1 Input File Development		2	4	2	\$960.00	0							0			
1 Model Setup and Execution			8		\$880.00	0							0			
1 Results Review & QC			4	4	\$1,100.00	0							0			
1 Documentation		4	4	4	\$1,480.00	0							0			
1 Task Coordination			2	2	\$550.00	0							0			
Task 500: North Dry Creek Augmentation Project														4,970.00		0.00
1 Input File Development		2	4	2	\$960.00	0							0			
1 Model Setup and Execution			8		\$880.00	0							0			
1 Results Review & QC			4	4	\$1,100.00	0							0			
1 Documentation		4	4	4	\$1,480.00	0							0			
1 Task Coordination			2	2	\$550.00	0							0			
Task 600: Allocation Analysis														0.00		0.00
1 Input File Development					\$0.00	0							0			
1 Model Setup and Execution					\$0.00	0							0			
1 Results Review & QC					\$0.00	0							0			
1 Documentation					\$0.00	0							0			
1 Task Coordination					\$0.00	0							0			
Task 701: M&I														4,970.00		4,970.00
1 Input File Development		2	4	2	\$960.00	1		2	4	2			960			
1 Model Setup and Execution			8		\$880.00	1			8				880			
1 Results Review & QC			4	4	\$1,100.00	1			4	4			1100			
1 Documentation		4	4	4	\$1,480.00	1		4	4	4			1480			
1 Task Coordination			2	2	\$550.00	1			2	2			550			
Task 801: Cumulative Effects														12,310.00		12,310.00
1 Input File Development	10	20	20	12	\$6,980.00	1	10	20	20	12			6980			
1 Model Setup and Execution			16		\$1,760.00	1			16				1760			
1 Results Review & QC			4	4	\$1,100.00	1			4	4			1100			
1 Documentation		4	8	4	\$1,920.00	1		4	8	4			1920			
1 Task Coordination			2	2	\$550.00	1			2	2			550			
Task 900: Final Technical Memorandum			30	40	\$13,400.00				30	40			13400			13400
Task 1000: Project Coordination			30	30	\$8,250.00				30	30			8250			8250
														103,060.00		79,970.00

Summary By Task:	Cost			Number of Runs	
	COHYST	WWUM	Total	COHYST	WWUM
Task 100	\$23,340.00	\$15,160.00	\$38,500.00	1	1
Task 200	\$19,910.00	\$14,940.00	\$34,850.00	3	3
Task 300	\$1,000.00	\$1,000.00	\$2,000.00	0	0
Task 400	\$14,910.00	\$9,940.00	\$24,850.00	3	2
Task 500	\$4,970.00	\$0.00	\$4,970.00	1	0
Task 600	\$0.00	\$0.00	\$0.00	0	0
Task 700	\$4,970.00	\$4,970.00	\$9,940.00	1	1
Task 800	\$12,310.00	\$12,310.00	\$24,620.00	1	1
Sum of Tasks 100 - 800	\$81,410.00	\$58,320.00	\$139,730.00	10	8
Task 900	\$13,400.00	\$13,400.00	\$26,800.00		
Task 1000	\$8,250.00	\$8,250.00	\$16,500.00		
ODCs	\$1,000.00	\$1,000.00	\$2,000.00		
Sum of All Tasks	\$104,060.00	\$80,970.00	\$185,030.00		



July 29, 2016

Platte Basin Coalition
c/o North Platte NRD
100547 Airport Road
P.O. Box 280
Scottsbluff, NE 69361

c/o South Platte NRD
551 Parkland Drive
P.O. Box 294
Sidney, NE 69162

RE: Robust Review Project Analysis Scope of Work Cost Estimates

Dear Platte Basin Coalition:

Adaptive Resources, Inc. (ARI) is providing a generalized scope of services and cost estimates for the Western Water Use Management (WWUM) Modeling portion of the Platte Over-Appropriated Committee (POAC) Robust Review Project Analysis Scope of Work Cost Estimates (Robust Review). As a team member of the WWUM Model, we are responsible for dataset creation, data integration, ground water modeling, and project management for the WWUM Model. As with that project, our expectation is that we will provide similar data, support, modeling, and project management.

Two options have been provided for each of the technical analyses. Option 1 analyses assumes that ARI will complete all the tasks described below. At DNR's request, Option 2 analyses assumes that DNR will complete the ground water modeling analysis including splitting of the well and recharge files between the two NRDs using their own independently developed processes. This option also includes an assumption of additional modeling support from ARI to help DNR with their efforts to complete the analyses. Also, as seen below included in the cost estimates, a **red colored cost estimate** has been used for certain tasks. These items are not included in the overall costs for each task due to existing services contract between North Platte NRD, South Platte NRD, and ARI prior to the Robust Review SOW being completed.

Scope of Services

Task 1: Modification to the Baseline WWUM Modeling

The Robust Review baseline scenario will use the current WWUM Modeling effort as the starting template to compare the modified model runs to provide the change in stream baseflow. The baseline scenario will be a modified from the current modeling as described in the DRAFT – Robust Review Project Analysis Scope of Work memo from Thad Kuntz (ARI) and Duane Woodward (CPNRD) to the POAC Technical Committee dated 06/16/2016 (Robust Review SOW).

This task involves modifying the current WWUM Modeling effort to include temporary retirements and transfers, repeat of the 2009 through 2013 climate into the future, actual

municipal, industrial, and confined livestock feeding operations pumping, incorporate excess flow diversions, and well file creation. Work from Wilson Water Group will also be necessary to incorporate the excess flow diversions in North Platte NRD and will be billed through ARI.

Table 1 provides the estimated cost associated to modify the existing WWUM Modeling.

Table 1 – Modification to the Baseline WWUM Modeling Cost Estimates

Subtask	Estimated Cost
Modify the land use dataset to incorporate temporary retirements and transfers, extend dataset 50 years into the future, and data exchange	\$8,000
Modification of the StateCU Models to Incorporate Excess Flows (Wilson Water Group and ARI task)	\$4,500
Modification of the well database to include observed municipal/industrial/confined livestock feeding facility pumping, build pumping from 1997 through 2001	\$6,300
Create well file for the ground water model	\$2,600
Crop and extend ground water model to be completed from 1997 through 2063, import the well and recharge files in the ground water model, and quality control and assurance of datasets	\$3,500
Option 1: Run ground water model and process results	\$1,000
Option 1: Total estimated cost to complete all subtasks excluding red colored costs	\$24,900
Option 2: Total estimated cost to complete all subtasks except those labeled Option 1	\$24,900

Task 2: Land Use Analysis

This task of the Robust Review is to analyze the effects of increased post-1997 irrigated land development (post-1997 analysis), permanent and temporary certified irrigated acreage retirements, permanent and temporary certified irrigated acreage transfers, certified irrigated acreage variances, and data exchange.

The NPNRD and SPNRD has already completed the post-1997 analysis and the only additional work is two ground water model runs to separate out the effects to each NRD. No additional regionalized soil water balance modeling work will need to be completed for this task.

Table 2 provides the estimated costs to complete the land use analysis.

Table 2 – Land Use Analysis Cost Estimates

Subtask	Estimated Cost
<i>Option 1: Post-1997 Analysis: Split well and recharge files using database processes and quality assurance and control</i>	\$3,200
<i>Post-1997 Analysis: Import well and recharge files into the ground water model, quality assurance and control</i>	\$2,200
<i>Post-1997 Analysis: Option 1: Run ground water model, process results, comparison analysis with baseline model results</i>	\$1,000
<i>Retirement Analysis: Modify land use datasets to add retired parcel into modeling as irrigated corn, replace temporary retirements with grass pasture at each contract end date, and data exchange</i>	\$4,200
<i>Retirement Analysis: Create well file for the ground water model</i>	\$2,600
<i>Retirement Analysis: Import well and recharge files into the ground water model, quality assurance and control</i>	\$2,500
<i>Retirement Analysis: Option 1: Run ground water model, process results, comparison analysis with baseline model results</i>	\$1,000
<i>Transfer Analysis: Modify land use datasets to add transferred parcel at original location into modeling as irrigated corn, replace temporary transfer with grass pasture/original crop/original water use at each contract end date, and data exchange</i>	\$4,200
<i>Transfer Analysis: Create well file for the ground water model</i>	\$2,600
<i>Transfer Analysis: Import well and recharge files into the ground water model, quality assurance and control</i>	\$2,500
<i>Transfer Analysis: Option 1: Run ground water model, process results, comparison analysis with baseline model results</i>	\$1,000
Option 1: Total estimated cost to complete all subtasks excluding red colored costs	\$24,000
Option 2: Total estimated cost to complete all subtasks except those labeled Option 1	\$20,800

Task 3: Changes in Crop Consumptive Use from Changes in Crop Mix as Compared to 1997 Crop Mix

This task will investigate the changes in crop consumptive use since 1997. This will be completed by determining the annual total consumptive use and comparing it to the 1997 annual consumptive use. **This task is estimated to be completed for \$3,000.**

Task 4: Canal Recharge Projects Analysis

This task will determine the accretions from the recharge of excess flow diversions into canals. Table 3 provides the estimated costs to complete the canal recharge project analysis.

Table 3 – Canal Recharge Project Analysis Cost Estimates

Subtasks	Estimated Cost
Create canal diversions without excess flow diversions, run through StateCU Models to create new recharge estimates, and data exchange	\$3,000
Import recharge file into the ground water model, quality assurance and control	\$2,500
Option 1: Run ground water model, process results, comparison analysis with baseline model results	\$1,000
Option 1: Total estimated cost to complete all subtasks excluding red colored costs	\$5,500
Option 2: Total estimated cost to complete all subtasks except those labeled Option 1	\$5,500

Task 5: Allocation Analysis

This task of the Robust Review is to analyze the effects of the allocations on lands developed prior to 1998. The NPNRD and SPNRD has already completed the allocation analysis and the only additional work is two ground water model runs to separate out the effects to each NRD. No additional regionalized soil water balance modeling work will need to be completed for this task.

Table 4 provides the estimated costs to complete the land use analysis.

Table 4 – Allocation Analysis

Subtask	Estimated Cost
Option 1: Split well and recharge files using database processes and quality assurance and control	\$3,200
Import well and recharge files into the ground water model, quality assurance and control	\$2,200
Option 1: Run ground water model, process results, comparison analysis with baseline model results	\$1,000
Option 1: Total estimated cost to complete all subtasks excluding red colored costs	\$5,400
Option 2: Total estimated cost to complete all subtasks except those labeled Option 1	\$2,200

Task 6: Municipal, Industrial, and Confined Livestock Feeding Operations Baseline and Transfer Analysis

This tasks of the Robust Review are to analyze the difference between the baseline and actual pumping of the municipal, industrial, and confined livestock feeding operations. Additionally, it will determine the effect of municipal, industrial, and confined livestock feeding operations transfers.

Table 5 provides the estimated costs to complete the Municipal, Industrial, and Confined Livestock Feeding Operations Baseline and Transfer Analysis.

Table 5 – Municipal, Industrial, and Confined Livestock Feeding Operations Baseline and Transfer Analysis

Subtask	Estimated Cost
Review, organize, and create baseline pumping for Municipal, Industrial, and Confined Livestock Feeding Operations	\$2,100
Replace the existing pumping with the baseline pumping at the 1997 well locations	\$2,100
Import well file into the ground water model, quality assurance and control	\$1,700
Option 1: Run ground water model, process results, comparison analysis with baseline model results	\$1,000
Option 1: Total estimated cost to complete all subtasks excluding red colored costs	\$5,900
Option 2: Total estimated cost to complete all subtasks except those labeled Option 1	\$5,900

Task 7: Overall Robust Review Analysis

The overall Robust Review analysis will combine each analysis into a single run. The only exception will be the crop mix changes analysis that will be a statistical analysis only. Table 6 provides the estimated costs to complete the overall Robust Review analysis.

Table 6 – Overall Robust Review Analysis

Subtask	Estimated Cost
Combine all land use dataset modifications from previous analyses, remove excess flow canal diversion recharge, and replace the existing municipal, industrial, and confined livestock feeding operations pumping with the baseline pumping at the 1997 well locations and data exchange	\$4,000
Create well file for the ground water model	\$2,600

Table 6 Continued – Overall Robust Review Analysis

Option 1: Split well and recharge files using database processes and quality assurance and control	\$3,200
Import well files into the ground water model, quality assurance and control	\$3,500
Option 1: Run ground water model, process results, comparison analysis with baseline model results	\$1,000
Option 1: Total estimated cost to complete all subtasks excluding red colored costs	\$13,300
Option 2: Total estimated cost to complete all subtasks except those labeled Option 1	\$10,100

Task 8: Project Coordination, Meetings, and Addition Support

This tasks are for the project coordination with other entities involved in the analyses and meetings associated with the Robust Review analyses. This will include project coordination work (10 hours), modeling analyses update conference calls (10 calls at 2 hours each), meetings with the POAC Technical Committee (3 in-person meetings in North Platte, NE for a total of 30 hours), POAC Administrators meeting (1 in-person meeting in North Platte, NE for a total of 10 hours), additional meeting (1 in-person meeting in North Platte, NE for a total of 10 hours) and mileage travel expenses. If Option 2 is chosen, we will assume 60 hours of additional time to provide modeling support to DNR for their efforts to complete the analysis.

Option 1: This task is estimated to be completed for \$16,000.

Option 2: This task is estimated to be completed for \$25,000.

Task 9: Documentation

This task is for the documentation of each analysis and includes the results of the ground water modeling analysis. The documentation will be completed as each task is finalized. The documentation will include a verbal summary of each task and graphical representation of annual changes in stream baseflow of the ground water model. We anticipate that this documentation will include sections that will be written by The Flatwater Group (TFG) to describe the regionalized soil water balance model runs and will work with TFG to describe the results of each of these analyses. A portion of this cost is completed through existing services contract between the North Platte NRD, South Platte NRD, and ARI prior to the Robust Review SOW being completed.

This task is estimated to be completed for \$12,500. An additional \$2,500 of the cost is provided under existing services contract.

Overall Cost Estimate and Timeline to Complete Analysis

The Option 1 overall estimated cost to complete all the tasks is \$110,500. The Option 2 overall estimated cost to complete the listed tasks is \$109,900. As stated in the Robust Review SOW the technical analyses are scheduled to be completed by December 31, 2016 and the draft information and final documentation will be provided to the administrators in early 2017, barring some unforeseen circumstances out of ARI's control. Additionally, if Option 2 is chosen, ARI does not assume responsibility for the completion of DNR tasks, and if late, could push the completion date past those stated in the SOW. All costs are estimates to complete the work and will be billed as time and material only.

Thank you for the opportunity to provide this scope and let me know if you have any additional questions or need any changes.

Sincerely,



Thad Kuntz, P.G.

Principal Hydrogeologist
Adaptive Resources, Inc.

Below is a table I created to summarize the cost estimates, separated by TFG and ARI. I don't know if this has any use in this contract, but I thought I would send it along in case you think it is useful.

Consultants

Activity	TFG	ARI	Total
Task 1	\$38,500	\$24,900	\$63,400
Task 2	\$34,850	\$20,800	\$55,650
Task 3	\$2,000	\$3,000	\$5,000
Task 4	\$24,850	\$5,500	\$30,350
Task 5	\$4,970	\$0	\$4,790
Task 6	\$0	\$2,200	\$2,200
Task 7	\$9,940	\$5,900	\$15,840
Task 8	\$24,620	\$10,100	\$34,720
Final Technical Memorandum	\$26,800	\$0	\$26,800
Project Coordination	\$16,500	\$25,000	\$41,500
Documentation	\$0	\$12,500	\$12,500
Other Direct Costs	\$2,000	\$0	\$2,000
Total	\$185,030	\$109,900	\$294,930

Notes:

ARI - Adaptive Resources, Inc

An additional \$2,500 for documentation cost is provided under existing services contract

TFG - The Flatwater Group, Inc

THE CENTRAL NEBRASKA PUBLIC POWER AND IRRIGATION DISTRICT
MEMORANDUM

To: Jerry Kenny, PH.D., Executive Director - PRRIP
Jeff Fassett, Director - Nebraska Department of Natural Resources
Diane Wilson, COO/CFO - Nebraska Community Foundation
From: Don Kraus, PE, General Manager - CNPPID
Subject: Quarterly J-2 Regulating Reservoir Report - September 2016
Date: August 30, 2016

Progress Report

The RJH J-2 Project quarterly progress report is attached.

Financial Report

Funds received to date	\$ 20,475,000.00
J-2 Operating Fund	\$ 10,326,289.19
Construction Phase Decommissioning Fund	2,252,443.50
Construction Phase Reserve Fund	2,653,158.21
Construction Phase Project Fee	363,454.31
Total	\$ 15,595,345.21
June Expenses not Reflected in Bank Balance	78,138.15
Adjusted Quarterly Balance as of June 30	\$ 15,517,207.06
J2 Project Expense 1st Quarter 2016	346,926.31
J2 Project Expense 2nd Quarter 2016	247,970.64
J2 Project Expenses 2013	77,400.79
J2 Project Expenses 2014	1,570,395.85
J2 Project Expenses 2015	2,715,099.35
Total J-2 Project Expenses Paid Through June 2016	\$ 4,957,792.94

Annual Financial Report

The annual expense and fund reports are attached.

Quarterly Report No. 11

J-2 Regulating Reservoirs Project

Report Period: June to August, 2016

The purpose of this Quarterly Report is to provide a general summary of the work performed for the J-2 Regulating Reservoirs Project (Project) during June, July, and August, 2016. This report does not include details of all the subtasks performed. The summary of work is organized into the following general categories of work:

- General Project Management and Implementation Tasks
- Permitting Activities
- Land Purchase Activities
- Water Rights Petition Filing
- Engineering Tasks

In July of 2016, RJH was notified that the Program was going to put the J-2 Project on hiatus.

General Project Management and Project Implementation Tasks

- Continued to coordinate as a team through recurring teleconferences.
- Maintained a Project website to provide information to the public.
- Continued to manage specialized sub consultants related to environmental and cultural resource permitting.
- Began developing an updated Project schedule and approach considering potential changes in project concept; but then paused this work at the time of the Project hiatus.
- Continued working to revise the agreement between Central and the Program to reflect a single reservoir concept.
- Developed a hiatus checklist of work tasks to continue and to complete prior to the hiatus on the J-2 Project.

Permitting Activities

- Continued preparation of the Phase I archeological reports.
- Continued report preparation for the wetland and stream data collection and functional assessment.
- Continued to develop strategies for pursuing a USACE 404 permit until notice of the Project hiatus.
- Continued planning for the 2016 data collection for water quality, but then stopped the data collection at the time of the Project hiatus.

- Began preparation of a letter to notify stakeholders the hiatus in the Project schedule.
- Continued to evaluate and discuss the changes (if any) to the general permitting approach for a single reservoir concept, and then paused the permitting activities at the hiatus.
- Continued development of the Phase II CRSP, and then paused development at the hiatus.

Land Purchase Activities

- Notified the landowners that the Project would enter into a hiatus and land would not be purchased.

Water Rights Petition Filing

- No work was performed on this task.

Engineering Tasks

- Began reading seven new monitoring wells, to assist in evaluating the feasibility of the seepage barrier wall.
- Continued to monitor the groundwater levels at 28 (total including the new seven) monitoring well locations along the Phelps Canal and around the proposed reservoir areas.
- Continued evaluation of geotechnical data related to feasibility of the barrier wall concept, and then paused further evaluation at the hiatus
- Continued laboratory testing and compilation of geotechnical data.
- Continued evaluation of the Unnamed Tributary Structure to evaluate options for reducing Project costs.
- Continued evaluating a VE concept proposed by the special advisor to the Program.
- Continued development of a hydrology report for the Unnamed Tributary.

Tasks Anticipated for the Next Quarter

- Complete various near-complete permitting and engineering tasks as agreed-upon with Central and the Program. These are listed on the hiatus checklist that was developed and delivered to the Program.
- Continue maintenance activities such as website maintenance, monitoring well data collection and reduction, etc. (as noted on the hiatus checklist).

Potential Issues:

- N/A

Annual J2 Project Fund Balance Report July, 2015 thru June, 2016

Contributions from the Parties

Wire from Foundation-PRRIP 9-30-13	\$14,606,250.00
Wire from CNPP&ID 10-2-13	\$1,000,000.00
Wire from Foundation-State 10-15-13	\$4,868,750.00
	\$20,475,000.00

Project Accounts	Initial Balance	Remaining Funds Available 6-30-15	Balance 6-30-16	Remaining Funds Available 6-30-16
J2 Operating Fund (Construction Phase Fund)	\$15,094,398.29	\$12,507,719.07	\$10,326,289.19 *	\$10,249,962.32
Construction Phase Decommissioning Fund	\$2,252,443.50	\$2,252,443.50	\$2,252,443.50	\$2,252,443.50
Construction Phase Reserve Fund	\$2,653,158.21	\$2,653,158.21	\$2,653,158.21	\$2,653,158.21
Project Construction Fee Fund	\$475,000.00	\$413,566.36	\$363,454.31 *	\$361,643.03
Total	\$20,475,000.00	\$17,826,887.14	\$15,595,345.21	\$15,517,207.06

* June expenses and July transfers occurring after the July Board Meeting are not included

Quarterly J2 Project Expense Report

July, 2015 thru June, 2016

	3196001 Land Acquisition	3196002 Engineering	3196003 Permitting	3196004 Project Outreach	3196005 Construction- General	Total
Ace Hardware			6.90			6.90
Alfred Benesch			45,780.14			45,780.14
Anderson Klein	1,377.00					1,377.00
Archeology Lab			5,960.13			5,960.13
Brown Expense Voucher			275.16			275.16
CHS Agri Svc Center			4.89			4.89
Cole-Parmer			353.75			353.75
Davis Tremaine			500.00			500.00
Don Shafer Display			394.42			394.42
Drain Expense Voucher			129.98		459.99	589.97
Equipment Use	495.00	90.00				585.00
Evans & Dixon	9,069.60					9,069.60
FedEx			348.08			348.08
First National Bank-Mastercard			221.18			221.18
Forestry Suppliers			4,140.90			4,140.90
Fraser Stryker	3,075.30					3,075.30
Hach Company			1,286.99			1,286.99
IPEX Appraisal	2,000.00					2,000.00
Kleinschmidt			112,724.94			112,724.94
Kraus Expense Voucher	157.12		298.06		1,494.13	1,949.31
Mammoth Archaeology Cons			3,028.96			3,028.96
McCormick, Robert	43.75					43.75
Midwest Laboratories			2,354.73			2,354.73
Midwest Right of Way	15,362.24					15,362.24
Nebr Dept of Nat Res		20.00				20.00
Nebr Dept of Rev-Use Tax			323.96			323.96
Payroll	29,632.80	4,972.46	11,167.27	960.06	33,841.76	80,574.35
Peyton Expense Voucher			24.19			24.19
Phelps County Title Co	624,799.52					624,799.52
Phelps County Treasurer	2,089.36					2,089.36
Prairie Hill Landfill	634.40					634.40
RB Partnership & Joan Brand	5,000.00					5,000.00
ReadyTalk-Conference Calls	97.87		16.06			113.93
Rittgard, Kathryn	909.50					909.50
RJH Consultants		1,311,004.10				1,311,004.10
S & W Auto Parts			7.99			7.99
SGS North America			450.00			450.00
Spartan Stores/Sunmart			2.10			2.10
Steinke Expense Voucher	166.52		402.73		536.62	1,105.87
Steven Dominquez			15,659.00			15,659.00
Thulin Expense Voucher					60.12	60.12
Trompke Expense Voucher			27.12			27.12
U-Line			207.41			207.41
Vehicle Use	1,589.54	30.02	420.63	24.70	729.60	2,794.49
Ward Laboratories			516.00			516.00
Project Construction Fee	16,541.86	29,557.02	4,910.51	23.39	890.55	51,923.33
Total	713,041.38	1,345,673.60	211,944.18	1,008.15	38,012.77	2,309,680.08