Platte Basin Coalition Committee Minutes

January 12th, 11:00 a.m. Central Time Conference Call

Call to order and attendance: Miller called the meeting to order at 11:00 a.m. Central Time. Sponsors and partners in attendance (Attachment A) were:

Jesse Mintken	CPNRD	John Thorburn	TBNRD
Melissa Mosier	NDNR	Ann Dimmitt	TPNRD
Jennifer Schellpeper	NDNR	Kent Miller	TPNRD
Jessie Wietjes	NDNR	Landon Shaw	TPNRD
John Berge	NPNRD	Thad Kuntz	ARI
Travis Glanz	SPNRD	Marc Groff	TFG
Rod Horn	SPNRD		
Rvan Reisdorff	SPNRD		

- **1.** Welcome and Open Meetings Act: Miller noted that a copy of the Open Meetings Act was available.
- **2. Publication of Meeting Notices**: Mosier reported that public notice (Attachment B) of the PBC meeting was published in the Grand Island Independent, the North Platte Telegraph, and Scottsbluff Star Herald newspapers.
- **3. Agenda Modifications**: No revisions were made to the agenda (Attachment C).
- 4. Conservation Measures Study:
 - a. Scope of Work: Groff discussed the changes that were made to the scopes of work since the December 19, 2014, PBC meeting. Tiers 3 and 4 were eliminated from the tasks in the scopes of work and the project coordination and documentation tasks have been more thoroughly outlined. The group discussed whether or not there were tasks that could still be eliminated from the scopes of work. Groff explained that the consultants have had further discussions on responsibilities for documentation of this project and The Flatwater Group, Inc., will be in charge of assembling the reports, putting the analysis to the reports, and developing the final product. The full extent of the documentation tasks was not included in the scope presented at the December 19, 2014, PBC meeting but is included in the revised scope.
 - **b.** Cost: Groff reported that the total cost is now at \$226,000.00 (Attachment D), which will cost the NRDs approximately \$1,300.00/year more than expected. NDNR will be able to provide half of the total cost of this project. Tier 1 estimates the impacts of conservation measures in accordance with statute and tier

2 better defines the range of potential impacts of conservation measures. Working on tier 1 and tier 2 at the same time provides efficiencies as compared to working on these tiers as separate projects. The consultants will bill for half of the work before July 1, 2015, and the other half after July 1, 2015.

Motion: To proceed with the Impact of Soil and Water Conservation Measures study as it was presented today with a cost \$226,000.00, half of which (\$113,000.00) will be provided by NDNR and the other half (\$113,000.00) will be provided by the Platte Basin NRDs over the next two fiscal years (FY 2014-2015 and FY 2015-2016). Berge motioned to approve and Schellpeper seconded. The motion passed with all ayes.

c. Contract: Schellpeper referred to the draft contract (Attachment E) that has been prepared for this study. The contract will be between the Platte Basin Water Project Coalition and The Flatwater Group, Inc. Miller would be responsible for signing the contract but the designated project coordinator will be NDNR staff.

<u>Motion</u>: To approve the contract between the Platte Basin Water Project Coalition and The Flatwater Group, Inc. Schellpeper motioned to approve and Thorburn seconded. The motion passed with all ayes.

- **5. Public Comments**: There were no public comments.
- **6. Adjourn**: The meeting adjourned at 11:37 a.m.

Next PBC meetings are scheduled for the following dates and will be held at 1:30 p.m. Central Time at the TPNRD office:

April 7th, 2015 October 6th, 2015 June 18th, 2015 December 7th, 2015 August 6th, 2015

Meeting Date: January 12, 2015

Name:	Representing:	E-Mail:
JESSE MINTRED	CPNRO	mintken@ condiors
) 583 En m5A99

Meeting Date: January 12, 2015

Name:	Representing:	E-Mail:
MENSSA M MOSICE	NONR	melsa noviera nebroska.
Cessie wietes	WNR	mel-sa noviera nebroska. jess ie wieffest vebroska, gar Jenniso, Schelppoto nibaskap
Sen Fo Schelleger	NONR	Jennifo, Shellogo a nibaskap
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Meeting Date: January 12, 2015

Name:	Representing:	E-Mail:
John Berge	NPNRD/ARI	beige a upnilora
John Berge Thad Kuntz	NPNRD/ARI	beige a upnidora thida noi-water. com
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Meeting Date: January 12, 2015

Name:	Representing:	E-Mail:
ROOL. HORN	SPNRD	r lhorn 2 spord.org
ROD L. HORN Travis Glanz Ryan Reisdorff	SPNRD SPNRO	r Thorn D spord.org to lanz @ spord.org reisduf@ spord.org
Ryan Reisdorff	SPNRO	reisduffe sparding
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Meeting Date: January 12, 2015 ILAM CST

Tri-Basin <u>Place/Room</u>: Conference Call Holdrege NE

Name:	Representing:	E-Mail:
John Thorburn	Tri-Basin NRD	

Meeting Date: January 12, 2015

Name:	Representing:	E-Mail:
Ann Dimmitt	TPNRO	afisher@tpnrd.org
LANDON SHAW	И	Ishaw @ tpnrd.org
Kent O. Miller	Twin Plate NRD	afisher@tpnrd.org Ishaw@tpnrd.org Komiller@tpnrd.org

Meeting Date: January 12, 2015

Name:	Representing:	E-Mail:
Marc GROFF	TFG	MGROFF @ FLATWATER GROUP. Com
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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 Monday, January 12th, 2015, at 11:00 a.m. Central Time, via conference call. Listening locations will be held at the offices of the Platte Basin NRDs and the Department. Addresses for the Platte Basin NRD and Department offices are listed below.

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 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

SPRND: http://www.spnrd.org or phone (308) 254-2377

551 Parkland Drive, Sidney, NE 69162

TBNRD: http://www.tribasinnrd.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.

DRAFT Agenda Platte Basin Coalition Committee Meeting

January 12th, 2015, 11:00 a.m. Central Time Conference Call

- 1. Welcome and Open Meetings Act
- 2. Publication of Meeting Notices
- 3. Agenda Modifications
- 4. Conservation Measures Study
 - A. Scope of Work
 - B. Cost
 - C. Contract
- 5. Public Comments
- 6. Adjourn

COST SUMMARY DERIVED FROM CONSULTANT'S RESPONSES TO SCOPES OF WORK

Consultant

Activity	WWG	ARI	HDR	TFG	Total
Tier 1 Modeling	\$17,500	\$21,000	\$20,000	\$30,000	\$88,500
Tier 2 Modeling	\$7,500	\$7,000	\$10,000	\$24,000	\$48,500
Project Coordination	\$7,500	\$10,000	\$6,500	\$22,000	\$46,000
Documentation	\$7,500	\$11,000	\$4,500	\$20,000	\$43,000
Cost Totals	\$40,000	\$49,000	\$41,000	\$96,000	\$226,000

Notes:

WWG - Wilson Water Group

Included Development of Conservation Measures Baseline Scenario costs in Tier 1 estimate

ARI - Adaptive Resources, Inc
Included Western Canal costs with Tier 1 estimate

HDR - HDR, Inc

TFG - The Flatwater Group, Inc

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

THIS AGREEMENT, made as of EFFECTIVE DATE, 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

Whereas, in Phase I of this project, the Consultant provided professional services related to development of methodology and design of an assessment of the impacts conservation measures have on streamflows of the Platte River and its tributaries, the Consultant shall now pursue Phase II project activities in which the selected conceptual design of the evaluation will be implemented in order to meet the goals and objectives of Basin Coalition as explained in the Request for Proposal advertised by the Basin Coalition in August 2012. The Scope of Services for the Task Authorization for Phase II under this Agreement is contained in Exhibit A, which is incorporated herein by reference. The Phase II Task Authorization will be subject to the terms of this agreement.

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.

3. Compensation Details and Billing Procedures

Phase II (Exhibit A) is a Firm Fixed Price (FFP) Task Authorization, the contract terms for which were developed and finalized upon the completion of Phase I. 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 an itemized invoice with substantiating documents for expenses per the Delivery Schedule set forth in Exhibit A. 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, client shall pay the amount thereof.

4. Term of Agreement

This Agreement is effective when the last of the parties has executed it (Effective Date). The term of the Agreement is from the Effective Date through END TERM DATE. All services shall be completed during this term.

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 five (5) 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 Exhibit, 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 İnjury 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:

Mr. Jesse Bradley
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) 471-0586
jesse.bradley@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.

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:

Exhibit A

Phase II Task Authorization Pursuant to Contract between

Platte Basin Water Project Coalition and The Flatwater Group, Inc.

1	EFFECTIVE DATE
Task Authorization Number	Effective Date

This Task Authorization is issued pursuant to the Contract effective, between Platte Basin Water Project Coalition (Client) and The Flatwater Group, Inc. (Consultant), hereinafter referred to as (Parties). Tasks under this Task Authorization are referred to collectively as "Phase II."

1. Project

The Central Platte NRD, North Platte NRD, South Platte NRD, Tri-Basin NRD, Twin Platte NRD, and State of Nebraska Department of Natural Resources (NDNR) are cooperating under an interlocal agreement as the Basin Coalition. These entities have responsibilities for implementing the requirements of *Neb. Rev. Stat.* §46-715(5)(c) for the overappropriated portion of the Platte River Basin. Each Basin Coalition NRD has developed a joint integrated management plan (IMP) with NDNR which references the requirements to complete a study. The study is to focus on estimating the impacts, if any, that conservation measures have on streamflow.

2. Purpose

The purpose of Phase II of this study will be to conduct COHYST and WWUM model runs to evaluate the amount, timing, and location of impacts of select conservation measures on streamflow, using the best available data. The conservation measures to be evaluated were selected based upon the potential impacts identified in the Final Matrix developed by the Consultant in Phase I.

3. Scope of Work

The scope of work covers evaluating the impacts of reduced tillage practices and on-farm irrigation efficiencies on streamflow for the COHYST 2010 model area and WWUM area. The analysis will involve running a circa 1953 scenario and a maximum efficiency scenario for both conservation practices and comparing the results to baseline model runs.

See attached scopes of work for the COHYST and WWUM areas for full detail on the tasks.

Phase II Tasks

I. Baseline Model Runs

- a. For the COHYST 2010 Model
 - i. Baseline Model Run. The baseline run will be developed from the current COHYST 2010 Integrated Model run number 24. Setup items include:
 - Use CROPSIM runs for 1950 through 2010 using current model values. Values for 1984 will generally be used for the 1950-1983 timeframe and 2005 values will be used for the 2006-2010 timeframe
 - Input 1950 through 2010 CROPSIM, land use, irrigation efficiency, etc., into the Watershed Model to make a run that generates surface water demands, pumping, recharge, runoff, etc., for baseline.
 - Input 1950 through 2010 inflows to STELLA along with the Watershed Model outputs (surface water demands, runoff, etc.) and run the STELLA Model for baseline. This analysis will use the mutual ditch approach to estimate commingled pumping.
 - Set up the MODFLOW transient model for 1950 through 2010 period, input Watershed Model outputs (recharge, pumping, etc.) and STELLA Model outputs (river, tributary, and canal flows, etc.). Make MODFLOW run for baseline.
 - Make integration runs and use outputs to populate comparison spreadsheets.

b. For the WWUM Model

- i. Baseline Model Run. The baseline run will be a modified form of the current 1953 to 2013 WWUM Modeling. To isolate the effects due to conservation measures, the following modification will be made to the existing model:
 - Add the ability to call for additional upstream storage from reservoirs.
 - Use the mutual ditch approach to estimate commingled pumping.
 - Use modeled pumping values in place of metered pumping information.

II. Circa 1953 Modified Model Run

The second tier analysis will involve modified model runs to evaluate the effects of maximum conversation practices.

- a. For the COHYST 2010 Model
 - i. Model Setup. The basic model setup for the circa 1953 modified model runs includes:
 - Use CROPSIM runs for 1950 through 2010.
 - Input 1950 through 2010 CROPSIM tillage runs along with land use, irrigation efficiency, etc., into the Watershed Model to make runs that generate surface water demands, pumping, recharge, runoff, etc.
 - Input 1950 through 2010 Watershed Model outputs (surface water demands, runoff, etc.) into STELLA and run the STELLA model for various scenarios.
 - Using the transient MODFLOW model from the baseline, input Watershed Model outputs (recharge, pumping, etc.) and STELLA

- model outputs (river, tributary, and canal flows, etc.) into MODFLOW and make MODFLOW runs for various scenarios.
- Make integration runs for each scenario and use outputs to populate comparison spreadsheets.
- ii. Irrigation Efficiency Model Run: Change the baseline irrigation efficiency on all irrigated lands to the 1950 efficiencies of 60 percent for surface water irrigated lands and 65 percent for groundwater irrigated lands.
- iii. Tillage Practices Model Run: Change baseline tillage practices to the 1950 practices of conventional tillage operations

b. For the WWUM Model

- i. Model Setup. The basic model process for the circa 1953 modified model runs will be:
 - Modify the net irrigation requirement or irrigation efficiencies calculated within the WWUM Regionalized Soil Water Balance (RSWB) Model.
 - Provided modified RSWB Model datasets to the Surface Water Operations (SWO) Model to create diversion, canal recharge, commingled pumping, irrigation recharge, and surface water runoff estimates.
 - Put new diversion, canal recharge, commingled pumping, irrigation recharge, and surface water runoff estimates into RSWB Model to create new recharge and well pumping information to create a new well file for the WWUM Groundwater (GW) Model.
 - Compare the SWO and GW Model runs to the baseline model to determine changes in streamflow and aquifer storage.
- ii. Irrigation Efficiency Model Run: Change the baseline irrigation efficiency on all irrigated lands to the 1953 efficiencies of 50 percent for surface water irrigated lands and 60 percent for groundwater irrigated lands.
- iii. Tillage Practices Model Run: Change baseline tillage practices to the 1953 practices of conventional tillage operations

III. Maximum Efficiency Modified Model Runs

a. For the COHYST 2010 Model

- i. Model Setup. The basic model setup for the maximum efficiency modified model runs will be the same as for the circa 1953 modified runs.
- ii. Irrigation Efficiency Model Run: Change the baseline irrigation efficiency to 95 percent efficiency on all irrigated lands.
- iii. Tillage Practices Model Run: Change the baseline tillage practices to no till or limited tillage practices. Certain crops within the modeling area cannot be no-tilled, so a limited tillage operation on these crops will be completed.

b. For the WWUM Model

- i. Model Setup. The basic model setup for the maximum efficiency modified model runs will be the same as for the circa 1953 modified runs.
- ii. Irrigation Efficiency Model Run: Change the baseline irrigation efficiency to 95 percent efficiency on all irrigated lands.
- iii. Tillage Practices Model Run: Change the baseline tillage practices to no till or limited tillage practices. Certain crops within the modeling area cannot be no-tilled, so a limited tillage operation on these crops will be completed.

Project Approach

Evaluating these impacts will involve "change modeling," which entails making a baseline or initial conditions model run and comparing it to a modified model run for which a specific dataset has been changed from the baseline. Any difference between the baseline and the modified run is assumed to be the effect of the changed dataset.

The COHYST 2010 model area analysis entails the following processes: complete a baseline model run, conduct a modified model run using conventional (circa 1953) tillage practices, conduct a modified model run using no till or limited tillage practices, conduct a modified model run using 60 percent surface water irrigation efficiency and 65 percent groundwater irrigation efficiency, conduct a modified model run using 95 percent irrigation efficiency. The results of the modified runs will be compared to the baseline and any change will be the effect of the modified parameter.

The WWUM area analysis will consist of the following processes: complete a baseline model run, conduct a modified model run using conventional (circa 1953) tillage practices, conduct a modified model run using no till or limited tillage practices, conduct a modified model run for the using 50 percent surface water irrigation efficiency and 60 percent groundwater irrigation efficiency, conduct a modified model run using 95 percent irrigation efficiency. The results of the modified runs will be compared to the baseline and any change will be the effect of the modified parameter.

The Consultants will work to develop the necessary input file for the integrated model runs, involving the POAC technical committee if needed. The models will be run to produce streamflow files for the baselines and scenarios. The difference between the baselines and each of the relevant scenarios will be computed in a comparison spreadsheet (by subtracting one from the other) and the results should be displayed in a graphical manner.

4. Schedule

The work conducted under Phase II is anticipated to be completed by October 1, 2015. CROPSIM and input model runs should be completed during spring 2015, groundwater model runs should be completed during summer 2015, and analysis and reports completed during fall 2015 so that the final report for Phase II is finished by October 1, 2015. Any extension of the Phase II schedule should be sought by the Consultant at least thirty (30) days prior to the scheduled completion date and provided in written communication to the Basin Coalition.

5. Deliverables

Consultant shall provide the following: graphics (charts, graphs, other visuals) displaying the difference between the baseline model run and each scenario model run for the two models; spreadsheet(s) showing the model outputs and the calculations performed to determine the differences; and a brief written summary of the results.

6. Compensation

This total cost of the services to be provided in this Scope of Work shall not exceed \$

All hourly rates and expenses applicable to this Task Authorization shall be as stated in the Contract of which this Task Authorization is part.

In no event shall the total actual cost invoiced to the Basin Coalition for the Services described herein exceed the total cost stated above, without the prior written approval of Basin Coalition.

7. Terms and Conditions

This Task Authorization, the performance of the services described herein, and the rights and obligations of the parties with respect thereto are governed by the contract between the parties effective EFFECTIVE DATE, and such terms and conditions as are set forth in this Task Authorization are pursuant to such Contract. The terms and conditions set forth in such Contract are incorporated herein by reference and are applicable hereto.

8. Signatures

FOR CONSULTANT-The Flatwater Group, Inc.	
By:	Date:
Mr. Thomas Riley, President	
FOR CLIENT-Platte Basin Water Project Coalitio	on
By:	Date:
Mr. Kent Miller, Chairman	