City of Prescott
Contract Amendment No. Two (2)
Development of a Big Chino Sub-basin Groundwater Flow Model

Contractor: Golder Associates, Inc
Contract No: 2017-246
CIP: 15-045
Account No(s): 7126010-8418
Date: December 16, 2020

Purpose of Amendment:

The Purpose of this amendment extends the contract expiration date to expire per Contract Allowance Auhtoirzation No. 3.

The following changes shall be made to the Contract Documents:

Extend contract terms to September 22, 2021

Description	*Qty*	*Unit*	*Unit Price*	*Total*
Modeling of Big Chino	1	LS	$ 277,460.00	$ 277,460.00
				$ -
				$ 277,460.00

Summary of Changes to Contract:

	Contract Amount
Original Contract	$ 1,149,300.00
Amendment #1	$ 277,460.00
Net Change this Amendment #2 (extend term only)	$ -
Amended Contract	$ 1,426,760.00

Original Expiration Date	March 31, 2020
Amended Expiration Date	September 22, 2021

Approved by: _____ 12/16/2020
Tim Sherwood, Construction Services Manager — Date

Accepted by: _____ 12/30/2020
Golder Associates, Inc — Date

Approved by: Craig Dotseth 12/31/2020
Craig Dotseth, Public Works Director — Date

Attest: Sarah M. Siep 1/5/2021
Sarah Siep, City Clerk — Date

Approved as to Form: Jon M. Paladini 1/5/2021
Jon M. Paladini, City Attorney — Date

Copy to: City Clerk (hard copy)
Finance (email)

CITY OF PRESCOTT
ARIZONA
Everybody's Hometown

Public Works Department

433 N. Virginia Street
Prescott, Arizona 86301
(928) 777-1130

CONTRACT ALLOWANCE AUTHORIZATION NO. 3

Project Name:	Big Chino Sub-Basin Groundwater Flow Model
Contract Number:	2017-246
Project Number:	CIP15-045
Date of Issuance:	November 2, 2020
Contractor:	Golder Associates Inc. 1430 W Broadway Road Suite 108 Tempe AZ 85282

Item No. 1:

Purpose of Allowance:

You are directed to proceed with the following change (s): This is in accordance with extra work requested by the CA1 Committee per the Contract Allowance Authorization Request No. 3 dated October 7, 2020.

The following changes have been approved:

The current contract was scheduled to run until December 31, 2020. Due to data delivery dates, additional review timelines, and additional requests by the CA1 Committees technical consultants, the estimated Project duration has increased approximately nine months. The scope of work has been revised to address more review time during the calibration and parameter estimation. In order to manage funds more appropriately, unused funds from completed task are being transferred to tasks which require additional monies. A detailed list of the reallocations can be found in the attached Proposal and Budget Summary.

All budget revisions shown in the attachment have been authorized by the CA1 Committee. Written authorization from each of the CA1 members has also been attached.

Reallocated Funds: $44,737.74
Allowance Funds: $36,920.49

Total Cost: $81,658.23

Attachments:

Contractor Allowance Authorization No. 3 with proposal, budget summary, schedule and written CA1 Authorization

Change Order costs will be based on the following method:

- ☐ Time & Materials
- ☒ Unit Prices
- ☒ Cost Plus Fixed
- ☐ Additional Contract Days
- ☒ Extend Completion Date
- ☐ Other- Cost Proposal by Contractor

Estimated change to:

☒	Contract Allowance	$36,920.49
☐	Contract Price	$ 0.00

Original Contract Amount	**$1,149,300.00**
Amendment 1	**$ 277,460.00**
Amended Contract Amount	**$1,426,760.00**

All additional costs more than $25,000.00 above the original contract amount are subject to final approval by the City Council.

Distribution for this Authorization:

Account Name	Account Number	Amount
Water	7126010-8418	$36,920.49

Contract Allowance and Time Accounting:

	Amount		Calendar Days
Original Contract Allowance:	$54,700.00	Original Contract Time	1123
Amendment #1 adding Funds	$54,700.00		
Total Contract Allowance	$109,400.00		
Authorization No. 1	$54,599.00		56
Authorization No. 2	$0.00		0
Authorization No. 3 (current):	$36,920.49		266
Total Authorizations:	$91,519.49		322
Remaining Contract Allowance:	**$17,880.51**	**New Contract Time:**	**1445**

Remaining Contract Allowance:	****$17,880.51**	**New Contract Time:**	**1445**

Original Notice to Proceed Date:	February 28, 2017
Original Final Completion Date:	December 31, 2020
Amended Final Completion Date:	**September 22, 2021**

Contract Allowance
Authorization Prepared By: _____ Date: 10/8/20
Benjamin Burns, Senior Infrastructure Analyst

Contract Allowance
Authorization Approved By: _____ Date: 10/8/2020
Tim Sherwood, Construction Services Manager

Contract Allowance
Authorization Approved By: _____ Date: 10-8-2020
Craig Dotseth, Public Works Director

I/We, the undersigned Contractor, gave careful consideration to the change proposed and agree that all compensation due the Contractor has been set forth in the Contract Allowance Authorization, and shall be considered full and complete payment (if any) for any and all work related costs, including but not limited to labor, materials, equipment, supervision, field office overhead, extended home office overhead, unabsorbed home office overhead, taxes, bonds, insurance and profits. Additionally, I/We shall not be entitled to any additional compensation based upon a Contract Allowance Authorization (or the accumulation of contract allowance authorizations) unless specifically set forth herein.

Contract Allowance
Authorization Accepted By: _____ Date: 11-3-20
(Authorized Signature)

Associate and Practice Leader
Title

GOLDER

October 6, 2020 Project No. 1662614

Mr. Benjamin Burns Senior Infrastructure Analyst
City of Prescott
433 North Virginia Street
Prescott, Arizona 86302

RE: CONTRACT ALLOWANCE AUTHORIZATION NO. 3 – HYDROGEOLOCIAL MODELING SERVICES FOR BIG CHINO SUB-BASIN GROUNDWATER FLOW MODEL

Dear Mr. Burns,

Golder Associates Inc. (Golder) has prepared this contract allowance authorization, herein designated Contract Allowance Authorization (CAA) No. 3, for professional services in support of the Big Chino Sub-Basin Groundwater Flow Model (BCSM) Project (Project). Golder is performing this Project for the City of Prescott (City) and the Steering Committee under Professional Services Agreement Contract # 2017-246 (Contract) between the City and Golder dated February 28, 2017.

1.0 BACKGROUND

The BCSM Project after CAR No. 1 was scoped to run until December 31, 2020 with a budget of $1,426,760, including a $54,801.49 allowance. Due to data delivery dates, review timelines, and additional requests by the City's technical review consultants, the estimated Project duration has increased by an additional nine months and the scope of work has been revised to address the technical consultants request to have more review during the model calibration and parameter estimation. These changes have resulted in the need for a budget reallocation among tasks and a request to use part of the allowance at this time. (Attachment 1)

2.0 CHANGE IN SCOPE OF WORK

The technical consultants reviewing the Technical Memorandum 8 Numerical Model commented that they would like to have additional review "gates" during the calibration and parameter estimation of the model and the alternative conceptual models. Golder proposed the following changes and assumptions to the scope of work to accommodate this request within the given budget:

- **Addition** of one conference call at the time of submittal of the Technical Memorandum 8 updated figures and tables. This conference call was completed on August 7, 2020.
- **Addition** of three "sets" of conference calls at key decision-making points: after PEST files are created, after calibration of Conceptual Model (CM)1, and after calibration of CM2 and CM3. Each set of conference calls will include:

Golder Associates Inc.
426 N. 44th Street, Suite 375, Phoenix, Arizona, USA 85008 T: +1 480 966-0153 F: +1 480 966-0193

- A brief call, approximately one hour in length, to discuss the model files and figures being provided to the technical reviewers. Model files and supporting figures will be distributed to the reviewers at this time.
- The technical reviewers will have a review period of five days to keep the project schedule.
- A longer follow up conference call, approximately two to four hours in length, to discuss the technical reviewers' comments and questions. At the end of the call it is expected consensus will be reached and the next modeling activities will proceed.
- These conference calls have been added to the project schedule under Tasks 5.4.2 Parameter Estimation (two sets of calls) and 5.4.3 Incorporate Various CMs (one set of calls).

- **Removal** of 5.6.2 Technical Memorandum for Model Calibration as a separate submittal for review.
  - Golder is keeping some of the budget under this task to complete the write up of the model calibration but the write up will be submitted with the draft report and not as a separate submittal.

The proposed changes were reviewed by the Steering Committee and its technical reviewers and agreed upon as an appropriate path forward. Key completion dates are summarized in Table 1 and a complete project schedule is provide as Attachment 2.

Table 1: Summary of Key Dates

Task	Completion Date
Conference Call Set 1: Conference call to provide an overview of the PEST files. Files are submitted same day.	10/14/2020
Review of PEST files by technical committee	10/14/2020- 10/20/2020
Conference call to discuss PEST reviewer feedback	10/22/2020
Conference Call Set 2: Conference call to provide an overview of the CM1 calibration files. Files and supporting figures are submitted same day.	12/8/2020
Review of CM1 calibration files by technical committee	12/9/2020 – 12/15/2020
Conference call to discuss CM1 calibration reviewer feedback	12/16/2020
Conference Call Set 3: Conference call to provide an overview of the CM2 and CM3 results and calibration files. Files and supporting figures are submitted same day.	3/2/2021
Review of CM1 calibration files by technical committee	3/3/2021 – 3/9/2021
Conference call to discuss CM1 calibration reviewer feedback	3/10/2021
Groundwater Model Draft Report Submittal (includes a write up of calibration)	7/21/2021
Review of Draft Report by the Technical Committee	7/22/2021 – 8/18/2021
Submittal of Final Report	9/22/2021

3.0 REQUESTED BUDGET REALLOCATIONS

Our requested budget reallocations under CAA No. 3 are described by task in this section. Most of the tasks have been initiated and are ongoing. We have estimated the amount of budget required for each task based on the anticipated level of effort required to complete the work. The CAA No. 3 budget reallocation is presented in Attachment 1.

3.1 Project Management (Phase 1)

The budget reallocation requested for Phase 1 is an additional $35,700.23 and is detailed below by task (Attachment 1).

3.1.1 Communications (Task 1.1)

Due to the increased duration of the project, Golder estimates the ongoing critical team communication will require the reallocation of $8,900 to Task 1.1. The estimated effort of 91 hours will be split between Andie Gehlhausen, Joanna Moreno, and Dave Carr.

3.1.2 Financial Management (Task 1.2)

Due to the increased duration of this Project the ongoing effort required for financial management is estimated to be about four hours per week for 63 weeks, or 254 hours. These hours will be split between Jana Hesker and Andrea Gehlhausen, plus some time added for administrative tasks. Golder estimates that this will require the reallocation of an $23,500.00 to this task. As agreed previously, the City will not be charged for any project management time spent on the BAS subcontract or time spent by Golder during the project management handover to Andie Gehlhausen.

3.1.3 Technical Management (Task 1.3)

Based on a change request from BAS, an additional 24 hours will be needed to support this task.
The budget reallocation requested for Task 1.3 is an additional $3,300.

3.2 Project Meetings (Phase 2)

The budget reallocation requested for Phase 2 is the removal of $36,541.13 and is detailed below by task (Attachment 2).

3.2.1 Kick-off Meeting (Task 2.1)

The kickoff meeting was completed and $472.50 of budget is remaining and Golder is requesting these funds be reallocated to other tasks.

3.2.2 Steering Committee Conference Calls (Task 2.3)

Due to the increased duration of the project, Golder is requesting an additional $1,700.00 be reallocated to Task 2.3. These funds will be used for Dave Carr, Joanna Moreno, Betsy Semmens, and Andie Gehlhausen to participate in the monthly Steering Committee calls.

3.2.3 In-Person Meetings at SRP (Task 2.4)

Due to COVID-19 we are defunding this task and assuming the only remaining interagency meeting will occur at the completion of the project, which will be funded under Task 2.5 End of Project Meeting. Golder is requesting the funds from Task 2.4, $37,768.63, are reallocated to other tasks.

3.3 Data Compilation and Model Review (Phase 3)

All tasks in Phase 3 have been completed and a total of $116.25 remains assigned to Task 3.1 through Task 3.5.2. Golder is requesting these funds be reallocated to other tasks (Attachment 1).

3.4 Conceptual Model Development (Phase 4)

All tasks in Phase 4 have been completed and a total of $132.86 remains assigned to Task 4.1 through Task 4.5. Golder is requesting these funds be reallocated to other tasks. (Attachment 1).

3.5 Numerical Model Development (Phase 5)

The budget reallocation requested for Phase 5 is $38,010.50 and is detailed below by task (Attachment 1).

3.5.1 Model Selection (Task 5.1)

Task 5.1 Model selection has been completed and Golder is requesting the remaining $26.25 be reallocated to other tasks.

3.5.2 Numerical Model Construction (Task 5.2)

Golder is requesting the reallocation of $8,647.00 to Task 5.2 Numerical Model construction to cover the increased time and effort beyond the assumed effort at the time of proposal submission. Golder issued a trend notice for the additional effort on March 18, 2020 to inform the City of the additional effort being expended on the task.

Increased effort was required due to:

- Addressing the large volume and inconsistencies in the available pumping data and developing rationale to fill data gaps for approximately 3,200 wells.
- Reconciling recharge data with groundwater budgets, which has required unplanned conversations and data exchanges with USGS model developers.
- Deriving multiple recharge distributions to represent alternative conceptual models.
- Addressing geologic complexities for numerous LeapFrog modeling domains.

In addition, the scope was increased to include:

- Effort and communication focused on obtaining groundwater age data as model targets.

3.5.3 Technical Memoranda for Numerical Model Development (1 of 2) (Task 5.3.1)

Golder is requesting the reallocation of $8,378.00 to Task 5.3.1 Technical Memoranda for Numerical Model Development (1 of 2) to cover the increased time and effort beyond the assumed effort at the time of proposal

submission. Golder issued a trend notice for the additional effort on March 18, 2020 to inform the City of the additional effort being expended on the task.

Increased effort was required due to:

- Addressing the large volume and complexity of the data, specifically:
  - Extracting and comparing LeapFrog geologic data to model layering
  - Developing groundwater balances based on many data sources and extracting data from prior models
  - Assessing runoff versus gage data to support the recharge summary
  - Deriving detailed domestic, stock, and irrigation pumping

In addition, the review process to address the complex data evolved into a multi-step process involving preliminary comments from the committee, phone conferences to discuss, and then receipt of final comments, requiring additional time and effort.

3.5.4 Technical Memoranda for Numerical Model Development (2 of 2) (Task 5.3.2)

Golder is requesting the reallocation of $8,733.00 to Task 5.3.2 Technical Memoranda for Numerical Model Development (2 of 2) to cover the increased time and effort beyond the assumed effort at the time of proposal submission. Similar to Task 5.3.1, increased effort was required due to the large volume and complexity of the data and the extended review process. The rigorous review process was necessary to ensure a consensus was reached on the model construction and approach prior to beginning the modeling activities.

Increased effort was required to adequately address reviewer comments around the more contentious components of the model including:

- Hydraulic properties of specific units
- Flow across model boundaries
- Recharge distribution
- Potentiometric surface mapping
- Selection of springs and seeps to include in the model
- Selection of faults to include in the model
- Conceptual model water balance concerns

3.5.5 Calibration Approach (Task 5.4.1)

Task 5.4.1 Calibration Approach has been completed and Golder is requesting the remaining $21.25 be reallocated to other tasks.

3.5.6 Parameter Estimation (Calibration) (Task 5.4.2)

The scope of work under Task 5.4.2 Parameter Estimation was expanded to include two sets of conference calls to provide additional review "gates" during the calibration process as described in Section 2.0 of this document. Golder is requesting the reallocation of $14,900 to Task 5.4.2 to cover this additional effort.

3.5.7 Incorporate Various Conceptual Models (Task.5.4.3)

The scope of work under Task 5.4.3 Incorporate Various Conceptual Models was expanded to include a set of conference calls to provide an additional review "gate" during the calibration process as described in Section 2.0 of this document. Golder is requesting the reallocation of $4,300 to Task 5.4.3 to cover this additional effort.

3.5.8 Technical Memorandum for Model Calibration (Task 5.6.2)

The scope of work for Task 5.6.2 Technical Memorandum for Model Calibration has been reduced from a stand-alone deliverable to a write up for submittal in the draft report. Removal of the effort required for production of a stand-alone deliverable, external review of the document, and response to reviewer comments frees up budget for reallocation to other tasks in the amount of $6,200.00.

3.6 Allowance Request

The original Allowance was restored in CAA No. 1 at $54,801.49. Golder is requesting that a portion of the allowance, in the amount of $36,920.49, be reallocated to other tasks in CAA No. 3. (Attachment 1). The remainder of the allowance, $17,881.00, will stay in the allowance budget at this time.

4.0 PROJECT SCHEDULE

The updated schedule provided in Attachment 2 reflects the delays experienced to date to allow for careful review by the City's technical reviewers and to ensure consensus was reached on a current task before beginning undertaking activity on any subsequent tasks. The consensus requirement resulted in an extension of the overall schedule but protected the overall project budget by ensuring tasks would not need to be reworked. In addition, the scope of work change outlined in Section 2.0 of this document added duration to the overall schedule and the current completion date is September 22, 2021.

The schedule is based on the estimated time required to complete the Project and extend beyond the authorized Final Completion Date of December 31, 2020. We therefore request that the Final Completion Date be extended to December 31, 2021. This Completion Dates includes a three-month contingency beyond the estimated completion dates in the schedules to allow for any unforeseen delays. We understand that an amendment of the Final Completion Date will require City Council approval.

5.0 CLOSING

Golder has worked diligently to provide quality deliverables and thoroughly address the concerns of both the City and its technical reviewers. We are proposing this reallocation of funds and extension of the contract end date to ensure the City receives a final model and report that meets its needs while remaining within the current budget.

If you have any questions regarding this request, please contact the undersigned.

Sincerely,

Golder Associates Inc.

Andrea Gehlhausen
Project Manager

David A. Carr, RG
Associate and Practice Leader

AG/DAC/mb/js

CC: Jana Hesker, PMP
Joanna Moreno, PH (GW)

Attachments: 1: Contract Allowance Authorization No. 3 Budget Summary
2: Project Schedule extended through September 22, 2021

https://golderassociates.sharepoint.com/sites/11334g/6 deliverables/011-car/rev2/1662614-car2-011-rev2-20201006.docx

ATTACHMENT 1

Contract Allowance Authorization No. 3 Budget Summary

Contract Allowance Authorization (CAA) No. 3 Budget Summary

Work Breakdown Structure			Original Budget	CAR No.1 Requested F
Phase	Task	Phase/Task Description		Total Budget Request (CAA No. 1 + CAA No. 2 + CAR No. 1)
1	**Task**	**Project Management**	**$128,900.00**	**$60,020.00**
1	1	Communication	$50,850.00	$3,510.00
1	2	Financial Management	$65,450.00	$53,000.00
1	3	Technical Management	$12,600.00	$3,510.00
2	**Task**	**Project Meetings**	**$145,300.00**	**($12,779.87)**
2	1	Kick-off Meeting	$6,100.00	$0.00
2	2	Site Reconnaissance	$33,865.00	$220.13
2	3	Steering Committee Conference Calls	$34,320.00	($13,000.00)
2	4	In-Person Meetings at SRP	$58,410.00	$0.00
2	5	End of Project Meeting	$12,605.00	$0.00
3	**Task**	**Data Compilation and Model Review**	**$259,700.00**	**$186,978.38**
3	1	Data Compilation	$26,400.00	$35,590.88
3	2.1	Data Management - Database	$31,200.00	$4,500.00
3	2.2	Data Management - ArcGIS	$28,380.00	$24,000.00
3	2.3	Data Management - Leapfrog	$21,580.00	$92,385.00
3	2.4	Data Management - Other	$13,200.00	$0.00
3	3.1	Data Analysis - Cross Sections	$21,540.00	$24,810.00
3	3.2	Data Analysis - Timeseries	$17,310.00	$8,000.00
3	3.3	Data Analysis - Spatial	$17,070.00	$7,000.00
3	3.4	Data Analysis - Other	$16,690.00	$0.00
3	4	Existing Model Review	$22,200.00	$0.00
3	5.1	Tech Memo (1 of 3) - Initial Data Compilation	$15,350.00	$442.50
3	5.2	Tech Memo (2 of 3) - Leapfrog	$15,550.00	$3,480.00
~~3~~	~~5.3~~	~~Tech Memo (3 of 3) - Final Data Compilation~~	$13,230.00	($13,230.00)
4	**Task**	**Conceptual Model Development**	**$91,500.00**	**$95,380.00**
4	1	Review/Alterations of Existing CMs	$26,850.00	$0.00
4	2	Develop New Conceptual Models	$12,250.00	$0.00
4	3	Initial Water Budget	$26,450.00	$48,700.00
4	4	Assess Multiple CMs	$4,520.00	$1,680.00
4	5	Technical Memorandum for CMs	$21,430.00	$45,000.00
5	**Task**	**Numerical Model Development**	**$372,500.00**	**($38,900.00)**
5	1	Model Selection	$1,900.00	$0.00
5	2	Numerical Model Construction	$29,680.00	$0.00
5	3.1	Technical Memoranda for Numerical Model Development (1 of 2)	$7,680.00	$5,200.00
5	3.2	Technical Memoranda for Numerical Model Development (2 of 2)	$7,680.00	$13,200.00
5	4.1	Calibration Approach	$22,860.00	$0.00
5	4.2	Parameter Estimation (Calibration)	$65,600.00	$17,000.00
5	4.3	Incorporate Various Conceptual Models	$64,000.00	$21,000.00
5	4.4	Sensitivity Analyses	$24,200.00	$0.00
5	4.5	Evaluation of Groundwater Flow Paths	$13,800.00	$2,200.00
5	4.6	Uncertainty Analysis for flows to UVS	$14,900.00	$0.00
~~5~~	~~5~~	~~Refinement of CMs and Adjustment of Calibration (Optional)~~	$29,500.00	($29,500.00)
~~5~~	~~6.1~~	~~Technical Memoranda for Model Calibration Approach~~[6]	$13,200.00	($13,200.00)
5	6.2	Technical Memoranda for Model Calibration	$15,700.00	$7,000.00
~~5~~	~~7.1~~	~~Groundwater Pumping (Optional)~~	$17,400.00	($17,400.00)
~~5~~	~~7.2~~	~~Precipitation Variability (Optional)~~	$28,700.00	($28,700.00)
~~5~~	~~7.3~~	~~Technical Memoranda for Stress Tests (Optional)~~	$15,700.00	($15,700.00)
6	**Task**	**Groundwater Model Report**	**$83,400.00**	**($40.00)**
6	1	Draft Report	$57,900.00	($40.00)
6	2	Final Report	$25,500.00	$0.00
7	**Task**	**Training (Optional)**	**$13,300.00**	**($13,300.00)**
~~7~~	~~1~~	~~Numerical Code~~	$780.00	($780.00)
~~7~~	~~2~~	~~Leapfrog~~	$1,180.00	($1,180.00)
~~7~~	~~3~~	~~Flow Source~~	$700.00	($700.00)
~~7~~	4	~~Model Orientation~~	$5,920.00	($5,920.00)
~~7~~	~~5~~	~~Database~~	$4,720.00	($4,720.00)
8	**Task**	**Allowance**	**$54,700.00**	**$101.49**
8	1	Allowance	$54,700.00	$101.49
	-	**Total**	**$1,149,300.00**	**$277,460.00**

1 Cumulative additional budget request for CAA No. 1, CAA No. 2, and CAR No. 1

2 CAA No. 3 Reallocation of Budget

3 Projected revised budget after CAA No. 3, subject to approval by the City and the Steering Committee

ATTACHMENT 2

Project Schedule extended through September 22, 2021

Date: Fri 9/11/20
Schedule Updated Through: Sun 9/6/20

Big Chino Sub-Ba
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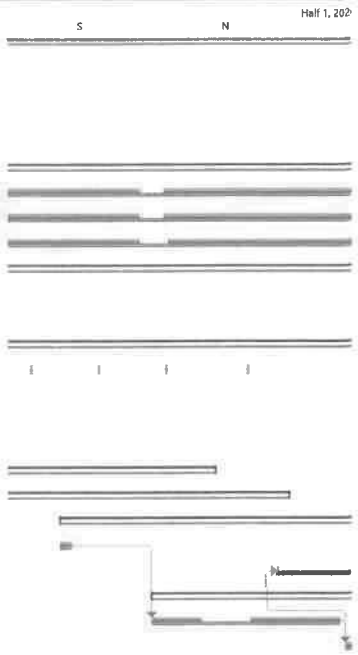
ID	Phase and	Task Name	Remaining Duration	Start	Finish	% Complete	Finish Slack	Predecessors
0		**Big Chino Sub-Basin Groundwater Flow Model**	**156.63 days**	**Mon 3/13/17**	**Thu 9/23/21**	**87%**	**0 days**	
1		Notice to Proceed	0 days	Mon 3/13/17	Mon 3/13/17	100%	0 days	
2		Contract Expiration	0 days	Thu 12/31/20	Thu 12/31/20	0%	0 days	147
3		Days Exceeding Contract Expiration (estimate)	189 days	Fri 1/1/21	Wed 9/22/21	0%	1 day	2SS
4		Project Completion	0 days	Thu 9/23/21	Thu 9/23/21	0%	0.5 days	147,3FF,44
5	**1.******	**Project Management**	**282.7 days**	**Mon 3/13/17**	**Thu 9/23/21**	**76%**	**0 days**	
6	1.1	Communication	274 days	Mon 3/13/17	Thu 9/23/21	75%	0 days	4FF
7	1.2	Financial Management	274 days	Mon 3/13/17	Thu 9/23/21	75%	0 days	4FF
8	1.3	Technical Management	241 days	Mon 3/13/17	Mon 8/9/21	77%	33 days	144FF
9	**2.******	**Project Meetings**	**307.19 days**	**Tue 3/21/17**	**Thu 9/23/21**	**74%**	**0.5 days**	
10	2.1	Kick-off Meeting	0 days	Tue 3/21/17	Tue 3/21/17	100%	0 days	1FS+6 days
11	2.2	Site Reconnaissance	0 days	Mon 3/27/17	Fri 5/5/17	100%	0 days	10FS+30 days
12	**2.3**	**Steering Committee Meetings**	**196.36 days**	**Wed 7/26/17**	**Wed 12/9/20**	**77%**	**206 days**	
13		**Quarterly Steering Committee Conference Calls**	**0 days**	**Wed 7/26/17**	**Wed 12/11/19**	**100%**	**0 days**	
24		**Monthly Steering Committee Conference Calls 2020**	**92.08 days**	**Mon 2/3/20**	**Wed 12/9/20**	**58%**	**206 days**	
37	**2.4**	**In-Person Meetings at SRP**	**325.29 days**	**Wed 10/11/17**	**Wed 9/30/20**	**57%**	**256 days**	
44	2.5	End of Project Meeting	1 day	Wed 9/22/21	Thu 9/23/21	0%	0.5 days	147
45	**3.******	**Data Compilation and Model Review**	**0 days**	**Thu 4/6/17**	**Tue 11/26/19**	**100%**	**0 days**	
74	**4.******	**Conceptual Model Development**	**0 days**	**Mon 6/12/17**	**Fri 12/27/19**	**100%**	**0 days**	
83	**5.******	**Numerical Model Development**	**248.86 days**	**Mon 9/23/19**	**Wed 6/16/21**	**43%**	**71.5 days**	
84	5.1	Model Selection	0 days	Mon 9/23/19	Fri 9/27/19	100%	0 days	80FF
85	5.2	Numerical Model Construction	0 days	Mon 12/23/19	Tue 4/21/20	100%	0 days	87,89FF
86	**5.3.1**	**Technical Memorandum for Numerical Model Development (1 of 2)**	**0 days**	**Thu 10/31/19**	**Wed 3/18/20**	**100%**	**0 days**	
87		Model TM 7 Draft	0 days	Thu 10/31/19	Fri 1/17/20	100%	0 days	84,77FF,81,82SS
88		Model TM 7 Committee Review	0 days	Mon 1/20/20	Mon 2/24/20	100%	0 days	87
89		Model TM 7 Final	0 days	Tue 2/25/20	Wed 3/18/20	100%	0 days	88
90	**5.3.2**	**Technical Memorandum for Numerical Model Development (2 of 2)**	**3.01 days**	**Mon 3/23/20**	**Tue 9/8/20**	**97%**	**266 days**	
91		Model TM 8 Draft	0 days	Mon 3/23/20	Tue 4/21/20	100%	0 days	85FF
92		Model TM 8 Committee Review	0 days	Wed 4/22/20	Fri 6/26/20	100%	0 days	91
93		Model TM 8 Final	0 days	Mon 7/6/20	Fri 8/14/20	100%	0 days	92
94		Conference call to discuss feedback on revised figures and tables	0 days	Fri 8/7/20	Fri 8/7/20	100%	0 days	
95		Potentiometric Map	2 days	Mon 8/10/20	Tue 9/8/20	91%	272 days	94
96	**5.4**	**Numerical Model Calibration**	**276.31 days**	**Mon 4/6/20**	**Wed 6/16/21**	**9%**	**71.5 days**	
97	5.4.1	Calibration Approach	3 days	Mon 4/13/20	Fri 8/14/20	62%	282 days	93FF
98	**5.4.2**	**Parameter Estimation (Calibration)**	**145.68 days**	**Mon 4/6/20**	**Wed 12/16/20**	**17%**	**-66 days**	
100		Preliminary Parameter Estimation	0 days	Mon 4/6/20	Fri 4/10/20	100%	0 days	
101		Update model and perform manual calibration	12 days	Fri 8/7/20	Thu 9/10/20	49%	-187.5 days	85,92,93,94
102		Prepare and test PEST approach	23 days	Thu 9/10/20	Tue 10/13/20	0%	-187.5 days	101
103		BRIEF Conference call to provide an overview of PEST files , submit files	1 day	Tue 10/13/20	Wed 10/14/20	0%	-188.5 days	102
104		Review period for PEST files	5 days	Wed 10/14/20	Wed 10/21/20	0%	-188.5 days	103
105		Conference call to discuss feedback on PEST files	1 day	Wed 10/21/20	Thu 10/22/20	0%	-188.5 days	104
106		Complete Calibration of CM1	29 days	Thu 10/22/20	Mon 12/7/20	0%	-187.5 days	102,105
107		BRIEF Conference call to provide an overview of calibration, submit (figures, files)	1 day	Mon 12/7/20	Tue 12/8/20	0%	-191.5 days	106
108		Review period for calibration figures and files	5 days	Tue 12/8/20	Tue 12/15/20	0%	-191.5 days	107
109		Conference call to discuss feedback on calibration	1 day	Tue 12/15/20	Wed 12/16/20	0%	-191.5 days	108
110	**5.4.3**	**Incorporate Various CMs**	**220.81 days**	**Mon 4/6/20**	**Wed 3/10/21**	**5%**	**-187.5 days**	
112		Preliminary Incorporate Various CMS	0 days	Mon 4/6/20	Fri 4/10/20	100%	0 days	
113		Calibrate CM2	30 days	Wed 12/16/20	Mon 2/1/21	0%	-187.5 days	106,109
114		Calibrate CM3	30 days	Wed 12/16/20	Mon 2/1/21	0%	-187.5 days	106,109
115		Compare and contrast flow balances and calibration success for each CM	20 days	Mon 2/1/21	Mon 3/1/21	0%	-187.5 days	114,113
116		BRIEF Conference call to provide an overview of CM2 and CM3 results, submit files and figures	1 day	Mon 3/1/21	Tue 3/2/21	0%	-194.5 days	115
117		Review period for CM2 and CM3 files and figures	5 days	Tue 3/2/21	Tue 3/9/21	0%	-194.5 days	116
118		Conference call to discuss feedback CM2 and CM3	1 day	Tue 3/9/21	Wed 3/10/21	0%	-194.5 days	117
119	**5.4.4**	**Sensitivity Analyses**	**40 days**	**Wed 3/10/21**	**Wed 5/5/21**	**0%**	**-187.5 days**	
121		Automated Sensitivity Analyses	20 days	Wed 3/10/21	Wed 4/7/21	0%	-187.5 days	115,118
122		Manual Sensitivity Analyses	20 days	Wed 4/7/21	Wed 5/5/21	0%	-187.5 days	121
123	5.4.5	Evaluation of Groundwater Flow Paths	30 days	Wed 5/5/21	Wed 6/16/21	0%	-187.5 days	122
124	5.4.6	Uncertainty Analysis for flows to UVS	30 days	Wed 5/5/21	Wed 6/16/21	0%	-187.5 days	122
131	**5.6.2**	**Technical Memoranda for Model Calibration**	**10 days**	**Tue 10/13/20**	**Tue 10/27/20**	**0%**	**-27.5 days**	
132		Model Calibration Internal Write-up	10 days	Tue 10/13/20	Tue 10/27/20	0%	-27.5 days	102
142	**6.******	**Groundwater Model Report**	**70 days**	**Wed 6/16/21**	**Wed 9/22/21**	**0%**	**-187.5 days**	
143	**6.1**	**Draft Report**	**45 days**	**Wed 6/16/21**	**Wed 8/18/21**	**0%**	**-187.5 days**	
144		Draft Report	25 days	Wed 6/16/21	Wed 7/21/21	0%	-187.5 days	93,89,82,69,124,123,1
145		Draft Report Committee Review	20 days	Wed 7/21/21	Wed 8/18/21	0%	-187.5 days	144
146	**6.2**	**Final Report**	**25 days**	**Wed 8/18/21**	**Wed 9/22/21**	**0%**	**-187.5 days**	
147		Final Report	25 days	Wed 8/18/21	Wed 9/22/21	0%	-187.5 days	145



Project: Big Chino Sub-Basin Gr
Date: Fri 9/11/20

Task | Milestone | Project Summary | Inactive Milestone | Manual Task | Manual Summary Rollup
Split | Summary | Inactive Task | Inactive Summary | Duration-only | Manual Summary

Burns,Benjamin

From: John Munderloh [JMunderloh@pvaz.net]
Sent: Wednesday, September 9, 2020 1:06 PM
To: Burns,Benjamin; Kornrumph Gregory S (Greg); Graser,Leslie
Subject: FW: BCSM Contract Amendment Request 2 (CAR2) (Project 1662614)
Attachments: 1662614-CAR2-011-Rev0-20200909.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Hi Ben,
This looks OK to me.
Thanks,
John

From: Gehlhausen, Andrea <Andrea_Gehlhausen@golder.com>
Sent: Wednesday, September 09, 2020 9:36 AM
To: Benjamin Burns <benjamin.burns@prescott-az.gov>
Cc: Carr, Dave <Dave_Carr@golder.com>; Sequeira, Zeena <Zeena_Sequeira@golder.com>; Hesker, Jana <Jana_Hesker@golder.com>; leslie.graser@prescott-az.gov; John Munderloh <JMunderloh@pvaz.net>; Greg.Kornrumph@srpnet.com
Subject: BCSM Contract Amendment Request 2 (CAR2) (Project 1662614)

Good Morning Ben:

Attached is the Contract Amendment Request 2 which outlines the changes in scope, budget reallocation, and contract deadline extension request in support of the Big Chino Sub-basin Groundwater Flow Model (BCSM) Project (Golder Project No. 1662614). The document provides additional supporting information to the budget reallocation and change in scope presented in the August 12, 2020 CA1 conference call. Please let me know if you have any questions or need additional supporting information.

Thank you,

Andie Gehlhausen

Andrea Gehlhausen
Senior Hydrogeologist

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7245 W Alaska Drive, Suite 200, Lakewood, Colorado, USA 80226 ◄ WE Have Moved!
T: +1 303 980-0540 | D: 303 987 4426 | C: 720 445 1163 | golder.com
LinkedIn | Instagram | Facebook | Twitter

Work Safe, Home Safe

Burns,Benjamin

From: Kornrumph Gregory S (Greg) [Greg.Kornrumph@srpnet.com]
Sent: Wednesday, September 9, 2020 1:30 PM
To: Graser,Leslie; John Munderloh; Burns,Benjamin
Cc: Sydow,Kay
Subject: RE: BCSM Contract Amendment Request 2 (CAR2) (Project 1662614) GK

Follow Up Flag: Follow up
Flag Status: Completed

I also agree. Thanks

Greg Kornrumph
Manager-Water Rights
Salt River Project
602-236-3264
602-236-2159 fax
greg.kornrumph@srpnet.com

From: Graser,Leslie <leslie.graser@prescott-az.gov>
Sent: Wednesday, September 9, 2020 1:28 PM
To: John Munderloh <JMunderloh@pvaz.net>; Burns,Benjamin <benjamin.burns@prescott-az.gov>; Kornrumph Gregory S (Greg) <Greg.Kornrumph@srpnet.com>
Cc: Sydow,Kay <kay.sydow@prescott-az.gov>
Subject: RE: BCSM Contract Amendment Request 2 (CAR2) (Project 1662614)

Agreed, let's go ahead and more this forward.

Sincerely,
Leslie Graser
Public Works, Water Resource Project Manager
433 N. Virginia Street | Prescott, AZ 86301
Ph: 928-777-1144 | Fax: 928-777-1255
leslie.graser@prescott-az.gov

From: John Munderloh [mailto:JMunderloh@pvaz.net]
Sent: Wednesday, September 9, 2020 1:06 PM
To: Burns,Benjamin <benjamin.burns@prescott-az.gov>; Kornrumph Gregory S (Greg) <Greg.Kornrumph@srpnet.com>; Graser,Leslie <leslie.graser@prescott-az.gov>
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Andie Gehlhausen

Andrea Gehlhausen
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Leslie Graser
Public Works, Water Resource Project Manager
433 N. Virginia Street | Prescott, AZ 86301
Ph: 928-777-1144 | Fax: 928-777-1255
leslie.graser@prescott-az.gov

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