

Notice and Agenda Special Meeting of the Beaumont Basin Watermaster

Wednesday, September 4, 2024 at 11:00 a.m.

Meeting Location:
Beaumont-Cherry Valley Water District
560 Magnolia Avenue • Beaumont, California 92223

*This meeting is hereby noticed pursuant to
California Government Code Section 54950 et. seq.*

Members of the Watermaster Committee:

City of Banning	Beaumont-Cherry Valley Water District
City of Beaumont	South Mesa Water Company
Yucaipa Valley Water District	

Remote attendance options are provided primarily as a matter of convenience to the public. Unless a Watermaster Committee member is attending remotely pursuant to provisions of GC 54953 et. seq., the public, in-person meeting will not stop or be otherwise suspended should a technological interruption occur with respect to the Zoom teleconference or call-in line listed on the agenda. Members of the public are encouraged to attend BBWM meetings in person at the above address, or remotely using the options listed.

Online Meeting Participation Link:

<https://us02web.zoom.us/j/81638720446?pwd=UnNZcC9TbGZzTGFMHdhVkJRMbIczQT09>

Telephone: (669) 900-9128 / Meeting ID: 816-3872-0446 / Passcode: 636756
One-Tap Mobile: +16699009128,,81638720446#,,,,*636756#

*For Public Comment, use the "**Raise Hand**" feature if on the video call when prompted, if dialing in, please **dial *9 to "Raise Hand"** when prompted*

Meeting materials are available on the Watermaster website:
<https://beaumontbasinwatermaster.org/>

**BEAUMONT BASIN WATERMASTER COMMITTEE
SPECIAL MEETING – WORKSHOP
SEPTEMBER 4, 2024**

I. Call to Order

II. Roll Call

Committee Member Agency	Primary Representative	Alternate
City of Banning	Arturo Vela, Chair	Nathan Smith
City of Beaumont	Robert Vestal	Dustin Christensen
Beaumont-Cherry Valley Water District	Daniel Jagers	Mark Swanson
South Mesa Water Company	Dave Armstrong	Brittany Lim
Yucaipa Valley Water District	Joseph Zoba	Jennifer Ares

III. Pledge of Allegiance

IV. Public Comments At this time, members of the public may address the Beaumont Basin Watermaster on matters within its jurisdiction; however, no action or discussion may take place on any item not on the agenda. To provide comments on specific agenda items, please complete a Request to Speak form and provide that form to the Secretary prior to the commencement of the meeting, or, RAISE HAND electronically or Press *9 when prompted for public comment.

ACTION ITEMS

Action may be taken on any item on the agenda.

V. Workshop / Discussion Items

- A. Update on Distribution of Safe Yield Redetermination Technical Report to Overliers [Memorandum No. 24-27, Page 6]
- B. Update on New U.S. Geological Survey (USGS) Monitoring Wells in Coordination with the San Gorgonio Pass Water Agency (SGPWA) [Memorandum No. 24-28, Page 8]
- C. Proposal from Thomas Harder & Co. to Investigate Basin Losses and Evaluate Future Hydrogeologic Scenarios of the Beaumont Basin [Memorandum No. 24-29, Page 9]
- D. Proposal to Renew Annual ESRI Subscriptions and Services for the Beaumont Basin Data Management System [Memorandum No. 24-30, Page 31]
- E. Scheduling of Future Special Meetings [Memorandum No. 24-31, Page 37]

VI. Topics for Future Meetings

	Item	Date Listed
A	Development of a Recycled Water Policy	3/27/2019
B	Development of a return flow accounting policy	3/27/2019
C	Development of a methodology and policy to account for groundwater storage losses in the basin / groundwater management	3/27/2019
D	Procurement Policy including thresholds for RFP process	8/17/2021
E	Incidental discharge	10/6/2021
F	Monitoring of future west side well sites and methodologies, and potential collaboration with USGS	10/5/2022
G	Discussion on what to do when an Appropriator goes negative	10/4/2023 and 11/1/2023
H	Discussion on Policy to Document and Account for Emergency Potable Water Transfers from Appropriator to Overlying Party (Tabled from 4/17/24 meeting)	4/17/2024

VII. Comments from the Watermaster Committee Members

VIII. Announcements

A. 2024/2025 Meeting Dates:

- | | |
|----------------------------------|-----------------------------|
| Wednesday, October 2 at 11 a.m. | Regular Meeting |
| Wednesday, December 4 at 11 a.m. | Regular Meeting |
| Wednesday, January 8 at 11 a.m. | Special Meeting (Tentative) |
| Wednesday, February 5 at 11 a.m. | Regular Meeting |
| Wednesday, March 5 at 11 a.m. | Special Meeting (Tentative) |

IX. Adjournment

NOTICES

AVAILABILITY OF AGENDA MATERIALS - Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the Beaumont Basin Watermaster Committee in connection with a matter subject to discussion or consideration at an open meeting of the Committee are available for public inspection in the Office of the Watermaster Secretary, at 560 Magnolia Avenue, Beaumont, California ("Office") during business hours, Monday through Thursday from 7:30 a.m. to 5 p.m. If such writings are distributed to members of the Committee less than 72 hours prior to the meeting, they will be available from the Office at the same time or within 24 hours' time as they are distributed to Board Members, except that if such writings are distributed one hour prior to, or during the meeting, they can be made available in the Board Room at the District Office. Materials may also be available on the Watermaster website: <https://beaumontbasinwatermaster.org/>.

REVISIONS TO THE AGENDA - In accordance with §54954.2(a) of the Government Code (Brown Act), revisions to this Agenda may be made up to 72 hours before the Board Meeting, if necessary, after mailings are completed. Interested persons wishing to receive a copy of the set Agenda may pick one up at the Office, located at 560 Magnolia Avenue, Beaumont, California, or download from the website up to 72 hours prior to the Meeting.

REQUIREMENTS RE: DISABLED ACCESS - In accordance with §54954.2(a), requests for a disability related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting, should be made to the Office, at least 48 hours in advance of the meeting to ensure availability of the requested service or accommodation. The Office may be contacted by telephone at (951) 845-9581, email at info@bcvwd.gov or in writing to the Beaumont Basin Watermaster Committee, c/o Beaumont-Cherry Valley Water District, 560 Magnolia Avenue, Beaumont, California 92223.

CERTIFICATION OF POSTING

A copy of the foregoing notice was posted near the regular meeting place of the Beaumont Basin Watermaster Committee and to its website at least 24 hours in advance of the meeting (Government Code §54954.2(a)).

Discussion Items

BEAUMONT BASIN WATERMASTER
MEMORANDUM NO. 24-27

Date: September 4, 2024

From: Dan Jagers, BBWM Secretary

Subject: Update on Distribution of Safe Yield Redetermination Technical Report to Overliers

Recommendation: None. Information only.

At the August 7, 2024 Regular meeting, it was suggested that it would be prudent to distribute the Draft 2023 Reevaluation of the Beaumont Basin Safe Yield report to the overliers as a matter of information and courtesy. BCVWD admin staff has been working to put together a memo, update the list of Overlying Parties, and transmit the 116-page report.

After detailed research and update, the list of Overlying Parties totaled 44 current / successor owners. Five valid and functional email addresses were obtained, leaving 37 report packets to be mailed vis US Postal Service.

The memo requests any comments / responses before 5 p.m. on Monday, September 16. BCVWD staff will respond to any questions / comments, and will forward any substantive comments to report author Thomas Harder & Co. and provide them to the BBWM at the October 2, 2024 regular meeting. Although comments will be accepted and shared, it was the intention of the BBWM Secretary to be transparent and informative to the OPs, not to make revisions to the Report based on OP comments.

These packets were mailed with the attached memo as follows:

8/26/2024 5 packets successfully emailed
8/26/2024 Tranche #1 - 7 packets snail mailed
8/27/2024 Tranche #2 - 28 packets snail mailed

BCVWD staff identifies a cost for this mailing of \$452.51, which will be absorbed by BCVWD as the current BBWM administrative entity.

ATTACHMENT: Memo re: Redetermination of the Safe Yield of the Beaumont Basin

Office of the Secretary Daniel K. Jagers
c/o Beaumont-Cherry Valley Water District
560 Magnolia Avenue / Beaumont, CA 92223

Office (951) 845-9581
email dan.jagers@bcvwd.org
beaumontbasinwatermaster.org

August 26, 2024

TO: Beaumont Groundwater Basin Overlying Party
SUBJECT: Redetermination of the Safe Yield of the Beaumont Basin
Amended Stipulated Judgment RIC 389197 dated March 14, 2019

The 2019 Stipulated Judgment requires the Watermaster to redetermine the safe yield of the Beaumont Basin every 10 years. A study was conducted in 2023-2024 and the analysis was completed and a draft report presented at the Watermaster Committee meeting of August 7, 2024.

The Watermaster is providing you, as an Overlying Party of the Basin, with this copy of the draft 2023 Reevaluation of the Beaumont Basin Safe Yield for your review and comment.

If you have comments or questions regarding the enclosed Report, please contact Lynda Kerney, Executive Assistant of the Beaumont-Cherry Valley Water District at (951) 845-9581 or by email to info@bcvwd.gov. If desired, please respond before 5 p.m. on Monday, September 16, 2024.

Sincerely,
BEAUMONT BASIN WATERMASTER COMMITTEE

Daniel K. Jagers
Secretary, Beaumont Basin Watermaster Committee
General Manager, Beaumont-Cherry Valley Water District

Attachment: Draft-Final 2023 Reevaluation of the Beaumont Basin Safe Yield

BEAUMONT BASIN WATERMASTER

MEMORANDUM NO. 24-28

Date: September 4, 2024

Subject: Update on New U.S. Geological Survey (USGS) Monitoring Wells in Coordination with the San Geronio Pass Water Agency (SGPWA)

Recommendation: None. Information only.

At the BBWM Committee meeting of October 5, 2022, the Committee was advised by SGPWA General Manager Lance Eckhart that a contract had been approved with the USGS to address well level data gaps on the west side of the Basin. The Committee indicated interest in a collaborative effort.

**BEAUMONT BASIN WATERMASTER
MEMORANDUM NO. 24-27**

Date: September 4, 2024

From: Jim Van de Water, Thomas Harder & Company

Subject: Proposal from Thomas Harder & Co. to Investigate Basin Losses and Evaluate Future Hydrogeologic Scenarios of the Beaumont Basin

Recommendation: For information and discussion

Revised Scope of Work to Conduct “Stress Test” and “Loss Analysis” using the Groundwater Flow Model

At the July 2024 meeting, TH&Co presented a framework for analysis of potential undesirable results in the Beaumont Basin. The purpose of the framework was to assess the types of conditions in the Basin that could result in groundwater level impacts to stakeholders. TH&Co proposed a “stress test” using the groundwater flow model to analyze a range of hydrogeologic conditions and their effects on groundwater levels and storage. At the August 2024 meeting, the framework for the “stress test” was discussed and it led to a subsequent discussion regarding Basin losses (“loss analysis”) – especially those associated with imported water used for recharge. To that end, TH&Co has prepared a revised scope of work and cost estimate to conduct both the stress test and loss analysis.

The approach to conduct the stress test is conceptually unchanged from that previously presented. That is, sequentially drier conditions would be simulated using the current groundwater flow model (GFM) to “stress” the Basin. Additional scenarios have been included based on discussions during the August 2024 meeting such that the revised proposal includes a total of eight scenarios.

The approach to conduct the loss analysis would also use the GFM but with the additional task of coupling it to a particle tracking model to assess where and when imported recharge water may exit the Basin.

The eight scenarios would be compared against a baseline scenario, which is what was developed for the redetermination of the Safe Yield.

The cost estimate to analyze the scenarios is \$98,520. Additional scenarios can be developed and analyzed for \$21,100 per scenario.

The scope of work can be completed within six months of authorization to proceed.

August 27, 2024

Mr. Art Vela, P.E.
Beaumont Basin Watermaster
99 E. Ramsey St.
Banning, California 92220

Re: Revised Proposed Scope of Work for Analysis of Basin Management and Potential Losses

Dear Mr. Vela:

At the request of the Beaumont Basin Watermaster (BBWM), Thomas Harder & Company (TH&Co) has prepared this revised proposed scope of work (SOW) to evaluate a range of basin management conditions and potential storage losses in the adjudicated area of the Beaumont Basin (the Basin) using a calibrated groundwater flow model (GFM). The proposed SOW is revised from that submitted on May 28th based on discussions during the most recent BBWM regular committee meeting held on August 7th. The proposed analysis is considered supplemental as it would be in addition to that recently conducted to update the safe yield of the Basin as described in our “*DRAFT-FINAL 2023 Reevaluation of the Beaumont Basin Safe Yield*” (TH&Co, July 2024).

1 OBJECTIVES

The proposed analysis is meant to help answer the following questions:

1. Is there a plausible dry hydrologic condition whereby groundwater pumping in the Basin within existing overlying rights and from established Appropriator storage accounts could cause undesirable results?
2. Are there limits to how much Appropriators can draw out of their storage accounts without causing undesirable results in the Basin?
3. What is the range of losses that could occur from a range of hydrologic and basin management conditions?

Thomas Harder & Co.
1260 N. Hancock St., Suite 109
Anaheim, California 92807
(714) 779-3875

4. What are the implications of the loss analysis for developing an accounting policy for losses in the Basin?

Implications of the loss analysis will be captured in a preliminary draft policy to account for groundwater storage losses in the Basin in the future. The preliminary draft policy will provide the basis for Committee review and discussion to form a final loss policy for the Basin.

2 SCOPE OF WORK

To meet the objectives and answer the questions, the scope of work consists of the following tasks:

1. Define hydrologic and basin management scenarios for analysis with the GFM;
2. Develop GFM input files to simulate the forecast scenarios (“pre-processing”);
3. Conduct the model runs (“simulations”);
4. Conduct particle tracking analysis of managed recharge water;
5. Analyze, illustrate, and tabulate the model results (“analysis”); and
6. Prepare and submit draft technical memorandum of the results (“reporting”) with the preliminary draft loss policy.

The analysis will utilize the updated GFM used to redetermine the safe yield of the Basin. The GFM is based on the United States Geological Survey’s MODFLOW-NWT^[1] computer code and post-processing utility code ZONEBUDGET^[2]. The GFM is comprised of a historical (“calibration”) period spanning January 1978 through December 2022 and a 10-year forecast period spanning January 2023 through December 2032. To meet the objectives stated above, this SOW will rely on the GFM using the same historical and forecast periods but with different alternative future hydrogeologic scenarios (“forecast scenarios”). For each scenario, TH&Co will also run MODPATH^[3] to estimate recharge water travel time and flow directions.

As the basin is bifurcated into two separate and distinct hydrologic areas, results of the analysis will be reported relative to a Western Study Area and an Eastern Study Area (**Figure 1**). The study areas are separated by the westernmost Beaumont Plains Fault.

¹ Niswonger, R.G., Panday, S., and Ibaraki, M., 2011. MODFLOW-NWT, A Newton Formulation for MODFLOW-2005: U.S. Geological Survey Techniques and Methods 6-A37, 44 p.

² Harbaugh, A., 1990. A computer program for calculating subregional water budgets using results from the U.S. Geological Survey Modular Three-Dimensional Finite-Difference Ground-Water Flow Model, Open-File Report 90-392, 49 p.

³ Pollock, D.W., 2012. User Guide for MODPATH Version 6—A Particle-Tracking Model for MODFLOW: U.S. Geological Survey. Techniques and Methods 6-A41, 58 p. (Version 6.0.01, August 24, 2012).



2.1 TASK 1: DEFINE THE FORECAST SCENARIOS

This task will involve developing a plausible set of future hydrologic conditions (“forecast scenarios”). These scenarios will be based on different rates of precipitation, imported water recharge, and pumping to stress the Basin and assess if these hypothetical future conditions could lead to undesirable results (e.g., significant declines in groundwater levels) using the GFM. The historical period for the GFM will remain unchanged from that used for the safe yield redetermination; however, the forecast period will be modified to evaluate alternative futures (“forecast scenarios”).

This SOW and cost estimate assumes the development and analysis of eight (8) forecast scenarios. In anticipation that simulations of additional forecast scenarios may be requested, a cost is provided on a per scenario basis should additional scenarios be approved by the BBWM. This cost includes the preparation of input files, running the simulation, and post-processing to analyze the results.

It is assumed that a prolonged period of extreme dry hydrologic conditions would have the highest probability of producing undesirable results in the Basin. Accordingly, our proposed approach is to define five forecast scenarios that reflect increasingly drier conditions to assess the relative impact of these conditions on the ability of Basin Stakeholders to pump groundwater without undesirable results. Subsequently, the last three scenarios will evaluate the potential effects of in lieu pumping (i.e., golf course using recycled water instead of groundwater for irrigation purposes) and the implementation of an aquifer storage and recovery program by YVWD during the two driest scenarios. All scenarios would be compared against a baseline scenario, which is what was used for the safe yield redetermination.

The hydrogeologic conditions will be varied according to: 1) precipitation and availability of imported water, 2) overlie pumping, and 3) storage of water in the eastern Study Area for recovery in the west. In short, the forecast scenarios are based on climate and pumping.

The following presents the proposed forecast scenarios. TH&Co envisions this task to be a collaborative effort and seeks input from all stakeholders in finalizing the forecast scenarios before continuing onto subsequent tasks.

2.1.1 Precipitation and Availability of Imported Water

As presented at the February workshop, with respect to precipitation and availability of imported water, the GFM forecast period assumes the following “proxy years” on a water year (WY) basis:

- WY 2005 = very wet;
- WY 2019 = wet;
- WY 2015 = average;
- WY 2018 = dry; and



- WY 2007 = very dry.

Table 1 below shows the water year types from 2005 to 2022 along with the mean annual rainfall to provide context regarding what is considered “very wet” to “very dry”. The proxy water years in the above bullet list are color-coded in this table.

Table 1: Characterization of Water Years 2005 through 2022

WY	Precipitation (inches)	Mean Annual Rainfall (inches) (Note 1)	Ratio (Note 2)	Category
2005	32.15	13.44	2.39	Very Wet
2006	13.13		0.98	Average
2007	5.36		0.40	Very Dry
2008	15.90		1.18	Average
2009	9.61		0.72	Average
2010	14.93		1.11	Average
2011	21.90		1.63	Wet
2012	10.62		0.79	Average
2013	8.78		0.65	Dry
2014	7.79		0.58	Dry
2015	13.56		1.01	Average
2016	9.77		0.73	Average
2017	18.30		1.36	Average
2018	8.08		0.60	Dry
2019	21.23		1.58	Wet
2020	16.22		1.21	Average
2021	7.29		0.54	Dry
2022	8.75		0.65	Dry
2023	28.44		2.12	Very Wet

Note 1: Mean annual rainfall based on WY 1998 through WY 2022.

Note 2: “Ratio” equals Precipitation / Mean Annual Rainfall.

For the sake of consistency, these proxy years will be used to represent hydrogeological conditions in the analysis as well. **Table 2** below shows a preliminary selection of proxy water years for the forecast period of each proposed scenario whereas **Table 3** shows the baseline distribution of imported water among the recharge facilities.



Table 2: Preliminary Precipitation / Availability of Imported Water Proxy Water Years for the Forecast Scenarios (FS)

WY	Baseline Proxy WY	FS 1	FS 2	FS 3	FS 4	FS 5	FS 5a	FS 4a	FS 5b
		Increasingly dryer conditions = >>>>					In lieu pumping (Note 1)	Aquifer storage and recovery (Note 2)	
2023	Very wet	Very wet	Very wet	Very wet	Very wet	Very wet	Very wet	Very wet	Very wet
2024	Very wet	Wet	Average	Average	Dry	Dry	Dry	Dry	Dry
2025	Dry	Dry	Dry	Very dry	Very dry	Very dry	Very dry	Very dry	Very dry
2026	Average	Average	Dry	Dry	Dry	Very dry	Very dry	Dry	Very dry
2027	Average	Average	Average	Dry	Dry	Dry	Dry	Dry	Dry
2028	Very dry	Very dry	Very dry	Very dry	Very dry	Very dry	Very dry	Very dry	Very dry
2029	Wet	Wet	Average	Average	Dry	Dry	Dry	Dry	Dry
2030	Average	Average	Dry	Dry	Dry	Very dry	Very dry	Dry	Very dry
2031	Very wet	Wet	Average	Average	Dry	Dry	Dry	Dry	Dry
2032	Average	Average	Average	Dry	Dry	Dry	Dry	Dry	Dry

Note 1: Assumes golf course production is discontinued and assumed to be supplied with recycled water.

Note 2: Assumes YVWD will recharge water in the Noble Creek and/or Brookside recharge facilities. This recharge water will be subsequently delivered back to YVWD via pipeline or some other mechanism.

Table 3: Baseline Distribution of Imported Water for the Forecast Scenarios (FS)

Basin Name			LSGCRF	Noble Creek 1	Noble Creek 2	Brookside East	Brookside West	Total
Basin Max Capacity Average (acre-ft/yr)			8,247	12,500	12,500	27,963	27,963	
Water Year	SWP Allocation %	Category	Recharge (acre-ft/yr)					
2023	N/A	Very Wet	0	9,712	3,058	500	0	13,270
2024	97%	Very Wet	0	11,908	4,873	0	0	16,781
2025	33%	Dry	0	5,623	0	0	0	5,623
2026	58%	Average	0	10,002	32	0	0	10,034
2027	58%	Average	0	10,002	32	0	0	10,034
2028	7%	Very Dry	0	1,211	0	0	0	1,211
2029	78%	Wet	0	11,399	2,008	0	0	13,408
2030	58%	Average	0	10,002	32	0	0	10,034
2031	97%	Very Wet	0	11,908	4,873	0	0	16,781
2032	58%	Average	0	10,002	32	0	0	10,034
2033	7%	Very Dry	0	1,211	0	0	0	1,211



2.1.2 Overlier Pumping

For Scenarios 1 and 2, overlier pumping will be assigned as the average historical overlier pumping between 2018 and 2023 (5 years), which is what was assumed for the GFM as used for the current safe yield redetermination.

For Scenarios 3 through 5, overlier pumping is assumed to be 1.25 times the average historical overlier pumping between 2018 and 2023 (5 years). We note that the overlies have not pumped this much water historically and, as such, this assumption is intended to simulate a drier climate.

To test the relative benefit of reducing overlier pumping in the western Study Area, TH&Co will conduct one simulation under the worst-case dry scenario (Scenario 5a) whereby golf course production is discontinued and assumed to be supplied with recycled water.

2.1.3 Appropriator Pumping

Pumping by Appropriators in each scenario will be in accordance with the pumping projections used in the Baseline.

2.1.4 Operation of Proposed YVWD Recharge and Recovery Wells

YVWD's planned recharge and recovery project in the Western Study Area will be simulated in each scenario as was simulated in the Baseline.

2.1.5 Other Basin Operating Scenarios

Sub-scenarios will be conducted for Scenarios 4 and 5 (4a and 5b) to simulate the potential effects of storing water in facilities in the Eastern Study Area for recovery in the Western Study Area. The assumed storage and recovery amount will be 500 acre-ft. TH&Co will work with the stakeholders to determine the timing and location of storage and recovery.

2.2 **TASK 2: PRE-PROCESSING**

To run MODFLOW-NWT, the user must provide several input files called 'packages'. Some packages include parameters that vary with time whereas others do not. For this analysis, packages that do not have time-variant parameters will not be modified. All packages that have time-variant parameters to be modified for this proposed analysis are listed in **Table 4** below.



Table 4: Time-Variant Packages to be Modified for the Analysis

Package	Function
Evapotranspiration (EVT)	This package simulates loss of water from the model due to evapotranspiration. It is a “head-dependent boundary condition”. That is, water levels must be at relatively shallow depths before this package is triggered. This package allows the user to vary evaporation surface, extinction depth, and rate. All these parameters are varied within the GFM over time.
General Head Boundary (GHB)	This package controls inflow and outflow from the model. Specifically, this package allows the user to vary groundwater elevations and conductances over time. The groundwater elevations at locations along the perimeter of the model domain and in some instances immediately outside the adjudicated boundary, are varied over time.
Multi-node Well (MNW2)	This package simulates groundwater pumping and allows the user to vary pumping rates over time. As currently configured, the pumping rates for all wells are varied within the GFM over time.
Recharge (RCH)	This package simulates deep infiltration (percolation) of precipitation, water applied at the surface, and leakage from engineered features such as septic tanks and transmission lines. It is generally referred to as return flow. The package allows the user to vary recharge rates over time. As currently configured, recharge rates in 33 individual recharge zones are varied within the GFM over time.
Streamflow Routing (SFR)	This package simulates surface water flow and the interaction of groundwater and surface water in streams, creeks, rivers, irrigation diversions, etc. As currently configured, this package allows the user to vary streambed conductivity and thickness by reach (model cell) but not over time. However, stream channel roughness coefficient, upstream stream channel width, and downstream stream channel width are varied within the GFM over time.
Well (WEL)	Like the MNW2 package, this package simulates pumping. As currently configured, this package is used to simulate mountain block/mountain front recharge as groundwater “injection”. This process is varied within the GFM over time at all cell locations specified in the WEL package.

The historical calibration of the model will not change and will utilize the 50th percentile realization from the 2023 safe yield redetermination. Each of the time-variant packages of the 10-yr forecast period for the three scenarios will be adjusted in the model to reflect the monthly pumping and recharge specific to each scenario.

2.3 TASK 3: SIMULATIONS

The input files for each scenario will be appended to the historical period in the GFM calibrated baseline model and analyzed. It is assumed for this cost estimate that the same historical realization of the model used for the safe yield redetermination will be used for the scenarios.

2.4 TASK 4: ANALYSIS

The task will involve processing output from the GFM for all scenarios to assess:

1. the safe yield of the Basin in response to the forecast scenarios;
2. enhanced loss of water from the Basin due to recharge mounding; and
3. loss of imported water recharged at the Noble Creek and Brookside recharge facilities.



Item 1 is hereafter referred to as “stress analysis” whereas Items 2 and 3 are hereafter referred to as “loss analysis”.

ZONEBUDGET will be used for Items 1 through 3 whereas MODPATH will be used for Item 2. The following provides a brief description of both.

- ZONEBUDGET calculates subregional water budgets using results from MODFLOW-NWT. Specifically, ZONEBUDGET calculates budgets by tabulating the budget data that MODFLOW-NWT produces for each model cell using the cell-by-cell flow option. The user specifies the subregion(s) for which budgets will be calculated.
- MODPATH uses groundwater elevations and associated gradients generated by MODFLOW-NWT to simulate the movement of particles laterally and vertically through the groundwater system.

2.4.1 Stress Analysis

ZONEBUDGET will be used to extract water budget components for each scenario. For the stress analysis, the subregion of interest is the Basin. The Basin zone will be configured as a single comparatively large 3-dimensional feature extending through all model layers identical to how it was configured for the safe yield update. The Western and Eastern Study Areas will be configured as subareas as well. TH&Co will select up to ten representative wells for analysis of hydrographs to assess the relative impact of the conditions assumed in each scenario on groundwater levels. TH&Co will also evaluate and present the water budgets to assess impacts of dry conditions on subsurface inflow and outflow.

2.4.2 Loss Analysis

Listed as Items 2 and 3 in the introduction to this subsection, the loss analysis consists of assessing enhanced loss of water from the Basin due to increased hydraulic gradients resulting from recharge mounding and accompanying loss of imported water used for recharge. For the loss analysis, the subregions of interest will be those areas along the perimeter of the Basin through which groundwater may enter or exit. In contrast to the stress analysis, the perimeter zones will be comparatively small, vertically-oriented 2-dimensional features that parallel – and immediately outside of - the Basin boundaries (**Figure 2**). It is anticipated that perimeter zones will be assigned in the Yucaipa area, along the base of the Singleton Hills, along the eastern Basin boundary, along the southeastern boundary near Banning, along the southern boundary in the area transected by faults, and along the remaining southwestern/western boundary. As such, the loss analysis will identify where (and when) groundwater exits (and enters) the Basin.



Tracking of imported recharge water will involve using MODPATH to trace the paths imported recharge water takes upon reaching the water table over time.^[4] The particles, which will serve as surrogates for recharge water, will be uniformly spaced throughout the areal extent of the Noble Creek recharge facility and, as necessary in the future depending on forecast imported water deliveries, the Brookside recharge facility.

The primary output associated with Item 2 will be a table of inflow and outflow volumes (in units of acre-feet) for each perimeter zone over time. The primary output associated with Item 3 will be one or more figures showing pathlines in 2-dimensional planview for one or more selected times. In those cases where imported water exits the Basin (i.e., is not captured by intervening wells and therefore “is lost”), the number of particles exiting the Basin will be used to estimate the volume of “lost imported water” and reported in tabular form.

3 TASK 5: REPORTING

The findings of the analysis will be presented in a technical memorandum (TM). Information from the safe yield redetermination report prepared by TH&Co may be briefly summarized in the TM where relevant; however, the TM will focus on the stress and loss analyses.

The TM will include as an attachment a preliminary draft basin loss policy. The policy will be informed by the stress test and loss analyses. It is emphasized that this preliminary draft policy is for review by the BBWM Committee and is only meant to stimulate discussion on what a final policy will look like given the conditions in the Basin. Any final basin loss policy will be determined by the Committee.

The cost estimate for this task assumes preparation of one draft version of the report and one final version.

4 COST AND SCHEDULE

The cost for the proposed scope of work is \$98,520 (see **Attachment 1**). It is anticipated that the work can be completed within 6 months of receiving approval to proceed.

If the BBWM requires analysis of additional scenarios, TH&Co can analyze them at a cost of \$21,100 per scenario. It is estimated that analysis of each additional scenario will add 3 to 4 weeks to the schedule.

⁴ Calibrated specific yield values will be used as effective porosity for the MODPATH particle tracking simulations for the uppermost (and unconfined) model layer (i.e., Layer 1). The effective porosity of Layers 2, 3, and 4 will be an assumed value of 0.20. Sensitivity simulations will also be conducted assuming effective porosity values for these three deeper layers of 0.10 and 0.30.



As always, we appreciate the opportunity to provide our services to the BBWM. If you have any questions, please contact us.

Sincerely,



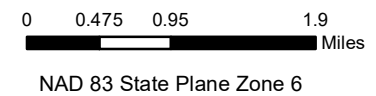
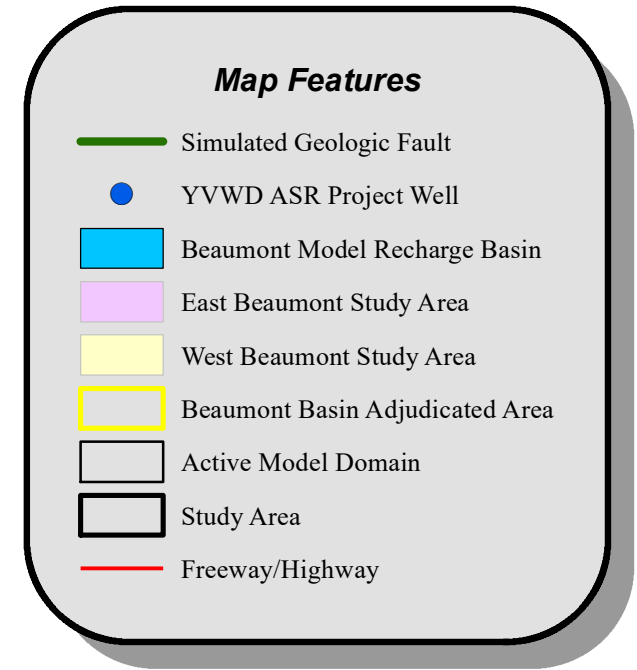
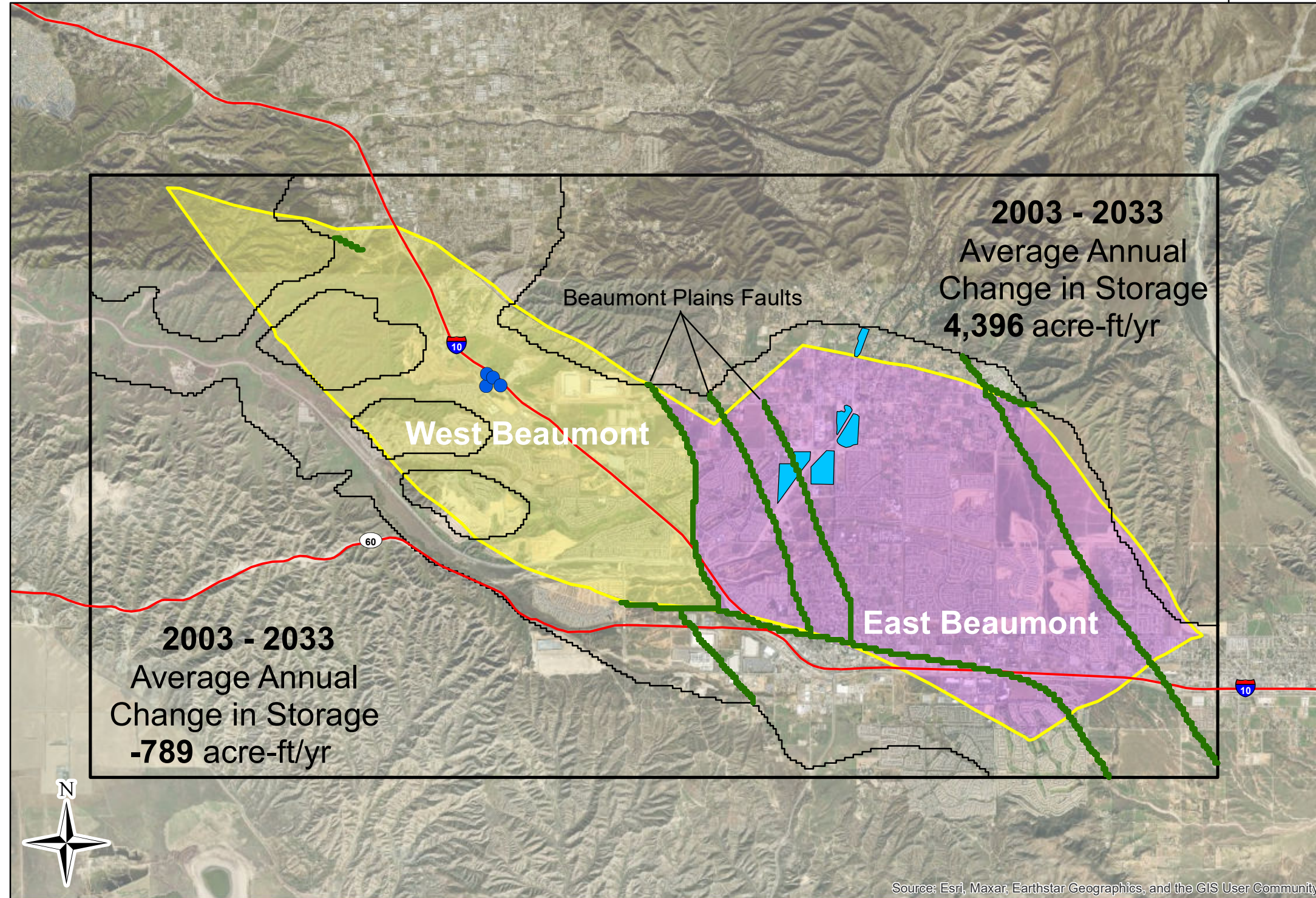
Thomas Harder, P.G., C.HG.
Principal Hydrogeologist



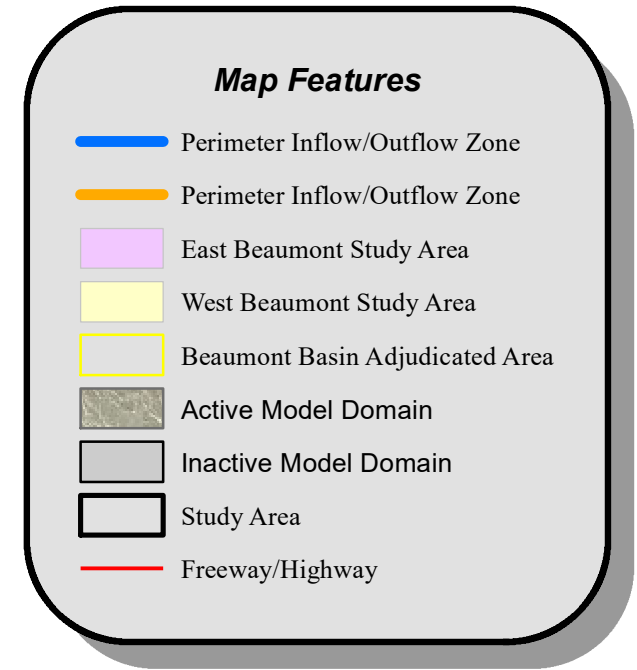
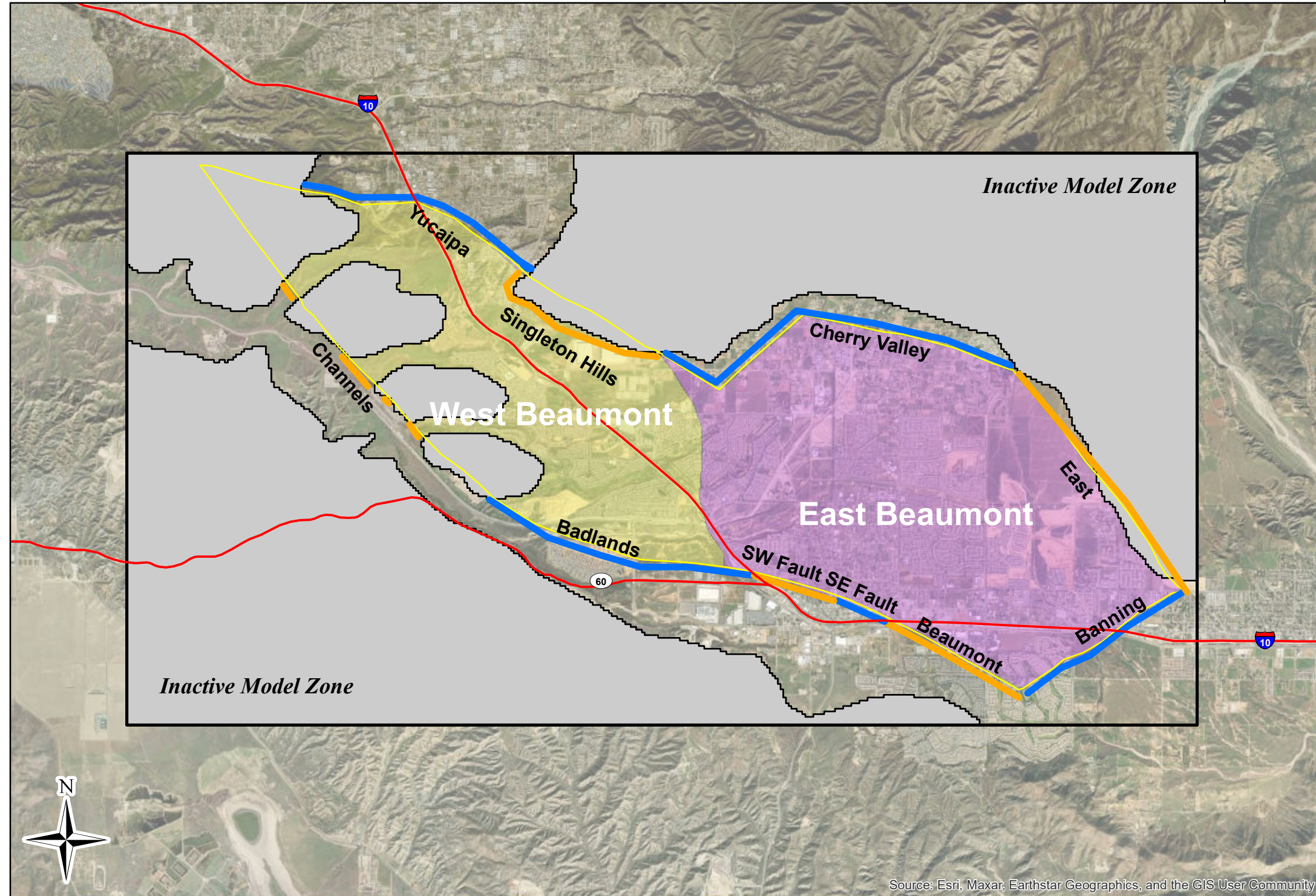
Jim Van de Water, P.G., C.HG.
Principal Hydrogeologist



Figures



Beaumont Basin Study Areas



Beaumont Basin Perimeter
Inflow and Outflow Zones

Figure 2

Attachment 1

Attachment 1

Cost Estimate

Beaumont Basin Watermaster - Analysis of Basin Management and Potential Losses

Task	Description	Principal Hydrogeologist \$220/hr	Associate Hydrogeologist \$190/hr	Senior Geologist \$160/hr	Project Geoscientist \$135/hr	Staff Geoscientist \$115/hr	Graphics \$100/hr	Clerical \$80/hr	Total Labor	Reimbursable Expenses	Total Cost
1	Define the Forecast Scenarios	12	0	0	0	24	0	0	\$5,400	\$0	\$5,400
2	Preparation of Input Files	40	0	0	0	160	0	0	\$27,200	\$0	\$27,200
3	Simulations	12	0	0	0	64	0	0	\$10,000	\$0	\$10,000
4	Post-Processing	40	0	0	0	120	8	0	\$23,400	\$0	\$23,400
5	Reporting	80	0	0	0	120	8	4	\$32,520	\$0	\$32,520
Totals =>		184	0	0	0	488	16	4	\$98,520	\$0	\$98,520

Optional Task

	Setup and Analysis of Each Additional Scenario	40	0	0	0	100	8		\$21,100	\$0	\$21,100
--	--	----	---	---	---	-----	---	--	----------	-----	----------

Beaumont Basin Watermaster

Stress Analysis and Loss Analysis

September 4, 2024



1

Composite of Prior Presentations and Feedback

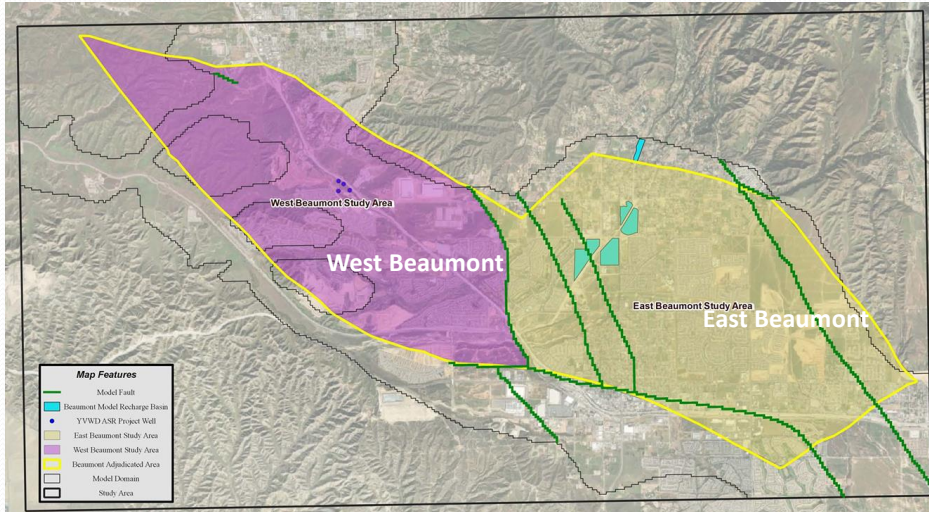
- **July 10th:** “Stress Analysis” – Presented a range of Basin hydrological conditions to stress the Basin and assess the potential for undesirable results (*Qualitative*)
- **August 7th:** “Loss Analysis” – Presented loss analysis for East and West Study Areas (*Quantitative*)
- **Today’s Goal:** Present revised Scope of Work based on feedback
 - “Stress Analysis” remains qualitative with additional scenarios
 - “Loss Analysis” presents a scope that addresses imported water losses
 - Get feedback on revised scenarios

Based on TH&Co Proposed Scope of Work dated August 27, 2024



2

West Study Area and East Study Areas



Thomas Harder & Co.
Groundwater Consulting

3

Questions to Answer

• Stress Analysis

- Is there a plausible dry hydrologic condition whereby groundwater pumping in the Basin within existing overlying rights and from established Appropriator storage accounts could cause undesirable results?
- Are there limits to how much Appropriators can draw out of their storage accounts without causing undesirable results in the Basin?

• Loss Analysis

- What is the range of losses that could occur from a range of hydrologic and basin management conditions?
- What are the implications of the loss analysis for developing an accounting policy for losses in the Basin?

Based on TH&Co Proposed Scope of Work dated August 27, 2024

Thomas Harder & Co.
Groundwater Consulting

4

Scope of Work

1. Define the forecast scenarios
2. Modify model input files to simulate the forecast scenarios
3. Conduct the model runs
4. Analyze, illustrate, and tabulate the model results, and
5. Prepare and submit draft technical memorandum of the results

5

Table 1: Characterization of Water Years 2005 through 2022

WY	Precipitation (inches)	Mean Annual Rainfall (inches) (Note 1)	Ratio (Note 2)	Category
2005	32.15	13.44	2.39	Very Wet
2006	13.13		0.98	Average
2007	5.36		0.40	Very Dry
2008	15.90		1.18	Average
2009	9.61		0.72	Average
2010	14.93		1.11	Average
2011	21.90		1.63	Wet
2012	10.62		0.79	Average
2013	8.78		0.65	Dry
2014	7.79		0.58	Dry
2015	13.56		1.01	Average
2016	9.77		0.73	Average
2017	18.30		1.36	Average
2018	8.08		0.60	Dry
2019	21.23		1.58	Wet
2020	16.22		1.21	Average
2021	7.29		0.54	Dry
2022	8.75		0.65	Dry
2023	28.44		2.12	Very Wet

Note 1: Mean annual rainfall based on WY 1998 through WY 2022.

Note 2: "Ratio" equals Precipitation / Mean Annual Rainfall.

Stress Analysis (Table 1)

6

Stress Analysis (Table 2)

Table 2: Preliminary Precipitation / Availability of Imported Water Proxy Water Years for the Forecast Scenarios (FS)

WY	Baseline Proxy WY	FS 1	FS 2	FS 3	FS 4	FS 5	FS 5a	FS 4a	FS 5b
		Increasingly dryer conditions =>>>>					In lieu pumping (Note 1)	Aquifer storage and recovery (Note 2)	
2023	Very wet	Very wet	Very wet	Very wet	Very wet	Very wet	Very wet	Very wet	Very wet
2024	Very wet	Wet	Average	Average	Dry	Dry	Dry	Dry	Dry
2025	Dry	Dry	Dry	Very dry	Very dry	Very dry	Very dry	Very dry	Very dry
2026	Average	Average	Dry	Dry	Dry	Very dry	Very dry	Dry	Very dry
2027	Average	Average	Average	Dry	Dry	Dry	Dry	Dry	Dry
2028	Very dry	Very dry	Very dry	Very dry	Very dry	Very dry	Very dry	Very dry	Very dry
2029	Wet	Wet	Average	Average	Dry	Dry	Dry	Dry	Dry
2030	Average	Average	Dry	Dry	Dry	Very dry	Very dry	Dry	Very dry
2031	Very wet	Wet	Average	Average	Dry	Dry	Dry	Dry	Dry
2032	Average	Average	Average	Dry	Dry	Dry	Dry	Dry	Dry

Note 1: Assumes golf course production is discontinued and assumed to be supplied with recycled water.
 Note 2: Assumes YVWD will recharge water in the Noble Creek and/or Brookside recharge facilities. This recharge water will be subsequently delivered back to YVWD via pipeline or some other mechanism.



7

Stress Analysis (Table 3)

Table 3: Baseline Distribution of Imported Water for the Forecast Scenarios (FS)

Basin Name			LSGCRF	Noble Creek 1	Noble Creek 2	Brookside East	Brookside West	Total
Basin Max Capacity Average (acre-ft/yr)			8,247	12,500	12,500	27,963	27,963	
Water Year	SWP Allocation %	Category	Recharge (acre-ft/yr)					Total
2023	N/A	Very Wet	0	9,712	3,058	500	0	
2024	97%	Very Wet	0	11,908	4,873	0	0	16,781
2025	33%	Dry	0	5,623	0	0	0	5,623
2026	58%	Average	0	10,002	32	0	0	10,034
2027	58%	Average	0	10,002	32	0	0	10,034
2028	7%	Very Dry	0	1,211	0	0	0	1,211
2029	78%	Wet	0	11,399	2,008	0	0	13,408
2030	58%	Average	0	10,002	32	0	0	10,034
2031	97%	Very Wet	0	11,908	4,873	0	0	16,781
2032	58%	Average	0	10,002	32	0	0	10,034
2033	7%	Very Dry	0	1,211	0	0	0	1,211



8

Other Assumptions / Considerations

- **Overlier Pumping**
 - Scenarios 1 and 2: Average of 2018-2023 (same as baseline)
 - Scenarios 3, 4, and 5: 1.25 x Average of 2018-2023 (too conservative?)
 - Scenario 5a: In lieu (golf course pumping replaced with recharge of recycled water)
- **Appropriator Pumping**
 - Same as baseline
 - YCWD injection and recovery same as baseline
- **Other Scenarios**
 - Scenarios 4a and 5b: Aquifer Storage and Recovery (West stores 500 AF/yr in the East to be transferred back to the West at TBD)

Based on TH&Co Proposed Scope of Work dated August 27, 2024

Thomas Harder & Co. 
Groundwater Consulting

9

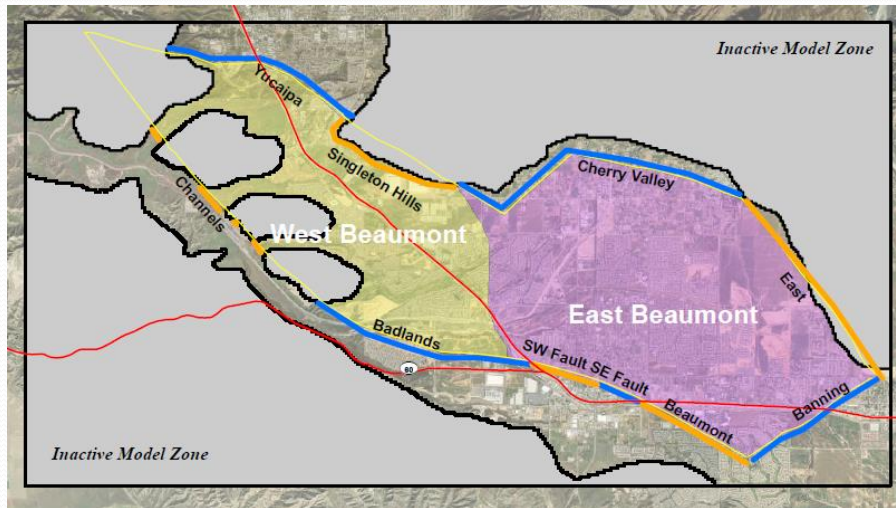
Modeling

- **Modify Input Files**
 - Recharge (RCH): Controls managed and unmanaged recharge
 - Multi-node Well (M_{NW2}): Controls groundwater pumping
 - General Head Boundary (GHB): Controls underflow along model perimeter
 - Drain Return Flow (DRT): Controls underflow through the “channels”
 - Well (WEL): Controls mountain block/front recharge
 - Evapotranspiration (EVT): Controls evapotranspiration (shallow gw)
 - Streamflow Routing (SFR): Control surface water flow

Thomas Harder & Co. 
Groundwater Consulting

10

Perimeter Inflow/Outflow Zones



Thomas Harder & Co.
Groundwater Consulting

11

Questions/Discussion

Thomas Harder & Co.
Groundwater Consulting

12

BEAUMONT BASIN WATERMASTER

MEMORANDUM NO. 24-30

Date: September 4, 2024

From: Steven Stuart, Dudek

Subject: Proposal to Renew Annual ESRI Subscriptions and Services for the Beaumont Basin Data Management System

Recommendation: That the Watermaster Committee Renew the Annual ESRI Online Subscriptions and Dudek Support Services for the Beaumont Basin Data Management System from August 3, 2024 to August 2, 2025 for a sum of \$15,824.46 and send invoices to each Watermaster Committee member for 20% of the approved amount

The Beaumont Basin Watermaster (Watermaster) authorized Dudek to proceed with developing a Data Management System (DMS) for the Beaumont Basin at the June 7, 2023 Watermaster regular meeting. Part of the fee for developing the DMS included annual subscription costs for online services provided by ESRI. Those services extended from August 3, 2023 to August 2, 2024.

The attached proposal is to renew the ESRI annual subscription online services from August 3, 2024 to August 2, 2025. Additionally, the proposal includes 4.5 hours per month of Dudek labor for routine maintenance, updating DMS databases, and addressing inquiries from the Watermaster. The fee is \$15,824.46.

September 4, 2024

Art Vela
Chairman
Beaumont Basin Watermaster
560 Magnolia Ave.
Beaumont, California 92223

Subject: Proposal to Renew Annual ESRI Subscriptions and Services for the Beaumont Basin Watermaster Data Management System

Dear Mr. Vela:

The Beaumont Basin Watermaster (Watermaster) authorized Dudek to proceed with developing a Data Management System (DMS) for the Beaumont Basin at the June 7, 2023 Watermaster regular meeting. Part of the fee for developing the DMS included annual subscription costs by ESRI to provide the following online services: ArcGIS Online Editor, ArcGIS Online Viewer, ArcGIS Online Mobile Worker, ArcGIS Online Credits, and Architecture, Engineering, and Construction (AEC) Project Delivery. The annual subscriptions covered the period from August 3, 2023 to August 2, 2024 (except the ArcGIS Online Credits that expire in August 2025).

This proposal includes ESRI annual subscription fees for ArcGIS Online Viewer User, AEC Project Delivery ArcGIS Online, ArcGIS Online Contributor (formerly Editor), and ArcGIS Online Mobile Worker for the period from August 3, 2024 to August 2, 2025. Additionally, the proposal includes 4.5 hours per month of Dudek labor for routine maintenance, updating DMS databases, and addressing inquiries from the Watermaster. The ESRI invoice (#94775760) for providing these online services from August 3, 2024 to August 2, 2025 is attached. Note there is no markup on the ESRI invoice.

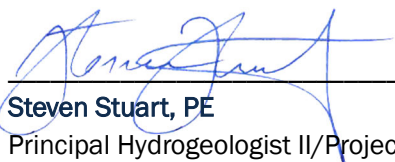
TOTAL FEE\$15,824.46

The cost share (20%) between each Watermaster Committee member is \$3,164.89.

Dudek appreciates the opportunity to present this proposal to continue providing support services and utilizing ESRI online services for the Beaumont Basin DMS. We look forward to continuing our working relationship with the Watermaster.

If you have any questions regarding this proposal, please call me at 760-415-9079 or email me at sstuart@dudek.com.

Sincerely,



Steven Stuart, PE
Principal Hydrogeologist II/Project Manager

Att.: *Table 1. Fee to Oversee Annual Maintenance of the Beaumont Basin Data Management System*
ESRI Invoice 94775760 dated August 2, 2024
Dudek 2024 Standard Schedule of Charges

Beaumont Basin Watermaster
 Annual ESRI Online Subscriptions and Support Services for the Beaumont Basin Data Management System
 August 3, 2024 to August 2, 2025
DUDEK FEE SCHEDULE

		<i>Project Team Role:</i>			TOTAL HOURS	DUDEK LABOR COST	OTHER DIRECT COSTS	TOTAL FEE
		Principal Hydrogeologist II/ Project Manager	Principal Hydrogeologist II/ Project Manager	ESRI Annual Subscription Fees				
		<i>Team Member:</i> Steven Stuart, PE	Matt Palavido					
		<i>Billable Rate :</i> \$300	\$195					
Task #	TASK							
1.0	Routine Maintenance, Updating Databases, and Respond to Watermaster Inquiries	6	48		54	\$ 11,160.00	\$ -	\$ 11,160
1.1	ArcGIS Online Viewer User Type Annual Subscription			\$ 120.91		\$ -	\$ 120.91	\$ 121
1.2	Architecture, Engineering, and Construction Project Delivery ArcGIS Online Annual Subscription			\$ 1,400.00		\$ -	\$ 1,400.00	\$ 1,400
1.3	ArcGIS Online Contributor User Type Annual Subscription			\$ 1,209.05		\$ -	\$ 1,209.05	\$ 1,209
1.4	ArcGIS Online Mobile Worker User Type Annual Subscription			\$ 1,934.50		\$ -	\$ 1,934.50	\$ 1,935
Total Hours and Fee		6	48		54	\$ 11,160.00	\$ 4,664.46	\$ 15,824.46

DUDEK 2024 Standard Schedule of Charges

Engineering Services

Project Director.....	\$335.00/hr
Principal Engineer III.....	\$310.00/hr
Principal Engineer II.....	\$290.00/hr
Principal Engineer I.....	\$280.00/hr
Program Manager.....	\$265.00/hr
Senior Project Manager.....	\$265.00/hr
Project Manager.....	\$255.00/hr
Senior Engineer III.....	\$250.00/hr
Senior Engineer II.....	\$240.00/hr
Senior Engineer I.....	\$230.00/hr
Project Engineer IV/Technician IV.....	\$220.00/hr
Project Engineer III/Technician III.....	\$210.00/hr
Project Engineer II/Technician II.....	\$200.00/hr
Project Engineer I/Technician I.....	\$180.00/hr
3D Production Manager.....	\$210.00/hr
Senior Designer II.....	\$200.00/hr
Senior Designer I.....	\$195.00/hr
Designer.....	\$185.00/hr
Assistant Designer.....	\$180.00/hr
CADD Operator III.....	\$175.00/hr
CADD Operator II.....	\$165.00/hr
CADD Operator I.....	\$145.00/hr
CADD Drafter.....	\$135.00/hr
CADD Technician.....	\$120.00/hr
Project Coordinator.....	\$155.00/hr
Engineering Assistant.....	\$125.00/hr

Environmental Services

Senior Project Director.....	\$330.00/hr
Project Director.....	\$285.00/hr
Senior Specialist V.....	\$260.00/hr
Senior Specialist IV.....	\$245.00/hr
Senior Specialist III.....	\$235.00/hr
Senior Specialist II.....	\$225.00/hr
Senior Specialist I.....	\$210.00/hr
Specialist V.....	\$195.00/hr
Specialist IV.....	\$185.00/hr
Specialist III.....	\$175.00/hr
Specialist II.....	\$165.00/hr
Specialist I.....	\$155.00/hr
Analyst V.....	\$145.00/hr
Analyst IV.....	\$135.00/hr
Analyst III.....	\$125.00/hr
Analyst II.....	\$115.00/hr
Analyst I.....	\$105.00/hr
Technician III.....	\$90.00/hr
Technician II.....	\$80.00/hr
Technician I.....	\$70.00/hr

Mapping and Surveying Services

Application Developer II.....	\$220.00/hr
Application Developer I.....	\$155.00/hr
GIS Analyst V.....	\$205.00/hr
GIS Analyst IV.....	\$170.00/hr
GIS Analyst III.....	\$150.00/hr
GIS Analyst II.....	\$135.00/hr
GIS Analyst I.....	\$125.00/hr
UAS Pilot.....	\$145.00/hr
Survey Lead.....	\$235.00/hr
Survey Manager.....	\$210.00/hr
Survey Crew Chief.....	\$165.00/hr
Survey Rod Person.....	\$120.00/hr
Survey Mapping Technician.....	\$95.00/hr

Construction Management Services

Principal/Manager.....	\$195.00/hr
Senior Construction Manager.....	\$185.00/hr
Senior Project Manager.....	\$180.00/hr
Construction Manager.....	\$175.00/hr
Project Manager.....	\$170.00/hr
Resident Engineer.....	\$175.00/hr
Construction Engineer.....	\$170.00/hr
On-site Owner's Representative.....	\$160.00/hr
Prevailing Wage Inspector.....	\$155.00/hr
Construction Inspector.....	\$145.00/hr
Administrator/Labor Compliance.....	\$120.00/hr

Hydrogeology/HazWaste Services

Project Director.....	\$335.00/hr
Principal Hydrogeologist/Engineer III.....	\$310.00/hr
Principal Hydrogeologist/Engineer II.....	\$300.00/hr
Principal Hydrogeologist/Engineer I.....	\$290.00/hr
Senior Hydrogeologist V/Engineer V.....	\$265.00/hr
Senior Hydrogeologist IV/Engineer IV.....	\$255.00/hr
Senior Hydrogeologist III/Engineer III.....	\$245.00/hr
Senior Hydrogeologist II/Engineer II.....	\$235.00/hr
Senior Hydrogeologist I/Engineer I.....	\$225.00/hr
Project Hydrogeologist V/Engineer V.....	\$215.00/hr
Project Hydrogeologist IV/Engineer IV.....	\$205.00/hr
Project Hydrogeologist III/Engineer III.....	\$195.00/hr
Project Hydrogeologist II/Engineer II.....	\$185.00/hr
Project Hydrogeologist I/Engineer I.....	\$175.00/hr
Hydrogeologist/Engineering Assistant.....	\$140.00/hr
HazMat Field Technician.....	\$125.00/hr

District Management & Operations

District General Manager.....	\$230.00/hr
District Engineer.....	\$215.00/hr
Operations Manager.....	\$165.00/hr
District Secretary/Accountant.....	\$145.00/hr
Collections System Manager.....	\$145.00/hr
Grade V Operator.....	\$135.00/hr
Grade IV Operator.....	\$115.00/hr
Grade III Operator.....	\$110.00/hr
Grade II Operator.....	\$90.00/hr
Grade I Operator.....	\$80.00/hr
Operator in Training.....	\$75.00/hr
Collection Maintenance Worker.....	\$80.00/hr

Creative Services

Creative Services IV.....	\$175.00/hr
Creative Services III.....	\$150.00/hr
Creative Services II.....	\$140.00/hr
Creative Services I.....	\$125.00/hr

Publications Services

Technical Editor IV.....	\$175.00/hr
Technical Editor III.....	\$150.00/hr
Technical Editor II.....	\$140.00/hr
Technical Editor I.....	\$125.00/hr
Publications Specialist IV.....	\$130.00/hr
Publications Specialist III.....	\$115.00/hr
Publications Specialist II.....	\$110.00/hr
Publications Specialist I.....	\$100.00/hr
Clerical Administration.....	\$90.00/hr

Expert Witness – Court appearances, depositions, and interrogatories as expert witness will be billed at 2.00 times normal rates.

Emergency and Holidays – Minimum charge of two hours will be billed at 1.75 times the normal rate.

Material and Outside Services – Subcontractors, rental of special equipment, special reproductions and blueprinting, outside data processing and computer services, etc., are charged at 1.15 times the direct cost.

Travel Expenses – Mileage at current IRS allowable rates. Per diem where overnight stay is involved is charged at cost.

Invoices, Late Charges – All fees will be billed to Client monthly and shall be due and payable upon receipt. Invoices are delinquent if not paid within 30 days from the date of the invoice. Client agrees to pay interest at a 10% annual rate for amounts unpaid greater than 30 days after the date of the invoice.

Annual Increases – Unless identified otherwise, these standard rates will increase in line with the CPI-U for the nearest urban area per the Department of Labor Statistics to where the work is being completed) or by 3% annually, whichever is higher.

Prevailing Wage – The rates listed above assume prevailing wage rates do not apply. If this assumption is incorrect Dudek reserves the right to adjust its rates accordingly.



380 New York Street
 Redlands, CA-92373
 Phone: (909) 793-2853

Invoice : 94775760
 Order : 4708659
 Customer : 13423
 Customer PO : 24.9363MB
 P.O. Date :
 End User : 13423
 Project :

Document date : 08/02/2024
 Delivery :

Dudek

Bill to:
 Mark Baldus
 Dudek
 605 3rd St
 Encinitas CA 92024-3513

'Invoice'

Page : 1
 Ship to:
 Mark Baldus
 Dudek
 605 3rd St
 Encinitas CA 92024-3513

For questions regarding this document, please contact Customer Service at 888-377-4575.

Terms of payment: Net Due 30 days, no discount

The line items included in this transaction are governed exclusively by the terms of the above-referenced contract, if any, or, where applicable, Esri's standard terms and conditions at www.esri.com/legal/software-license.

Item	Qty	Material Number	Price
10	1	153147 ArcGIS Online Viewer User Type Annual Subscription Start Date: 08/03/2024 End Date: 08/02/2025	120.91
1010	1	155001 Architecture, Engineering, and Construction (AEC) Project Delivery ArcGIS Online Annual Subscription Start Date: 08/03/2024 End Date: 08/02/2025	1,400.00
2010	5	165531 ArcGIS Online Contributor (formerly Editor) User Type Annual Subscription Start Date: 08/03/2024 End Date: 08/02/2025	1,209.05
3010	5	165533 ArcGIS Online Mobile Worker User Type Annual Subscription Start Date: 08/03/2024 End Date: 08/02/2025	1,934.50
Item Subtotal			4,664.46
Total:			USD 4,664.46



380 New York Street
Redlands, CA-92373
Phone: (909) 793-2853

Invoice : 94775760
Order : 4708659
Customer : 13423
Customer PO : 24.9363MB
P.O. Date :
End User : 13423
Project :

Document date : 08/02/2024
Delivery :

Dudek

'Invoice'

Page : 2

FEIN: 95-2775732
DUNS/CEC: 06-313-4175 CAGE: 0AMS3
Please detach lower portion and return with remittance



Mark Baldus
Dudek
605 3rd St
Encinitas CA 92024-3513

Remit Payment to:
Environmental Systems Research Institute, Inc.

By Check:
P.O. Box 741076
Los Angeles
CA 90074-1076

Electronic Instructions:
Bank: Bank of America
Wire ABA: 026009593
ACH ABA: 121000358

Acct#: 1496150335



Invoice: 94775760 **Document Date: 08/02/2024**
Order: 4708659
Payer: 13423 **Total: USD 4,664.46**

**BEAUMONT BASIN WATERMASTER
MEMORANDUM NO. 24-31**

Date: September 4, 2024
From: Steven Stuart, Dudek
Subject: Scheduling of Future Special Meetings
Recommendation: That the Watermaster Committee Approve the Proposed Dates for Additional Special Meetings on January 8 and March 5, 2025

The September 4, 2024 Special Meeting for the Beaumont Basin Watermaster is the last scheduled special meeting in 2024.

Dudek proposes scheduling two additional special meetings for the following dates:

1. January 8, 2025
2. March 5, 2025

These two special meetings will provide an opportunity for the Watermaster Committee and public to participate in discussions on the progress of the hydrogeological investigations conducted by Thomas Harder & Company and other matters brought forward to the Committee.

2025

January

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

1 New Year's Day
 20 Martin Luther King Jr. Day

February

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

2 Groundhog Day
 12 Lincoln's Birthday
 14 St. Valentine's Day
 17 President's Day
 22 Washington's Birthday

March

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

5 Ash Wednesday
 9 Daylight Saving Time Begins
 17 St. Patrick's Day

April

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

1 April Fool's Day
 13 Palm Sunday
 18 Good Friday
 20 Easter

May

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

11 Mother's Day
 26 Memorial Day

June

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

14 Flag Day
 15 Father's Day
 19 Juneteenth
 21 Summer Solstice

July

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

4 Independence Day

August

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

1 Labor Day
 7 Grandparent's Day

October

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

31 Halloween

November

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

2 Daylight Saving Time Ends
 4 Election Day
 11 Veteran's Day
 27 Thanksgiving

December

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

21 Winter Solstice
 25 Christmas
 31 New Year's Eve

Created at www.CalendarHome.com