

# Amended Agenda

## Notice and Agenda of a Workshop of the Yucaipa Sustainable Groundwater Management Agency Wednesday, August 29, 2018 at 10:00 a.m.

City of Yucaipa, 34272 Yucaipa Boulevard  
Yucaipa, California 92399  
(909) 797-2489 | [www.yucaipasgma.org](http://www.yucaipasgma.org)

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- I. Call to Order**
- II. Roll Call**
- III. Public Comments** At this time, members of the public may address the representatives of the Yucaipa Groundwater Sustainability Agency on matters within its jurisdiction.
- IV. Review and Approval of Meeting Minutes**
  - A. Meeting Minutes - June 27, 2018
  - B. Meeting Minutes - August 9, 2018
- V. Discussion Items**
  - A. Status Report on the Sustainable Groundwater Management Act Grant Supporting Work by the Yucaipa Sustainable Groundwater Management Agency - Bob Tincher / Aaron Jones
  - B. Status Report on the Yucaipa Groundwater Model and Related Report by the United States Geological Survey - Bob Tincher / Aaron Jones
  - C. Status Report on the Infiltration Testing Study for the Yucaipa Basin - Bob Tincher / Aaron Jones [[See page 9 of 25](#)]
  - D. Status Report on the Preparation of a Logo and Letterhead for the Yucaipa Sustainable Groundwater Management Agency - Ray Casey
  - E. Discussion Regarding an Invitation for Todd Groundwater to Explain their Bid on GSP Management Services - David Armstrong [[See page 10 of 25](#)]
  - F. Approval of a Recommendation for the San Bernardino Valley Municipal Water District to Award of Contract to Dudek for \$814,500 for the Development of a Groundwater Sustainability Plan for the Yucaipa Valley Basin Area - All [[See page 11 of 25](#)]
  - G. Discussion Regarding Website Related Policies
- VI. Topics for Future Meetings**
  - A. Discussion Regarding Development of a Detention Basin from City of Calimesa as a Project for the Groundwater Sustainability Agency - Scheduled for September 26, 2018
  - B. Discussion Regarding the Methodology for Achieving a Sustainable Groundwater Plan - To be scheduled for a future meeting.
- VII. Comments by Board of Directors**
- VIII. Announcements - Future Meetings**
  - A. Wednesday, September 26, 2018 at 10:00 am
  - B. Wednesday, October 24, 2018 at 10:00 am
  - C. Wednesday, January 23, 2019 at 10:00 am
- IX. Adjournment**

## Roll Call - Board of Directors

Purveyors	Present	Primary Representative	Present	Alternative Representative
South Mesa Water Company		David Armstrong		George Jorritsma
South Mountain Water Company		- -		- -
Western Heights Water Company		Mark Iverson		Tim Green
Yucaipa Valley Water District		Joseph Zoba		Jennifer Ares
<b>Municipals</b>				
City of Calimesa		Lori Askew		Bonnie Johnson
City of Redlands		Cecilia Griego		- -
City of Yucaipa		Ray Casey		Fermin Preciado
<b>Regionals</b>				
San Bernardino Valley MWD		Doug Headrick		Bob Tincher
San Gorgonio Pass Water Agency		Jeff Davis		- -
<b>Stakeholders</b>				
County of Riverside		Steve Horn		Jeff Johnson
County of San Bernardino		Bob Page		- -

\* Quorum requires five Purveyor, Municipal, Regional Members

**MINUTES OF THE YUCAIPA SUSTAINABLE  
GROUNDWATER MANAGEMENT AGENCY**

**June 27, 2018 - 10:00 a.m.  
City of Yucaipa, 34272 Yucaipa Boulevard, Yucaipa, California**

- I. Call to Order - Chairman Mark Iverson called the meeting to order at 10:00 a.m.
- II. Roll Call - The following representatives, as assigned by each Party, attended the meeting:

Purveyors	Present	Primary Representative	Present	Alternative Representative
South Mesa Water Company	✓	David Armstrong		George Jorritsma
South Mountain Water Company	✓	Bill Gane		- -
Western Heights Water Company	✓	Mark Iverson		Tim Green
Yucaipa Valley Water District	✓	Joseph Zoba	✓	Jennifer Ares
<u>Municipals</u>				
City of Calimesa	✓	Lori Askew		Bonnie Johnson
City of Redlands	✓	Cecilia Griego		- -
City of Yucaipa	✓	Ray Casey	✓	Fermin Preciado
<u>Regionals</u>				
San Bernardino Valley MWD		Doug Headrick	✓	Bob Tincher
San Gorgonio Pass Water Agency		Jeff Davis		- -
<u>Stakeholders</u>				
County of Riverside		Steve Horn		Jeff Johnson
County of San Bernardino		Bob Page		- -

A quorum of the Governing Board of the Yucaipa Groundwater Sustainability Agency was present at the meeting.

Members of the public and other attendees at the meeting included:

- Susan Allen, Ortega Strategies Group
- David Duron, Member of the public
- Kevin Garcia, City of Yucaipa
- Ashley Gibson, Yucaipa Valley Water District
- Landon Kern, City of Yucaipa
- Chris Mann, Yucaipa Valley Water District
- Adan Ortega, , Ortega Strategies Group
- Mike Podegracz, Charles Abbott Associates
- Tom Shalhoub, Yucaipa Valley Water District

- III. Public Comments - There were no public comments.

IV. Review and Approval of Meeting Minutes

A. Approval of Meeting Minutes from May 23, 2018

Dave Armstrong moved to approve the meeting minutes from May 23, 2018. Fermin Preciado seconded the motion. The meeting minutes were approved by a unanimous vote of the board members.

V. Presentation

A. Presentation of the North Bench Water Resource Plan by the City of Yucaipa

Ray Casey provided a detailed overview of the proposed North Bench Water Resource Plan. The presentation focused on stormwater capture and a variety of water resource management projects in the City of Yucaipa.

VI. Discussion Items

A. Status Report on the Sustainable Groundwater Management Act Grant Received by the Yucaipa Sustainable Groundwater Management Agency

Bob Tincher provided an update on the grant and the assignment of a contact person by the Department of Water Resources. Invoices to the Yucaipa SGMA participants are expected to be timed in conjunction with payments issued by the San Bernardino Valley Municipal Water District.

B. Status Report on the Website prepared by the San Bernardino Valley Municipal Water District ([www.yucaipasgma.org](http://www.yucaipasgma.org))

Bob Tincher reported that the Yucaipa SGMA website is now functional and online at [www.yucaipasgma.org](http://www.yucaipasgma.org)

C. Status Report on the Proposals Received for the Development of a Groundwater Sustainability Plan

Bob Tincher reported that San Bernardino Valley Municipal Water District received three proposals for the development of a Groundwater Sustainability Plan. Interviews will be conducted in a public forum at a future date to select a consultant to prepare the Groundwater Sustainability Plan.

~~After a discussion by the board members, Joseph Zoba moved to reject all proposals and have the website developed by staff members of the San Bernardino Valley Municipal Water District. David Armstrong seconded the motion. The motion was approved by a unanimous vote of the board members.~~

D. Status Report on the Preparation of a Logo and Letterhead for the Yucaipa Sustainable Groundwater Management Agency

Lori Askew presented sample logos for the Yucaipa Sustainable Groundwater Management Agency. Board members were asked to provide feedback to Lori Askew for future consideration.

E. Status Report on the Infiltration Testing Study for the Yucaipa Basin

Bob Tincher distributed a recharge testing schedule that showed that the infiltration testing will be completed on October 8, 2018.

F. Discussion Regarding Website Related Policies

This item was continued to the next meeting.

G. Discussion Regarding Available Resources and Involvement by the Department of Water Resources

Following a brief discussion, the board members decided to add Brian Moniz to the meeting distribution list as a method to keep the Department of Water Resources up to date on the progress of the Yucaipa Sustainable Groundwater Management Agency.

VII. Topics for Future Meetings

The group discussed the topics for future meetings and requested the following items be added to a future meeting agenda:

- A. Discussion Regarding Development of a Detention Basin from City of Calimesa as a Project for the Groundwater Sustainability Agency - Scheduled for July 25, 2018
- B. Discussion Regarding the Methodology for Achieving a Sustainable Groundwater Plan - To be scheduled for a future meeting.
- C. Discussion Regarding the Scheduling of Consultant Workshops for the Preparation of a Groundwater Sustainability Plan
- D. Discussion Regarding Website Related Policies

VIII. Comments by the Board of Directors

None

IX. Announcements - The next meeting of the Yucaipa Sustainable Groundwater Management Agency is scheduled for Wednesday, July 25, 2018 at 10:00 a.m.

X. Adjournment - The meeting was adjourned at 11:55 a.m.

**MINUTES OF THE YUCAIPA SUSTAINABLE  
GROUNDWATER MANAGEMENT AGENCY**

**August 9, 2018 - 8:30 a.m.  
City of Yucaipa, 34272 Yucaipa Boulevard, Yucaipa, California**

- I. Call to Order - Chairman Mark Iverson called the meeting to order at 8:50 a.m.
- II. Roll Call - The following representatives, as assigned by each Party, attended the meeting:

Purveyors	Present	Primary Representative	Present	Alternative Representative
South Mesa Water Company	✓	David Armstrong		George Jorritsma
South Mountain Water Company		Bill Gane		- -
Western Heights Water Company	✓	Mark Iverson	✓	Tim Green
Yucaipa Valley Water District	✓	Joseph Zoba	✓	Jennifer Ares
<b>Municipals</b>				
City of Calimesa	✓	Lori Askew		Bonnie Johnson
City of Redlands	✓	Cecilia Griego		- -
City of Yucaipa	✓	Ray Casey		Fermin Preciado
<b>Regionals</b>				
San Bernardino Valley MWD		Doug Headrick		Bob Tincher
San Gorgonio Pass Water Agency		Jeff Davis		- -
<b>Stakeholders</b>				
County of Riverside		Steve Horn		Jeff Johnson
County of San Bernardino		Bob Page		- -

A quorum of the Governing Board of the Yucaipa Groundwater Sustainability Agency was present at the meeting.

Members of the public and other attendees at the meeting included:

- Ashley Gibson, Yucaipa Valley Water District
- Aaron Jones - San Bernardino Valley Municipal Water District
- Greg Mendez, United States Geological Survey
- Mike Podegracz, Charles Abbott Associates

- III. Public Comments - There were no public comments.
- IV. Discussion Items
  - A. Interviews for the Development of a Groundwater Sustainability Plan for the Yucaipa Valley Basin Area

- Water Systems Consulting - 9:00 am

The following representatives from Water Systems Consulting provided a presentation to the Board of Directors:

  - Michael Cruikshank, Project Manager
  - Jeffery Szytel, Principal in Charge
  - Laine Carlson, Management Actions, Project Development
  - Brian Villalobos, Geohydrology
  - Johnson Yeh, Groundwater Modeling

This team also answered questions from the Board of Directors of the Yucaipa Sustainable Groundwater Management Agency.
  
- Dudek - 10:00 am

The following representatives from Dudek provided a presentation to the Board of Directors:

  - Peter Quinlan, Principal in Charge
  - Steven Stuart, Project Manager
  - Jill Weinberger
  - Kyle Harper
  - Zoe Carlson

This team also answered questions from the Board of Directors of the Yucaipa Sustainable Groundwater Management Agency.
  
- Todd Groundwater - 11:00 am

The following representatives from Todd Groundwater provided a presentation to the Board of Directors:

  - Edwin Lin, Project Manager
  - Phyllis Stanin, Technical Oversight
  - Mark Sillings, Public Outreach
  - Esmerelda Garcia, Public Outreach
  - Ben Willardson, Project Engineering Design and Costing

This team provided a presentation and answered questions from the Board of Directors of the Yucaipa Sustainable Groundwater Management Agency.

Following a lengthy discussion by the Board of Directors of the Yucaipa Sustainable Groundwater Management Agency, Joseph Zoba moved to have Joseph Zoba, Mark Iverson, and David Armstrong meet with representatives from Dudek to negotiate a revised scope of services and project cost. Ray Casey seconded the motion. The motion was approved by a unanimous vote of the board members.

- V. Announcements - The next meeting of the Yucaipa Sustainable Groundwater Management Agency is scheduled for Wednesday, August 22, 2018 at 10:00 a.m.
- VI. Adjournment - The meeting was adjourned at 12:45 a.m.



Table 1. Project Schedule (revised 2018-08-14)

Month	July			August				September				October				November		
Dates (Mon - Sun)	July 9-15	Jul 16-22	July 23-29	Jul 30-Aug 5	Aug 6-12	Aug 13-19	Aug 20-26	Aug 27-Sep2	Sep 3-9	Sep 10-16	Sep 17-23	Sep 24-30	Oct 1-7	Oct 8-14	Oct 15-21	Oct 22-28	Oct 29-Nov 4	Nov 5-11
Completed																		
<b>Task 2. Infiltration Testing</b>																		
<i>Skid A</i>																		
A.1 Tennessee Street Basins																		
A.3 Chapman Heights Basin																		
A.7 Yucaipa Creek at California St. (EX-5)																		
A.7A South of Yucaipa Creek at California St. (EX-5)																		
A.9A Oak Glen Creek Basins (EX-2) - Bermed																		
A.9A Oak Glen Creek Basins (EX-2) - Excavated																		
<i>Skid B</i>																		
B.2 Dunlap Channel																		
B.4 10th St. and Avenue E (EX-7)																		
B.8 Wilson Creek Basins (EX-1)																		
B.6 Wilson Creek III (EX-3)																		
A.5 Oak Glen Creek - Western Heights (EX-9)																		
B.10 Wildwood Creek Basins (EX-4)																		
<b>Task 3. Draft and Final Reports</b>																		
3.1. Prepare Draft Report																		
Agency Review																		
3.2. Prepare Final Report																		

- = Site Preparation (Excavation/Fencing/Equipping/Start Fill)
- = Infiltration Testing (Process Monitoring/Data Collection)
- = Infiltration Testing End (Site Demobilization and Restoration/Equipment Transfer to Next Site [if applicable])

**From:** David Armstrong  
**To:** [Joseph Zoba](#)  
**Cc:** [Mark Iverson](#)  
**Subject:** Yucaipa GSA agenda  
**Date:** Thursday, August 16, 2018 3:56:25 PM

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Dear Joe -

I would like to add an item added to the next agenda of the Yucaipa GSA on August 29th, before or concurrent with any agenda item addressing the discussion with Dudek on August 14th.

Agenda Item:

Invitation for Todd Groundwater to explain their bid on GSP management services

Thank you,  
Dave

**David A. Armstrong, General Manager**

South Mesa Water Company  
391 West Avenue L  
Calimesa, CA 92320-0458  
909-795-2401

August 23, 2018

P218245

Aaron Jones  
San Bernardino Valley Municipal Water District  
380 East Vanderbilt Way  
San Bernardino, California 92408

**Subject:** *Revisions to Dudek Proposal to Develop the Yucaipa Basin Groundwater Sustainability Plan*

Dear Mr. Jones:

On behalf of the Dudek team that you and the Yucaipa Groundwater Sustainability Agency (GSA) met during our interview on August 9, 2018, I'd like to express our sincere gratitude in the GSA selecting Dudek to develop the Groundwater Sustainability Plan (GSP) for the Yucaipa Basin. Per the request of the Yucaipa GSA, we have revised our scope of work and project assumptions to streamline the GSP development process at a reduced cost, but still provide a plan that will be compliant with the regulatory requirements of the Department of Water Resources and beneficial for all users in the basin. The following bullet items summarize the modifications made to our original scope of work and fee:

- The project timeline for preparing a draft GSP for public review was reduced from 36 months to 28 months. Consequently, this reduced the cost in project management by \$34,000 with a reduction in the number of meetings with the GSA from 36 to 8, monthly progress reports, and weekly update phone calls. Dudek will allocate two (2) hours per week for the update phone calls and additional communication, and six (6) hours per month to prepare progress reports and invoices.
- We have reduced the number of labor hours for the project by 32% after removing four personnel (a \$155,000 savings in cost) and redistributing fewer hours to more experienced staff. The overall reduction in labor cost is \$366,000. The following items provide more detail in how Dudek reduced the labor cost.
  - The original scope of work identified thirteen (13) Technical Advisory Committee (TAC) meetings that Dudek personnel would participate in at a cost of \$132,000. The revised scope identifies eight (8) meetings with the GSA, four (4) meetings with the TAC, and two (2) public meetings. The project manager, Mr. Stuart, will attend these meetings and be accompanied by Dr. Weinberger or other staff pertinent to the specific meeting topic at that time. The revised fee for Dudek to participate in these meetings is \$120,000.
  - Per the GSA Board, the task to establish the Governance of the GSA was removed and the cost allocated to infiltration testing was reduced by 90%, resulting in a cut of \$35,500 from the original budget with these two modifications. Dudek understands that Todd Groundwater will perform the infiltration testing and analysis. Dudek anticipates receiving the results from Todd Groundwater and SBVMWD and will incorporate the findings into the GSP and, if applicable, the numerical model to evaluate the potential impacts of implementing additional artificial recharge in the basin.

- Dudek will request that the GSA provide all historical and current data in specified digital formats within a 60-day window. Dudek has removed labor hours to manually enter and/or update databases with information obtained from the GSA in the revised scope and fee, which reduced the fee by \$36,000. Additionally, no money is budgeted for incorporating data received after the 60-day window. Data received after the 60-day window will be used in the 5-year update to the GSP, which is outside this scope of work.
  - The revised fee includes labor hours for Dudek to prepare four (4) water level maps, eight (8) water quality maps, and five (5) hydrostratigraphic cross-sections based on the data received in the 60-day data collection period. Additional maps requested by the GSA will require a change order and may impact the project schedule.
- Dudek will run the future predictive simulations using the final version of the USGS numerical model, which is anticipated to be available in summer 2019. The revised scope of work and fee are based on receiving the final version in summer 2019 and completing the predictive simulations in time to prepare the administrative draft GSP by July 2020; however, if the USGS releases the final version after the summer of 2019, then this will impact the schedule and budget.
  - Dudek has identified the following scenarios using the numerical model:
    - Dudek will use one 50-year climate period to represent baseline climatic conditions
    - One baseline simulation using existing pumping and spreading
    - Two simulations to evaluate proposed projects.
    - Additional simulations requested by the GSA will require a change order to revise the project fee. This will also impact the schedule.
- Dudek will rely on the GSA in evaluating projects and providing specific details of the most favorable and likely projects to Dudek to incorporate in the future predictive simulations. Hence, the revised fee includes fewer hours for Dudek personnel to evaluate projects, resulting in a reduction in cost by \$39,000.
- Dudek will present an administrative draft of the GSP to the GSA in July 2020. Dudek requests that the GSA provide comments on the administrative draft GSP within 60 days. Dudek will respond to 100 comments. Dudek has allocated 60 days to address comments received from the GSA and turn around a red-line check copy to the GSA one week before release to the public. Dudek anticipates releasing the draft GSP for public review in January 2021. The shortened time frame to prepare the administrative draft GSP reduced the labor cost by \$86,000.
  - To accommodate the July 2020 deadline for the administrative draft of the GSP and reduce the cost to prepare the report, we limited the number of figures included in the report to four water level maps, eight water quality maps and five hydrostratigraphic cross-sections. Additional figures requested by the GSA will require a change order and may impact the project schedule.

Mr. Aaron Jones, San Bernardino Valley Municipal Water District

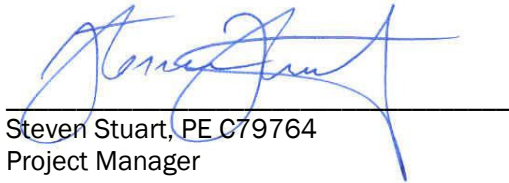
Subject: Revisions to Dudek Proposal to Develop the Yucaipa Basin Groundwater Sustainability Plan

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- Labor hours were redistributed for the grant administration and public outreach tasks that resulted in a savings of \$49,000. Dudek will participate in two (2) public outreach meetings: the first meeting will present our understanding of the basin and the SGMA requirements for achieving sustainability and what that means, and the second meeting will occur just prior to the release of the draft GSP to the public. Dudek will prepare a draft Outreach and Engagement Plan and provide the GSA with a 60-day window to provide comments. Dudek will address the comments and prepare a final plan. Dudek will also prepare eight (8) electronic newsletters distributed via email.

We look forward to working with you and the GSA member agencies in developing the Yucaipa Basin GSP. If you have any questions or need more information, please call me at 760-479-4128.

Sincerely,  
Dudek



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Steven Stuart, PE C79764  
Project Manager

Att.: Text here  
cc: Mark Iverson, Western Heights Water Company  
David Armstrong, South Mesa Water Company  
Joe Zoba, Yucaipa Valley Water District  
Peter Quinlan, Dudek  
Jill Weinberger, Dudek  
Zoe Carlson, Dudek  
Kyle Harper, Dudek

# 1 Cost Proposal

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Dudek has prepared a cost estimate that is competitive, yet accurately reflects the level of effort required to complete the scope of services based on our understanding of the project and our experience having prepared draft GSPs. We will use as much information as applicable from recently prepared analyses in the area so as to recognize schedule and cost efficiencies. Dudek does not believe it is in the client's interest to submit an unrealistically low cost proposal, which is made possible by either reducing the scope of work or by assuming that budget augments will be made available at a later date. That said, we are flexible and willing to discuss ways to reduce our preliminary cost proposal. In an effort to keep costs at a minimum, there will be limited printing of draft documents and notices. If additional printed copies are requested by any member of the project team, Dudek will revise this budget accordingly. Factors that would increase the scope of work and estimated costs outlined in this proposal include, but are not necessarily limited to, any of the following:

- Attendance at additional meetings;
- Additional printing of copies of reports;
- Analysis of additional issues beyond those discussed in this proposal, or a more detailed level of analysis than described in this proposal;
- Changes in the project requiring re-analysis or rewriting of report sections; and/or
- Collection of additional data.

The fee schedule in the proposal presents Dudek's cost estimate for this project. The hourly rates include fringe benefits, indirect costs and profit. The Dudek team will bill on a time-and-materials basis. Each invoice will identify the hours expended by each staff member and the percentage of the budget, by task, that has been expended to date.

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## 2 Budget Estimate

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The Dudek team proposes to perform the services described at a fixed-price total of \$814,500. This budget is based on a fixed-price contract and costs will not be exceeded without prior written approval from Valley District. The budget includes an allocation for project management, meetings, and project coordination.



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# 3 Assumptions

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Dudek provides the following cost assumptions used in development of the fixed-price items outlined in the budget estimate.

## Assumptions for Development of GSP

### GSP Development

Dudek Assumes the project will last 28 months. This is an escalation of the original schedule, but reduces costs associated with meetings and project management.

### Project Facilitation, Project Management, and Meetings

#### **Project Management**

##### **Weekly Project Phone Calls**

We have budgeted one (1) hour per week for the duration of the project for update phone calls with the GSA point of contact and one (1) additional hour per week for additional communication. The phone calls will be conducted by either the project manager or other team members.

##### **Progress Reports and Schedule Updates**

Dudek will prepare monthly project reports and schedule updates that will identify the percentage of the budget by task that has been expended to date, the upcoming work and schedule, scope, or budget concerns identified during the billing period. Dudek anticipates preparing up to 28 monthly progress reports, beginning in fall 2018. Estimated time for progress reports and invoicing is six (6) hours per month.

##### **Monthly Yucaipa GSA Meetings**

Dudek will participate in eight (8) GSA meetings. Each meeting is assumed to require twelve (12) hours for meeting preparation, presenting at meetings, and travel. It is assumed that all 8 meetings will be attended by the project manager and four (4) will be attended by Dr. Weinberger. Dudek assumes Valley District or Yucaipa GSA member agencies will reserve the meeting location. The tentative topics for presentation to the GSA are:

1. Kickoff, project organization, request for historical and current data
2. Conceptual Model,
3. Current conditions, historical water budget, historical safe yield, data gaps, uncertainty
4. Sustainability: undesirable results, minimum thresholds and measureable objectives
5. USGS model uncertainty, and establishing future conditions to be simulated: climate, population growth and demand, projects to be evaluated
6. Review simulations of future conditions and estimated sustainable yield, re-visit undesirable results, minimum thresholds and measureable objectives
7. Review of comments on administrative draft GSP
8. Review of comments from public review

Dudek assumes that Valley District or the Yucaipa GSA will provide a single lead point of contact authorized to make decisions and provide project direction and project management upon Notice to Proceed. This person will assist with facilitating the kickoff meeting with the GSA, which will be held at a location provided by Valley District.

## Current and Historical Data Compilation and Assessment of Existing Data

Following this meeting, Dudek will submit a formal request to the GSA for historical and current data to characterize groundwater and surface water conditions in the basin.

- Dudek assumes that all data will be provided in digital format (e.g., excel files, text files, GIS shape files, etc.) so Dudek personnel may efficiently compile all information in a database to facilitate evaluation and analysis. This estimate does not include collecting PDFs or hard copies requiring time to manually enter data into digital formats. If data is currently in such format, then Dudek requests that Agency staff manually enter the data in digital formats. Dudek will provide direction to Agency staff, if necessary, to compile the data in the requested format.
- Dudek will request that the historical and current data be provided sixty (60) days after the GSA receives the formal request. Data made available after the 60-day window will be held for incorporation in the 5-year updates. We make this request so that it is not necessary to re-do analyses when additional data are found. Re-doing analyses because incomplete data were provided originally would be out of scope.

### Prepare Initial Data Gaps Technical Memo

Data gaps will be summarized in a list at the conclusion of the Current and Historical Groundwater Conditions task. Data conformance issues (i.e., inconsistent units, etc.) will be noted but not rectified as part of this task. Data provided by the various sources is assumed to be correct and representative, and does not require verification. However, related data and reports will be compared for consistency. Data gaps will be limited to those with potential significance to the development of the GSP. This task assumes two (2) conference calls and one (1) round of review by the Yucaipa GSA.

### Deliverables:

- Data Gaps Technical Memo

It is assumed that 4 water level maps, up to 8 water quality maps, and 5 hydrostratigraphic cross sections will be prepared.

### Technical Advisory Committee and Stakeholder Meetings

Dudek will participate in four (4) TAC meetings. Our participation in each TAC meeting will correspond with a milestone in developing the GSP.

1. Kickoff, discussion of roles and expectations, discussion of conceptual model of the basin.
2. Current conditions, historical water budget, historical safe yield, data gaps, uncertainty  
Undesirable results, minimum thresholds and measureable objectives
3. Establishing future conditions to be simulated: climate, population growth and demand, projects to be evaluated and included, how the simulations will be conducted with the numerical model..

4. Review simulations of future conditions and estimated sustainable yield, re-visit undesirable results, minimum thresholds and measureable objectives

The cost estimate assumes eighteen (18) hours of preparation, travel and participation per meeting. The TAC meetings will be attended by the project manager and two other team members pertinent to the meeting agenda. Dudek assumes Valley District or Yucaipa GSA member agencies will reserve the meeting location and audiovisual equipment for the meetings.

### USGS Groundwater Model

The costs for this task are based on using a calibrated numerical model that integrates surface water and recharge with groundwater. Dudek understands that the USGS anticipates having a calibrated model by the end of summer 2018, at which point the preliminary model input files and draft documentation on model design and calibration will be provided to Valley District. USGS anticipates publishing a final report of the model in the summer of 2019. Dudek anticipates obtaining the preliminary model input files and draft documentation in the summer of 2018 to begin evaluating the basin water budget, historical safe yield, sustainable yield, data gaps, and preparing predictive simulations of future conditions to estimate sustainable yield. It is assumed that there will not be any substantial revisions between the preliminary model of 2018 and final model in 2019 that would require revisions to work already done on historical water budget and historical safe yield. We will wait for the final model to conduct simulations of future conditions. If the final version of the USGS model is not available by July 2019, it will impact the schedule and budget.

#### Modeling Future Conditions

Dudek will incorporate the following simulations using the USGS numerical model to evaluate future conditions and potential impacts from proposed projects. These simulations will satisfy the future conditions evaluations required by SGMA.

1. Dudek will use one 50-year climate period to represent baseline climatic conditions for the basin. This 50-year climatic period will be used to simulate future climatic conditions after applying DWR's climatic factors.
2. Dudek will conduct one baseline simulation that includes existing pumping and spreading.
3. Dudek will conduct two simulations to evaluate future projects against baseline conditions.
  - a. Each simulation may include one or more proposed projects concurrently to evaluate the potential impact of their combined operations on groundwater conditions in the basin.

If the Yucaipa GSA requests additional predictive simulations to evaluate other climate change scenarios or potential projects, than the scope of work and budget provided in this proposal will be amended and presented for approval by the GSA.

### Prepare Historical Water Budget

The historical water budget will be based on the data identified by the local agencies and provided to Dudek during the 60-day period of data submittal. Data made available after the 60-day period of data submittal will be held for incorporation in the 5-year updates.

#### Deliverables:

- Pre-draft historical water budget tables and figures for Yucaipa GSA review and comment

### Technical Assessment of Monitoring Network

A memorandum will document the procedures used during the evaluation of the existing monitoring program, and conclude with a discussion of expanding the network to be sufficient to meet SGMA

requirements and meet temporal and spatial monitoring objectives to support continued evaluation of the effectiveness of the GSP. Includes a preliminary study of available information and data evaluation of screened intervals with respect to aquifer zones based on existing logs. The memorandum will be subject to one (1) round of review by the Yucaipa GSA.

**Deliverables:**

- One (1) electronic copy of the Monitoring Network Technical Memo (which will constitute the majority of the “Existing and Planned Monitoring” chapter of the GSP).

## Technical Assessment of Projects and Actions

Dudek assumes that project costs, costs associated with implementing management actions, and anticipated acre-feet of water supplied, will be provided by the project proponent, Yucaipa GSA member agencies, or stakeholders. Dudek will produce an initial memo documenting the technical assessment of projects and management actions after coordination with the Yucaipa GSA and stakeholders during the first projects and management actions discussion session. Up to one (1) additional memo will be prepared following the second discussion session to reflect updated analyses provided by project proponents, additional management actions contemplated by the Yucaipa GSA, and the results of the groundwater modeling efforts.

**Deliverables:**

- One (1) electronic copy of the Initial Projects and Management Actions Technical Memo
- One (1) electronic copy of the Second Projects and Management Actions Technical Memo

## Prepare GSP

### Administrative Draft GSP

Dudek anticipates completing the administrative draft of the GSP in July 2020. The administrative draft will be provided electronically to the Yucaipa GSA to review and provide comments. Dudek anticipates a 60-day review period for the administrative draft. Dudek anticipates that the member agencies will coordinate their comments and provide either a single comment document from the entire GSA or a single comment document from each GSA member agency.

- Dudek will respond to 100 comments.

### Draft GSP

Dudek will incorporate the comments made on the administrative draft and submit (electronically only) a final red-line draft document as a check copy to the Yucaipa GSA before preparing the draft GSP for public review. The check copy will be provided to the GSA one week before release to the public. It is anticipated that the comments received on the check copy will be minimal and mostly editorial in nature. Substantive comments requiring a second round of substantial edits would require an amendment to the proposed budget. Dudek assumes the Draft will be released to the public in January 2021, and that the comment period will close in February 2021.

### Respond to Comments on Draft GSP

Responses to comments will be generated following closure of the comment period in February 2021. Dudek assumes that no more than 20 substantive discrete comments will be received on the Draft GSP; note that one comment letter can contain multiple substantive comments. Since the actual scope and extent of public comments (in either written or oral format) cannot be definitively determined at this time, if additional staff hours are needed to prepare responses to comments, the scope of work and budget provided in this proposal would be amended.

**Prepare Final GSP**

Dudek will produce a final GSP that incorporates comments on the administrative and draft GSPs. Dudek will provide the Yucaipa GSA with five (5) printed and bound copies of the final GSP, one (1) electronic copy of the Final GSP in Word format, and one (1) electronic copy of the final GSP in Web-ready PDF format.

**Outreach to Stakeholders**

It is assumed that there will be two (2) public outreach meetings. The first meeting will present the conceptual model, current conditions, historical water budget and historical safe yield. It will also explain SGMA requirements and the concept of sustainability meaning the avoidance of undesirable result. The second meeting will occur just prior to the release of the draft GSP for public review. It will provide an overview of the GSP, the estimated sustainable yield and projects envisioned to increase sustainable yield to meet future demands and the impacts of climate change.

**Outreach and Engagement Plan Development**

It is assumed that the outreach plan development will include an informal phone interview with each of the GSA members and both counties to discuss interested parties, stakeholder interests, GSA governance and decision making, current outreach practices and key outreach opportunities. One draft of the outreach and engagement plan will be prepared for GSA review and comment. After the GSA has commented, the outreach and engagement plan will be finalized

**Deliverables:**

- One (1) electronic copy of the draft Outreach and Engagement Plan
- One (1) electronic copy of the final Outreach and Engagement Plan

**Outreach and Engagement Plan Implementation**

Dudek will create a centralized public email address, mailchimp account and electronic newsletter template. The public email address will be used to collect stakeholder feedback and electronic newsletters will be sent to the entire list of interested parties on a roughly quarterly basis.

**Deliverables:**

- Eight (8) electronic newsletters.

**Develop Framework for Data Management System**

The first step in developing the system architecture for this Data Management System will be to meet with the Yucaipa GSA to confirm the needs, goals, and existing capabilities with respect to data management and analysis. While we provide our anticipated solution below as part of this scope (congruent with what we are implementing on other GSPs), it will provide the most long-term value to the Yucaipa GSA over the term of the GSP if we first develop a roadmap specific to this endeavor and tailor our tools to best fit the goals and workflows of this specific plan and the stakeholders involved.

The costs for this task are based on the following assumptions:

- The Yucaipa GSA uses and has access to the following software: Microsoft Windows Server, Microsoft SQL Server, and ESRI ArcGIS Enterprise (or ArcGIS Server and ArcGIS Online).
- Dudek will host the Data Management System database and user interface(s) during development, and we will deploy the solution to Yucaipa GSA infrastructure upon final delivery of the GSP. We could continue to host the Data Management System long-term for a nominal fee, should the Yucaipa GSA

prefer this approach. This hosting fee is calculated upon final delivery based on the server resource requirements of the solution, but is generally between \$2,000 and \$3,000 per year for low-traffic applications.

- The user interface would consist of up to three ESRI Web AppBuilder applications, serving as the primary user interface for the Data Management System (allowing map-based search and query of the data within the enterprise geodatabase). The three versions are assumed to be clones of each other (i.e., similar in design and scope), with each allowing different levels of access and functionality based on user permissions (e.g., Yucaipa GSA internal access, agency/stakeholder access, and public access). The applications will be built and customized using readily available configurable widgets; development of custom widgets would require an amendment.

**Meetings:**

- One (1) in-person kickoff meeting with the Yucaipa GSA and key stakeholders, to confirm the assist in the development of the Data Management System Technical Memo
- Two (2) remote demonstration/training meetings to review the user interface, the first being at 50% complete and the second being at 90% complete

**Deliverables:**

- One (1) electronic copy of the Data Management System Technical Memo
- One (1) electronic copy of the Data Management System User Guide
- One (1) ESRI enterprise geodatabase, populated with the current and historical data compiled during Task 2
- Up to three (3) ESRI Web AppBuilder applications
- Three (3) geoprocessing tasks (i.e., Python scripts) for enabling automated import of water quality data, water level data, and weather data, respectively, over the term of the GSP
- One (1) geoprocessing task (i.e., Python script) for quality assurance of data within the enterprise geodatabase over the term of the GSP
- One (1) geoprocessing task (i.e., Python script) for packaging data in the enterprise geodatabase into an exportable format (e.g., Excel), and enabling self-serve user exports from the Data Management System over the term of the GSP

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Task	DUDEK Labor Hours and Rates												TOTAL DUDEK HOURS	DUDEK LABOR COSTS	OTHER DIRECT COSTS	TOTAL FEE	
	Project Team Role:	PIC	Project Manager	Quality Control Manager	Principal Hydro-geologist	GIS Programmer I	Hydro-geologist V	Hydro-geologist II	Hydro-geologist II	Grant Funding Assistance/ Stakeholder Engagement	Publications	Publications					
	Team Member:	P. Quinlan	S. Stuart	R. Schnabel	J. Weinberger	K. Harper	D. Ritter	N. Tucker	H. McManus	J. Gray	Z. Carlson	B. Golden-Harrell					T. Eaton
Billable Rate :	\$260	\$240	\$225	\$240	\$180	\$150	\$120	\$120	\$225	\$175	\$145	\$95					
1	USGS Groundwater Model	60	28				300	120						508	\$ 81,720		\$ 81,720
2	Current and Historical Groundwater Conditions	5	8		46		96	60	100			4		319	\$ 48,440	\$ 1,000	\$ 49,440
3	Plan Area Including Land Use		8		18		40	80	40					186	\$ 26,640		\$ 26,640
4	Water Budget and Sustainable Yield	26	16		32		160	40						274	\$ 47,080		\$ 47,080
5	Define Management Areas	16	8		24		80		20					148	\$ 26,240		\$ 26,240
6	Define Undesirable Results, Minimum Thresholds, Measureable Objectives	28	16		80		80							204	\$ 42,320		\$ 42,320
7	Identify Projects and Management Actions to Achieve Sustainability Goal	12	8	20	16									56	\$ 13,380		\$ 13,380
8	Infiltration Testing		2	8										10	\$ 2,280		\$ 2,280
9	Define Plan Implementation Actions	16	4		50			24						94	\$ 20,000		\$ 20,000
10	Describe Existing and Planned Monitoring Network	4	20		16		96	96	40					272	\$ 40,400		\$ 40,400
11	Develop Framework for Data Management System		16			180								196	\$ 36,240		\$ 36,240
12	Draft and Final GSP	70	32		210		238	176				48	72	846	\$ 146,900	\$ 2,000	\$ 148,900
13	GSP Submittal to DWR for Review and Approval		2		20									22	\$ 5,280	\$ 250	\$ 5,530
14	Grant Administration		6							20	140			166	\$ 30,440	\$ 1,200	\$ 31,640
15	Establish Governance of GSA - <b>Completed!</b>														\$ -		\$ -
16	Develop and Implement Coordinated Outreach Plan		2		8						140			150	\$ 26,900		\$ 26,900
17	Technical Advisory Committee Meetings (4)	72	72		72		20							236	\$ 56,280	\$ 7,550	\$ 63,830
18	GSA Meetings (8)		96		28									124	\$ 29,760		\$ 29,760
	Public Meetings (2)		40		40						40			120	\$ 26,200		\$ 26,200
	Project Management		400											400	\$ 96,000		\$ 96,000
	<b>Totals</b>	<b>309</b>	<b>784</b>	<b>28</b>	<b>660</b>	<b>180</b>	<b>1110</b>	<b>596</b>	<b>200</b>	<b>20</b>	<b>320</b>	<b>52</b>	<b>72</b>	<b>4,259</b>	<b>\$ 802,500</b>	<b>\$ 12,000</b>	<b>\$ 814,500</b>