

# Notice and Agenda of a Board Meeting of the Yucaipa Sustainable Groundwater Management Agency

Wednesday, January 22, 2020 at 10:00 a.m.

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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. **Introductions of Board Members and Public Participants**
- IV. **Public Comments** At this time, members of the public may address the representatives of the Yucaipa Groundwater Sustainability Agency on matters within its jurisdiction.
- V. **Review and Approval of Meeting Minutes**
  - A. Meeting Minutes - October 23, 2019 [\[Page 3 of 17\]](#)
- VI. **Discussion Items**
  - A. Selection of Officers for the Yucaipa Sustainable Groundwater Management Agency
  - B. Consider the Data Management System Proposal Provided by Dudek [\[Page 7 of 17\]](#)
  - C. Status Report on Activities Related to the Preparation of the Groundwater Sustainability Plan
  - D. Status Report on the Location and Installation of Stream Monitoring Locations
  - E. Status Report on the Sustainable Groundwater Management Act Grant and Financial Status
  - F. Discussion Regarding the Setting of a Public Meeting
- VII. **Topics for Future Meetings**
  - Workshop - February 26, 2020
    - Development of a Water Budget for the Yucaipa Region
    - Status Report on the Database Management System (if approved)
    - Status Report on the Location and Installation of Stream Monitoring Locations
    - Status Report on the Sustainable Groundwater Management Act Grant and Financial Status
  - Workshop - March 25, 2020
    - Discuss potential recharge projects to be included in the groundwater model
  - Board Meeting - April 22, 2020
  - Unscheduled Future Topics
    - Discussion regarding groundwater dependent ecosystems
- VIII. **Comments by Board of Directors**
- IX. **Announcements - Future Meetings**
  - A. Wednesday, January 22, 2020 at 10:00 am - **Board Meeting**
  - B. *Public Meeting No. 1 - Yucaipa Performing Arts Center, 12062 California Street, Yucaipa, California - Tentatively set for February 2020*
  - C. Wednesday, February 26, 2020 at 10:00 am - Workshop
  - D. Wednesday, March 25, 2020 at 10:00 am - Workshop
- X. **Adjournment**

## Roll Call - Board of Directors

|                                                                                                   | Present | Primary Representative | Present | Alternative Representative |
|---------------------------------------------------------------------------------------------------|---------|------------------------|---------|----------------------------|
| <b>Purveyors</b>                                                                                  |         |                        |         |                            |
| South Mesa Water Company                                                                          |         | David Armstrong        |         | George Jorritsma           |
| South Mountain Water Company                                                                      |         | Bob Martin             |         | Rolland Moore              |
| Western Heights Water Company                                                                     |         | Mark Iverson           |         | Tim Green                  |
| Yucaipa Valley Water District                                                                     |         | Joseph Zoba            |         | Jennifer Ares              |
| <b>Municipals</b>                                                                                 |         |                        |         |                            |
| City of Redlands                                                                                  |         | Cecilia Griego         |         | Kevin Watson               |
| 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             |         | Leonard Stephenson         |
| * Quorum of the Board of Directors requires a total of five Purveyor, Municipal, Regional Members |         |                        |         |                            |
| <b>Stakeholders</b>                                                                               |         |                        |         |                            |
| County of Riverside                                                                               |         | Steve Horn             |         | Jeff Johnson               |
| County of San Bernardino                                                                          |         | Bob Page               |         | - -                        |
| City of Calimesa                                                                                  |         | Lori Askew             |         | Bonnie Johnson             |

## Future Dates and Milestones

The dates provided below are subject to change.

|                                                                                                              |                          |
|--------------------------------------------------------------------------------------------------------------|--------------------------|
| Public Presentation of the Goals and Objectives of the Groundwater Sustainability Plan - Meeting Number 1    | February 2020            |
| Distribution of the Administrative Draft of the Yucaipa SGMA Groundwater Sustainability Plan                 | Monday, July 20, 2020    |
| Release of the Draft Yucaipa SGMA Groundwater Sustainability Plan for Public Comment                         | Monday, January 18, 2021 |
| Final Groundwater Sustainability Plan Submitted to the Department of Water Resources for Review and Approval | Monday, May 24, 2021     |

# MINUTES OF THE YUCAIPA SUSTAINABLE GROUNDWATER MANAGEMENT AGENCY

## Board Meeting Minutes October 23, 2019 - 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   | ✓       | Bob Martin             | ✓       | Rolland Moore              |
| Western Heights Water Company  | ✓       | Mark Iverson           |         | Tim Green                  |
| Yucaipa Valley Water District  | ✓       | Joseph Zoba            | ✓       | Jennifer Ares              |
| Municipals                     |         |                        |         |                            |
| City of Redlands               | ✓       | Cecilia Griego         | ✓       | Kevin Watson               |
| City of Yucaipa                |         | Ray Casey              | ✓       | Fermin Preciado            |
| Regionals                      |         |                        |         |                            |
| San Bernardino Valley MWD      |         | Doug Headrick          | ✓       | Bob Tincher                |
| San Gorgonio Pass Water Agency |         | Jeff Davis             |         | Leonard Stephenson         |
| Stakeholders                   |         |                        |         |                            |
| County of Riverside            |         | Steve Horn             |         | Jeff Johnson               |
| County of San Bernardino       |         | Bob Page               |         |                            |
| City of Calimesa               |         | Lori Askew             |         | Bonnie Johnson             |

A quorum of the Board of Directors was present to start the meeting.

- III. Introductions of Board Members and Public Participants - In addition to the Board of Directors identified above, the following members of the public attended the meeting:
- Madeline Blua - Yucaipa Valley Water District
  - Bruce Granlund - Yucaipa Valley Water District
  - Matt Howard - San Bernardino Valley Municipal Water District
  - Mike Kostelecky - Yucaipa Valley Water District
  - Joyce McIntire - Yucaipa Valley Water District
  - Matthew Palavido - Dudek
  - Steve Stuart - Dudek
- IV. Public Comments – None.

V. Review and Approval of Meeting Minutes

A. Meeting Minutes - September 25, 2019

Fermin Preciado moved to approve the minutes for September 25, 2019.

Joseph Zoba seconded the motion.

|                                |        |
|--------------------------------|--------|
| South Mesa Water Company       | Yes    |
| South Mountain Water Company   | Yes    |
| Western Heights Water Company  | Yes    |
| Yucaipa Valley Water District  | Yes    |
| City of Redlands               | Yes    |
| City of Yucaipa                | Yes    |
| San Bernardino Valley MWD      | Yes    |
| San Gorgonio Pass Water Agency | Absent |

The motion was approved.

VI. Discussion Items

A. Presentation and Discussion of Borrego Valley GSA Data Management System

Matt Howard, Steve Stuart, and Matthew Palavido discussed the draft Request for Proposals for the development of a data management system for the Yucaipa Sustainable Groundwater Agency to review and consider at a future meeting.

After discussion by the Agency members, Bob Martin made a motion to create a database for the historical information gathered to support the Groundwater Sustainability Plan.

Bob Tincher seconded the motion.

|                                |        |
|--------------------------------|--------|
| South Mesa Water Company       | Yes    |
| South Mountain Water Company   | Yes    |
| Western Heights Water Company  | Yes    |
| Yucaipa Valley Water District  | Yes    |
| City of Redlands               | Yes    |
| City of Yucaipa                | Yes    |
| San Bernardino Valley MWD      | Yes    |
| San Gorgonio Pass Water Agency | Absent |

The motion was approved.

Further discussion included the concept of having the San Bernardino Valley Municipal Water District work with Dudek to create the database maximizing the existing funds available and to develop a methodology for collecting data.

B. Discussion of Data Management System Framework Design Technical Memorandum

Matt Howard reviewed the technical memorandum related to the data management system.

Joseph Zoba moved to approve the Data Management System Framework Design Technical Memorandum.

David Armstrong seconded the motion.

|                               |        |
|-------------------------------|--------|
| South Mesa Water Company      | Yes    |
| South Mountain Water Company  | Yes    |
| Western Heights Water Company | Yes    |
| Yucaipa Valley Water District | Yes    |
| City of Redlands              | Yes    |
| City of Yucaipa               | Yes    |
| San Bernardino Valley MWD     | Yes    |
| San Geronio Pass Water Agency | Absent |

The motion was approved.

C. Discussion of Data Management System Funding Options

There was no additional discussion on this meeting topic.

D. Status Report and Discussion on Additional Infiltration Testing for the Yucaipa Basin

Matt Howard and Bob Tincher discussed the concept of performing additional infiltration testing in the Gateway Wash and the Calimesa Basin.

E. Status Report on the Sustainable Groundwater Management Act Grant and Financial Status

Matt Howard provided an overview and update on the progress of the overall project and the current funding status.

VII. Topics for Future Meetings - Suggested meeting dates are provided below and will be adjusted based on the progress of each topic.

- Board Meeting - January 22, 2020
  - Review of sustainable yield calculation
  - Review and Preparation for Public Meeting No. 1
- Workshop - February 26, 2020
  - Development of a Water Budget for the Yucaipa Region
  - Discussion Regarding a Database Management System
  - Discussion Regarding Stream Monitoring Locations

- Status Report on the Sustainable Groundwater Management Act Grant and Financial Status
- Workshop - March 25, 2020
  - Discuss potential recharge projects to be included in the groundwater model
- Unscheduled Future Topics
  - Discussion regarding groundwater dependent ecosystems

VIII. Comments by the Board of Directors - None

IX. Announcements - The next meeting of the Yucaipa Sustainable Groundwater Management Agency will be on Wednesday, January 22, 2020 at 10:00 a.m.

X. Adjournment - The meeting was adjourned at 11:05 a.m.

**DATE:** January 22, 2020

**TO:** Yucaipa Groundwater Sustainability Agency Board of Directors'

**FROM:** Matthew Howard, Water Resources Senior Project Manager

**SUBJECT:** Consider Approval of the Data Management System Proposal Provided by Dudek

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This item was discussed at the Yucaipa Groundwater Sustainability Agency (GSA) Board of Directors' (Board) Meeting on October 23, 2019. At that meeting the Board requested that Dudek provide a proposal to develop the Data Management System (DMS) for the Yucaipa GSA and directed to place this item on an upcoming Board agenda for consideration.

In December 2019, Dudek provided the Yucaipa GSA Board a proposal to develop the DMS that would meet the needs of the Yucaipa GSA and the requirements outlined in the SGMA Legislation. The Yucaipa GSA Board made this request as Dudek had recently completed the DMS framework technical memorandum which was a deliverable under the Proposition 1 Sustainable Groundwater Planning (SGWP) Grant. The DMS framework technical memorandum detailed the database structure and development process, as well as how historical and future data would be incorporated and stored from all of the Yucaipa GSA member agencies. The proposal includes the design and development of the DMS, installation and training on field data collection devices, onsite training and testing of DMS, and the final deployment of the DMS. The proposal includes one year of hosting the DMS on Dudek's servers.

### **Fiscal Impact**

The cost to develop the DMS provided by Dudek is \$45,060. There was a \$23,760 reduction in the overall DMS proposal cost by applying the remaining unspent funds from the DMS framework task item to the DMS development proposal. The fee of \$45,060 will need to be funded from sources outside the 2018 Proposition 1 SGWP Grant Agreement and would be subject to the cost sharing allocation outlined in the Memorandum of Agreement of the Yucaipa GSA.

### **Recommendation**

Approve the proposal provided by Dudek to develop the DMS for the Yucaipa GSA.

## **Attachments**

1. Dudek's Proposal to Develop a Data Management System for the Yucaipa GSA



December 6, 2019

11507-19

Mark Iverson, President  
Yucaipa Basin Groundwater Sustainability Agency  
32352 Avenue D  
Yucaipa, California 92399-1801

**Subject:** *Proposal to Develop a Data Management System for the Yucaipa-GSA*

Dear Mr. Iverson:

Dudek is pleased to present this proposal to develop a data management system (DMS) for the Yucaipa Groundwater Sustainability Agency (Yucaipa-GSA). Dudek will follow the DMS framework we developed as part of the original scope of work for developing a Groundwater Sustainability Plan (GSP) for the Yucaipa Basin. The DMS framework was presented to the Yucaipa-GSA in a technical memorandum on October 29, 2019. In summary, the DMS framework technical memorandum detailed the database structure and the development process. This process begins with adding historical data that has been vetted and confirmed accurate and relevant for characterizing groundwater conditions in the Yucaipa Basin. The DMS framework technical memorandum also identified how future data will be incorporated into the DMS, and how data will be disseminated to users accessing the DMS database via an internet portal. The data will be stored in a Geographic Information System (GIS) relational geodatabase format. The data will be housed in a versioned ESRI Enterprise Geodatabase (GDB) and will run on a SQL Server platform.

The task of developing the DMS framework had a budget of \$36,240. Of that amount, \$12,480 was used to develop the DMS framework and prepare a technical memorandum. The remaining \$23,760 is available to offset the cost of developing a DMS for the Yucaipa-GSA.

The following presents our scope of work for designing the user interface, building, testing, and deploying a fully-functional DMS for the Yucaipa-GSA.

## Scope of Work

The goal of a Data Management System (DMS) is the effective communication of data between teams and sources. For the Yucaipa-GSA, the DMS will be a system capable of incorporating data from multiple sources and streams into consistent information, delivered at the right place and the right time.

The architecture of modern database systems is ideal for managing the various data collection tools and platforms used by the member agencies of the Yucaipa-GSA. The most efficient database management is to build effective integrations between systems, to centralize the data with the understanding that the input sources can—and most likely will—change in the future, but the underlying goals remain the same.

In the DMS architecture, each primary source of data serves as the single source of truth for the information it contains, and the data from each source would flow through the DMS to become available at the right time for

reports and analytics. In a properly configured DMS, a piece of data, once entered, would not need to be entered a second time to be used by other areas of the system.

Leveraging the DMS framework design previously completed and presented to the Yucaipa GSA in our October 2019 technical memorandum, we propose taking the following next steps in building the DMS:

- Task 1 - User Interface Design
- Task 2 - Build
- Task 3 - Optional Add-in: Field Team Mobilization Tools
- Task 4 - Test
- Task 5 - Deploy

## Task 1 – User Interface Design

This first task of DMS development will set the precedent for future design patterns, practices, policies, and conventions; therefore, it is crucial to invest properly in planning and design to reach a shared agreement on the desired functionality and most effective approach.

This does not mean the structure must be set in stone and never deviate. To the contrary, the central goal of the design phase is to establish a flexible approach that is resilient to inevitable future changes, with distributed components that adhere to standards-compliant conventions, provides for succession planning, and maximizes intercommunication while minimizing dependencies. Think of the Yucaipa-GSA's DMS as the “glue” holding together the data systems used to help manage the Yucaipa Basin sustainably.

Beyond setting high-level organizational DMS structure during this design iteration, we will work with the Yucaipa-GSA to incorporate and develop functionality necessary to accomplish their goals.

We propose completing Task 1 with the following steps:

- Conduct a one-day kick-off workshop with representatives from the member agencies of the Yucaipa-GSA that will participate in the development of the DMS:
  - Meet with the Yucaipa-GSA IT staff (SBVMWD has offered to provide IT support on behalf of the Yucaipa GSA) in early January 2020 (date to be determined) to identify the appropriate hardware and software components and architecture for DMS user interface development, and identify constraints and considerations with respect to operating systems, software, licensing, and security/firewalls.
  - Discuss third-party software currently used by members of the Yucaipa-GSA and explore the service/support levels of each to discuss options for optimizing the use of these tools.
- Conduct post-workshop planning:

- Develop strategies for importing legacy data from each source. Determine how much past data to load into the DMS, and how to best phase this process if necessary to maintain forward progress.
- Plan strategies for phasing out paper/manual entry where possible.
- Decide on a platform for reporting and analytics (e.g., ESRI Insights, ESRI Operations Dashboard, or custom).
- Identify opportunities for “health checks” (i.e., test scripts that run in the background to detect possible issues).

Assumptions:

- Dudek will assist the GSA in identifying appropriate staff to attend the workshop.
- During the one-day workshop to kick off the project, necessary staff will be available to participate for relevant session(s).
- We assume up to two one-hour conference calls with participating members of the GSA to discuss the progress in developing the user interface design of the DMS following the workshop. The schedule for these project progress calls will be determined at the kick-off workshop.
- Dudek will not begin work on the following tasks until the Yucaipa-GSA approves the DMS hardware and software components, and architecture in a technical memorandum delivered to the Yucaipa-GSA at the conclusion of this task.
- As a courtesy, we will not charge direct costs for travel to the Yucaipa-GSA office/meeting locations.

Deliverables:

- We will provide a technical memorandum, delivered electronically, which summarizes the agreed-upon DMS hardware and software components, and architecture. This technical memorandum focuses on the front end user facing technology and complements the previously completed technical memorandum outlining the database structure.

**Cost for Task 1 .....\$14,800.00**

## Task 2 - Build

Once the conceptual design of the user interface is established, we will develop a prototype of the user interface to share with participating members of the GSA to test, including wireframes (mock-ups) of the design. Our application development team develops in rapid iterations to modify the prototype after receiving feedback from the test users to quickly evaluate how those modifications improve performance and/or functionality. This is especially important early in the process, when fundamental design decisions and assumptions may require adjustment.

We plan to meet with the Yucaipa-GSA during the regularly scheduled monthly GSA workshops/Board meetings between January and April 2020.

While Task 1 will design the user interface structure of the DMS, we envision building the Yucaipa-GSA's DMS with a combination of the following tools and technologies:

- Application Database(s)
  - Microsoft SQL Server
  - ESRI Enterprise Geodatabase (i.e., ArcSDE)
- Custom Web Application for Administration and QA/QC
  - Microsoft Windows Server + Internet Information Server (IIS) for serving the application
  - JavaScript for the client-side application
  - Python API for serving data to the application
  - Functionality would center on data QA/QC workflows, and would include user management, access control levels, and alerts/notifications.
- Geocortex Reporting,, ESRI Operations Dashboard, or Zerion Connect for reporting/analytics

Assumptions:

- Dudek will host components of the DMS during development, and for up to twelve months after completion of development of the DMS at no additional cost to the Yucaipa-GSA; after this time, a monthly hosting fee may apply for continued hosting. The fee would be relative to the server requirements needed to host the application (i.e., Dudek would pass the cost through to the Yucaipa-GSA based on actual usage).
- Dudek will work with IT staff have access to the appropriate Yucaipa-GSA hosting servers and data necessary to develop the DMS.
- We assume legacy data will be clean enough to import into the DMS as-is, or with minimal automated/scripted cleanup. We will leverage prior data cleanup performed by Dudek as part of the development of the GSP.
- The Yucaipa-GSA will be responsible for third-party licensing costs and determining the cost sharing mechanism among member agencies; Dudek will assist the Yucaipa-GSA in understanding these costs prior to adding new licensing requirements.
- We assume up to three review meetings for the user facing web application: one at the wireframe stage, one at 50% completion, and one at 100% completion.

- We offer the option of a biweekly call throughout the development process; these calls are brief 15-minute status updates to identify progress and potential roadblocks, with actual issue resolution occurring offline or via separate conversations.

Deliverables:

- For the cost provided in this task, we will deliver a draft release of the DMS including:
  - One central Enterprise Geodatabase (GDB)
  - One automated integration health check
  - Legacy data import (see assumptions)
  - One administration QA/QC dashboard
  - One reporting/analytics dashboard (ESRI Operations Dashboard, or other—TBD based on Task 1 planning).

**Cost for Task 2 .....\$29,600.00**

## Task 3 – Field Team Mobilization Tools

As part of Task 2 development, we will include tools for improved field crew planning, mobilization, and navigation. These options include:

- ESRI Collector for map-centric spatial data collection in the field, on any mobile device.
- ESRI Workforce for office-based planning of field crew efforts, to optimize routes and divide work effectively among teams.
- ESRI Navigator to assist field personnel with navigating data to assets.

Deliverables:

- Draft user documentation for the mobile applications
- One ESRI Collector application (will be integrated with the GDB by default, TBD based on Task 1 planning)
- One ESRI Workforce/Navigator implementation (requires additional licensing cost, TBD based on Task 1 planning).

**Cost for Task 3 .....\$4,440.00**

## Task 4 – Test

Testing will be ongoing during Task 2; however, we find it beneficial to have a dedicated testing phase toward the end of development, prior to production. This allows a larger group of users to test the implementation before going live. This will give users a hands-on opportunity to evaluate the draft version of the DMS implementation to provide feedback, and will serve as a first form of training to create power users who can assist others in learning the system.

### Assumptions:

- Biweekly calls during testing (same as Task 2).
- One on-site beta-tester training held at the Yucaipa-GSA offices or meeting location. This meeting will be scheduled after the first weeks of beta testing and feedback received from the participating members of the GSA.
- The purpose of beta testing is to identify small issues and bugs with the goal of achieving desired functionality as previously defined in Task 1.

### Deliverables:

- Completed “beta” release of the DMS
- Draft user documentation

**Cost for Task 4 .....\$11,100.00**

## Task 5 – Deploy

Deployment and training are essential to a successful rollout and adoption of the DMS. Users will need to understand the system and their role in maintaining it, as well as be empowered to train others and take ownership in their day-to-day work using the DMS.

We will provide on-site training for both staff and IT prior to making the final migration, deployment, and rollout of the DMS. We will also provide post-deployment support to the Yucaipa-GSA staff and IT.

### Assumptions:

- SBVMWD, on behalf of the Yucaipa-GSA, will have sufficient server infrastructure to host the DMS implementation (database, applications, scripts, and automated jobs), will be able to procure the hardware/licensing needed to host this system (based on specifications defined during Task 1), or will enter into an agreement with Dudek to continue hosting the DMS.
- Documentation will be provided as-is.

- Post-deployment, we will provide up to 20 hours of support under this scope; additional support would be available for a flat rate of \$185/hr unless otherwise specified in a subsequent contract/amendment.

Deliverables:

- Production deployment and rollout of version 1.0 the DMS
- Online user documentation
- One on-site staff training (screen casted or recorded, if desired)
- Technical whitepaper-style documentation of DMS architecture and roadmap
- One on-site IT training (screen casted or recorded, if desired)

**Cost for Task 5 .....\$8,880.00**

## Schedule

The tentative date to conduct the one-day kick-off meeting with representatives of the member agencies participating in the development of the DMS is January 6, 2020. The kick-off meeting is flexible to shift to another date to accommodate the schedules of participating representatives since January 6 comes right after the Christmas Holiday season, but we recommend that the kick-off meeting be held in the first two weeks of January 2020 in order to meet the proposed deployment date of the DMS in November 2020 (please see attached schedule).

## Fee Summary

The fee presented in this proposal will be charged on a time and materials basis in accordance with Dudek's 2019 Standard Schedule of Charges. The time and materials fee provided in this proposal represents an estimate of the anticipated level of effort required to complete the tasks described in the proposal. Should the actual effort required to complete the tasks be less than anticipated, the amount billed will be less than the total fee. Conversely, should the actual effort to complete the proposed tasks be greater than anticipated, additional fee authorizations will be requested. No work in excess of the proposed fee or outside of the proposed scope of work will be performed without written authorization from the Yucaipa-GSA.

**Sub-Total Cost .....\$68,820.00**

Applying the remaining funds from our task of developing the DMS framework for the Yucaipa Basin GSP, the fee to develop a fully-functional DMS for the Yucaipa-GSA is  $\$68,820 - \$23,760 = \$45,060$ . The fee of \$45,060 will need to be funded from sources outside the 2018 Prop 1 Grant Agreement between DWR and SBVMWD.

**Total Cost .....\$45,060.00**

Mr. Mark Iverson, President Yucaipa-GSA

Subject: Proposal to Develop a Data Management System for Yucaipa-GSA

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**Table 1. Data Management System Tasks**

| Task                                                                                                 | Expected Time to Complete | Cost               |
|------------------------------------------------------------------------------------------------------|---------------------------|--------------------|
| 1.1. Design                                                                                          | 1-2 months                | \$14,800.00        |
| 1.2. Build                                                                                           | 2-4 months                | \$29,600.00        |
| 1.3. Field Team Mobilization Tools                                                                   | 2-4 weeks                 | \$4,440.00         |
| 1.4. Test                                                                                            | 2-4 months                | \$11,100.00        |
| 1.5. Deploy                                                                                          | 2-4 weeks                 | \$8,880.00         |
| <b>Sub-Total</b>                                                                                     |                           | <b>\$68,820.00</b> |
| Remaining Funds from DMS Framework Design in GSP Development Scope of Work to Apply to the Sub-Total |                           | <b>\$23,760.00</b> |
| <b>Total</b>                                                                                         |                           | <b>\$45,060.00</b> |

If you have any questions regarding this scope of work and fee, please call me at 760-479-4128.

Sincerely,



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Steven Stuart, PE  
Principal Hydrogeologist and Project Manager

Att.: Schedule to Develop a DMS for the Yucaipa-GSA  
cc: David Armstrong, Vice-President Yucaipa-GSA, South Mesa Water Company  
Joe Zoba, Secretary Yucaipa-GSA, Yucaipa Valley Water District  
Bob Tincher, Treasurer Yucaipa-GSA, San Bernardino Valley Municipal Water District  
Matt Howard, San Bernardino Valley Municipal Water District  
Matt Palavido, Dudek  
Kyle Harper, Dudek



YUCAIPA BASIN GSA DMS DEVELOPMENT

1 User Interface Design

- Kick-off Workshop
- Develop Data Import Strategies
- Define Data Input / Field Data Collection Strategies
- Determine Reporting Platform
- Identify Health Checks
- Technical Memorandum

2 Build

- Set Up Geodatabase
- Enterprise Geodatabase
- Web Application Development
- Reporting Platform Configuration
- Beta Applications

3 Field Team Mobilization Tools

- Configure Esri Collector Application
- Collector Application
- Workforce / Operations Dashboard
- Workforce/Operation Dashboard Application
- Draft User Documentation

4 Test

- Beta Testing
- Stakeholder review / check-in
- Fix/Revision Period
- Draft User Documentation
- Beta Application

5 Deploy

- Technical Memo Creation
- Technical Memo
- IT Staff Training Session
- Online User Documentation Creation
- Online User Documentation
- Deploy
- Staff Training Session

