As a matter of proper business decorum, the Board of Commissioners respectfully request that all cell phones be turned off or placed on vibrate. To prevent any potential distraction of the proceeding, we request that side conversations be taken outside the meeting room.

REGULAR BOARD MEETING
VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
VICTORVILLE CITY HALL, CONFERENCE ROOM D
14343 CIVIC DRIVE, VICTORVILLE CA 92392
Thursday, February 16, 2023
Closed Session 7:30 a.m. Open Session 8:00 a.m.

VVWRA is committed to protecting public health and the environment in the Victor Valley by providing effective and fiscally responsible wastewater collection, treatment, and recycling.

Call to Order — **Higgins**

Roll Call — **Casteel**

Public Comments- Closed Session Agenda Items — **Higgins**

CLOSED SESSION: During the course of conducting the business set forth on this agenda as a regular meeting of the Board, the Chair may convene the Board in closed session to consider matters of pending real estate negotiations, pending or potential litigation, or personnel matters, pursuant to Government Code Sections 54956.8, 54956.9, 54957 or 54957.6, as noted. Reports relating to (a) purchase and sale of real property; (b) matters of pending or potential litigation; or (c) employment actions, or which are exempt from public disclosure under the California Public Records Act, may be reviewed by the Board during a permitted closed session and are not available for public inspection. At such time the Board takes final action on any of these subjects, the minutes will reflect all required disclosures of information. Closed Session is scheduled to commence at 7:30 a.m.. If the matters discussed in closed session require additional time beyond 8:00 a.m., in deference to the public, the Board may continue the Closed Session discussion after Open Session is concluded. In that case, Closed Session will resume after the Commissioners Comments section and any reportable action will be reported after the continued Closed Session has concluded and before adjournment.

Closed Session

Item 1. (Gov. Code Sec. 54956.9(d)) Conference with Legal - Threatened or Potential Litigation
- **California River Watch-Notice of Intent to Sue**

Item 2. (Gov. Code Sections 54957/54957.6/ 54954.5 (f)):
- **Personnel Issues: One (1)**

Call to Order & Pledge of Allegiance — **Higgins**

Report from Closed Session — **Legal**

Public Comment (Government Code Section 54954.3) — Higgins

Opportunity for members of the public to directly address the Board on items of public interest within its jurisdiction. The public may also address the Board on items being considered on this agenda. VVWRA requests that all public speakers complete a speaker's card and provide it to the Secretary. Persons desiring to submit paperwork to the Board of Commissioners shall provide a copy of any paperwork to the Board Secretary for the official record. We request that remarks be limited to five minutes or less. Pursuant to Government Code Section 54954.3, if speaker is utilizing a translator, the total allotted time will be doubled.

Possible Conflicts of Interest — Higgins

Consent Calendar — Higgins

All matters placed on the Consent Calendar are considered as not requiring discussion or further explanation and unless any particular item is requested to be removed from the Consent Calendar by a Commissioner, staff member or member of the public in attendance, there will be no separate discussion of these items. All items on the Consent Calendar will be enacted by one action approving all motions and casting a unanimous ballot for resolutions included on the consent calendar. All items removed from the Consent Calendar shall be considered in the regular order of business.

Item 3. Receive, Approve and File Minutes — Poulsen

- Regular Board Meeting 01/19/2023

Item 4. Receive, Approve and File January 2023 Disbursement

- Warrant Summary Disbursements

Board Action Required

Staff Recommendation: Approve as presented

Action Items

The Executive Leadership Team will provide brief updates on existing matters under their purview and will be available to respond to any questions thereof.

Item 5. Recommendation to Amend the Fiscal Year 2022-23 Operating Budget by Utilizing a Portion of the FY 2022 Surplus and Approve the Prefunding of the Cal Recycle Grant Project — Poulsen

It is recommended that the Board of Commissioners approve the General Manager to amend the FY 2022-23 Operating Budget by utilizing a portion of the operating surplus from FY 2021-2022 to cover the repair cost of the Apple Valley Subregional Plant fire suppression system; as well as several areas in the budget that require additional funding. Also, it is recommended that the Board of Commissioners approve the General Manager to utilize a portion of the connection fee reserve to prefund the quarterly cost of the Cal Recycle Grant project

Board Action Required

Staff Recommendation: Approve as presented

Item 6. **Recommendation to Approve An Amendment to the American Organics Lease Agreement to Account for Storm Water Management Changes on the Proposed Operation Expansion** **Poulsen**

It is recommended that the Board of Commissioners approve the General Manager to execute an amendment to the American Organics Lease Agreement to account for the storm water management changes on the proposed operation expansion upon approval of the amendment by American Organics and the VVWRA Attorneys

Board Action Required

Staff Recommendation: Approve as presented

Item 7. **Recommendation to Approve the General Manager to Execute the Necessary Socal Biomethane Amendment and Anaergia Equipment Purchase Agreement to Allow for the Installation and Purchase of Equipment Detailed in the CEC and Cal Recycle Grant Budgets to Improve Renewable Gas Production and ADM Receiving Operations Upon Approval of the Amendment and the Agreement by Socal Biomethane, Anaergia and the VVWRA Attorneys** **Poulsen**

It is recommended that the Board of Commissioners approve the General Manager to execute the necessary SoCal Biomethane Amendment and Anaergia Equipment Purchase Agreement to allow for the installation and purchase of equipment detailed in the CEC and Cal Recycle grant budgets to improve Renewable Gas Production (RNG) and ADM receiving operations upon approval of the amendment and the agreement by SoCal Biomethane, Anaergia and the VVWRA Attorneys

Board Action Required

Staff Recommendation: Approve as Presented

Item 8. **Recommendation to Adopt Resolution 2023-04 to Establish a New Fog Tipping Fee of $.12 Per Gallon** **Laari**

It is recommended that the Board of Commissioners adopt Resolution 2023-04 to establish a new FOG tipping fee of $.12 per gallon

Board Action Required

Staff Recommendation: Approve as Presented

Item 9. **Recommendation to Authorize the General Manager to Award a Contract for the Servers Virtualization Project in the Amount of $210,000.00 to Netgain Networks Inc** **Laari**

It is recommended that the Board of Commissioners approauthorize the General Manager to award a contract for the Servers Virtualization Project in the amount of $210,000.00 (which is the amount of the bid of $190,091.63 plus an approximate 10%

contingency fee) to Netgain Networks Inc., pending legal review and approval of the agreement

Board Action Required

Staff Recommendation: Approve as Presented

Staff Reports

Item 10. General Managers Report - **Mojave Basin One Water Concept** - **Mojave Narrows Regional Plant Concept Update**	**Poulsen**

Report Range	Board Meeting Date (Thursday)
4th Quarter October 2022- December 2022	March 16, 2023
1st Quarter January 2023-March 2023	May 18, 2023
2nd Quarter April 2023-June 2023	September 21, 2023
3rd Quarter July 2023- September 2023	November 16, 2023
4th Quarter October 2023- December 2023	February Board 2024

Adjournment

Higgins

The board will adjourn to a regular board meeting

American Disabilities Act Compliance Statement

Government Code Section 54954.2(a)

Any request for disability-related modifications or accommodations (including auxiliary aids or services) sought to participate in the above public meeting should be directed to the VVWRA's Secretary at (760) 246-8638 at least 72 hours prior to the scheduled meeting. Requests must specify the nature of the disability and the type of accommodation requested.

Agenda posting

Government Code Section 54954.2

This agenda has been posted in the main lobby of the Authority's Administrative offices not less than 72 hours prior to the meeting date and time above. All written materials relating to each agenda item are available for public inspection in the office of the Board Secretary.

Agenda items received after posting

Government Code Section 54957.5

Materials related to an item on this agenda submitted after distribution of the agenda packet are available for public review at the VVWRA office located at, 20111 Shay Road, Victorville CA 92394. The materials will also be posted on the VVWRA website at www.vvwra.com.

Items Not Posted

Government Code Section 54954.2(b)

In the event any matter not listed on this agenda is proposed to be submitted to the Board for discussion and/or action, it will be done as an emergency item or because there is a need to take immediate action, which came to the attention of the Board subsequent to the posting of the agenda, or as set forth on a supplemental agenda posted in the manner as above, not less than 72 hours prior to the meeting date.

Items Continued

Government Section 54954.2(b)(3)

Items may be continued from this meeting without further notice to a Committee or Board meeting held within five (5) days of this meeting

Meeting Adjournment

This meeting may be adjourned to a later time and items of business from this agenda may be considered at the later meeting by Order of Adjournment and Notice

VVWRA's Board Meeting packets and agendas are available for review on its website at www.vvwra.com. The website is updated on Friday preceding any regularly scheduled board meeting.

MINUTES OF A REGULAR MEETING
REGULAR MEETING OF THE BOARD OF COMMISSIONERS
VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY (VVWRA)
January 19, 2023

CALL TO ORDER: Chair Dakota Higgins called the meeting to order at 7:32 AM; in Conference Room D at Victorville City Hall, located at 14343 Civic Drive, Victorville California, with the following members present:

ORO GRANDE (CSA 42) AND SPRING VALLEY LAKE (CSA 64)	**Dakota Higgins,** Chair
TOWN OF APPLE VALLEY	**Scott Nassif,** Vice-Chair
CITY OF VICTORVILLE	**Debra Jones,** Secretary
CITY OF HESPERIA	**Larry Bird,** Treasurer

VVWRA Staff and Legal Counsel:

Darron Poulsen, General Manager
Kristi Casteel, Executive Assistant
Piero Dallarda, Legal Counsel (BB&K)
Xiwei Wang, Accounting Supervisor
David Wylie, Safety & Communications Officer
Brad Adams, Director of O&M
Robert Coromina, Director of Administration
Latif Laari, Environmental Compliance Manager

Guest Present:

Guy Eisenbrey, Town of Apple Valley
Brian Gengler, City of Victorville
ADP Reps, City of Victorville

CLOSED SESSION

PUBLIC COMMENTS- CLOSED SESSION AGENDA

Chair Higgins asked if there were any comments from the public regarding any item on the Closed Session Agenda. Hearing none, Chair Higgins called for a motion to enter into Closed Session.

Moved: Commissioner Nassif **Second: Commissioner Jones**

Motion to enter into Closed Session

Motion passed by a 4-0 roll call vote

REGULAR SESSION

CALL TO ORDER & PLEDGE OF ALLEGIANCE

Chair Higgins called the meeting to order at 8:00 AM.

REPORT FROM CLOSED SESSION

NONE

PUBLIC COMMENTS- REGULAR SESSION AGENDA

None

POSSIBLE CONFLICT OF INTEREST

Commissioner Nassif will be abstaining from any disbursements to Napa Auto Parts on item 4

CONSENT CALENDAR:

3. **Receive, Approve and File Minutes, November 17, 2022**

4. **Receive, Approve and File November & December 2022 Disbursement**

Moved: Commissioner Nassif **Second: Commissioner Jones**

Approval of the Consent Calendar Items 3 and 4 with Commissioner Nassif abstaining from any disbursements to Napa Auto Parts on item 4.

Chair Higgins- Yes

Commissioner Nassif - Yes

Commissioner Jones - Yes

Commissioner Bird- Yes

Motion passed by a 4-0 roll call vote

ACTION ITEM:

5. **Recommendation to Authorize the General Manager to Approve Change Order #1 for Engineering Services for the Final Design and Construction Support for the Oro Grande Interceptor Replacement Project in the Amount of $79,512.00**

The Board will consider approval to authorize the General Manager to authorize the general manager to approve change order #1 for engineering services for the final design and construction support for the Oro Grande interceptor replacement project in the amount of $79,512.00

Moved: Chair Higgins **Second: Commissioner Nassif**

Approval to authorize the General Manager to authorize the general manager to approve change order #1 for engineering services for the final design and construction support for the Oro Grande interceptor replacement project in the amount of $79,512.00

Chair Higgins- Yes

Commissioner Nassif - Yes

Commissioner Jones - Yes

Commissioner Bird- Yes

Motion passed by a 4-0 roll call vote

6. **Recommendation to Authorize the General Manager to Sign the Agreement with Alert One to Recharge Our Existing Fire Suppression System at the Apple Valley Sub-Regional Facility for an Amount Not to Exceed $170,000**

   The Board will consider approval to authorize the General Manager to sign the agreement with Alert One to recharge our existing fire suppression system at the Apple Valley Sub-Regional Facility for an amount not to exceed $170,000 should the insurance claim not cover the cost for repairs

Moved: Commissioner Nassif **Second: Commissioner Jones**

Approval to authorize the General Manager to sign the agreement with Alert One to recharge our existing fire suppression system at the Apple Valley Sub-Regional Facility for an amount not to exceed $170,000 should the insurance claim not cover the cost for repairs

Chair Higgins- Yes

Commissioner Nassif - Yes

Commissioner Jones - Yes

Commissioner Bird- Yes

Motion passed by a 4-0 roll call vote

7. **Recommendation to Adopt Resolution 2023-01 Sanitary Sewer Management Plan Two Years Update**

   The Board will consider approval to adopt Resolution 2023-01 VVWRA Sanitary Sewer Management plan two (2) years audit

Moved: Commissioner Bird **Second: Commissioner Jones**

Approval to adopt Resolution 2023-01 VVWRA Sanitary Sewer Management plan two (2) years audit

Chair Higgins- Yes

Commissioner Nassif - Yes

Commissioner Jones - Yes

Commissioner Bird- Yes

Motion passed by a 4-0 roll call vote

8. **Recommendation to Adopt Resolution 2023-02 to Approve the Clarifying Modifications on the Investment Policy**

The Board will consider approval to adopt Resolution 2023-02, the clarifying modifications on the Investment Policy

Moved: Commissioner Nassif **Second: Commissioner Jones**

Approval to adopt Resolution 2023-02, the clarifying modifications on the Investment Policy

Chair Higgins- Yes

Commissioner Nassif - Yes

Commissioner Jones - Yes

Commissioner Bird- Yes

Motion passed by a 4-0 roll call vote

9. **Recommendation to Adopt Resolution 2023-03 to Approve the Clarifying Modifications on the Authorized Local Agency Investment Fund (LAIF)**

The Board will consider approval to adopt Resolution 2023-03, to approve the clarifying modifications on the authorized LAIF investors

Moved: Chair Higgins **Second: Commissioner Jones**

Approval to adopt Resolution 2023-03, to approve the clarifying modifications on the authorized LAIF investors.

Chair Higgins- Yes

Commissioner Nassif - Yes

Commissioner Jones - Yes

Commissioner Bird- Yes

Motion passed by a 4-0 roll call vote

10. **Recommendation to Authorize The General Manager To Apply for a .Gov Domain**

The Board will consider approval to authorize the General Manager to apply for a .gov domain through the Cybersecurity and Infrastructure Security Agency (CISA) for VVWRA

Moved: Commissioner Jones **Second: Commissioner Nassif**

Approval to authorize the General Manager to apply for a .gov domain through the Cybersecurity and Infrastructure Security Agency (CISA) for VVWRA

Chair Higgins- Yes

Commissioner Nassif - Yes

Commissioner Jones - Yes

Commissioner Bird- Yes

Motion passed by a 4-0 roll call vote

11. **Recommendation to Approve Amended Language for Employee Contracts**

The Board will consider approval to amend language for Employee Contracts.

Moved: Commissioner Jones **Second: Chair Higgins**

Approval to amend language for Employee Contracts.

Chair Higgins- Yes

Commissioner Nassif - Yes

Commissioner Jones - Yes

Commissioner Bird- Yes

Motion passed by a 4-0 roll call vote

ADJOURNMENT

The board will adjourn to a regular board meeting on January 19, 2023 at 7:30 a.m.

APPROVAL:

DATE: _____BY: _____

Approved by Debra Jones, Secretary
VVWRA Board of Commissioners

Victor Valley Wastewater Reclamation Authority
A Joint Powers Authority and Public Agency of the State of California
Administrative Offices
20111 Shay Road, Victorville, CA 92394
Telephone: (760) 246-8638
Fax: (760) 948-9897
e-mail: mail@vvwra.com

DATE: February 16, 2023

TO: Darron Poulsen
General Manager

FROM: Xiwei Wang
Accounting Supervisor

SUBJECT: Cash Disbursements Register

RECOMMENDED ACTION

It is recommended that the Board of Commissioners approve the cash disbursements and payroll register for the Victor Valley Wastewater Reclamation Authority.

BACKGROUND

The Cash Disbursements Register totals represented below are for the month of JANUARY 2023, check numbers 124977-125019 and ACH's.

Accounts Payable			
Checks	***ACH's and EFT's***	***Payroll***	***Total***
$89,884.89	***$796,899.51***	***$523,178.03***	***$1,409,962.43***

Victor Valley Wastewater Reclamation Authority
Cash Disbursement Register
From 1/1/2023 through 1/31/2023

Vendor Name	Payment #	Date		Total
Answering 365	124977	01/06/2023	$	173.00
Big Sky Electric	124978	01/06/2023	$	4,244.00
Brown Bear Corp	124979	01/06/2023	$	5,090.52
City Of Victorville / Sanitation	124980	01/06/2023	$	4,373.14
Guardian	124981	01/06/2023	$	1,289.31
Konica Minolta Business Solutions	124982	01/06/2023	$	289.38
Mojave Desert A.Q.M.D.	124983	01/06/2023	$	373.93
Orkin	124984	01/06/2023	$	341.00
Prudential Overall Supply	124985	01/06/2023	$	848.41
Quill Corporation	124986	01/06/2023	$	595.87
Shredyourdocs.Com	124987	01/06/2023	$	114.00
Snap On Industrial	124988	01/06/2023	$	2,410.96
Verizon Wireless	124989	01/06/2023	$	2,702.52
Answering 365	124990	01/12/2023	$	198.00
Cintas Corporation	124991	01/12/2023	$	400.42
Dell Inc.	124992	01/12/2023	$	36.46
Liberty Utilities	124993	01/12/2023	$	614.87
Orkin	124994	01/12/2023	$	786.00
Snap On Industrial	124996	01/12/2023	$	11,191.46
Yucca Crane	124997	01/12/2023	$	750.00
Airgas Usa, Llc	124998	01/26/2023	$	814.15
Battery Mart	124999	01/26/2023	$	4,652.20
Big Sky Electric	125000	01/26/2023	$	16,906.00
Bird, Larry	125001	01/26/2023	$	100.00
Burrtec Waste Ind., Inc.	125002	01/26/2023	$	637.24
Cintas Corporation	125003	01/26/2023	$	1,263.58
Connectwise, Llc	125004	01/26/2023	$	828.00
Done-Right Concrete Co	125005	01/26/2023	$	3,878.00
Heritage Environmental Services, L.L.C.	125006	01/26/2023	$	928.37
Hesperia Water District	125007	01/26/2023	$	1,910.52
Hi-Grade Materials Co.	125008	01/26/2023	$	1,623.30
Jones, Debra	125009	01/26/2023	$	100.00
Merrell Johnson Companies	125010	01/26/2023	$	12,000.00
Motion Industries, Inc.	125011	01/26/2023	$	487.54
Napa Victorville	125012	01/26/2023	$	303.28
Nassif, Scott	125013	01/26/2023	$	100.00
Prudential Overall Supply	125014	01/26/2023	$	2,519.17
Safety-Kleen Systems Inc.	125015	01/26/2023	$	1,635.93
Shredyourdocs.Com	125016	01/26/2023	$	145.00
Town & Country Tire	125017	01/26/2023	$	1,099.36
United Rentals Northwest, Inc	125018	01/26/2023	$	380.00
Yucca Crane	125019	01/26/2023	$	750.00
		Total Checks	**$**	**89,884.89**
2G Energy Inc.	20276	01/04/23	$	2,517.97

Victor Valley Wastewater Reclamation Authority
Cash Disbursement Register
From 1/1/2023 through 1/31/2023

Vendor Name	Payment #	Date		Total
A.D.S. Corp.	20277	01/04/23	$	14,300.00
ADT Commercial	20278	01/04/23	$	62.14
Applied Maintenance Supplies & Solution	20279	01/04/23	$	2,015.07
CDW Government, Inc	20280	01/04/23	$	634.17
Collicutt Energy Services Inc	20281	01/04/23	$	2,700.00
Daily Express	20282	01/04/23	$	1,540.00
Davis Electric, Inc	20283	01/04/23	$	16,918.24
Environmental Systems Research Institute, Inc.	20284	01/04/23	$	7,000.00
G.A. Osborne Pipe & Supply	20285	01/04/23	$	1,182.51
Grainger	20286	01/04/23	$	8,550.78
Inductive Automation Llc	20287	01/04/23	$	2,337.50
JWC Environmental Inc	20288	01/04/23	$	18,159.48
Labor Finders	20289	01/04/23	$	2,089.76
Mcgrath Rentcorp	20290	01/04/23	$	5,525.47
Quinn Company	20291	01/04/23	$	64.00
Rockwell Solutions	20292	01/04/23	$	27,647.85
Siemens Industry Inc.	20293	01/04/23	$	730.80
Underground Service Alert Of Southern California	20294	01/04/23	$	67.75
Victor Valley Wastewater Employees Assoc	20295	01/04/23	$	937.50
Wageworks, Inc	20296	01/04/23	$	118.25
Xylem Water Solutions	20297	01/04/23	$	9,366.67
Yorke Engineering, Llc	20298	01/04/23	$	1,426.75
Bustos, Johnny	20299	01/04/23	$	192.03
Westover, Kalin	20300	01/04/23	$	295.00
American Express	20301	01/12/23	$	2,549.26
2G Energy Inc.	20302	01/12/23	$	9,511.34
ADT Commercial	20303	01/12/23	$	473.45
Applied Maintenance Supplies & Solution	20304	01/12/23	$	74.39
Babcock Laboratories, Inc.	20305	01/12/23	$	10,390.75
Beck Oil, Inc.	20306	01/12/23	$	2,019.18
Blackline Safety Corp	20307	01/12/23	$	210.00
Brenntag Pacific, Inc	20308	01/12/23	$	14,845.04
California School Veba	20309	01/12/23	$	708.82
CDW Government, Inc	20310	01/12/23	$	837.11
CSRMA	20311	01/12/23	$	94,118.00
Culligan Water Conditioning	20312	01/12/23	$	611.48
D.K.F. Solutions Group, Llc	20313	01/12/23	$	350.00
FHA Services, Inc.	20314	01/12/23	$	1,426.13
Haaker Equipment Company	20315	01/12/23	$	8,786.88
Labor Finders	20316	01/12/23	$	1,508.36
Michael'S Auto Detail	20317	01/12/23	$	560.00
Quinn Company	20318	01/12/23	$	32.00
Siemens Industry Inc.	20319	01/12/23	$	1,511.63
T-Mobile	20320	01/12/23	$	196.56
Tyler Technologies, Inc	20321	01/12/23	$	542.00

Victor Valley Wastewater Reclamation Authority
Cash Disbursement Register
From 1/1/2023 through 1/31/2023

Vendor Name	Payment #	Date		Total
Veteran Janitorial, Llc	20322	01/12/23	$	2,630.00
Bustos, Johnny	20323	01/12/23	$	150.00
Ceden0,Martin	20324	01/12/23	$	250.94
Laari, Latif	20325	01/12/23	$	3,955.28
High Desert Affordable Landscaping	20326	01/12/23	$	5,034.00
Allmax Software, Inc.	20327	01/19/23	$	5,665.00
Applied Maintenance Supplies & Solution	20328	01/19/23	$	175.66
Beck Oil, Inc.	20329	01/19/23	$	63.63
Biogas Power Systems- Mojave, Llc	20330	01/19/23	$	64,119.27
Brenntag Pacific, Inc	20331	01/19/23	$	4,913.42
C.S. Amsco	20332	01/19/23	$	1,984.28
CDW Government, Inc	20333	01/19/23	$	223.08
Daily Express	20334	01/19/23	$	1,540.00
DXP Enterprises	20335	01/19/23	$	10,278.36
EHS International Inc.	20336	01/19/23	$	2,130.00
FHA Services, Inc.	20337	01/19/23	$	6,950.00
G.A. Osborne Pipe & Supply	20338	01/19/23	$	383.46
Grainger	20339	01/19/23	$	1,740.35
Graybar Electric Co., Inc.	20340	01/19/23	$	214.26
Labor Finders	20341	01/19/23	$	1,824.44
Larry Walker Associates	20342	01/19/23	$	2,148.00
Luhdorff And Scalmanini	20343	01/19/23	$	4,287.50
Misco - T.W. Associates	20344	01/19/23	$	1,099.45
Netgain Networks, Inc	20345	01/19/23	$	1,268.75
Procurement Consulting Services, Llc.	20346	01/19/23	$	662.50
Quinn Company	20347	01/19/23	$	4,080.71
Saddleback Environmental Equipment, Inc.	20348	01/19/23	$	8,737.50
Solenis Llc	20349	01/19/23	$	12,043.93
Waukesha-Pearce Industries, Llc	20350	01/19/23	$	568.88
Alvarez, Juan	20351	01/19/23	$	244.68
Anthony, Donna	20352	01/24/23	$	420.00
Billings, Richard	20353	01/24/23	$	420.00
Correia, Linda	20354	01/24/23	$	420.00
Dagnino, Roy	20355	01/24/23	$	420.00
Davis, Tim	20356	01/24/23	$	420.00
Flint, Terrie Gossard	20357	01/24/23	$	269.02
Gyurcsik, Darline	20358	01/24/23	$	269.02
Hinojosa, Thomas	20359	01/24/23	$	420.00
Keniston, Olin	20360	01/24/23	$	269.02
Main, Randy	20361	01/24/23	$	420.00
Mcgee, Mark	20362	01/24/23	$	420.00
Montgomery, Lillie	20363	01/24/23	$	148.68
Nalian, L. Christina	20364	01/24/23	$	148.68
Nave, Patrick	20365	01/24/23	$	420.00
Applied Maintenance Supplies & Solution	20366	01/25/23	$	403.05

Victor Valley Wastewater Reclamation Authority
Cash Disbursement Register
From 1/1/2023 through 1/31/2023

Vendor Name	Payment #	Date		Total
Biogas Engineering	20367	01/25/23	$	4,950.00
Collicutt Energy Services Inc	20368	01/25/23	$	4,989.53
D.K.F. Solutions Group, Llc	20369	01/25/23	$	1,200.00
DXP Enterprises	20370	01/25/23	$	13,263.91
Elogger Inc.	20371	01/25/23	$	5,124.80
FHA Services, Inc.	20372	01/25/23	$	593.88
Grainger	20373	01/25/23	$	585.99
Hach Company	20374	01/25/23	$	2,255.63
Higgins, Dakota	20375	01/25/23	$	100.00
Netwrix Corporation	20376	01/25/23	$	1,475.17
Polydyne Inc.	20377	01/25/23	$	6,220.50
Xylem Water Solutions	20378	01/25/23	$	105,610.45
U.S. Bank	20379	01/26/23	$	8,202.25
Flyers Energy, Llc	DFT03683	01/05/23	$	1,919.62
Konica Minolta Business Solutions	DFT03684	01/05/23	$	391.50
Lincoln Financial Group	DFT03685	01/05/23	$	6,057.90
Lincoln Financial Group	DFT03686	01/05/23	$	80.11
Principal Life Ins. Co.	DFT03687	01/05/23	$	3,794.03
Southwest Gas Company	DFT03688	01/05/23	$	14,793.68
Southwest Gas Company	DFT03689	01/05/23	$	35,015.02
Citizens Business Bank	DFT03690	01/05/23	$	16,420.00
Flyers Energy, Llc	DFT03691	01/13/23	$	1,678.79
Southern California Edison	DFT03692	01/13/23	$	70,246.03
Southern California Edison	DFT03693	01/13/23	$	866.42
Sparkletts Drinking Water	DFT03694	01/13/23	$	1,388.39
Town Of Apple Valley	DFT03695	01/13/23	$	188.24
Citizens Business Bank	DFT03717	01/19/23	$	4,200.00
Southern California Edison	DFT03726	01/20/23	$	18,919.76
Southern California Edison	DFT03727	01/20/23	$	1,257.64
Southern California Edison	DFT03728	01/20/23	$	12,001.76
Southwest Gas Company	DFT03729	01/20/23	$	39.27
Southwest Gas Company	DFT03730	01/20/23	$	134.11
Southwest Gas Company	DFT03731	01/20/23	$	124.21
UPS	DFT03732	01/20/23	$	316.69
Ca Dept. Of Tax And Fee Admin.	DFT03734	01/20/23	$	3,262.00
Spectrum (Prev. Charter Communications)	DFT03735	01/26/23	$	5,157.61
SWRCB	DFT03736	01/26/23	$	4,007.75
SWRCB	999999	01/05/23	$	7,770.00
		Total ACH & EFT's	**$**	**796,899.51**

Approved

Total Checks	**$**	**89,884.89**
Total ACH and EFT's	**$**	**796,899.51**
Total Payroll - January 2023	**$**	**523,178.03**
Total	**$**	**1,409,962.43**

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Board of Commissioners Staff Report

TO:	VVWRA Board of Commissioners
FROM:	Darron Poulsen, General Manager
SUBMITTED BY:	Darron Poulsen, General Manager
DATE:	February 16, 2023
SUBJECT:	**RECOMMENDATION TO AMEND THE FISCAL YEAR 2022-23 OPERATING BUDGET BY UTILIZING A PORTION OF THE FY 2022 SURPLUS AND APPROVE THE PREFUNDING OF THE CAL RECYCLE GRANT PROJECT**

☒	**For Action**	☒	**Fiscal Impact $ 0**
☐	**Information Only**	☒	**Account Code: Multiple Accounts**
		☒	**Funds Budgeted/ Approved:**

STAFF RECOMMENDATION

It is recommended that the Board of Commissioners approve the General Manager to amend the FY 2022-23 Operating Budget by utilizing a portion of the operating surplus from FY 2021-22 to cover the repair cost of the Apple Valley Subregional Plant fire suppression system; as well as several areas in the budget that require additional funding. Also, it is recommended that the Board of Commissioners approve the General Manager to utilize a portion of the connection fee reserve to prefund the quarterly cost of the Cal Recycle Grant project.

PREVIOUS ACTION(S)

On June 16, 2022, the VVWRA Board of Commissioners approved the FY 2022-23 Budget.

BACKGROUND INFORMATION

The current Mid-Year budget review reflects a balanced budget to date and expected revenues and expenses are on track to meet fiscal year budgeted needs. As part of the Mid-Year budget revision process, staff recalculates the beginning 2023 fiscal year User Charge and Connection Fee fund balances by using information from the audited financial statements. For the User Charge fund, a surplus of $708,895 is available as a result of the calculation. Staff recommends that the Board of Commissioners approve the General Manager to utilize a portion of the $708,895 operational surplus to cover several areas in the budget that require additional funding, as well as the repair cost of the Appel Valley Subregional Plant fire suppression system, which was damaged during an unforeseen event on 12/7/2022.

	FY 2023 Adapted Budget	FY 2023 Mid Year Budget
Beginning Fund Balance	6,017,724	6,726,619
Operating Budget Surplus - User Charge	1,000,864	721,018
Total Reserve	7,018,588	7,447,637
Restricted Reserve - SRF Loan Payment	(2,749,738)	(2,749,738)
Restricted Reserve - Operating Reserve	(1,648,180)	(1,648,180)
Restricted Reserve - Emergency Reserve	(1,000,000)	(1,000,000)
Capital Project	(1,620,670)	(1,340,824)
Unallocated Reserve Surplus	**(0)**	**708,895**
Fire Supression System at AVWRP		(150,000)
General Counsel		(60,000)
Special Counsel		(50,000)
Uniform		(20,000)
		428,895

During FY 2023, VVWRA has secured a grant funding from Cal Recycle for a major facility upgrade project. To receive the grant, VVWRA must pay first and receive reimbursement from Cal Recycle afterwards. Staff recommends that the Board of Commissioners approve the General Manager to utilize a portion of the Connection Fee fund reserve to prefund the quarterly Cal Recycle project cost. Given the urgent nature of the Cal Recycle project, prefunding the quarterly cost would ensure VVWRA to meet the requirements of the Cal Recycle grant.

	FY 2023 Mid Year Budget
Beginning Fund Balance	7,138,608
Operating Budget Surplus - Connection Fee	1,849,579
Total Reserve	8,988,187
Restricted Reserve - SRF Loan Payment	(1,553,204)
Capital Project	(2,380,000)
Unallocated Reserve Surplus	**5,054,983**
Cal Recycle Project Reserve	**(1,000,000)**
	4,054,983

Attachments:

None

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Board of Commissioners Staff Report

TO: VVWRA Board of Commissioners

FROM: Darron Poulsen, General Manager

SUBMITTED BY: Darron Poulsen, General Manager

DATE: February 16, 2022

SUBJECT: RECOMMENDATION TO APPROVE AN AMENDMENT TO THE AMERICAN ORGANICS LEASE AGREEMENT TO ACCOUNT FOR STORM WATER MANAGEMENT CHANGES ON THE PROPOSED OPERATION EXPANSION

☒	For Action	☒	Fiscal Impact	$0
☐	Information Only	☐	Account Codes:	TBD
		☒	Funds Budgeted/Approved	

STAFF RECOMMENDATION

It is recommended that the Board of Commissioners approve the General Manager to execute an amendment to the American Organics Lease Agreement to account for the storm water management changes on the proposed operation expansion upon approval of the amendment by American Organics and the VVWRA Attorneys.

PREVIOUS ACTION(S)

December 1, 2016, VVWRA entered into a lease agreement with American Organics to allow them to utilize VVWRA land to operate a green waste recovery facility for the purpose to develop compost for a soil amendment product.

BACKGROUND INFORMATION

The lease agreement signed on December 1, 2016, did account for the required storm water management on the original land used by the American Organics green waste recovery and composting site. The lease also detailed additional land use for a future expansion of the American Organics operation. That expansion has gone through the environmental review and a conditional use permit (CUP) with the City of Victorville. A stipulation of the CUP was the American Organics had to sign a Mojave River Watershed Water Quality Management Plan (WQMP) Exhibit 1. This plan is necessary to comply with the requirements of the County of San Bernardino and Phase II Small MS4 General Permit for the Mojave River Watershed.

The WQMP details the necessary drainage plan and detention basins that must be maintained to capture stormwater on the site. The plan also identifies the necessary Best Management Practices (BMP's) that must be performed to assure the system operates correctly to protect the Mojave River Watershed. Water Quality requirements and testing are also outlined in the plan.

Because of these changes in the operations of the site, it is now necessary to amend the VVWRA lease agreement with American Organics to assure these new stipulations are identified and appropriately addressed to protect VVWRA from liability issues. It is recommended that the Board of Commissioners approve the General Manager to execute an amendment to the American Organics Lease Agreement to account for the storm water management changes on the proposed operation expansion upon approval of the amendment by American Organics and the VVWRA Attorneys.

Attachment(s):

Exhibit 1 – Mojave River Watershed WQMP for American Organics

EXHIBIT 1

MOJAVE RIVER WATERSHED

Water Quality Management Plan

For:

American Organics Composting Facility

GRADING PERMIT NUMBER: **BUILDING PERMIT NUMBER:TRACT NUMBER:**

LAND DEVELOPMENT FILE NUMBER: **APN: 0468-111-13**

Prepared for:

American Organics

20055 Shay Road

Victorville, CA 92394

(760) 246-7946

Prepared by:

Geo-Logic Associates

2777 E. Guasti Road

Ontario, CA 91761

(909) 626-2282

Submittal Date: Insert Initial Submittal Date

Revision No. and Date: Insert No and Current Revision Date

Revision No. and Date: Insert No and Current Revision Date

Revision No. and Date: Insert No and Current Revision Date

Revision No. and Date: Insert No and Current Revision Date

Revision No. and Date: Insert No and Current Revision Date

Final Approval Date:_____

Project Owner's Certification

This Mojave River Watershed Water Quality Management Plan (WQMP) has been prepared for American Organics by Geo-Logic Associates. The WQMP is intended to comply with the requirements of the County of San Bernardino and the Phase II Small MS4 General Permit for the Mojave River Watershed. The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the Phase II Small MS4 Permit and the intent of San Bernardino County (unincorporated areas of Phelan, Oak Hills, Spring Valley Lake and Victorville) and the incorporated cities of Hesperia and Victorville and the Town of Apple Valley. Once the undersigned transfers its interest in the property, its successors in interest and the city/county/town shall be notified of the transfer. The new owner will be informed of its responsibility under this WQMP. A copy of the approved WQMP shall be available on the subject site in perpetuity.

"I certify under a penalty of law that the provisions (implementation, operation, maintenance, and funding) of the WQMP have been accepted and that the plan will be transferred to future successors."

Project Data			
Permit/Application Number(s):		Grading Permit Number(s):	
Tract/Parcel Map Number(s):		Building Permit Number(s):	
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract):			APN 0468-111-13

Owner's Signature			
Owner Name:			
Title			
Company			
Address			
Email			
Telephone #			
Signature		Date	

Preparer's Certification

Project Data			
Permit/Application Number(s):		Grading Permit Number(s):	
Tract/Parcel Map Number(s):		Building Permit Number(s):	
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract):			APN 0468-111-13

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan were prepared under my oversight and meet the requirements of the California State Water Resources Control Board Order No. 2013-0001-DWQ.

Engineer: Robert Johnson		PE Stamp Below
Title	Principal Engineer	
Company	Geo-Logic Associates	
Address	2777 Guasti Road	
Email	rjohnson@geo-logic.com	
Telephone #	(909) 626-2282	
Signature		
Date	6-13-18	

REGISTERED PROFESSIONAL ENGINEER
ROBERT DYER JOHNSON
C 39641
EXP. 12-31-19
CIVIL
STATE OF CALIFORNIA

Table of Contents

Section I Introduction

Section 1 Discretionary Permits 1-1

Section 2 Project Description 2-1

2.1 Project Information 2-1
2.2 Property Ownership / Management 2-2
2.3 Potential Stormwater Pollutants 2-3
2.4 Water Quality Credits 2-4

Section 3 Site and Watershed Description 3-1

Section 4 Best Management Practices 4-1

4.1 Source Control and Site Design BMPs 4-1
4.1.1 Source Control BMPs 4-1
4.1.2 Site Design BMPs 4-6
4.2 Treatment BMPs 4-7
4.3 Project Conformance Analysis 4-12
4.3.1 Site Design BMP 4-14
4.3.2 Infiltration BMP 4-16
4.3.4 Biotreatment BMP 4-19
4.3.5 Conformance Summary 4-23
4.3.6 Hydromodification Control BMP 4-24
4.4 Alternative Compliance Plan (if applicable) 4-25

Section 5 Inspection & Maintenance Responsibility Post Construction BMPs 5-1

Section 6 Site Plan and Drainage Plan 6-1

6.1. Site Plan and Drainage Plan 6-1
6.2 Electronic Data Submittal 6-1

Forms

Form 1-1 Project Information 1-1
Form 2.1-1 Description of Proposed Project 2-1
Form 2.2-1 Property Ownership/Management 2-2
Form 2.3-1 Pollutants of Concern 2-3
Form 2.4-1 Water Quality Credits 2-4
Form 3-1 Site Location and Hydrologic Features 3-1
Form 3-2 Hydrologic Characteristics 3-2
Form 3-3 Watershed Description 3-3
Form 4.1-1 Non-Structural Source Control BMP 4-2
Form 4.1-2 Structural Source Control BMP 4-4
Form 4.1-3 Site Design Practices Checklist 4-6
Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume 4-7
Form 4.2-2 Summary of Hydromodification Assessment 4-8
Form 4.2-3 Hydromodification Assessment for Runoff Volume 4-9
Form 4.2-4 Hydromodification Assessment for Time of Concentration 4-10

Form 4.2-5 Hydromodification Assessment for Peak Runoff 4-11
Form 4.3-1 Infiltration BMP Feasibility 4-13
Form 4.3-2 Site Design BMP 4-14
Form 4.3-3 Infiltration LID BMP 4-17
Form 4.3-4 Selection and Evaluation of Biotreatment BMP 4-19
Form 4.3-5 Volume Based Biotreatment – Bioretention and Planter Boxes w/Underdrains .. 4-20
Form 4.3-6 Volume Based Biotreatment- Constructed Wetlands and Extended Detention ... 4-21
Form 4.3-7 Flow Based Biotreatment 4-22
Form 4.3-8 Conformance Summary and Alternative Compliance Volume Estimate 4-23
Form 4.3-9 Hydromodification Control BMP 4-24
Form 5-1 BMP Inspection and Maintenance 5-1

Insert Appendix Title if Applicable - Otherwise, please delete text

Insert Appendix Title if Applicable - Otherwise, please delete text

Insert Appendix Title if Applicable - Otherwise, please delete text

Insert Appendix Title if Applicable - Otherwise, please delete text

Insert Appendix Title if Applicable - Otherwise, please delete text

Section I – Introduction

This WQMP template has been prepared specifically for the Phase II Small MS4 General Permit in the Mojave River Watershed. This location is within the jurisdiction of the Lahontan Regional Water Quality Control Board (LRWQCB). This document should not be confused with the WQMP template for the Santa Ana Phase I area of San Bernardino County.

WQMP preparers must refer to the MS4 Permit for the Mojave Watershed WQMP template and Technical Guidance (TGD) document found at: http://cms.sbcounty.gov/dpw/Land/NPDES.aspx to find pertinent arid region and Mojave River Watershed specific references and requirements.

Section 1 Discretionary Permit(s)

Form 1-1 Project Information					
Project Name	Victor Valley Region Compost Facility Site Improvements				
Project Owner Contact Name:					
Mailing Address:		E-mail Address:		Telephone:	
Permit/Application Number(s):		Tract/Parcel Map Number(s):			
Additional Information/ Comments:					
Description of Project:	Upgrade existing composting facility including new administration building, materials processing building, maintenance canopy, compost aeration, break room, paving, stormwater detention basin				
Provide summary of Conceptual WQMP conditions (if previously submitted and approved). Attach complete copy.					

Section 2 Project Description

2.1 Project Information

The WQMP shall provide the information listed below. The information provided for Conceptual/ Preliminary WQMP should give sufficient detail to identify the major proposed site design and LID BMPs and other anticipated water quality features that impact site planning. Final Project WQMP must specifically identify all BMP incorporated into the final site design and provide other detailed information as described herein.

The purpose of this information is to help determine the applicable development category, pollutants of concern, watershed description, and long term maintenance responsibilities for the project, and any applicable water quality credits. This information will be used in conjunction with the information in Section 3, Site Description, to establish the performance criteria and to select the LID BMP or other BMP for the project or other alternative programs that the project will participate in, which are described in Section 4.

2.1.1 Project Sizing Categorization

If the Project is greater than 5,000 square feet, and not on the excluded list as found on Section 1.4 of the TGD, the Project is a Regulated Development Project.

If the Project is creating and/or replacing greater than 2,500 square feet but less than 5,000 square feet of impervious surface area, then it is considered a Site Design Only project. This criterion is applicable to all development types including detached single family homes that create and/or replace greater than 2,500 square feet of impervious area and are not part of a larger plan of development.

Form 2.1-1 Description of Proposed Project

1 Regulated Development Project Category (Select all that apply):			
☐ #1 New development involving the creation of 5,000 ft^2 or more of impervious surface collectively over entire site	☒ #2 Significant re-development involving the addition or replacement of 5,000 ft^2 or more of impervious surface on an already developed site	☐ #3 Road Project – any road, sidewalk, or bicycle lane project that creates greater than 5,000 square feet of contiguous impervious surface	☐ #4 LUPs – linear underground/overhead projects that has a discrete location with 5,000 sq. ft. or more new constructed impervious surface
☐ Site Design Only (Project Total Square Feet > 2,500 but < 5,000 sq.ft.) *Will require source control Site Design Measures. Use the "PCMP" Template. Do not use this WQMP Template.*			

2 Project Area (ft2):	1,431,000	**3** Number of Dwelling Units:	0	**4** SIC Code:	2875

5 Is Project going to be phased? Yes ☐ No ☒ *If yes, ensure that the WQMP evaluates each phase as a distinct DA, requiring LID BMPs to address runoff at time of completion.*

2.2 Property Ownership/Management

Describe the ownership/management of all portions of the project and site. State whether any infrastructure will transfer to public agencies (City, County, Caltrans, etc.) after project completion. State if a homeowners or property owners association will be formed and be responsible for the long-term maintenance of project stormwater facilities. Describe any lot-level stormwater features that will be the responsibility of individual property owners.

Form 2.2-1 Property Ownership/Management

Describe property ownership/management responsible for long-term maintenance of WQMP stormwater facilities:
American Organics leases the property from the Victor Valley Water Reclamation Authority (VVWRA) who ownes the property. Long term maintenance of WQMP associated facilities will be performed by the American Organics maintenance staff.

2.3 Potential Stormwater Pollutants

Best Management Practices (BMP) measures for pollutant generating activities and sources shall be designed consistent with recommendations from the CASQA Stormwater BMP Handbook for New Development and Redevelopment (or an equivalent manual). Pollutant generating activities must be considered when determining the overall pollutants of concern for the Project as presented in Form 2.3-1.

Determine and describe expected stormwater pollutants of concern based on land uses and site activities (refer to Table 3-2 in the TGD for WQMP).

Form 2.3-1 Pollutants of Concern

Pollutant	Please check: E=Expected, N=Not Expected		Additional Information and Comments
Pathogens (Bacterial / Virus)	E ☒	N ☐	Prescriptive TGD Table 3-2, Commercial/Industrial and Parking Lot
Nutrients - Phosphorous	E ☒	N ☐	Prescriptive TGD Table 3-2, Commercial/Industrial and Parking Lot
Nutrients - Nitrogen	E ☒	N ☐	Prescriptive TGD Table 3-2, Commercial/Industrial and Parking Lot
Noxious Aquatic Plants	E ☒	N ☐	Prescriptive TGD Table 3-2, Commercial/Industrial and Parking Lot
Sediment	E ☒	N ☐	Prescriptive TGD Table 3-2, Commercial/Industrial and Parking Lot
Metals	E ☒	N ☐	Prescriptive TGD Table 3-2, Commercial/Industrial and Parking Lot
Oil and Grease	E ☒	N ☐	Prescriptive TGD Table 3-2, Commercial/Industrial and Parking Lot
Trash/Debris	E ☒	N ☐	Prescriptive TGD Table 3-2, Commercial/Industrial and Parking Lot
Pesticides / Herbicides	E ☒	N ☐	Prescriptive TGD Table 3-2, Commercial/Industrial and Parking Lot
Organic Compounds	E ☒	N ☐	Prescriptive TGD Table 3-2, Commercial/Industrial and Parking Lot
Other:	E ☐	N ☐	
Other:	E ☐	N ☐	
Other:	E ☐	N ☐	

Section 3 Site and Watershed Description

Describe the project site conditions that will facilitate the selection of BMPs through an analysis of the physical conditions and limitations of the site and its receiving waters. Identify distinct drainage areas (DA) that collect flow from a portion of the site and describe how runoff from each DA (and sub-watershed Drainage Management Areas (DMAs)) is conveyed to the site outlet(s). Refer to Section 3.2 in the TGD for WQMP. The form below is provided as an example. Then complete Forms 3.2 and 3.3 for each DA on the project site. ***If the project has more than one drainage area for stormwater management, then complete additional versions of these forms for each DA / outlet. A map presenting the DMAs must be included as an appendix to the WQMP document.***

Form 3-1 Site Location and Hydrologic Features

Site coordinates *take GPS measurement at approximate center of site*	Latitude 117d21'18"N	Longitude 117d21'18"W	Thomas Bros Map page

1 San Bernardino County climatic region: ☒ Desert

2 Does the site have more than one drainage area (DA): Yes☒ No☐ *If no, proceed to Form 3-2. If yes, then use this form to show a conceptual schematic describing DMAs and hydrologic feature connecting DMAs to the site outlet(s). An example is provided below that can be modified for proposed project or a drawing clearly showing DMA and flow routing may be attached*

Conveyance	Briefly describe on-site drainage features to convey runoff that is not retained within a DMA
DA1 DMA C flows to DA1 DMA A	*Ex. Bioretention overflow to vegetated bioswale with 4' bottom width, 5:1 side slopes and bed slope of 0.01. Conveys runoff for 1000' through DMA 1 to existing catch basin on SE corner of property*
DA1 DMA A to Outlet 1	Runoff from administration building area West of Shay Road sheet flows to proposed infiltration basin (BMP 1). Basin overflows to offsite drainage wash along South perimeter of site.
DA1 DMA B to Outlet 1	
DA2 to Outlet 2	Runoff from grading borrow area is channeled to proposed infiltration basin (BMP 2). Basin overflows to existing drainage swale on West side of Shay road.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area 1

For Drainage Area 1's sub-watershed DMA, provide the following characteristics	DMA A	DMA B	DMA C	DMA D
1 DMA drainage area (ft^2)	173,000			
2 Existing site impervious area (ft^2)	0			
3 Antecedent moisture condition *For desert areas, use* http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf	2			
4 Hydrologic soil group *Refer to County Hydrology Manual Addendum for Arid Regions – http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_addendum.pdf*	A			
5 Longest flowpath length (ft)	1,000			
6 Longest flowpath slope (ft/ft)	0.023			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	barren			
8 Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50%* ***Attach photos of site to support rating***	poor			

Form 3-2 Existing Hydrologic Characteristics for Drainage Area 1 (use only as needed for additional DMA w/in DA 1)				
For Drainage Area 1's sub-watershed DMA, provide the following characteristics	DMA E	DMA F	DMA G	DMA H
1 DMA drainage area (ft^2)				
2 Existing site impervious area (ft^2)				
3 Antecedent moisture condition *For desert areas, use* http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf				
4 Hydrologic soil group *County Hydrology Manual Addendum for Arid Regions – http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_addendum.pdf*				
5 Longest flowpath length (ft)				
6 Longest flowpath slope (ft/ft)				
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*				
8 Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50% Attach photos of site to support rating*				

Form 3-3 Watershed Description for Drainage Area

Receiving waters Refer to SWRCB site: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml	Mohave River below Lower Narrows
Applicable TMDLs *http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml*	NA
303(d) listed impairments *http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml*	None
Environmentally Sensitive Areas (ESA) *Refer to Watershed Mapping Tool –* *http://sbcounty.permitrack.com/WAP*	No
Hydromodification Assessment	☐ Yes *Complete Hydromodification Assessment. Include Forms 4.2-2 through Form 4.2-5 and Hydromodification BMP Form 4.3-9 in submittal* ☒ No

Section 4 Best Management Practices (BMP)

4.1 Source Control BMPs and Site Design BMP Measures

The information and data in this section are required for both Regulated Development and Site Design Only Projects. Source Control BMPs and Site Design BMP Measures are the basis of site-specific pollution management.

4.1.1 Source Control BMPs

Non-structural and structural source control BMP are required to be incorporated into all new development and significant redevelopment projects. Form 4.1-1 and 4.1-2 are used to describe specific source control BMPs used in the WQMP or to explain why a certain BMP is not applicable. Table 7-3 of the TGD for WQMP provides a list of applicable source control BMP for projects with specific types of potential pollutant sources or activities. The source control BMP in this table must be implemented for projects with these specific types of potential pollutant sources or activities.

The preparers of this WQMP have reviewed the source control BMP requirements for new development and significant redevelopment projects. The preparers have also reviewed the specific BMP required for project as specified in Forms 4.1-1 and 4.1-2. All applicable non-structural and structural source control BMP shall be implemented in the project.

The identified list of source control BMPs correspond to the CASQA Stormwater BMP Handbook for New Development and Redevelopment.

Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N1	Education of Property Owners, Tenants and Occupants on Stormwater BMPs	☒	☐	
N2	Activity Restrictions	☒	☐	
N3	Landscape Management BMPs	☒	☐	
N4	BMP Maintenance	☒	☐	
N5	Title 22 CCR Compliance (How development will comply)	☒	☐	
N6	Local Water Quality Ordinances	☐	☒	categorically exempt
N7	Spill Contingency Plan	☐	☒	categorically exempt categorically exempt
N8	Underground Storage Tank Compliance	☐	☒	categorically exempt
N9	Hazardous Materials Disclosure Compliance	☐	☒	categorically exempt

Form 4.1-1 Non-Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, if not applicable, state reason
		Included	Not Applicable	
N10	Uniform Fire Code Implementation	☐	☒	categorically exempt
N11	Litter/Debris Control Program	☒	☐	
N12	Employee Training	☒	☐	
N13	Housekeeping of Loading Docks	☐	☒	categorically exempt
N14	Catch Basin Inspection Program	☒	☐	
N15	Vacuum Sweeping of Private Streets and Parking Lots	☒	☐	
N16	Other Non-structural Measures for Public Agency Projects	☐	☒	categorically exempt
N17	Comply with all other applicable NPDES permits	☒	☐	

Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, If not applicable, state reason
		Included	Not Applicable	
S1	Provide storm drain system stencilling and signage (CASQA New Development BMP Handbook SD-13)	☐	☒	no storm drain inlets
S2	Design and construct outdoor material storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-34)	☐	☒	categorically exempt
S3	Design and construct trash and waste storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-32)	☒	☐	
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control (Statewide Model Landscape Ordinance; CASQA New Development BMP Handbook SD-12)	☐	☒	no irrigation to conserve water
S5	Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement	☐	☒	no irrigation to conserve water
S6	Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10)	☒	☐	
S7	Covered dock areas (CASQA New Development BMP Handbook SD-31)	☐	☒	categorically exempt
S8	Covered maintenance bays with spill containment plans (CASQA New Development BMP Handbook SD-31)	☐	☒	categorically exempt
S9	Vehicle wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)	☐	☒	categorically exempt
S10	Covered outdoor processing areas (CASQA New Development BMP Handbook SD-36)	☐	☒	categorically exempt

Form 4.1-2 Structural Source Control BMPs

Identifier	Name	Check One		Describe BMP Implementation OR, If not applicable, state reason
		Included	Not Applicable	
S11	Equipment wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)	☐	☒	categorically exempt
S12	Fueling areas (CASQA New Development BMP Handbook SD-30)	☐	☒	categorically exempt
S13	Hillside landscaping (CASQA New Development BMP Handbook SD-10)	☐	☒	slopes not landscaped to conserve water
S14	Wash water control for food preparation areas	☐	☒	categorically exempt
S15	Community car wash racks (CASQA New Development BMP Handbook SD-33)	☐	☒	categorically exempt

4.1.2 Site Design BMPs

As part of the planning phase of a project, the site design practices associated with new LID requirements in the Phase II Small MS4 Permit must be considered. Site design BMP measures can result in smaller Design Capture Volume (DCV) to be managed by both LID and hydromodification control BMPs by reducing runoff generation.

As is stated in the Permit, it is necessary to evaluate site conditions such as soil type(s), existing vegetation and flow paths will influence the overall site design.

Describe site design and drainage plan including:

- A narrative of site design practices utilized or rationale for not using practices
- A narrative of how site plan incorporates preventive site design practices
- Include an attached Site Plan layout which shows how preventative site design practices are included in WQMP

Refer to Section 5.2 of the TGD for WQMP for more details.

Form 4.1-3 Site Design Practices Checklist
Site Design Practices *If yes, explain how preventative site design practice is addressed in project site plan. If no, other LID BMPs must be selected to meet targets*
Minimize impervious areas: Yes ☒ No ☐ Explanation: Design includes no superfluous paving
Maximize natural infiltration capacity; Including improvement and maintenance of soil: Yes ☒ No ☐ Explanation: Most of the site is unpaved. Soils are naturally highly pervious.
Preserve existing drainage patterns and time of concentration: Yes ☐ No ☒ Explanation:
Disconnect impervious areas. Including rerouting of rooftop drainage pipes to drain stormwater to storage or infiltration BMPs instead of to storm drain : Yes ☐ No ☒ Explanation:
Use of Porous Pavement.: Yes ☐ No ☒ Explanation:
Protect existing vegetation and sensitive areas: Yes ☐ No ☒ Explanation:
Re-vegetate disturbed areas. Including planting and preservation of drought tolerant vegetation. : Yes ☐ No ☒ Explanation:

Minimize unnecessary compaction in stormwater retention/infiltration basin/trench areas: Yes ☒ No ☐ Explanation: Infiltration trenches will be uncompacted
Utilize naturalized/rock-lined drainage swales in place of underground piping or imperviously lined swales: Yes ☐ No ☒ Explanation:
Stake off areas that will be used for landscaping to minimize compaction during construction : Yes ☐ No ☒ Explanation:
Use of Rain Barrels and Cisterns, Including the use of on-site water collection systems.: Yes ☐ No ☒ Explanation:
Stream Setbacks. Includes a specified distance from an adjacent steam: : Yes ☐ No ☒ Explanation:

It is noted that, in the Phase II Small MS4 Permit, site design elements for green roofs and vegetative swales are required. Due to the local climatology in the Mojave River Watershed, proactive measures are taken to maximize the amount of drought tolerant vegetation. It is not practical in this region to have green roofs or vegetative swales. As part of site design the project proponent should utilize locally recommended vegetation types for landscaping. Typical landscaping recommendations are found in following local references:

San Bernardino County Special Districts:

Guide to High Desert Landscaping -
http://www.specialdistricts.org/Modules/ShowDocument.aspx?documentid=795

Recommended High-Desert Plants -
http://www.specialdistricts.org/modules/showdocument.aspx?documentid=553

Mojave Water Agency:

Desert Ranch: http://www.mojavewater.org/files/desertranchgardenprototype.pdf

Summertree: http://www.mojavewater.org/files/Summertree-Native-Plant-Brochure.pdf

Thornless Garden: http://www.mojavewater.org/files/thornlessgardenprototype.pdf

Mediterranean Garden: http://www.mojavewater.org/files/mediterraneangardenprototype.pdf

Lush and Efficient Garden: http://www.mojavewater.org/files/lushandefficientgardenprototype.pdf

Alliance for Water Awareness and Conservation (AWAC) outdoor tips – http://hdawac.org/save-outdoors.html

4.2 Treatment BMPs

After implementation and design of both Source Control BMPs and Site Design BMP measures, any remaining runoff from impervious DMAs must be directed to one or more on-site, treatment BMPs (LID or biotreatment) designed to infiltrate, evaportranspire, and/or bioretain the amount of runoff specified in Permit Section E.12.e (ii)(c) Numeric Sizing Criteria for Storm Water Retention and Treatment.

4.2.1 Project Specific Hydrology Characterization

The purpose of this section of the Project WQMP is to establish targets for post-development hydrology based on performance criteria specified in Section E.12.e.ii.c and Section E.12.f of the Phase II Small MS4 Permit. These targets include runoff volume for water quality control (referred to as LID design capture volume), and runoff volume, time of concentration, and peak runoff for protection from hydromodification.

If the project has more than one outlet for stormwater runoff, then complete additional versions of these forms for each DA / outlet.

It is noted that in the Phase II Small MS4 Permit jurisdictions, the LID BMP Design Capture Volume criteria is based on the 2-year rain event. The hydromodification performance criterion is based on the 10-year rain event.

Methods applied in the following forms include:

- For LID BMP Design Capture Volume (DCV), San Bernardino County requires use of the P_6 method (Form 4.2-1) For pre- and post-development hydrologic calculation, San Bernardino County requires the use of the Rational Method (San Bernardino County Hydrology Manual Section D). Forms 4.2-2 through Form 4.2-5 calculate hydrologic variables including runoff volume, time of concentration, and peak runoff from the project site pre- and post-development using the Hydrology Manual Rational Method approach. For projects greater than 640 acres (1.0 mi^2), the Rational Method and these forms should not be used. For such projects, the Unit Hydrograph Method (San Bernardino County Hydrology Manual Section E) shall be applied for hydrologic calculations for hydromodification performance criteria.

Refer to Section 4 in the TGD for WQMP for detailed guidance and instructions.

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (DA 1)		
1 Project area DA 1 (ft^2): 173,000	2 Imperviousness after applying preventative site design practices (Imp%): 0.29	3 Runoff Coefficient (Rc): _0.217 $R_c = 0.858(Imp\%)^{3} - 0.78(Imp\%)^{2} + 0.774(Imp\%) + 0.04$
4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.327 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html		
5 Compute P_6, Mean 6-hr Precipitation (inches): 0.405 *P_6 = Item 4 * C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1 (Desert = 1.2371)*		
6 Drawdown Rate *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*		24-hrs ☐ 48-hrs ☒
7 Compute design capture volume, DCV (ft^3): 2,487 *DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)* *Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2*		

Form 4.2-2 Summary of Hydromodification Assessment (DA 1)

Is the change in post- and pre- condition flows captured on-site? : Yes ☐ No ☒

If "Yes", then complete Hydromodification assessment of site hydrology for 10yr storm event using Forms 4.2-3 through 4.2-5 and insert results below *(Forms 4.2-3 through 4.2-5 may be replaced by computer software analysis based on the San Bernardino County Hydrology Manual- Addendum 1)*

If "No," then proceed to Section 4.3 BMP Selection and Sizing

Condition	Runoff Volume (ft^3)	Time of Concentration (min)	Peak Runoff (cfs)
Pre-developed	**1** *Form 4.2-3 Item 12*	**2** *Form 4.2-4 Item 13*	**3** *Form 4.2-5 Item 10*
Post-developed	**4** *Form 4.2-3 Item 13*	**5** *Form 4.2-4 Item 14*	**6** *Form 4.2-5 Item 14*
Difference	**7** *Item 4 – Item 1*	**8** *Item 2 – Item 5*	**9** *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** % *Item 7 / Item 1*	**11** % *Item 8 / Item 2*	**12** % *Item 9 / Item 3*

Form 4.2-3 Hydromodification Assessment for Runoff Volume (DA 1)

Weighted Curve Number Determination for: Pre-developed DA	DMA A	DMA B	DMA C	DMA D	DMA E	DMA F	DMA G	DMA H
1a Land Cover type	barren							
2a Hydrologic Soil Group (HSG)	A							
3a DMA Area, ft^2 *sum of areas of DMA should equal area of DA*	173,000							
4a Curve Number (CN) *use Items 1 and 2 to select the appropriate CN from Appendix C-2 of the TGD for WQMP*	78							
Weighted Curve Number Determination for: Post-developed DA	DMA A	DMA B	DMA C	DMA D	DMA E	DMA F	DMA G	DMA H
1b Land Cover type	barren							
2b Hydrologic Soil Group (HSG)	A							
3b DMA Area, ft^2 *sum of areas of DMA should equal area of DA*	173,000							
4b Curve Number (CN) *use Items 5 and 6 to select the appropriate CN from Appendix C-2 of the TGD for WQMP*	78							

5 Pre-Developed area-weighted CN: 78	**7** Pre-developed soil storage capacity, S (in): 2.82 *S = (1000 / Item 5) - 10*	**9** Initial abstraction, I_a (in): 0.56 *I_a = 0.2 * Item 7*
6 Post-Developed area-weighted CN: 78	**8** Post-developed soil storage capacity, S (in): 2.82 *S = (1000 / Item 6) - 10*	**10** Initial abstraction, I_a (in): 0.56 *I_a = 0.2 * Item 8*

11 Precipitation for 10 yr, 24 hr storm (in): 1.79
Go to: http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html

12 Pre-developed Volume (ft^3): 5,385
*V_{pre} =(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 9)^2 / ((Item 11 – Item 9 + Item 7)*

13 Post-developed Volume (ft^3): 5,385
*V_{pre} =(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 10)^2 / ((Item 11 – Item 10 + Item 8)*

14 Volume Reduction needed to meet hydromodification requirement, (ft^3): 0
*Vhydro = (Item 13 * 0.95) – Item 12*

Form 4.2-4 Hydromodification Assessment for Time of Concentration (DA 1)

Compute time of concentration for pre and post developed conditions for each DA *(For projects using the Hydrology Manual complete the form below)*

Variables	Pre-developed DA1 *Use additional forms if there are more than 4 DMA*				Post-developed DA1 *Use additional forms if there are more than 4 DMA*			
	DMA A	DMA B	DMA C	DMA D	DMA A	DMA B	DMA C	DMA D
1 Length of flowpath (ft) *Use Form 3-2 Item 5 for pre-developed condition*								
2 Change in elevation (ft)								
3 Slope (ft/ft), S_o = *Item 2 / Item 1*								
4 Land cover								
5 Initial DMA Time of Concentration (min) *Appendix C-1 of the TGD for WQMP*								
6 Length of conveyance from DMA outlet to project site outlet (ft) *May be zero if DMA outlet is at project site outlet*								
7 Cross-sectional area of channel (ft^2)								
8 Wetted perimeter of channel (ft)								
9 Manning's roughness of channel (n)								
10 Channel flow velocity (ft/sec) V_{fps} = *(1.49 / Item 9) * (Item 7/Item 8)^0.67 * (Item 3)^0.5*								
11 Travel time to outlet (min) T_t = *Item 6 / (Item 10 * 60)*								
12 Total time of concentration (min) T_c = *Item 5 + Item 11*								

13 Pre-developed time of concentration (min): *Minimum of Item 12 pre-developed DMA*

14 Post-developed time of concentration (min): *Minimum of Item 12 post-developed DMA*

15 Additional time of concentration needed to meet hydromodification requirement (min): $T_{c\text{-}Hydro}$ = *(Item 13 * 0.95) – Item 14*

Form 4.2-5 Hydromodification Assessment for Peak Runoff (DA 1)

Compute peak runoff for pre- and post-developed conditions

Variables		Pre-developed DA to Project Outlet (*Use additional forms if more than 3 DMA)*			Post-developed DA to Project Outlet (*Use additional forms if more than 3 DMA)*		
		DMA A	DMA B	DMA C	DMA A	DMA B	DMA C
1 Rainfall Intensity for storm duration equal to time of concentration *I_{peak} = 10^(LOG Form 4.2-1 Item 4 - 0.7 LOG Form 4.2-4 Item 5 /60)*							
2 Drainage Area of each DMA (Acres) *For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
3 Ratio of pervious area to total area *For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
4 Pervious area infiltration rate (in/hr) *Use pervious area CN and antecedent moisture condition with Appendix C-3 of the TGD for WQMP*							
5 Maximum loss rate (in/hr) *F_m = Item 3 * Item 4* *Use area-weighted F_m from DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)*							
6 Peak Flow from DMA (cfs) *Q_p =Item 2 * 0.9 * (Item 1 - Item 5)*							
7 Time of concentration adjustment factor for other DMA to site discharge point *Form 4.2-4 Item 12 DMA / Other DMA upstream of site discharge point (If ratio is greater than 1.0, then use maximum value of 1.0)*	DMA A	*n/a*			*n/a*		
	DMA B		*n/a*			*n/a*	
	DMA C			*n/a*			*n/a*

8 Pre-developed Q_p at T_c for DMA A: *Q_p = Item 6_{DMAA} + [Item 6_{DMAB} * (Item 1_{DMAA} - Item 5_{DMAB})/(Item 1_{DMAB} - Item 5_{DMAB})* Item $7_{DMAA/2}$] + [Item 6_{DMAC} * (Item 1_{DMAA} - Item 5_{DMAC})/(Item 1_{DMAC} - Item 5_{DMAC})* Item $7_{DMAA/3}$]*	**9** Pre-developed Q_p at T_c for DMA B: *Q_p = Item 6_{DMAB} + [Item 6_{DMAA} * (Item 1_{DMAB} - Item 5_{DMAA})/(Item 1_{DMAA} - Item 5_{DMAA})* Item $7_{DMAB/1}$] + [Item 6_{DMAC} * (Item 1_{DMAB} - Item 5_{DMAC})/(Item 1_{DMAC} - Item 5_{DMAC})* Item $7_{DMAB/3}$]*	**10** Pre-developed Q_p at T_c for DMA C: *Q_p = Item 6_{DMAC} + [Item 6_{DMAA} * (Item 1_{DMAC} - Item 5_{DMAA})/(Item 1_{DMAA} - Item 5_{DMAA})* Item $7_{DMAC/1}$] + [Item 6_{DMAB} * (Item 1_{DMAC} - Item 5_{DMAB})/(Item 1_{DMAB} - Item 5_{DMAB})* Item $7_{DMAC/2}$]*
10 Peak runoff from pre-developed condition confluence analysis (cfs):		*Maximum of Item 8, 9, and 10 (including additional forms as needed)*
11 Post-developed Q_p at T_c for DMA A: *Same as Item 8 for post-developed values*	**12** Post-developed Q_p at T_c for DMA B: *Same as Item 9 for post-developed values*	**13** Post-developed Q_p at T_c for DMA C: *Same as Item 10 for post-developed values*
14 Peak runoff from post-developed condition confluence analysis (cfs):		*Maximum of Item 11, 12, and 13 (including additional forms as needed)*
15 Peak runoff reduction needed to meet Hydromodification Requirement (cfs):		$Q_{p,hydro}$ = *(Item 14 * 0.95) – Item 10*

4.3 BMP Selection and Sizing

Complete the following forms for each project site DA to document that the proposed treatment (LID/Bioretention) BMPs conform to the project DCV developed to meet performance criteria specified in the Phase II Small MS4 Permit (WQMP Template Section 4.2). For the LID DCV, the forms are ordered according to hierarchy of BMP selection as required by the Phase II Small MS4 Permit (see Section 5.3 in the TGD for WQMP). The forms compute the following for on-site LID BMP:

- Site Design Measures (Form 4.3-2)
- Retention and Infiltration BMPs (Form 4.3-3) or
- Biotreatment BMPs (Form 4.3-4).

> Please note that the selected BMPs may also be used as dual purpose for on-site, hydromodification mitigation and management.

At the end of each form, additional fields facilitate the determination of the extent of mitigation provided by the specific BMP category, allowing for use of the next category of BMP in the hierarchy, if necessary.

The first step in the analysis, using Section 5.3.2 of the TGD for WQMP, is to complete Forms 4.3-1 and 4.3-3) to determine if retention and infiltration BMPs are infeasible for the project. For each feasibility criterion in Form 4.3-1, if the answer is "Yes," provide all study findings that includes relevant calculations, maps, data sources, etc. used to make the determination of infeasibility.

Next, complete Form 4.3-2 to determine the feasibility of applicable Site Design BMPs, and, if their implementation is feasible, the extent of mitigation of the DCV.

If no site constraints exist that would limit the type of BMP to be implemented in a DA, evaluate the use of combinations of LID BMPs, including all applicable Site Design BMPs to maximize on-site retention of the DCV. If no combination of BMP can mitigate the entire DCV, implement the single BMP type, or combination of BMP types, that maximizes on-site retention of the DCV within the minimum effective area.

If the combination of site design, retention and/or infiltration BMPs is unable to mitigate the entire DCV, then the remainder of the volume-based performance criteria that cannot be achieved with site design, retention and/or infiltration BMPs must be managed through biotreatment BMPs. If biotreatment BMPs are used, then they must be sized to provide equivalent effectiveness based on Template Section 4.3.4.

4.3.1 Exceptions to Requirements for Bioretention Facilities

Contingent on a demonstration that use of bioretention or a facility of equivalent effectiveness is infeasible, other types of biotreatment or media filters (such as tree-box-type biofilters or in-vault media filters) may be used for the following categories of Regulated Projects:

1) Projects creating or replacing an acre or less of impervious area, and located in a designated pedestrian-oriented commercial district (i.e., smart growth projects), and having at least 85% of the entire project site covered by permanent structures;

2) Facilities receiving runoff solely from existing (pre-project) impervious areas; and

3) Historic sites, structures or landscapes that cannot alter their original configuration in order to maintain their historic integrity.

Form 4.3-1 Infiltration BMP Feasibility (DA 1)
Feasibility Criterion – Complete evaluation for each DA on the Project Site
[1] Would infiltration BMP pose significant risk for groundwater related concerns? Yes ☐ No ☒ *Refer to Section 5.3.2.1 of the TGD for WQMP*
If Yes, Provide basis: (attach)
[2] Would installation of infiltration BMP significantly increase the risk of geotechnical hazards? Yes ☐ No ☒ (Yes, if the answer to any of the following questions is yes, as established by a geotechnical expert): • The location is less than 50 feet away from slopes steeper than 15 percent • The location is less than ten feet from building foundations or an alternative setback. • A study certified by a geotechnical professional or an available watershed study determines that stormwater infiltration would result in significantly increased risks of geotechnical hazards.
If Yes, Provide basis: (attach)
[3] Would infiltration of runoff on a Project site violate downstream water rights? Yes ☐ No ☒
If Yes, Provide basis: (attach)
[4] Is proposed infiltration facility located on hydrologic soil group (HSG) D soils or does the site geotechnical investigation indicate presence of soil characteristics, which support categorization as D soils? Yes ☐ No ☒
If Yes, Provide basis: (attach)
[5] Is the design infiltration rate, after accounting for safety factor of 2.0, below proposed facility less than 0.3 in/hr (accounting for soil amendments)? Yes ☐ No ☒
If Yes, Provide basis: (attach)
[6] Would on-site infiltration or reduction of runoff over pre-developed conditions be partially or fully inconsistent with watershed management strategies as defined in the WAP, or impair beneficial uses? Yes ☐ No ☒ *See Section 3.5 of the TGD for WQMP and WAP*
If Yes, Provide basis: (attach)
[7] Any answer from Item 1 through Item 3 is "Yes": Yes ☐ No ☒ *If yes, infiltration of any volume is not feasible onsite. Proceed to Form 4.3-4, Selection and Evaluation of Biotreatment BMP.* *If no, then proceed to Item 8 below.* [8] Any answer from Item 4 through Item 6 is "Yes": Yes ☐ No ☒ *If yes, infiltration is permissible but is not required to be considered. Proceed to Form 4.3-2, Site Design BMP.* *If no, then proceed to Item 9, below.* [9] All answers to Item 1 through Item 6 are "No": *Infiltration of the full DCV is potentially feasible, LID infiltration BMP must be designed to infiltrate the full DCV to the MEP.* *Proceed to Form 4.3-2, Site Design BMPs.*

4.3.2 Site Design BMP

Section E.12.e. of the Small Phase II MS4 Permit emphasizes the use of LID preventative measures; and the use of Site Design Measures reduces the portion of the DCV that must be addressed in downstream BMPs. Therefore, all applicable Site Design Measures shall be provided except where they are mutually exclusive

with each other, or with other BMPs. Mutual exclusivity may result from overlapping BMP footprints such that either would be potentially feasible by itself, but both could not be implemented. Please note that while there are no numeric standards regarding the use of Site Design BMPs. If a project cannot feasibly meet BMP sizing requirements or cannot fully address hydromodification, feasibility of all applicable Site Design BMPs must be part of demonstrating that the BMP system has been designed to retain the maximum feasible portion of the DCV. Complete Form 4.3-2 to identify and calculate estimated retention volume from implementing site design BMP. Refer to Section 5.4 in the TGD for more detailed guidance.

Form 4.3-2 Site Design BMPs (DA 1)

1 Implementation of Impervious Area Dispersion BMP (i.e. routing runoff from impervious to pervious areas), excluding impervious areas planned for routing to on-lot infiltration BMP: Yes ☐ No ☒ *If yes, complete Items 2-5; If no, proceed to Item 6*	DA 1 DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
2 Total impervious area draining to pervious area (ft^2)			
3 Ratio of pervious area receiving runoff to impervious area			
4 Retention volume achieved from impervious area dispersion (ft^3) *V = Item2 * Item 3 * (0.5/12), assuming retention of 0.5 inches of runoff*			
5 Sum of retention volume achieved from impervious area dispersion (ft^3):	$V_{retention}$ *=Sum of Item 4 for all BMPs*		
6 Implementation of Localized On-lot Infiltration BMPs (e.g. on-lot rain gardens): Yes ☐ No ☒ *If yes, complete Items 7-13 for aggregate of all on-lot infiltration BMP in each DA; If no, proceed to Item 14*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
7 Ponding surface area (ft^2)			
8 Ponding depth (ft) (min. 0.5 ft.)			
9 Surface area of amended soil/gravel (ft^2)			
10 Average depth of amended soil/gravel (ft) (min. 1 ft.)			
11 Average porosity of amended soil/gravel			
12 Retention volume achieved from on-lot infiltration (ft^3) $V_{retention}$ *= (Item 7 *Item 8) + (Item 9 * Item 10 * Item 11)*			
13 Runoff volume retention from on-lot infiltration (ft^3):	$V_{retention}$ *=Sum of Item 12 for all BMPs*		

Form 4.3-2 cont. Site Design BMPs (DA 1)

14 Implementation of Street Trees: Yes ☐ No ☒ *If yes, complete Items 14-18. If no, proceed to Item 19*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
15 Number of Street Trees			
16 Average canopy cover over impervious area (ft^2)			
17 Runoff volume retention from street trees (ft^3) $V_{retention}$ = *Item 15 * Item 16 * (0.05/12) assume runoff retention of 0.05 inches*			
18 Runoff volume retention from street tree BMPs (ft^3):	$V_{retention}$ = *Sum of Item 17 for all BMPs*		
19 Total Retention Volume from Site Design BMPs: 0 *Sum of Items 5, 13 and 18*			

4.3.3 Infiltration BMPs

Use Form 4.3-3 to compute on-site retention of runoff from proposed retention and infiltration BMPs. Volume retention estimates are sensitive to the percolation rate used, which determines the amount of runoff that can be infiltrated within the specified drawdown time. The infiltration safety factor reduces field measured percolation to account for potential inaccuracy associated with field measurements, declining BMP performance over time, and compaction during construction. Appendix C of the TGD for WQMP provides guidance on estimating an appropriate safety factor to use in Form 4.3-3.

If site constraints limit the use of BMPs to a single type and implementation of retention and infiltration BMPs mitigate no more than 40% of the DCV, then they are considered infeasible and the Project Proponent may evaluate the effectiveness of BMPs lower in the LID hierarchy of use (Section 5.5 of the TGD for WQMP)

If implementation of infiltrations BMPs is feasible as determined using Form 4.3-1, then LID infiltration BMPs shall be implemented to the MEP (section 4.1 of the TGD for WQMP).

4.3.3.1 Allowed Variations for Special Site Conditions

The bioretention system design parameters of this Section may be adjusted for the following special site conditions:

1) Facilities located within 10 feet of structures or other potential geotechnical hazards established by the geotechnical expert for the project may incorporate an impervious cutoff wall between the bioretention facility and the structure or other geotechnical hazard.

2) Facilities with documented high concentrations of pollutants in underlying soil or groundwater, facilities located where infiltration could contribute to a geotechnical hazard, and facilities located on elevated plazas or other structures may incorporate an impervious liner and may locate the underdrain discharge at the bottom of the subsurface drainage/storage layer (this configuration is commonly known as a "flow-through planter").

3) Facilities located in areas of high groundwater, highly infiltrative soils or where connection of underdrain to a surface drain or to a subsurface storm drain are infeasible, may omit the underdrain.

4) Facilities serving high-risk areas such as fueling stations, truck stops, auto repairs, and heavy industrial sites may be required to provide adequate pretreatment to address pollutants of concern unless these high-risk areas are isolated from storm water runoff or bioretention areas with no chance of spill migration.

Form 4.3-3 Infiltration LID BMP - including underground BMPs (DA 1)

1 Remaining LID DCV not met by site design BMP (ft^3): 2,487 *V_{unmet} = Form 4.2-1 Item 7 - Form 4.3-2 Item19*

BMP Type *Use columns to the right to compute runoff volume retention from proposed infiltration BMP (select BMP from Table 5-4 in TGD for WQMP) - Use additional forms for more BMPs*	DA 1 DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
2 Infiltration rate of underlying soils (in/hr) *See Section 5.4.2 and Appendix C of the TGD for WQMP for minimum requirements for assessment methods*	1.0 assumed		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	0.5		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	2		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	2		
8 Infiltrating surface area, *SA_{BMP}* (ft^2) *the lesser of the area needed for infiltration of full DCV or minimum space requirements from Table 5.7 of the TGD for WQMP*	1,245		
9 Amended soil depth, *d_{media}* (ft) *Only included in certain BMP types, see Table 5-4 in the TGD for WQMP for reference to BMP design details*			
10 Amended soil porosity			
11 Gravel depth, *d_{media}* (ft) *Only included in certain BMP types, see Table 5-4 of the TGD for WQMP for BMP design details*			
12 Gravel porosity			
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
14 Above Ground Retention Volume (ft^3) *$V_{retention}$ = Item 8 * [Item7 + (Item 9 * Item 10) + (Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*	2,490		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*			

16 Total Retention Volume from LID Infiltration BMPs: 2,490 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*

17 Fraction of DCV achieved with infiltration BMP: 100% *Retention% = Item 16 / Form 4.2-1 Item 7*

18 Is full LID DCV retained onsite with combination of hydrologic source control and LID retention/infiltration BMPs? Yes ☒ No ☐

If yes, demonstrate conformance using Form 4.3-10; If no, then reduce Item 3, Factor of Safety to 2.0 and increase Item 8, Infiltrating Surface Area, such that the portion of the site area used for retention and infiltration BMPs equals or exceeds the minimum effective area thresholds (Table 5-7 of the TGD for WQMP) for the applicable category of development and repeat all above calculations.

4.3.4 Biotreatment BMP

Biotreatment BMPs may be considered if the full LID DCV cannot be met by maximizing retention and infiltration. A key consideration when using biotreatment BMP is the effectiveness of the proposed BMP in addressing the pollutants of concern for the project (see Table 5-5 of the TGD for WQMP).

Use Form 4.3-4 to summarize the potential for volume based and/or flow based biotreatment options to biotreat the remaining unmet LID DCV. Biotreatment computations are included as follows:

- Use Form 4.3-5 to compute biotreatment in small volume based biotreatment BMP (e.g. bioretention w/underdrains);
- Use Form 4.3-6 to compute biotreatment in large volume based biotreatment BMP (e.g. constructed wetlands);
- Use Form 4.3-7 to compute sizing criteria for flow-based biotreatment BMP (e.g. bioswales)

Form 4.3-4 Selection and Evaluation of Biotreatment BMP (DA 1)

1 Remaining LID DCV not met by site design , or infiltration, BMP for potential biotreatment (ft^3): *Form 4.2-1 Item 7 - Form 4.3-2 Item 19 – Form 4.3-3 Item 16*	List pollutants of concern *Copy from Form 2.3-1.*	
2 Biotreatment BMP Selected *(Select biotreatment BMP(s) necessary to ensure all pollutants of concern are addressed through Unit Operations and Processes, described in Table 5-5 of the TGD for WQMP)*	Volume-based biotreatment *Use Forms 4.3-5 and 4.3-6 to compute treated volume*	Flow-based biotreatment *Use Form 4.3-7 to compute treated flow*
	☐ Bioretention with underdrain ☐ Planter box with underdrain ☐ Constructed wetlands ☐ Wet extended detention ☐ Dry extended detention	☐ Vegetated swale ☐ Vegetated filter strip ☐ Proprietary biotreatment
3 Volume biotreated in volume based biotreatment BMP (ft^3): *Form 4.3-5 Item 15 + Form 4.3-6 Item 13*	**4** Compute remaining LID DCV with implementation of volume based biotreatment BMP (ft^3): *Item 1 – Item 3*	**5** Remaining fraction of LID DCV for sizing flow based biotreatment BMP: % *Item 4 / Item 1*
6 Flow-based biotreatment BMP capacity provided (cfs): *Use Figure 5-2 of the TGD for WQMP to determine flow capacity required to provide biotreatment of remaining percentage of unmet LID DCV (Item 5), for the project's precipitation zone (Form 3-1 Item 1)*		
7 Metrics for MEP determination: • Provided a WQMP with the portion of site area used for suite of LID BMP equal to minimum thresholds in Table 5-7 of the TGD for WQMP for the proposed category of development: ☐ *If maximized on-site retention BMPs is feasible for partial capture, then LID BMP implementation must be optimized to retain and infiltrate the maximum portion of the DCV possible within the prescribed minimum effective area. The remaining portion of the DCV shall then be mitigated using biotreatment BMP.*		

Form 4.3-5 Volume Based Biotreatment (DA 1) – Bioretention and Planter Boxes with Underdrains

Biotreatment BMP Type *(Bioretention w/underdrain, planter box w/underdrain, other comparable BMP)*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
1 Pollutants addressed with BMP *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP*			
2 Amended soil infiltration rate *Typical ~ 5.0*			
3 Amended soil infiltration safety factor *Typical ~ 2.0*			
4 Amended soil design percolation rate (in/hr) P_{design} = *Item 2 / Item 3*			
5 Ponded water drawdown time (hr) *Copy Item 6 from Form 4.2-1*			
6 Maximum ponding depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
7 Ponding Depth (ft) d_{BMP} = *Minimum of (1/12 * Item 4 * Item 5) or Item 6*			
8 Amended soil surface area (ft^2)			
9 Amended soil depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
10 Amended soil porosity, *n*			
11 Gravel depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
12 Gravel porosity, *n*			
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*			
14 Biotreated Volume (ft^3) $V_{biotreated}$ = *Item 8 * [(Item 7/2) + (Item 9 * Item 10) +(Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*			
15 Total biotreated volume from bioretention and/or planter box with underdrains BMP: *Sum of Item 14 for all volume-based BMPs included in this form*			

Form 4.3-6 Volume Based Biotreatment (DA 1) – Constructed Wetlands and Extended Detention

Biotreatment BMP Type *Constructed wetlands, extended wet detention, extended dry detention, or other comparable proprietary BMP. If BMP includes multiple modules (E.g. forebay and main basin), provide separate estimates for storage and pollutants treated in each module.*	DA DMA BMP Type		DA DMA BMP Type *(Use additional forms for more BMPs)*	
	Forebay	Basin	Forebay	Basin
1 Pollutants addressed with BMP forebay and basin *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP*				
2 Bottom width (ft)				
3 Bottom length (ft)				
4 Bottom area (ft^2) A_{bottom} = *Item 2 * Item 3*				
5 Side slope (ft/ft)				
6 Depth of storage (ft)				
7 Water surface area (ft^2) $A_{surface}$ =*(Item 2 + (2 * Item 5 * Item 6)) * (Item 3 + (2 * Item 5 * Item 6))*				
8 Storage volume (ft^3) *For BMP with a forebay, ensure fraction of total storage is within ranges specified in BMP specific fact sheets, see Table 5-6 of the TGD for WQMP for reference to BMP design details* V =*Item 6 / 3 * [Item 4 + Item 7 + (Item 4 * Item 7)^0.5]*				
9 Drawdown Time (hrs) *Copy Item 6 from Form 2.1*				
10 Outflow rate (cfs) Q_{BMP} = *(Item $8_{forebay}$ + Item 8_{basin}) / (Item 9 * 3600)*				
11 Duration of design storm event (hrs)				
12 Biotreated Volume (ft^3) $V_{biotreated}$ = *(Item $8_{forebay}$ + Item 8_{basin}) +(Item 10 * Item 11 * 3600)*				
13 Total biotreated volume from constructed wetlands, extended dry detention, or extended wet detention : *(Sum of Item 12 for all BMP included in plan)*				

Form 4.3-7 Flow Based Biotreatment (DA 1)

Biotreatment BMP Type *Vegetated swale, vegetated filter strip, or other comparable proprietary BMP*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
1 Pollutants addressed with BMP *List all pollutant of concern that will be effectively reduced through specific Unit Operotions and Processes described in TGD Table 5-5*			
2 Flow depth for water quality treatment (ft) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
3 Bed slope (ft/ft) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
4 Manning's roughness coefficient			
5 Bottom width (ft) b_w = *(Form 4.3-5 Item 6 * Item 4) / (1.49 * Item 2^1.67 * Item 3^0.5)*			
6 Side Slope (ft/ft) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
7 Cross sectional area (ft^2) *A = (Item 5 * Item 2) + (Item 6 * Item 2^2)*			
8 Water quality flow velocity (ft/sec) *V = Form 4.3-5 Item 6 / Item 7*			
9 Hydraulic residence time (min) *Pollutant specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
10 Length of flow based BMP (ft) *L = Item 8 * Item 9 * 60*			
11 Water surface area at water quality flow depth (ft^2) SA_{top} = *(Item 5 + (2 * Item 2 * Item 6)) * Item 10*			

4.3.5 Conformance Summary

Complete Form 4.3-8 to demonstrate how on-site LID DCV is met with proposed site design, infiltration, and/or biotreatment BMP. The bottom line of the form is used to describe the basis for infeasibility determination for on-site LID BMP to achieve full LID DCV, and provides methods for computing remaining volume to be addressed in an alternative compliance plan. If the project has more than one outlet, then complete additional versions of this form for each outlet.

Form 4.3-8 Conformance Summary and Alternative Compliance Volume Estimate (DA 1)

1 Total LID DCV for the Project DA-1 (ft^3): 2,487 *Copy Item 7 in Form 4.2-1*

2 On-site retention with site design BMP (ft^3): 0 *Copy Item18 in Form 4.3-2*

3 On-site retention with LID infiltration BMP (ft^3): 2,490 *Copy Item 16 in Form 4.3-3*

4 On-site biotreatment with volume based biotreatment BMP (ft^3): 0 *Copy Item 3 in Form 4.3-4*

5 Flow capacity provided by flow based biotreatment BMP (cfs): 0 *Copy Item 6 in Form 4.3-4*

6 LID BMP performance criteria are achieved if answer to any of the following is "Yes":

- Full retention of LID DCV with site design or infiltration BMP: Yes ☒ No ☐
  If yes, sum of Items 2, 3, and 4 is greater than Item 1
- Combination of on-site retention BMPs for a portion of the LID DCV and volume-based biotreatment BMP that address all pollutants of concern for the remaining LID DCV: Yes ☐ No ☒
  If yes, a) sum of Items 2, 3, 4, and 5 is greater than Item 1, and Items 2, 3 and 4 are maximized; or b) Item 6 is greater than Form 4.3--5 Item 6 and Items 2, 3 and 4 are maximized
- On-site retention and infiltration is determined to be infeasible; therefore biotreatment BMP provides biotreatment for all pollutants of concern for full LID DCV: Yes ☐ No ☒
  If yes, Form 4.3-1 Items 7 and 8 were both checked yes

7 If the LID DCV is not achieved by any of these means, then the project may be allowed to develop an alternative compliance plan. Check box that describes the scenario which caused the need for alternative compliance:

- Combination of Site Design, retention and infiltration, , and biotreatment BMPs provide less than full LID DCV capture: ☐
  Checked yes if Form 4.3-4 Item 7is checked yes, Form 4.3-4 Item 6 is zero, and sum of Items 2, 3, 4, and 5 is less than Item 1. If so, apply water quality credits and calculate volume for alternative compliance, V_{alt} *= (Item 1 – Item 2 – Item 3 – Item 4 – Item 5) * (100 - Form 2.4-1 Item 2)%*

- Facilities, or a combination of facilities, of a different design than in Section E.12.e.(ii)(f) may be permitted if all of the following Phase II Small MS4 General Permit 2013-0001-DWQ 55 February 5, 2013 measures of equivalent effectiveness are demonstrated:
  1) Equal or greater amount of runoff infiltrated or evapotranspired; ☐
  2) Equal or lower pollutant concentrations in runoff that is discharged after biotreatment; ☐
  3) Equal or greater protection against shock loadings and spills; ☐
  4) Equal or greater accessibility and ease of inspection and maintenance. ☐

4.3.6 Hydromodification Control BMP

Use Form 4.3-9 to compute the remaining runoff volume retention, after Site Design BMPs are implemented, needed to address hydromodification, and the increase in time of concentration and decrease in peak runoff necessary to meet targets for protection of waterbodies with a potential hydromodification. Describe the proposed hydromodification treatment control BMP. Section 5.6 of the TGD for WQMP provides additional details on selection and evaluation of hydromodification control BMP.

Form 4.3-9 Hydromodification Control BMPs (DA 1)

1 Volume reduction needed for hydromodification performance criteria (ft^3): 0 *(Form 4.2-2 Item 4 * 0.95) – Form 4.2-2 Item 1*	**2** On-site retention with site design and infiltration, BMP (ft^3): *Sum of Form 4.3-8 Items 2, 3, and 4. Evaluate option to increase implementation of on-site retention in Forms 4.3-2, 4.3-3, and 4.3-4 in excess of LID DCV toward achieving hydromodification volume reduction*
3 Remaining volume for hydromodification volume capture (ft^3): *Item 1 – Item 2*	**4** Volume capture provided by incorporating additional on-site BMPs (ft^3):

5 Is Form 4.2-2 Item 11 less than or equal to 5%: Yes ☐ No ☐

If yes, hydromodification performance criteria is achieved. If no, select one or more mitigation options below:

- Demonstrate increase in time of concentration achieved by proposed LID site design, LID BMP, and additional on-site BMP ☐
- Increase time of concentration by preserving pre-developed flow path and/or increase travel time by reducing slope and increasing cross-sectional area and roughness for proposed on-site conveyance facilities ☐

6 Form 4.2-2 Item 12 less than or equal to 5%: Yes ☐ No ☐

If yes, hydromodification performance criteria is achieved. If no, select one or more mitigation options below:

- Demonstrate reduction in peak runoff achieved by proposed LID site design, LID BMPs, and additional on-site retention BMPs ☐

4.4 Alternative Compliance Plan (if applicable)

Describe an alternative compliance plan (if applicable) for projects not fully able to infiltrate, or biotreat the DCV via on-site LID practices. A project proponent must develop an alternative compliance plan to address the remainder of the LID DCV. Depending on project type some projects may qualify for water quality credits that can be applied to reduce the DCV that must be treated prior to development of an alternative compliance plan (see Form 2.4-1, Water Quality Credits). Form 4.3-9 Item 8 includes instructions on how to apply water quality credits when computing the DCV that must be met through alternative compliance.

Alternative Designs — Facilities, or a combination of facilities, of a different design than in Permit Section E.12.e.(ii)(f) may be permitted if all of the following measures of equivalent effectiveness are demonstrated:

1) Equal or greater amount of runoff infiltrated or evapotranspired;

2) Equal or lower pollutant concentrations in runoff that is discharged after biotreatment;

3) Equal or greater protection against shock loadings and spills;

4) Equal or greater accessibility and ease of inspection and maintenance.

The Project Proponent will need to obtain written approval for an alternative design from the Lahontan Regional Water Board Executive Officer (see Section 6 of the TGD for WQMP).

Section 5 Inspection and Maintenance Responsibility for Post Construction BMP

All BMPs included as part of the project WQMP are required to be maintained through regular scheduled inspection and maintenance (refer to Section 8, Post Construction BMP Requirements, in the TGD for WQMP). Fully complete Form 5-1 summarizing all BMP included in the WQMP. Attach additional forms as needed. The WQMP shall also include a detailed Operation and Maintenance Plan for all BMP and a Maintenance Agreement. The Maintenance Agreement must also be attached to the WQMP.

> Note that at time of Project construction completion, the Maintenance Agreement must be completed, signed, notarized and submitted to the County Stormwater Department

Form 5-1 BMP Inspection and Maintenance (use additional forms as necessary)

BMP	Reponsible Party(s)	Inspection/ Maintenance Activities Required	Minimum Frequency of Activities
BMP-1	American Organics	Inspect and desilt	Annual
BMP-2	American Organics	Inspect, clean debris rack, and desilt	Annual

Section 6 WQMP Attachments

6.1. Site Plan and Drainage Plan

Include a site plan and drainage plan sheet set containing the following minimum information:

- Project location
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural Source Control BMP locations
- Site Design Hydrologic Source Control BMP locations
- LID BMP details
- Drainage delineations and flow information
- Drainage connections

6.2 Electronic Data Submittal

Minimum requirements include submittal of PDF exhibits in addition to hard copies. Format must not require specialized software to open. If the local jurisdiction requires specialized electronic document formats (as described in their Local Implementation Plan), this section will describe the contents (e.g., layering, nomenclature, geo-referencing, etc.) of these documents so that they may be interpreted efficiently and accurately.

6.3 Post Construction

Attach all O&M Plans and Maintenance Agreements for BMP to the WQMP.

6.4 Other Supporting Documentation

- BMP Educational Materials
- Activity Restriction – C,C&R's & Lease Agreements

SUPPLEMENTAL FORMS FOR DRAINAGE AREA 2 (DA 2)

Form 3-2 Existing Hydrologic Characteristics for Drainage Area 1 2

For Drainage Area 1's sub-watershed DMA, provide the following characteristics	DMA A	DMA B	DMA C	DMA D
1 DMA drainage area (ft^2)	191,000			
2 Existing site impervious area (ft^2)	0			
3 Antecedent moisture condition *For desert areas, use* http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf	2			
4 Hydrologic soil group *Refer to County Hydrology Manual Addendum for Arid Regions – http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_addendum.pdf*	A			
5 Longest flowpath length (ft)	1,025			
6 Longest flowpath slope (ft/ft)	0.035			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	BARREN			
8 Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50%* ***Attach photos of site to support rating***	POOR			

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (~~DA 1~~ DA-2)		
1 Project area DA 1 (ft^2): 191,000	2 Imperviousness after applying preventative site design practices (Imp%): 0	3 Runoff Coefficient (Rc): 0.04 $R_c = 0.858(Imp\%)^{\wedge 3} - 0.78(Imp\%)^{\wedge 2} + 0.774(Imp\%) + 0.04$
4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.327 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html		
5 Compute P_6, Mean 6-hr Precipitation (inches): 0.405 *P_6 = Item 4 * C_1, where C_1 is a function of site climatic region specified in Form 3-1 Item 1 (Desert = 1.2371)*		
6 Drawdown Rate *Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*		24-hrs ☐ 48-hrs ☒
7 Compute design capture volume, DCV (ft^3): 506 *DCV = 1/12 * [Item 1* Item 3 *Item 5 * C_2], where C_2 is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)* *Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2*		

Form 4.2-2 Summary of Hydromodification Assessment (DA 1)

Is the change in post- and pre- condition flows captured on-site? : Yes ☐ No ☐

If "Yes", then complete Hydromodification assessment of site hydrology for 10yr storm event using Forms 4.2-3 through 4.2-5 and insert results below *(Forms 4.2-3 through 4.2-5 may be replaced by computer software analysis based on the San Bernardino County Hydrology Manual- Addendum 1)*

If "No," then proceed to Section 4.3 BMP Selection and Sizing

Condition	Runoff Volume (ft^3)	Time of Concentration (min)	Peak Runoff (cfs)
Pre-developed	**1** *Form 4.2-3 Item 12*	**2** *Form 4.2-4 Item 13*	**3** *Form 4.2-5 Item 10*
Post-developed	**4** *Form 4.2-3 Item 13*	**5** *Form 4.2-4 Item 14*	**6** *Form 4.2-5 Item 14*
Difference	**7** *Item 4 – Item 1*	**8** *Item 2 – Item 5*	**9** *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** % *Item 7 / Item 1*	**11** % *Item 8 / Item 2*	**12** % *Item 9 / Item 3*

Form 4.2-3 Hydromodification Assessment for Runoff Volume (DA ~~1~~) DA 2

Weighted Curve Number Determination for: Pre-developed DA	DMA A	DMA B	DMA C	DMA D	DMA E	DMA F	DMA G	DMA H
1a Land Cover type	BARREN							
2a Hydrologic Soil Group (HSG)	A							
3a DMA Area, ft^2 *sum of areas of DMA should equal area of DA*	191,000							
4a Curve Number (CN) *use items 1 and 2 to select the appropriate CN from Appendix C-2 of the TGD for WQMP*	78							
Weighted Curve Number Determination for: Post-developed DA	DMA A	DMA B	DMA C	DMA D	DMA E	DMA F	DMA G	DMA H
1b Land Cover type	BARREN							
2b Hydrologic Soil Group (HSG)	A							
3b DMA Area, ft^2 *sum of areas of DMA should equal area of DA*	191,000							
4b Curve Number (CN) *use items 5 and 6 to select the appropriate CN from Appendix C-2 of the TGD for WQMP*	78							

5 Pre-Developed area-weighted CN: 78	**7** Pre-developed soil storage capacity, S (in): 2.82 *S = (1000 / Item 5) - 10*	**9** Initial abstraction, I_a (in): 0.56 *I_a = 0.2 * Item 7*
6 Post-Developed area-weighted CN: 78	**8** Post-developed soil storage capacity, S (in): 2.82 *S = (1000 / Item 6) - 10*	**10** Initial abstraction, I_a (in): 0.56 *I_a = 0.2 * Item 8*

11 Precipitation for 10 yr, 24 hr storm (in): 1.79
Go to: http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html

12 Pre-developed Volume (ft^3):
*V_{pre} =(1 / 12) * (Item sum of Item 3) * ((Item 11 – Item 9)^2 / ((Item 11 – Item 9 + Item 7)* 5,934

13 Post-developed Volume (ft^3):
*V_{pre} =(1 / 12) * (Item sum of Item 3) * ((Item 11 – Item 10)^2 / ((Item 11 – Item 10 + Item 8)* 5,934

14 Volume Reduction needed to meet hydromodification requirement, (ft^3): 0
*Vhydro = (Item 13 * 0.95) – Item 12*

Form 4.3-1 Infiltration BMP Feasibility (DA 1) DA-2
Feasibility Criterion – Complete evaluation for each DA on the Project Site
[1] Would infiltration BMP pose significant risk for groundwater related concerns? Yes ☐ No ☒ *Refer to Section 5.3.2.1 of the TGD for WQMP*
If Yes, Provide basis: (attach)
[2] Would installation of infiltration BMP significantly increase the risk of geotechnical hazards? Yes ☐ No ☒ (Yes, if the answer to any of the following questions is yes, as established by a geotechnical expert): • The location is less than 50 feet away from slopes steeper than 15 percent • The location is less than ten feet from building foundations or an alternative setback. • A study certified by a geotechnical professional or an available watershed study determines that stormwater infiltration would result in significantly increased risks of geotechnical hazards.
If Yes, Provide basis: (attach)
[3] Would infiltration of runoff on a Project site violate downstream water rights? Yes ☐ No ☒
If Yes, Provide basis: (attach)
[4] Is proposed infiltration facility located on hydrologic soil group (HSG) D soils or does the site geotechnical investigation indicate presence of soil characteristics, which support categorization as D soils? Yes ☐ No ☒
If Yes, Provide basis: (attach)
[5] Is the design infiltration rate, after accounting for safety factor of 2.0, below proposed facility less than 0.3 in/hr (accounting for soil amendments)? Yes ☐ No ☒
If Yes, Provide basis: (attach)
[6] Would on-site infiltration or reduction of runoff over pre-developed conditions be partially or fully inconsistent with watershed management strategies as defined in the WAP, or impair beneficial uses? Yes ☐ No ☒ *See Section 3.5 of the TGD for WQMP and WAP*
If Yes, Provide basis: (attach)
[7] Any answer from Item 1 through Item 3 is "Yes": Yes ☐ No ☒ *If yes, infiltration of any volume is not feasible onsite. Proceed to Form 4.3-4, Selection and Evaluation of Biotreatment BMP.* *If no, then proceed to Item 8 below.* [8] Any answer from Item 4 through Item 6 is "Yes": Yes ☐ No ☒ *If yes, infiltration is permissible but is not required to be considered. Proceed to Form 4.3-2, Site Design BMP.* *If no, then proceed to Item 9, below.* [9] All answers to Item 1 through Item 6 are "No": *Infiltration of the full DCV is potentially feasible, LID infiltration BMP must be designed to infiltrate the full DCV to the MEP. Proceed to Form 4.3-2, Site Design BMPs.*

4.3.2 Site Design BMP

Section E.12.e. of the Small Phase II MS4 Permit emphasizes the use of LID preventative measures; and the use of Site Design Measures reduces the portion of the DCV that must be addressed in downstream BMPs. Therefore, all applicable Site Design Measures shall be provided except where they are mutually exclusive

with each other, or with other BMPs. Mutual exclusivity may result from overlapping BMP footprints such that either would be potentially feasible by itself, but both could not be implemented. Please note that while there are no numeric standards regarding the use of Site Design BMPs. If a project cannot feasibly meet BMP sizing requirements or cannot fully address hydromodification, feasibility of all applicable Site Design BMPs must be part of demonstrating that the BMP system has been designed to retain the maximum feasible portion of the DCV. Complete Form 4.3-2 to identify and calculate estimated retention volume from implementing site design BMP. Refer to Section 5.4 in the TGD for more detailed guidance.

Form 4.3-2 Site Design BMPs (~~DA 1~~) DA - 2			
1 Implementation of Impervious Area Dispersion BMP (i.e. routing runoff from impervious to pervious areas), excluding impervious areas planned for routing to on-lot infiltration BMP: Yes ☐ No ☒ *If yes, complete Items 2-5; If no, proceed to Item 6*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
2 Total impervious area draining to pervious area (ft^2)			
3 Ratio of pervious area receiving runoff to impervious area			
4 Retention volume achieved from impervious area dispersion (ft^3) *V = Item2 * Item 3 * (0.5/12), assuming retention of 0.5 inches of runoff*			
5 Sum of retention volume achieved from impervious area dispersion (ft^3):	$V_{retention}$ *=Sum of Item 4 for all BMPs*		
6 Implementation of Localized On-lot Infiltration BMPs (e.g. on-lot rain gardens): Yes ☐ No ☒ *If yes, complete Items 7-13 for aggregate of all on-lot infiltration BMP in each DA; If no, proceed to Item 14*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
7 Ponding surface area (ft^2)			
8 Ponding depth (ft) (min. 0.5 ft.)			
9 Surface area of amended soil/gravel (ft^2)			
10 Average depth of amended soil/gravel (ft) (min. 1 ft.)			
11 Average porosity of amended soil/gravel			
12 Retention volume achieved from on-lot infiltration (ft^3) $V_{retention}$ *= (Item 7 *Item 8) + (Item 9 * Item 10 * Item 11)*			
13 Runoff volume retention from on-lot infiltration (ft^3):	$V_{retention}$ *=Sum of Item 12 for all BMPs*		

Form 4.3-2 cont. Site Design BMPs (~~DA 1~~) DA-2

14 Implementation of Street Trees: Yes ☐ No ☒ *If yes, complete items 14-18. If no, proceed to Item 19*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
15 Number of Street Trees			
16 Average canopy cover over impervious area (ft^2)			
17 Runoff volume retention from street trees (ft^3) $V_{retention}$ = *Item 15 * Item 16 * (0.05/12) assume runoff retention of 0.05 inches*			
18 Runoff volume retention from street tree BMPs (ft^3):	$V_{retention}$ = *Sum of Item 17 for all BMPs*		
19 Total Retention Volume from Site Design BMPs: 0	*Sum of Items 5, 13 and 18*		

DA-2

Form 4.3-3 Infiltration LID BMP - including underground BMPs (~~DA 1~~)

1	Remaining LID DCV not met by site design BMP (ft^3): *V_{unmet} = Form 4.2-1 Item 7 - Form 4.3-2 Item19*			
	BMP Type *Use columns to the right to compute runoff volume retention from proposed infiltration BMP (select BMP from Table 5-4 in TGD for WQMP) - Use additional forms for more BMPs*	DA DMA BMP Type	DA DMA BMP Type	DA DMA BMP Type *(Use additional forms for more BMPs)*
2	Infiltration rate of underlying soils (in/hr) *See Section 5.4.2 and Appendix C of the TGD for WQMP for minimum requirements for assessment methods*	1.0 ASSUMED		
3	Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2		
4	Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	0.5		
5	Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6	Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	2		
7	Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	2		
8	Infiltrating surface area, *SA_{BMP}* (ft^2) *the lesser of the area needed for infiltration of full DCV or minimum space requirements from Table 5.7 of the TGD for WQMP*	253		
9	Amended soil depth, *d_{media}* (ft) *Only included in certain BMP types, see Table 5-4 in the TGD for WQMP for reference to BMP design details*			
10	Amended soil porosity			
11	Gravel depth, *d_{media}* (ft) *Only included in certain BMP types, see Table 5-4 of the TGD for WQMP for BMP design details*			
12	Gravel porosity			
13	Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
14	Above Ground Retention Volume (ft^3) *$V_{retention}$ = Item 8 * [Item7 + (Item 9 * Item 10) + (Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]*	506		
15	Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*			
16	Total Retention Volume from LID Infiltration BMPs: 506 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*			
17	Fraction of DCV achieved with infiltration BMP: 100 % *Retention% = Item 16 / Form 4.2-1 Item 7*			
18	Is full LID DCV retained onsite with combination of hydrologic source control and LID retention/infiltration BMPs? Yes ☒ No ☐ *If yes, demonstrate conformance using Form 4.3-10; if no, then reduce Item 3, Factor of Safety to 2.0 and increase Item 8, Infiltrating Surface Area, such that the portion of the site area used for retention and infiltration BMPs equals or exceeds the minimum effective area thresholds (Table 5-7 of the TGD for WQMP) for the applicable category of development and repeat all above calculations.*			

4.3.5 Conformance Summary

Complete Form 4.3-8 to demonstrate how on-site LID DCV is met with proposed site design, infiltration, and/or biotreatment BMP. The bottom line of the form is used to describe the basis for infeasibility determination for on-site LID BMP to achieve full LID DCV, and provides methods for computing remaining volume to be addressed in an alternative compliance plan. If the project has more than one outlet, then complete additional versions of this form for each outlet.

Form 4.3-8 Conformance Summary and Alternative Compliance Volume Estimate (DA-1) DA 2

1	Total LID DCV for the Project DA-1 (ft^3): 506 *Copy Item 7 in Form 4.2-1*
2	On-site retention with site design BMP (ft^3): 0 *Copy Item18 in Form 4.3-2*
3	On-site retention with LID infiltration BMP (ft^3): 506 *Copy Item 16 in Form 4.3-3*
4	On-site biotreatment with volume based biotreatment BMP (ft^3): 0 *Copy Item 3 in Form 4.3-4*
5	Flow capacity provided by flow based biotreatment BMP (cfs): 0 *Copy Item 6 in Form 4.3-4*
6	LID BMP performance criteria are achieved if answer to any of the following is "Yes": • Full retention of LID DCV with site design or infiltration BMP: Yes ☒ No ☐ *If yes, sum of Items 2, 3, and 4 is greater than Item 1* • Combination of on-site retention BMPs for a portion of the LID DCV and volume-based biotreatment BMP that address all pollutants of concern for the remaining LID DCV: Yes ☐ No ☒ *If yes, a) sum of Items 2, 3, 4, and 5 is greater than Item 1, and Items 2, 3 and 4 are maximized; or b) Item 6 is greater than Form 4.3--5 Item 6 and Items 2, 3 and 4 are maximized* • On-site retention and infiltration is determined to be infeasible; therefore biotreatment BMP provides biotreatment for all pollutants of concern for full LID DCV: Yes ☐ No ☒ *If yes, Form 4.3-1 Items 7 and 8 were both checked yes*
7	If the LID DCV is not achieved by any of these means, then the project may be allowed to develop an alternative compliance plan. Check box that describes the scenario which caused the need for alternative compliance: • Combination of Site Design, retention and infiltration, , and biotreatment BMPs provide less than full LID DCV capture: ☐ *Checked yes if Form 4.3-4 Item 7is checked yes, Form 4.3-4 Item 6 is zero, and sum of Items 2, 3, 4, and 5 is less than Item 1. If so, apply water quality credits and calculate volume for alternative compliance, V_{alt} = (Item 1 – Item 2 – Item 3 – Item 4 – Item 5) * (100 - Form 2.4-1 Item 2)%* • Facilities, or a combination of facilities, of a different design than in Section E.12.e.(ii)(f) may be permitted if all of the following Phase II Small MS4 General Permit 2013-0001-DWQ 55 February 5, 2013 measures of equivalent effectiveness are demonstrated: 1) Equal or greater amount of runoff infiltrated or evapotranspired; ☐ 2) Equal or lower pollutant concentrations in runoff that is discharged after biotreatment; ☐ 3) Equal or greater protection against shock loadings and spills; ☐ 4) Equal or greater accessibility and ease of inspection and maintenance. ☐

4.3.6 Hydromodification Control BMP

Use Form 4.3-9 to compute the remaining runoff volume retention, after Site Design BMPs are implemented, needed to address hydromodification, and the increase in time of concentration and decrease in peak runoff necessary to meet targets for protection of waterbodies with a potential hydromodification. Describe the proposed hydromodification treatment control BMP. Section 5.6 of the TGD for WQMP provides additional details on selection and evaluation of hydromodification control BMP.

Form 4.3-9 Hydromodification Control BMPs (DA-1) PA 2

1 Volume reduction needed for hydromodification performance criteria (ft^3): 0 *(Form 4.2-2 Item 4 * 0.95) – Form 4.2-2 Item 1*	**2** On-site retention with site design and infiltration, BMP (ft^3): *Sum of Form 4.3-8 Items 2, 3, and 4. Evaluate option to increase implementation of on-site retention in Forms 4.3-2, 4.3-3, and 4.3-4 in excess of LID DCV toward achieving hydromodification volume reduction*
3 Remaining volume for hydromodification volume capture (ft^3): *Item 1 – Item 2*	**4** Volume capture provided by incorporating additional on-site BMPs (ft^3):

5 Is Form 4.2-2 Item 11 less than or equal to 5%: Yes ☐ No ☐

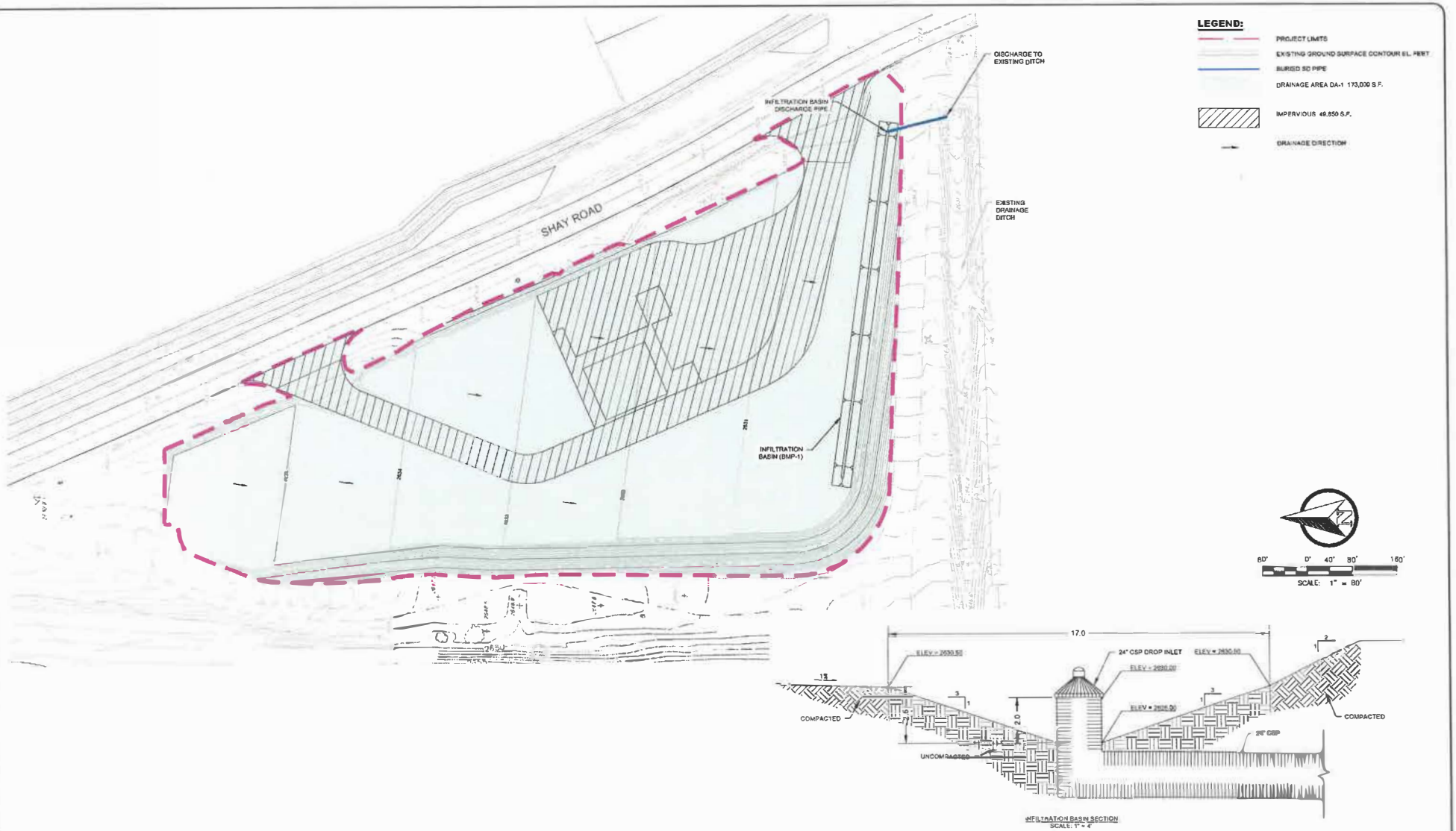
If yes, hydromodification performance criteria is achieved. If no, select one or more mitigation options below:

- Demonstrate increase in time of concentration achieved by proposed LID site design, LID BMP, and additional on-site BMP ☐
- Increase time of concentration by preserving pre-developed flow path and/or increase travel time by reducing slope and increasing cross-sectional area and roughness for proposed on-site conveyance facilities ☐

6 Form 4.2-2 Item 12 less than or equal to 5%: Yes ☐ No ☐

If yes, hydromodification performance criteria is achieved. If no, select one or more mitigation options below:

- Demonstrate reduction in peak runoff achieved by proposed LID site design, LID BMPs, and additional on-site retention BMPs ☐



REV. NO.	DATE	DESCRIPTION	APPROVED BY

DATE OF ISSUE: JUNE 2018
DESIGNED BY: R JOHNSON
DRAWN BY: L PADILLA
CHECKED BY: C BARRET
APPROVED BY: R JOHNSON

DIG ALERT 811

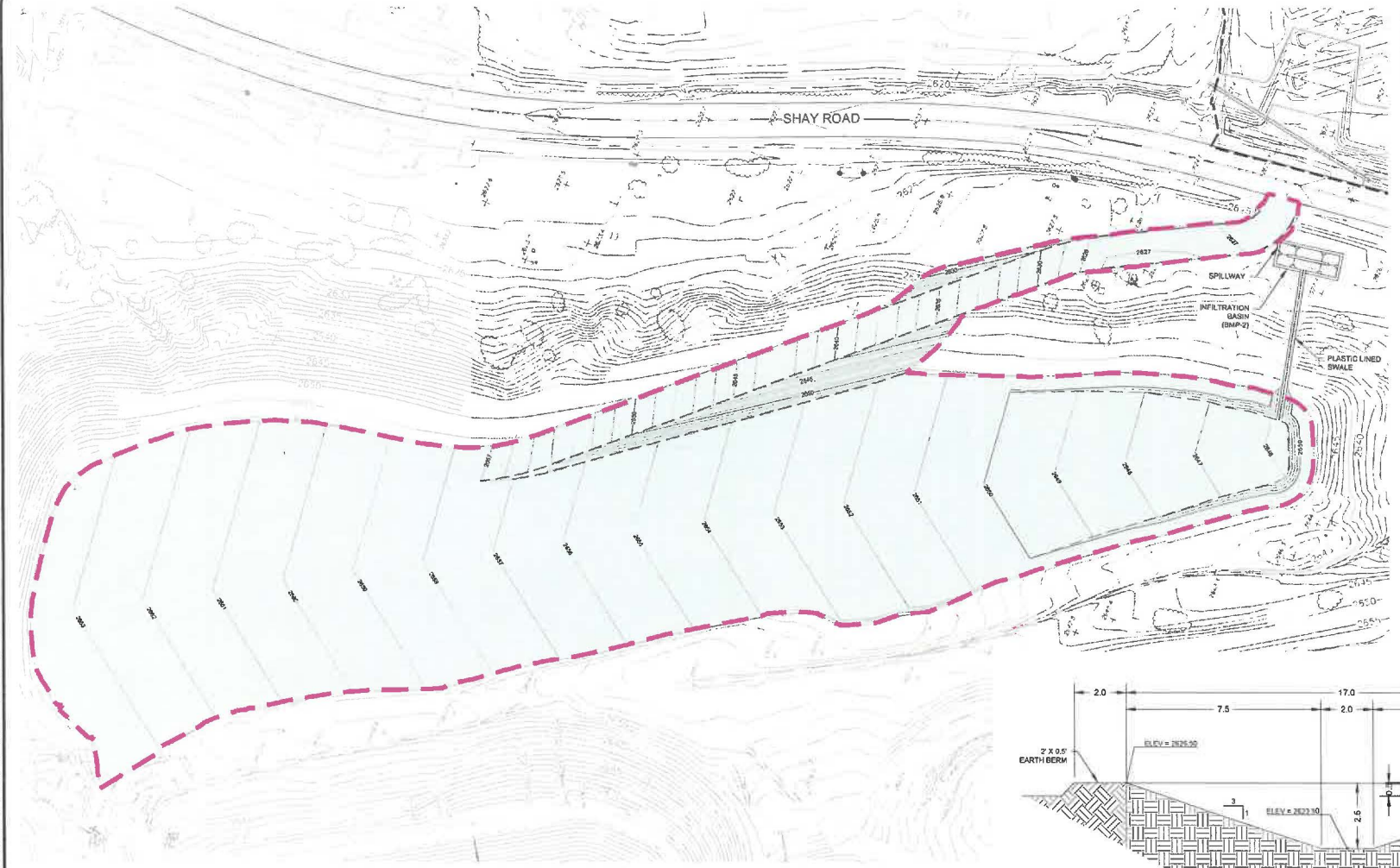
Geo-Logic ASSOCIATES
2777 EAST GUASTI ROAD
SUITE 1
ONTARIO, CA 91761
(909) 626-2282
www.geo-logic.com

Athens Services
2151 E. CONVENTION CENTER WAY, SUITE 202
ONTARIO, CA 91784

AMERICAN ORGANICS
VICTOR VALLEY REGIONAL COMPOSTING FACILITY
20055 SHAY ROAD, VICTORVILLE CA 92394
PROJECT DESIGN REPORT

WQMP SITE PLAN

DWG NO. DA-1
PROJECT NO.

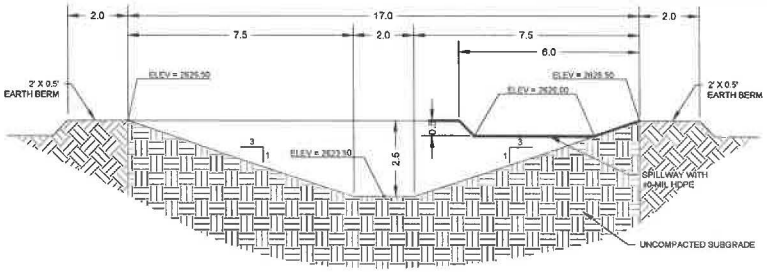


LEGEND:

- PROJECT LIMITS
- EXISTING GROUND SURFACE CONTOUR EL. FEET
- DRAINAGE AREA DA-2 161,000 S.F.
- DRAINAGE DIRECTION

80' 0' 40' 80' 160'

SCALE: 1" = 80'



INFILTRATION BASIN SECTION
SCALE: 1" = 4'

REV. NO.	DATE	DESCRIPTION	APPROVED BY

DATE OF ISSUE: JUNE 2018
DESIGNED BY: R JOHNSON
DRAWN BY: L PADILLA
CHECKED BY: C BARRET
APPROVED BY: R JOHNSON

DIG ALERT 811

Geo-Logic ASSOCIATES
2777 EAST GUASTI ROAD
SUITE 1
ONTARIO, CA 91761
(909) 629-2262
www.geo-logic.com

Athens Services
2151 E. CONVENTION CENTER WAY, SUITE 202
ONTARIO, CA 91764

AMERICAN ORGANICS
VICTOR VALLEY REGIONAL COMPOSTING FACILITY
20055 SHAY ROAD, VICTORVILLE CA 92394
PROJECT DESIGN REPORT

WQMP SITE PLAN

DWG NO. DA-2
PROJECT NO.

P:\SITES\AMERICAN ORGANICS\VCRMP\DWG SETS\2018.1022-AO-WQMP-DA-2-ST.DWG Jun 7, 2018 - 10:42 AM BY: ELA-USER

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Board of Commissioners Staff Report

TO: VVWRA Board of Commissioners

FROM: Darron Poulsen, General Manager

SUBMITTED BY: Darron Poulsen, General Manager

DATE: February 16, 2023

SUBJECT: **IT IS RECOMMENDED THAT THE BOARD OF COMMISSIONERS APPROVE THE GENERAL MANAGER TO EXECUTE THE NECESSARY SOCAL BIOMETHANE AMENDMENT AND ANAERGIA EQUIPMENT PURCHASE AGREEMENT TO ALLOW FOR THE INSTALLATION AND PURCHASE OF EQUIPMENT DETAILED IN THE CEC AND CAL RECYCLE GRANT BUDGETS TO IMPROVE RENEWABLE GAS PRODUCTION AND ADM RECEIVING OPERATIONS UPON APPROVAL OF THE AMENDMENT AND THE AGREEMENT BY SOCAL BIOMETHANE, ANAERGIA AND THE VVWRA ATTORNEYS.**

☒	For Action	☒	Fiscal Impact	$0
☐	Information Only	☐	Account Codes:	TBD
		☒	Funds Budgeted/Approved	

STAFF RECOMMENDATION

It is recommended that the Board of Commissioners approve the General Manager to execute the necessary SoCal Biomethane Amendment and Anaergia Equipment Purchase Agreement to allow for the installation and purchase of equipment detailed in the CEC and Cal Recycle grant budgets to improve Renewable Gas Production (RNG) and ADM receiving operations upon approval of the amendment and the agreement by SoCal Biomethane, Anaergia and the VVWRA Attorneys.

PREVIOUS ACTION(S)

April 18, 2019, the Board of Commissioners authorized the General Manager to sign the Gas Collection Facilities Lease and Energy Storage Agreement with SoCal Biomethane, LLC.

July 27, 2020, the Board of Commissioners authorized the General Manager to execute the first amendment to the Gas Collection Agreement and contract with SoCal Biomethane, LLC.

July 15, 2021, the Board of Commissioners approved the General Manager to execute the Second Amendment to the Gas Collection Facilities Lease and Energy Service Agreement with SoCal Biomethane, LLC.

October 27, 2022, the Board of Commissioners approved the General Manager to execute the third Amendment to the Gas Collection Facilities Lease and Energy Service Agreement with SoCal Biomethane, LLC.

BACKGROUND INFORMATION

VVWRA has demonstrated a commitment to protect the public health and the environment through a successful partnership with Anaergia and SoCal Biomethane by converting food waste and sewage into renewable natural gas. Through this partnership we have been able to prove that what was once a burden on the environment can become a renewable fuel source that reduces negative greenhouse gases and carbon impacts. That process has been moved from a fiscal burden to a new revenue stream and a financial benefit for our organization. The success of this partnership with Anergia and SoCal Biomethane has created the first Renewable Natural Gas (RNG) production facility in California using both food waste and regular municipal waste.

Anaergia and VVWRA staff meet on a regular basis to discuss opportunities to improve RNG production and operational enhancements to overcome inefficiencies and maintenance expenses. Both parties agreed to submit applications for grant funding to address the needs. Anaergia, SoCal Biomethane, was successful in winning a grant for $1,500,000 from the California Energy Commission (CEC).

To receive the assets and services identified within the budget for the CEC grant VVWRA needs to approve an amendment to the Lease agreement. The scope of work identified in the CEC grant budget includes:

- ADM receiving pump bypass and system upgrades.
- Digester 2 pipe modifications
- New ADM tank
- DAF 3 Upgrades
- Micro-Grid power system

VVWRA and Anaergia submitted and were awarded a grant for $3,970,000 from CalRecycle. VVWRA is the lead recipient for this grant and as such will have to pay up front to Anaergia for services and equipment which will then be reimbursed by CalRecycle on a quarterly basis. An additional agreement needs to be developed with Anaergia to receive the equipment and services to perform the work in the CalRecycle Grant budget which includes:

- Installation of two OPS Cleanrex / Grit rex ADM receiving skids.
- The balance of the work on DAF 3
- Paving the ADM receiving road
- Lighting the ADM area
- New ADM receiving building.
- Spare OPS parts
- Spare mixer

These grant funds will significantly improve our operations and ultimately create an improved and more reliable RNG system. Both VVWRA and Anaergia, SoCal Biomethane, will continue our efforts to improve our operations using grant funding whenever possible.

For these reasons it is recommended that the Board of Commissioners approve the General Manager to execute the necessary SoCal Biomethane Amendment and Anaergia Equipment Purchase Agreement to allow for the installation and purchase of equipment detailed in the CEC and Cal Recycle grant budgets to improve Renewable Gas Production (RNG) and ADM receiving operations upon approval of the amendment and the agreement by SoCal Biomethane, Anaergia and the VVWRA Attorneys.

Attachment(s):

Exhibit 1 – Third Amendment to the Gas Collections Facility Agreement

EXHIBIT 1

THIRD AMENDMENT
TO
GAS COLLECTION FACILITIES LEASE AND ENERGY SERVICES AGREEMENT

This Third Amendment to Gas Collection Facilities Lease and Energy Services Agreement ("Amendment"), dated as of February [__], 2023 ("Effective Date") is entered into by and between SOCAL BIOMETHANE, LLC, a Delaware limited liability company ("Tenant"), and VICTOR VALLEY WASTE WATER RECLAMATION AUTHORITY, a Joint Powers Authority and a Public Agency of State of California organized and existing in the County of San Bernardino under and by virtue of the laws of the State of California ("Landlord").

RECITALS

A. Landlord and Tenant are parties to that certain Gas Collection Facilities Lease and Energy Services Agreement dated as of May 9, 2019 ("Original Agreement"), as modified by that certain First Amendment dated July 27, 2020 ("First Amendment") and that certain Second Amendment dated [_____]. The Original Agreement, the First Amendment and the Second Amendment are collectively referred to as the "Agreement".

B. Tenant desires to enhance the gas production capabilities of the SoCal Biomethane Facilities through the addition of certain improvements to the WWTP which will be owned by Landlord, including upgraded food waste recovery areas, increased food waste storage capabilities, modifications to the digesters, food waste quality control systems and a microgrid, all as more fully described on the exhibit attached hereto as Exhibit "A" ("Feedstock Improvements").

C. Tenant has agreed to perform all work related to the installation of the Feedstock Improvements in connection with its ongoing operations of the SoCal Biomethane Facilities.

D. The Feedstock Improvements will further enhance the efficiency and operation of the WWTP and Landlord is willing to allow the installation of the Feedstock Improvements and thereafter maintain such improvements in good operating condition in consideration of the obligations of Tenant set forth herein.

NOW THEREFORE, in consideration of the mutual promises set forth below, recitals above, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. Contribution of Feedstock Improvements. Tenant agrees to contribute the Feedstock Improvements to Landlord, at no cost or expense, in furtherance of the purposes of the Lease.

2. Landlord Contribution. Landlord agrees to take ownership of, insure and maintain the Feedstock Improvements in good working order for the duration of the Agreement. Notwithstanding the foregoing, Landlord will not be required to make any capital repairs to or replacements of the Feedstock Improvements that are not covered by warranty.

3. Feedstock Improvement Installation. Tenant shall undertake the work necessary to design and install the Feedstock Improvements in accordance with the terms of this Amendment, the Feedstock Improvement Documents and Exhibit C of the Lease. For the purposes of Exhibit C of the Lease, the "Contract Documents" shall mean the Feedstock Improvement Documents, the "Project" will mean the installation of the Feedstock Improvements and the "Work" shall be the scope of work set forth in the Feedstock Improvement Documents.

4. Scope of Work of Feedstock Improvements. Within thirty (30) days of the execution of this Amendment, Tenant and Landlord will agree in writing on (i) a detailed scope of work for the Feedstock Improvements; and (ii) the schedule for completion of the Feedstock Improvements. The scope of work and schedule are collectively referred to herein as the "Feedstock Improvement Documents". The Feedstock Improvement Documents will be subject to the approval of Landlord and Tenant, each in their sole discretion. The Feedstock Improvements will become the property of Landlord upon completion.

5. Financing. All financing for the Feedstock Improvements and the work contemplated in the Feedstock Improvement Documents will be the responsibility of Tenant. Notwithstanding the foregoing, Landlord agrees to cooperate with Tenant to provide any documentation or reporting which is necessary for the California Energy Commission grant.

6. Event of Default. A default by Tenant in its obligations under this Amendment shall constitute an Event of Default pursuant to Section 22(a)(v) of the Agreement if not cured within the period set forth therein.

7. Nature of Amendment. Except as expressly set forth herein, the Agreement shall remain in full force and effect. All terms defined in the Agreement shall have the same meaning when used in this Amendment. This Amendment and the Agreement shall be read together, as one document. In the event there is any inconsistency between the terms hereof and the Agreement, this Amendment shall control.

8. Effective Date; No Defaults. Landlord and Tenant further certify and affirm that as of the date of this Amendment, there exists no default by Landlord of the Agreement or Event of Default as defined in the Agreement, nor any condition, act or event which with the giving of notice or the passage of time or both would constitute any such Landlord default or Event of Default.

[signature page follows]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Amendment as of the date first set forth above.

TENANT:

SOCAL BIOMETHANE, LLC
a Delaware limited liability company

By: _____
Name: Arun Sharma
Title: President

VVWRA:

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

By: _____
Name: Darron Poulsen
Title: General Manager

EXHIBIT A

SCOPE OF WORK FOR FEEDSTOCK IMPROVEMENTS

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Board of Commissioners Staff Report

TO:	VVWRA Board of Commissioners
FROM:	Darron Poulsen, General Manager
SUBMITTED BY:	Latif Laari Environnemental Compliance Manager
DATE:	February 16, 2023
SUBJECT:	**STAFF RECOMMENDATION TO ADOPT RESOLUTION NO. 2023-04 TO ESTABLISH A NEW FOG TIPPING FEE OF $.12 PER GALLON**

☒	**For Action**	☐	**Fiscal Impact** $
☐	**Information Only**	☐	**Account Code:**
		☐	**Funds Budgeted/ Approved:**

STAFF RECOMMENDATION

It is recommended that the Board of Commissioners adopt Resolution No. 2023-04 to establish a new FOG tipping fee of $.12 per gallon.

PREVIOUS ACTION(S)

On July 21, 2016, the Commission approved Resolution 2016-3 to approve a tipping fee of $.05 per gallon effective July 1, 2016, for both ADM and FOG program.

BACKGROUND INFORMATION

FOG refers to Food Oils and Grease. In 2016, VVWRA began a program of receiving FOG to assist local haulers dispose of this difficult waste. The receiving of this waste is environmentally beneficial as it produces a good amount of methane gas that when captured during the digestion process can be used to operate the 2G generators instead of being released into the atmosphere. The previous tipping fee was established by evaluating the additional costs of receiving these materials divided by the estimated volume of material at the established rate. This rate was established to cover the costs of the FOG program so as not to be fiscally impactful to other operations at the regional facility.

At the time, we advised the Board that we would be keeping track of the costs of receiving, handling and processing FOG; how it impacted our operations and

its contribution to our biomethane production process. One of the goals is to have portions of the Plant be sufficiently funded with resources and qualified personnel to implement the FOG tipping program. In order to do this, we engaged a consultant, John Robinson Consulting, Inc. ("Robinson Consulting") to prepare a technical memorandum that would review the costs associated with the receiving handling and processing of FOG, the impact on our operations and also a comparison with the operations and charges of other facilities engaged in similar activities. Robinson Consulting prepared a technical memorandum (the "Robinson Report") that aims to evaluate the current FOG fee structure and identify potential fees that may be implemented to support improvements to the FOG tipping program and ensure that it is as self-sustaining as possible. A copy of the Robinson Report is attached hereto as Exhibit 1.

As part of the Robinson Report the FOG tipping volumes were evaluated for 2014 through 2020. The volumes for 2021 were not included as COVID significantly impacted the FOG tipping as the average was 1,329 gallons per day. The volumes for 2022 were not included as we did not have a full year worth of data and COVID was still impacting the FOG generations. The average volume over those seven (7) years was 4,792 gallons per day. Refer to Table 1 below for the summary:

Table 1. FOG Tipping – Last Seven Years

Year	Volume	Days
2014	6,425	46
2015	4,130	84
2016	4,457	115
2017	5,008	148
2018	5,416	182
2019	4,193	167
2020	3,917	304
Average	4,792	183 (1)

(1) Average of 2016 through 2020

The current FOG tipping service is not balanced with the FOG tipping rate information collected from other Public Owned Treatment Works (POTWs) as the VVWRA's FOG tipping fees are on the lower end of the spectrum. A summary of wastewater discharge permit fees from other POTWs is presented in Table 2.

TABLE 2. FOG TIPPING RATES FEES

Publicly Owned Treatment Works	Tipping Fee
Victor Valley Wastewater Reclamation Authority	$0.05/gallon
Burbank Water and Power	$0.15/gallon
City of Los Angeles Sanitation and Environment (Hyperion WRP only)	$0.12/gallon
City of Riverside	$0.10/gallon
Eastern Municipal Water District	$0.10/gallon
Los Angeles County Sanitation District (Lancaster WRP and Palmdale WRP)	$0.18/gallon
Inland Empire Utilities Agency	$0.15/gallon
Orange County Sanitation District	$0.20/gallon

The average FOG tipping fee for the seven POTWs (excluding VVWRA) identified is $0.143/gallon. A potential increase of the VVWRA septage receiving tipping rate from $0.05/gallon to $0.12/gallon would potentially yield an additional $61,385 annually in additional revenue. This is calculated based on $0.07/gallon * 4,792 gallons/day * 183 days/year = $61,385. The current FOG tipping fee charged by VVWRA does not sufficiently cover the cost of administering FOG receiving activities for operations and maintenance or to cover the cost for future planning and construction for the FOG receiving station.

In light of the Robinson Report and Staff's experience with the FOG program, it is recommended that the Board of Commissioners approve and adopt Resolution No. 2023-04 to establish a new FOG tipping fee of $.12 per gallon, which is similar to the fee VVWRA charges for receiving, handling and processing septage. Staff also recommends that, going forward, the FOG fees track the fees VVWRA charges for septage. In order to make sure that FOG haulers have enough notice and time to prepare, Staff recommends that the recommended FOG fees become effective on July 1, 2023.

Attachment(s):

Exhibit [1] – Resolution 2023-04

EXHIBIT 1

RESOLUTION 2023-04

RESOLUTION OF THE VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY TO APPROVE TIPPING FEE OF $.12 PER GALLON EFFECTIVE JULY 1, 2023, FOR THE FOG PROGRAM

WHEREAS Ordinance 001 of the Victor Valley Wastewater Reclamation Authority ("VVWRA" or the "Authority") provides that its fees for the receipt and processing of ADM and Food, Oils and Grease ("FOG") may be established and set by Resolution; and,

WHEREAS, pursuant to its contractual relationship with SoCal Biomethane, VVWRA is to receive and treat in excess of 50,000 gallons per day of ADM/FOG; and,

WHEREAS, VVWRA Staff has recommended and the VVWRA Board of Commissioners has determined and ordered that VVWRA recuperate the cost of all expenses associated with ADM/FOG facilities and operations; and,

WHEREAS, in or about July of 2021, VVWRA adopted Resolution 2021-06, a true and accurate copy of which is hereto attached as Attachment A; and,

WHEREAS, Resolution 2021-06 sets the rate for both ADM (Food Waste) and FOG at the same value of $.05 per gallon for both; and,

WHEREAS, from the time of passage of Resolution 2021-06, Staff at VVWRA ("Staff") has observed and reported a drastic difference between how FOG must be received, handled and processed as opposed to how ADM must be received, handled and processed; and,

WHEREAS, from the time of passage of Resolution 2021-06, Staff has also observed and reported that the gas production from FOG is much lower than the gas production originated from ADM; and,

WHEREAS, from the time of passage of Resolution 2021-06, Staff has also observed and reported that the impact of receiving, handling and processing of FOG on VVWRA's equipment and operations is much higher, and therefore costly, than the receiving, handling and processing ADM; and,

WHEREAS, in light of those observations and impacts, VVWRA Staff commissioned a study and report by John Robinson Consulting, Inc. (the "Robinson Report") (a true and accurate copy of the Robinson Report is attached hereto as Attachment B); and,

WHEREAS, the Robinson Report finds that the true impact of receiving, handling and processing FOG on VVWRA's operations and equipment is consistent with the costs of receiving, handling and processing septage; and,

WHEREAS, in light of the Robinson Report, Staff recommends that the fees for receiving, handling and processing of FOG should be equal to the fees charged for receiving, handling and processing septage (a true and accurate copy of Staff Recommendation is attached hereto as Attachment C); and,

WHEREAS, Staff recommends that the fees for receiving, handling and processing of FOG should be equal to and in the future track the fees charged for receipt, handing and processing of septage; and,

WHEREAS, Staff recommends that the receiving, handling and processing fees for ADM remain at this time as set forth in Resolution 2021-06;

NOW THEREFORE, the Board of Commissioners of the Victor Valley Wastewater Reclamation Authority hereby ordains as follows,

Section 1. Findings. The Board of Commissioners asserts and adopts the findings set forth above as well as the studies, reports that support the fee being adopted, including the staff report and exhibits attached to this Resolution;

Section 2. Repeal of Past FOG Fee/Establishment of New FOG Fee. The current Fee Schedule for FOG attached to Resolution 2021-06 is hereby repealed and a new FOG fee is established as follows:

- the Board adopts a fee of $.12 per gallon of FOG;

Section 3. The fee for FOG set by this resolution shall supersede any previous FOG fees established by VVWRA contractually or otherwise;

Section 4. The ADM fee set forth by Resolution 2021-06 shall remain unchanged and is not modified by this Resolution;

Section 5. From the time that this Resolution becomes effective, the charges and fees for receipt, handling and processing of FOG shall be the same as the fees charged for the receipt, handling and processing of septage;

Section 6. Effective Date. This Resolution shall become effective upon its approval or adoption. The established rate of $.12 per gallon for the FOG Program shall be effective on July 1st, 2023, following the adoption of this Resolution.

ADOPTED this 16th day of February 2023.

Dakota Higgins, Chair
VVWRA Board of Commissioners

ATTEST:

Debra Jones, Secretary
VVWRA Board of Commissioners

APPROVED AS TO FORM:

Piero Dallarda of
Best Best & Krieger LLP, Counsel for VVWRA

CERTIFICATION:

I do hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the Board of Commissioners held on February 16, 2023.

_____

Kristi Casteel – Clerk of the Board

EXHIBIT A

Resolution 2023-04

RESOLUTION 2021-06

RESOLUTION OF THE VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY TO APPROVE TIPPING FEE OF $0.05 PER GALLON EFFECTIVE JULY 1, 2021, FOR THE ADM/FOG PROGRAM

WHEREAS Ordinance 001 of the Victor Valley Wastewater Reclamation Authority ("VVWRA" or the "Authority") provides that its fees for the receipt and processing of ADM and Food, Oils and Grease ("FOG") may be established and set by Resolution; and,

WHEREAS, pursuant to its contractual relationship with SoCal Biomethane, VVWRA is to receive and treat in excess of 50,000 gallons per day of ADM/FOG; and,

WHEREAS VVWRA Staff recommends that VVWRA recuperate the cost of all expenses associated with ADM/FOG facilities and operations; and,

WHEREAS, in order to recuperate the costs of said expenses, VVWRA Staff recommends a $0.05 per gallon user fee schedule as set forth in the Staff Report, a copy of which is attached hereto as Exhibit "A"

WHEREAS, as provided in the Staff Report based on the current volume of materials received, a potential total amount of revenue of $658,212 would cover both the costs of treating the materials as well as the long impacts on the system;.

NOW THEREFORE, the Board of Commissioners of the Victor Valley Wastewater Reclamation Authority hereby ordains as follows,

Section 1. Findings. The Board of Commissioners asserts and adopts the findings set forth above as well as the studies, reports that support the fee being adopted, including the staff report and exhibits attached to this Resolution;

Section 2. Establish ADM/FOG Fee. The current Fee Schedule, for ADM/FOG attached hereto as Exhibit "B". is hereby established, as follows:

- the Board adopts a fee of $0.05 per gallon of ADM/FOG;

Section 3. The fee for ADM/FOG set by this resolution shall supersede any previous ADM/FOG fees established by VVWRA contractually or otherwise.

Section 4. Effective Date. This Resolution shall become effective upon its approval or adoption. The established rate of $0.05 per gallon for the ADM/FOG Program shall be effective on July 1st, 2021, following the adoption of this Resolution.

ADOPTED this 17th day of June 2021.

Debra Jones Chair
VVWRA Board of Commissioners

ATTEST:

Paul Cook, Secretary
VVWRA Board of Commissioners

APPROVED AS TO FORM:

Piero Dallarda of
Best Best & Krieger LLP, Counsel VVWRA

CERTIFICATION:

I do hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the Board of Commissioners held on June 17, 2021.

Kristi Casteel – Clerk of the Board

EXHIBIT B

TECHNICAL MEMORANDUM

Subject: Victor Valley Wastewater Reclamation Authority – FOG Tipping Fee Rate Evaluation Technical Memorandum

Prepared For: Darron Poulsen, General Manager with Victor Valley Wastewater Reclamation Authority

Prepared By: John Robinson, Principal with John Robinson Consulting, Inc.

Date: November 8, 2022

INTRODUCTION

Victor Valley Wastewater Reclamation Authority (VVWRA) is a joint powers authority that consists of the City of Victorville, the City of Hesperia, the Town of Apple Valley, and two San Bernardino County Service Areas (No. 42 Oro Grande and No. 64 Spring Valley Lake). VVWRA owns and operates the Victor Valley Regional Wastewater Treatment Plant (Plant), which provides domestic, commercial, and industrial wastewater treatment from its service area.

In 2016, VVWRA began a program of receiving FOG to assist local haulers dispose of this difficult waste. The receiving of this waste is environmentally beneficial as it produces a good amount of methane gas that when captured during the digestion process can be used to operate the 2G generators instead of being released into the atmosphere. The previous tipping fee was established by evaluating the additional costs of receiving these materials divided by the estimated volume of material at the established rate. This rate was established to cover the costs of the FOG program so as not to be fiscally impactful to other operations at the regional facility.

One of the goals is to have portions of the Plant be sufficiently funded with resources and qualified personnel to implement the FOG tipping program. This technical memorandum aims to evaluate the current FOG fee structure and identify potential fees that may be implemented to support improvements to the FOG tipping program.

BACKGROUND:

As part of the TM, the FOG tipping volumes were evaluated for 2014 through 2020. The volumes for 2021 were not included as COVID significantly impacted the FOG tipping as the average was 1,329 gallons per day. The volumes for 2022 were not included as we did not have a full year worth of data and COVID was still impacting the FOG generations.

The average volume over those seven (7) years was 4,792 gallons per day. Refer to Table 1 below for the summary:

Table 1. FOG Tipping – Last Seven Years

Year	Volume (Gallons)	Days Discharged
2014	6,425	46
2015	4,130	84
2016	4,457	115
2017	5,008	148
2018	5,416	182
2019	4,193	167
2020	3,917	304
Average	4,792	183 (1)

(1) Average of 2016 through 2020

The average number of days FOG tipping over the last seven years (2014 to 2020) is approximately 139 days but over the last five years (2016 to 2020) the average days of discharge increase dramatically to 183 days.

As part of the TM, the FOG tipping rates were evaluated for other agencies The FOG tipping rates have not been reviewed or updated since 2016, which is similar to the Septage Receiving rates evaluated earlier in 2022. For the last seven years (2016 through 2022), these rates have remained at $0.05 per gallon for FOG tipping. The current FOG tipping service is not balanced with the FOG tipping rate information collected from other Public Owned Treatment Works (POTWs) as the VVWRA's FOG tipping fees are on the lower end of the spectrum. A summary of wastewater discharge permit fees from other POTWs is presented in Table 2.

Table 2. FOG Tipping Rates Fees

Publicly-Owned Treatment Works	Tipping Fee
Victor Valley Wastewater Reclamation Authority	$0.05/gallon
Burbank Water and Power	$0.15/gallon
City of Los Angeles Sanitation and Environment (Hyperion WRP only)	$0.12/gallon
City of Riverside	$0.10/gallon

Eastern Municipal Water District	$0.10/gallon
Los Angeles County Sanitation District (Lancaster WRP and Palmdale WRP)	$0.18/gallon
Inland Empire Utilities Agency	$0.15/gallon
Orange County Sanitation District	$0.20/gallon

The average FOG tipping fee for the seven POTWs (excluding VVWRA) identified is $0.143/gallon. A potential increase of the VVWRA septage receiving tipping rate from $0.05/gallon to $0.12/gallon would potentially yield an additional $61,385 annually in additional revenue. This is calculated based on $0.07/gallon * 4,792 gallons/day * 183 days/year = $61,385. The current FOG tipping fee charged by VVWRA does not sufficiently cover the cost of administering FOG receiving activities for operations and maintenance or to cover the cost for future planning and construction for the FOG receiving station.

SUMMARY

This technical memorandum summarized an evaluation of the VVWRA current FOG tipping fee and researched FOG tipping programs in Southern California in order to determine the following:

- Are VVWRA FOG tipping fees providing sufficient revenue to fund the program?
- What tipping fees are being applied for FOG implemented by other POTWs in Southern California?

RECOMMENDATIONS

At present, revenue generated by the FOG tipping program does not sufficiently provide funds for future planning and modifications for FOG equipment. A review of VVWRA's FOG tipping fees indicates that the price ($) per gallon is approximately 65% lower than seven POTWs located in Southern California. The FOG tipping should consider increasing the same percentage rate as to service charges fees increase that were applied to the Septage receiving program.

Based on this evaluation, JRC proposes the following recommendations for the VVWRA's FOG tipping system:

- Increase septage receiving tipping fee from $0.05/gallon to $0.12/gallon for Fiscal Year 23
- FOG tipping fee recommendations should be evaluated annually to ensure that they sufficiently recover costs for the program since they have not been updated since 2016.

TECHNICAL MEMORANDUM

CONCLUSION

The recommended increase in the FOG tipping fee from $0.05/gallon to $0.12/gallon will allow VVWRA additional revenue for both operations and maintenance as well as planning and construction of future modifications to the system. While there will be an economic impact on the FOG waste hauling companies, the cost per truck seems minimal compared to the benefits.

EXHIBIT C

Resolution 2023-04

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Board of Commissioners Staff Report

TO:	VVWRA Board of Commissioners
FROM:	Darron Poulsen, General Manager
SUBMITTED BY:	Latif Laari Environnemental Compliance Manager
DATE:	February 16, 2023
SUBJECT:	**STAFF RECOMMENDATION TO ADOPT RESOLUTION NO. 2023-04 TO ESTABLISH A NEW FOG TIPPING FEE OF $.12 PER GALLON**

☒	**For Action**	☐	**Fiscal Impact** $
☐	**Information Only**	☐	**Account Code:**
		☐	**Funds Budgeted/ Approved:**

STAFF RECOMMENDATION

It is recommended that the Board of Commissioners adopt Resolution No. 2023-04 to establish a new FOG tipping fee of $.12 per gallon.

PREVIOUS ACTION(S)

On July 21, 2016, the Commission approved Resolution 2016-3 to approve a tipping fee of $.05 per gallon effective July 1, 2016, for both ADM and FOG program.

BACKGROUND INFORMATION

FOG refers to Food Oils and Grease. In 2016, VVWRA began a program of receiving FOG to assist local haulers dispose of this difficult waste. The receiving of this waste is environmentally beneficial as it produces a good amount of methane gas that when captured during the digestion process can be used to operate the 2G generators instead of being released into the atmosphere. The previous tipping fee was established by evaluating the additional costs of receiving these materials divided by the estimated volume of material at the established rate. This rate was established to cover the costs of the FOG program so as not to be fiscally impactful to other operations at the regional facility.

At the time, we advised the Board that we would be keeping track of the costs of receiving, handling and processing FOG; how it impacted our operations and

its contribution to our biomethane production process. One of the goals is to have portions of the Plant be sufficiently funded with resources and qualified personnel to implement the FOG tipping program. In order to do this, we engaged a consultant, John Robinson Consulting, Inc. ("Robinson Consulting") to prepare a technical memorandum that would review the costs associated with the receiving handling and processing of FOG, the impact on our operations and also a comparison with the operations and charges of other facilities engaged in similar activities. Robinson Consulting prepared a technical memorandum (the "Robinson Report") that aims to evaluate the current FOG fee structure and identify potential fees that may be implemented to support improvements to the FOG tipping program and ensure that it is as self-sustaining as possible. A copy of the Robinson Report is attached hereto as Exhibit 1.

As part of the Robinson Report the FOG tipping volumes were evaluated for 2014 through 2020. The volumes for 2021 were not included as COVID significantly impacted the FOG tipping as the average was 1,329 gallons per day. The volumes for 2022 were not included as we did not have a full year worth of data and COVID was still impacting the FOG generations. The average volume over those seven (7) years was 4,792 gallons per day. Refer to Table 1 below for the summary:

Table 1. FOG Tipping – Last Seven Years

Year	Volume	Days
2014	6,425	46
2015	4,130	84
2016	4,457	115
2017	5,008	148
2018	5,416	182
2019	4,193	167
2020	3,917	304
Average	4,792	183 (1)

(1) Average of 2016 through 2020

The current FOG tipping service is not balanced with the FOG tipping rate information collected from other Public Owned Treatment Works (POTWs) as the VVWRA's FOG tipping fees are on the lower end of the spectrum. A summary of wastewater discharge permit fees from other POTWs is presented in Table 2.

TABLE 2. FOG TIPPING RATES FEES

Publicly Owned Treatment Works	Tipping Fee
Victor Valley Wastewater Reclamation Authority	$0.05/gallon
Burbank Water and Power	$0.15/gallon
City of Los Angeles Sanitation and Environment (Hyperion WRP only)	$0.12/gallon
City of Riverside	$0.10/gallon
Eastern Municipal Water District	$0.10/gallon
Los Angeles County Sanitation District (Lancaster WRP and Palmdale WRP)	$0.18/gallon
Inland Empire Utilities Agency	$0.15/gallon
Orange County Sanitation District	$0.20/gallon

The average FOG tipping fee for the seven POTWs (excluding VVWRA) identified is $0.143/gallon. A potential increase of the VVWRA septage receiving tipping rate from $0.05/gallon to $0.12/gallon would potentially yield an additional $61,385 annually in additional revenue. This is calculated based on $0.07/gallon * 4,792 gallons/day * 183 days/year = $61,385. The current FOG tipping fee charged by VVWRA does not sufficiently cover the cost of administering FOG receiving activities for operations and maintenance or to cover the cost for future planning and construction for the FOG receiving station.

In light of the Robinson Report and Staff's experience with the FOG program, it is recommended that the Board of Commissioners approve and adopt Resolution No. 2023-04 to establish a new FOG tipping fee of $.12 per gallon, which is similar to the fee VVWRA charges for receiving, handling and processing septage. Staff also recommends that, going forward, the FOG fees track the fees VVWRA charges for septage. In order to make sure that FOG haulers have enough notice and time to prepare, Staff recommends that the recommended FOG fees become effective on July 1, 2023.

Attachment(s):

Exhibit [1] – Resolution 2023-04

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Board of Commissioners Staff Report

TO:	VVWRA Board of Commissioners
FROM:	Darron Poulsen, General Manager
SUBMITTED BY:	Latif Laari, Environmental Compliance Manager
DATE:	2/16/2023
SUBJECT:	**RECOMMENDATION TO AUTHORIZE THE GENERAL MANAGER TO AWARD A CONTRACT FOR THE SERVERS VIRTUALIZATION PROJECT IN THE AMOUNT OF $210,000.00 TO NETGAIN NETWORKS INC**

☒	**For Action**	☒	**Fiscal Impact $210,000.00**
☐	**Information Only**	☒	**Account Code: 01-02-545-9000-9999-R138 & 09-02-545-9000-9999 R138**
		☒	**Funds Budgeted/ Approved:**

STAFF RECOMMENDATION

It is recommended that the Board of Commissioners authorize the General Manager to award a contract for the **Servers Virtualization Project** in the amount of $210,000.00 (which is the amount of the bid of $190,091.63 plus an approximate 10% contingency fee) to Netgain Networks Inc., pending legal review and approval of the agreement.

PREVIOUS ACTION(S)

None

BACKGROUND INFORMATION

VVWRA currently relies on sixteen physical servers to operate its reclamation plants, pump stations, and needed software applications. To maintain these physical servers and provide reliable services at all times, the staff must continuously upgrade hardware and software, purchase costly extended warranties and maintain large battery backups during power outages.

Consolidating physical hardware via server virtualization will eliminate underutilized independent physical servers. Resulting in higher availability irrespective of hardware or software system layer as well as:

These are the key benefits of server virtualization:

- Improved security and protection of valuable data.
- Reduced IT hardware costs.
- Business continuity solutions.
- Reduced IT footprint.
- Improved service levels.
- Improved application quality.

To achieve this goal, staff requested on 1/23/2023 bids using a request for proposals (RFP) process via Planetbids , two prospective bidders showed up for a mandatory pre-bid meeting and one company (Netgain Networks, Inc) submitted a proposal.

The bid received is as follows:

Company	Total Cost
Netgain Networks	$190,091

Staff reviewed Netgain Networks Proposal and determined it meets all conditions of the RFP, including clarity and conformance of the bid, the proposer's technical expertise, and performance.

Staff recommends that the Board of Commissioners approve the General Manager to award a contract for the Servers Virtualization Project in the amount of $210,000.00 (which is the amount of the bid of $190,091.63 plus an approximate 10% contingency fee) per fiscal year 22-23 to Netgain Networks Inc., pending legal review and approval of the agreement.

Attachments:

Exhibit 1- Netgain Networks Bid

EXHIBIT 1

NETGAIN NETWORKS, INC.

Server Virtualization Project

Quote #FB006816 v1

Prepared For:
Victor Valley Wastewater (VVWRA)
Michael Medina
20111 Shay Rd
Victorville, CA 92394

P: (760) 221-5339
E: MMedina@vvwra.com

Prepared By:
Netgain Networks Inc.
Fernando Borja
8378 Attica Dr
Riverside, CA 92508

P: (855) 667-2364 opt.4
E: fernando@netgainnetworks.com

Date Issued:
02.07.2023
Expires:
03.04.2023

Hardware		Price	Qty	Ext. Price
PowerStore 500T	**Dell PowerStore 500T** PowerStore 500T Customer Rack 192GB Appliance DIMM 96GB Per Node PowerStore Base SW 25GBASE-T 4 PORT CARD PAIR Dual 1450 Watt Power Supply Pair PowerStore Base Enclosure Install Kit Parts Only Warranty 36Months ProSupport and 4Hr Mission Critical Extension, 24 Month(s) ProSupport and 4Hr Mission Critical Initial, 36 Month(s) ProDeploy for PowerStore 5xx T P1 25X2.5 NVME SED SSD 3.84 TB QTY 10 PowerStore NVRAM FIPS QTY 2 10GBASE-T 4 PORT IO MODULE PAIR QTY 2	$81,255.50	1	$81,255.50
PowerSwitch S4128T	**Dell PowerSwitch S4128** Dell EMC Switch S4128T-ON, 1U, 28 x 10Gbase-T, 2 x QSFP28, PSU to IO, 2 VLT Tech Sheet Document OS10 Enterprise S4128T-ON Dell EMC Networking S4100-ON Americas User Guide Dell Hardware Limited Warranty 1 Year Mission Critical Package: 4-Hour 7x24 On-Site Service with Emergency Dis Mission Critical Package: 4-Hour 7x24 On-Site Service with Emergency Dis ProSupport Mission Critical:7x24 HW/SW Technical Support and Assistanc Dell Limited Hardware Warranty Extended Year(s) Thank you choosing Dell ProSupport. For tech support, visit //www.dell.cc 3355 Info 3rd Party Software Warranty provided by Vendor ProDeploy Dell Networking S Series 4XXX Switch - Deployment Verificatior ProDeploy Dell Networking S Series 4XXX Switch - Deployment 5 Years ProSupport OS10 Enterprise Software Support-Maintenance Power Cord, 125V, 15A, 10 Feet, NEMA 5-15/C13 Power Cord, 125V, 15A, 10 Feet, NEMA 5-15/C13 Dell Networking, Jumper Cord, 250V, 12A, 2 Meters, C13/C14, US Dell Networking, Jumper Cord, 250V, 12A, 2 Meters, C13/C14, US Dell Networking Cable, 100GbE QSFP28 to QSFP28, Passive Copper Direct	$11,308.13	2	$22,616.26

NETGAIN NETWORKS, INC.

Hardware		Price	Qty	Ext. Price
		Subtotal		**$103,871.76**

Software		Price	Qty	Ext. Price
VMWare Essentials Plus	**VMWare Essentials Plus- 3 Years**	$7,676.84	1	$7,676.84
Windows 2022 Data Center Server	**Windows 2022 Data Center Server 16 Core**	$6,156.00	4	$24,624.00
Windows Server 2022 2 Additional Cores	**Windows Server 2022 Data Center 2 Additional Cores**	$770.00	8	$6,160.00
Windows Server 2022 CALS	**Windows Server 2022 CALS**	$46.00	50	$2,300.00
		Subtotal		**$40,760.84**

Services		Price	Qty	Ext. Price
On-site Service	**Virtualization Scope phase 1-6** 1. Phase one - Discovery a. Inventory equipment b. Review connections and configurations 2. Phase two - Planning a. Study results of discovery b. Creation of diagram for Servers, SAN and Switches c. Create a migration plan for the 16 servers i. Assign migration based on priority risk 3. Phase three - Installation a. Stage equipment and install equipment. b. Install temporary migration hardware and tools 4. Phase four - Setup and Configuration a. Setup hosts, Switches and SAN b. Deploy VCenter 7.XX c. Upgrade VMware 6.XX on current servers to 7.XX 5. Phase five - Testing a. Test environment by deploying a new virtual server and test servers 6. Phase six - Server Migration a. Install Backup agents 16 physical servers b. Migrate server per schedule 7. Phase seven - Server decommissioning (Billed Separate) a. Remove physical servers. b. Remove temporary migration hardware c. Move new hardware to final location 8. Phase seven - Post Support a. Provide documentation b. Provide up to 16 hours of post support as needed (Billed Separate)	$26,250.00	1	$26,250.00

NETGAIN NETWORKS, INC.

Services		Price	Qty	Ext. Price
On-site Service	**Server Decommissioning Phase 7** Phase seven - Server decommissioning a. Remove physical servers. b. Remove temporary migration hardware c. Move new hardware to final location	$4,000.00	1	$4,000.00
Remote Service	**Post Migration Support Phase 8** Provide up to 16 hours of post support as needed	$250.00	16	$4,000.00
		Subtotal		**$34,250.00**

Exclusions and Clarifications

- Material availability will may effect project scheduling
- 14-30 days notice required to schedule installation.
- Each server requires 40 core license of Windows Data Center Server (20 core per each CPU)
- Excludes reconfiguration of end user devices and end points
- Excludes server recycling or disposal
- Excludes electrical work
- Work will be performed during hours of 8:00 am to 5:00 PM
- Work requested outside of regular business hour will be billed 1.5 times the rate.
- Permit fees are not included in the estimate. If a permit is required there will be an additional charge.
- ANY delays incurred at NO FAULT to Netgain Networks, will be billed on a TIME & MATERIALS basis.
- Requests outside scope of work listed will be billed on a TIME & MATERIALS basis.
- Netgain Networks, Inc. is not responsible for delays caused by others that delay timeline.

Quote Summary	Amount
Hardware	$103,871.76
Software	$40,760.84
Services	$34,250.00
Subtotal:	**$178,882.60**
Estimated Tax:	**$11,209.03**
Total:	**$190,091.63**

Quotations are valid for thirty days from the date they are generated. Manufacturer's prices are subject to change without notice. Netgain Networks, Inc. is not responsible for typographical errors. Quotes are calculated using Riverside tax code and are subject to change based on city business is conducted in. Special orders are not Cancellable. Software licenses are non-refundable. No refunds on service. Credit may be provided on purchases returns up to seven (7) days of purchase. Returns and/or exchanges are subject to a 35% restocking fee. All credit card transaction are subject to a 3.5% surcharge at the time of payment. Equipment is subject to the manufacturer's warranty unless otherwise stated. A 50% deposit will be required for all orders, following 30% of balance upon delivery of equipment, and 20% upon the completion of service. No deposit will be required when leasing. Recurring monthly service require a credit card or electronic check on file for automatic monthly charge or withdraw.
Leasing estimates are based on pre-sales tax totals. All leasing payments are estimated and are subject to the leasing company's final approval. Sales tax on leases will be applied by leasing company.