CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION

In the matter of:)
REPUBLIC SERVICES, INC. AND) SETTLEMENT AGREEMENT AND) STIPULATION FOR ENTRY OF
WEST CONTRA COSTA SANITARY LANDFILL, INC.) ADMINISTRATIVE CIVIL LIABILITY) ORDER
) R2-2021-1010
)
)

Section I: INTRODUCTION

This Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order (Stipulated Order) is entered into by and between the Assistant Executive Officer of the San Francisco Bay Regional Water Quality Control Board (Regional Water Board), on behalf of the Regional Water Board Prosecution Team on the one hand, and Republic Services, Inc. (Republic) and West Contra Costa Sanitary Landfill, Inc. (WCCSL) on the other hand, collectively referred to as the Parties, and is presented to the Regional Water Board, or its delegate, for adoption as an Order by settlement, pursuant to Water Code section 13323 and Government Code section 11415.60.

Section II: RECITALS

- 1. WCCSL is the owner and operator of a landfill and composting facility called the West Contra Costa Sanitary Landfill (Landfill), located at 1 Parr Boulevard in Richmond, along the San Pablo Bay shoreline. In May 2001, Republic acquired WCCSL.
- 2. The Landfill is regulated under Waste Discharge Requirements Order No. R2-2002-0066 (WDR), as amended by Order No. R2-2006-0008. The WDR identifies WCCSL and Republic as the dischargers responsible for complying with the requirements of the WDR.
- 3. Additionally, the Landfill is regulated under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Industrial Activities, Order No. 2014-0057-DWQ (Industrial General Permit or IGP), as amended by Order No. 2015-0122-DWQ. WCCSL submitted the notice of

- intent to comply with the terms of the IGP and is therefore the sole permittee responsible for complying with the requirements of the IGP.
- 4. As explained in Exhibit A, the Prosecution Team alleges Republic and WCCSL violated the requirements of the WDR by failing to do the following:
 - a. Submit a technical report to the Regional Water Board 120 days prior to making material changes to site development, site features, or site operations, as required by WDR Provision C.19.
 - b. Immediately notify the Regional Water Board of a slope failure, make immediate repairs, and submit a technical report within 30 days of the slope failure that documents the corrective measures taken, as required by WDR Provision C.20.
 - c. Immediately report any seepage from a landfill disposal area and submit a written report within 5 days after it is discovered, as required by WDR Attachment A, Part A, section F, subsection 2.a.
- 5. The WDR violations alleged in Section II, paragraph 4, constitute violations of California Water Code (Water Code) section 13267 for which administrative civil liability of up to \$1,000 per day of violation may be assessed pursuant to Water Code section 13268.
- 6. Additionally, as explained in Exhibit A, the Prosecution Team alleges WCCSL failed to implement best management practices by not properly managing organic compost operations (i.e., by not cleaning up and disposing of organic associated debris, waste, or tracked materials on closed landfill sideslopes below the compost facility areas) as required by IGP section X.H.1(a). For violations of the IGP, WCCSL may be subject to administrative civil liability of up to \$10,000 per day of violation, pursuant to Water Code section 13385, subdivision (a)(2).
- 7. This enforcement action commenced on June 12, 2018. The Parties have engaged in confidential, good-faith settlement negotiations and agree to fully settle the alleged violations summarized above, and further explained in Exhibit A, without administrative or civil litigation by presenting this Stipulated Order to the Regional Water Board, or its delegate, for adoption as an Order by settlement, pursuant to Water Code section 13323 and Government Code section 11415.60.
- 8. To resolve the violations alleged herein by consent and without further administrative or civil proceedings, the Parties have agreed to the imposition of joint and several administrative civil liability against WCCSL and Republic in the amount of \$253,100 for the alleged violations of the WDR (Violations 1 through 3). The parties have further agreed to the imposition of administrative civil liability against WCCSL in the amount of \$207,500 for the alleged violation of the IGP (Violation 4).
- 9. The settlement amounts (\$253,100 and \$207,500) are less than the liability the Prosecution Team determined using the State Water Board Water Quality

Enforcement Policy (Enforcement Policy) in effect at the time of each violation, as noted in Exhibit A. The administrative civil liability for the alleged WDR violations (Violations 1 through 3) was calculated consistent with the 2010 Enforcement Policy, which went into effect May 20, 2010. The administrative civil liability for the alleged IGP violation (Violation 4) was calculated consistent with the 2017 Enforcement Policy, which went into effect October 5, 2017. As a result of settlement discussions, the Parties have agreed to lower the liability by approximately 5 percent in consideration of hearing and litigation risks, a reduction consistent with the range of settlement considerations specified in the Enforcement Policy.

10. The Prosecution Team believes that the resolution of the alleged violations as set forth in this Stipulated Order is fair and reasonable and fulfills all of its enforcement objectives, that no further action is warranted concerning the alleged violations except as provided in this Stipulated Order, and that this Stipulated Order is in the public's best interest.

Section III: STIPULATIONS

The Parties incorporate the foregoing recitals and stipulate to the following:

- 1. **Jurisdiction:** The Parties agree that the Regional Water Board has subject matter jurisdiction over the matters alleged in this action and personal jurisdiction of the Parties to this Stipulation.
- 2. Administrative Civil Liabilities: In consideration of the mutual covenants of the Parties and the release provided herein paragraph 10, Republic and WCCSL hereby agree to the imposition of an administrative civil liability totaling \$253,100 to resolve the WDR violations (Violations 1 through 3) alleged in Section II and further explained in Exhibit A. WCCSL further agrees to the imposition of an administrative civil liability totaling \$207,500 to resolve the IGP violation (Violation 4) alleged in Section II and further explained in Exhibit A. Additionally, to allow the administrative civil liabilities to be aggregated for the purpose of funding the Supplemental Environmental Projects (SEPs) discussed below, Republic hereby agrees to be jointly and severally liable with WCCSL for full payment of the SEPs, including the portion funded by WCCSL's alleged violation of the IGP (Violation 4). Accordingly:
 - a. Within 30 days of issuance of this Order, WCCSL and Republic shall submit a check for \$133,550 for the alleged WDR violations (Violations 1 through 3) made payable to the "State Water Pollution Cleanup and Abatement Account" and shall reference on the check the number of this Stipulated Order. The check shall be mailed to: State Water Resources Control Board Accounting Office, Attn: ACL Payment, P.O. Box 1888, Sacramento, CA 95812-1888. WCCSL and Republic shall provide a copy of the check via email to the State

Water Resources Control Board, Office of Enforcement (<u>Heather.Jidkov@waterboards.ca.gov</u>), and the Regional Water Board (<u>Jerry.Xu@waterboards.ca.gov</u>).

- b. Within 30 days of issuance of this Order, WCCSL shall submit an additional check for \$103,750 for the alleged IGP violation (Violation 4) made payable to the "State Water Pollution Cleanup and Abatement Account" and shall reference on the check the number of this Order. The check shall be mailed to: State Water Resources Control Board Accounting Office, Attn: ACL Payment, P.O. Box 1888, Sacramento, CA 95812-1888. WCCSL shall provide a copy of the check via email to the State Water Resources Control Board, Office of Enforcement (Heather.Jidkov@waterboards.ca.gov), and the Regional Water Board (Jerry.Xu@waterboards.ca.gov)
- c. WCCSL and Republic agree that \$223,300 of the aggregated administrative liability shall be paid to the Regional Monitoring Program care of the San Francisco Estuary Institute for implementation of Supplemental Environmental Projects (SEPs) as follows. Exhibit B provides complete descriptions of these SEPs (Study #1 and Study #2) and is incorporated herein by reference.
 - i. A total of \$200,000 (SEP Amount for Study #1) shall be paid solely for use toward the Integrated Watershed-Bay Modeling Strategy and Pilot Implementation Project. Funding this project will produce and enable implementation of a strategy that integrates, links, and advances modeling tools to evaluate transport and loading of pollutants and sediment to San Francisco Bay from its tributary watersheds and other sources and pathways, and to evaluate the fate and transport of the resulting exposure of those pollutants in the Bay. Payment shall be made no later than 30 days after the Regional Water Board, or its delegate, signs this Stipulated Order. Payment for the SEP shall be in the form of check payable to "Regional Monitoring Program," with reference to this Stipulated Order number, and mailed to: Regional Monitoring Program c/o San Francisco Estuary Institute, 4911 Central Avenue, Richmond, CA 94804. WCCSL and Republic shall provide a copy of the check via email to the State Water Resources Control Board, Office of Enforcement (Heather.Jidkov@waterboards.ca.gov), and the Regional Water Board (Jerry.Xu@waterboards.ca.gov)
 - ii. A total of \$23,300 (SEP Amount for Study #2) shall be paid solely for use toward the Regional Watershed Spreadsheet Model Update Project. Funding this project will be used to improve mercury model calibration and load estimates, and to develop the model and load estimates for one or more other pollutants. Payment shall be made no later than 30 days after the Regional Water Board, or its delegate,

signs this Stipulated Order. Payment for the SEP shall be in the form of check payable to "Regional Monitoring Program," with reference to this Stipulated Order number, and mailed to: Regional Monitoring Program c/o San Francisco Estuary Institute, 4911 Central Avenue, Richmond, CA 94804. WCCSL and Republic shall provide a copy of the check via email to the State Water Resources Control Board, Office of Enforcement (Heather.Jidkov@waterboards.ca.gov), and the Regional Water Board (Jerry.Xu@waterboards.ca.gov).

- 3. **Supplemental Environmental Projects:** The Parties agree that payment of a SEP Amount is a SEP that will be treated as suspended administrative civil liability for purposes of this Stipulated Order. WCCSL and Republic's SEP obligations will be satisfactorily completed upon the San Francisco Estuary Institute's written notification to the Parties acknowledging that the Regional Monitoring Program received payment of the SEP Amount from WCCSL and Republic, and that the payments will be spent on the projects described in Section III, paragraph 2.c., in accordance with the terms of this Stipulated Order. The San Francisco Estuary Institute's annual and quarterly financial reports to the Regional Water Board shall be considered a final post-project accounting of expenditures.
- 4. Failure to Expend all Suspended Administrative Civil Liability Funds on the SEPs: If WCCSL and Republic fail to submit full payment to the San Francisco Estuary Institute for the SEPs within 30 days of the effective date of this Stipulated Order, WCCSL and Republic shall pay the difference between the suspended administrative civil liability and any amount received and accepted by the San Francisco Estuary Institute. If a payment is due pursuant to this paragraph, WCCSL and Republic shall send the original signed check to the State Water Resources Control Board Accounting Office, Attn: ACL Payment/SEP Failure, P.O. Box 1888, Sacramento, CA 95812-1888. WCCSL and Republic shall provide a copy of the check via email to the State Water Resources Control Board, Office of Enforcement (Heather.Jidkov@waterboards.ca.gov), and the Regional Water Board (Jerry.Xu@waterboards.ca.gov).
- 5. **Publicity Associated with the SEP:** Whenever WCCSL, Republic, or their agents or subcontractors publicize one or more elements of the SEP, they shall state in a prominent manner that the project is undertaken as part of a settlement to a Regional Water Board enforcement action against WCCSL and Republic.
- 6. Compliance with Applicable Laws: WCCSL and Republic understand that payment of administrative civil liabilities in accordance with the terms of this Stipulated Order and/or compliance with the terms of this Stipulated Order is not a substitute for compliance with applicable laws, and that continuing violations of the type alleged herein may result in further enforcement, including additional administrative civil liability.

7. Party Contacts for Communications related to this Stipulated Order:

For the Regional Water Board:

Jerry Xu
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, 14th Floor
Oakland, CA 94612

Jerry.Xu@waterboards.ca.gov
(510) 622-2469

For WCCSL:

Rob Sherman General Manager West Contra Costa Sanitary Landfill, Inc. 1 Parr Boulevard Richmond, CA 94801 rsherman@republicservices.com (510) 970-7244

For Republic:

Judith George Senior Corporate Counsel Republic Services, Inc. 18500 North Allied Way Phoenix, AZ 85054 JGeorge4@republicservices.com (480) 493-1738

- 8. **Attorney's Fees and Costs:** Except as otherwise provided herein, each Party shall bear all attorneys' fees and costs arising from the Party's own counsel in connection with the matters set forth herein.
- 9. **Matters Addressed by this Stipulated Order:** Upon the Regional Water Board's or its delegate's adoption, this Stipulated Order represents a final and binding resolution and settlement of the alleged violations as of the effective date of this Stipulated Order. The provisions of this paragraph are expressly conditioned on the full payment of the administrative civil liabilities by the deadlines specified in Section II, paragraphs 2.a. and 2.b, and full satisfaction of the SEP obligations described in Section III, paragraph 2.c.
- 10. **Public Notice:** WCCSL and Republic understand that this Stipulated Order must be noticed for a 30-day public review and comment period prior to consideration by the Regional Water Board or its delegate. If significant new information is received that

reasonably affects the propriety of presenting this Stipulated Order to the Regional Water Board, or its delegate, for adoption, the Prosecution Team may unilaterally declare this Stipulated Order void and decide not to present it to the Regional Water Board or its delegate. WCCSL and Republic agree that they may not rescind or otherwise withdraw their approval of this proposed Stipulated Order.

- 11. Addressing Objections Raised During Public Comment Period: The Parties agree that the procedure contemplated for the Regional Water Board's or its delegate's adoption of the Order, and public review of this Stipulated Order, is lawful and adequate. The Parties understand that the Regional Water Board or its delegate has the authority to require a public hearing on this Stipulated Order. If procedural objections are raised or the Regional Water Board requires a public hearing prior to this Stipulated Order becoming effective, the Parties agree to meet and confer concerning any such objections, and may agree to revise or adjust the procedure and/or this Stipulated Order as necessary or advisable under the circumstances.
- 12. **No Waiver of Right to Enforce:** The failure of the Prosecution Team or the Regional Water Board to enforce any provision of this Stipulated Order shall in no way be deemed a waiver of such provision or in any way affect the validity of the Order. The failure of the Prosecution Team or the Regional Water Board to enforce any such provision shall not preclude it from later enforcing the same or any other provision of this Stipulated Order.
- 13. **Effect of Stipulated Order:** Except as expressly provided in this Stipulated Order, nothing in this Stipulated Order is intended to be, nor shall it be, construed to preclude the Prosecution Team; any State agency, department, board, or entity; or any local agency from exercising its authority under any law, statute, or regulation.
- 14. **Interpretation:** This Stipulated Order shall be construed as if the Parties prepared it jointly. Any uncertainty or ambiguity shall not be interpreted against any one Party. The Parties are represented by counsel in this matter.
- 15. **Modification:** The Parties shall not modify this Stipulated Order by oral representation made before or after its execution. All modifications must be in writing, signed by all Parties, and approved by the Regional Water Board or its delegate.
- 16. If the Order Does Not Take Effect: If this Stipulated Order does not take effect because the Regional Water Board or its delegate does not approve it, the Parties acknowledge that they expect to proceed to a contested evidentiary hearing before the Regional Water Board to determine whether to assess administrative civil liabilities for the alleged violations, unless the Parties agree otherwise. The Parties agree that all oral and written statements and agreements made during the course of settlement discussions will not be admissible as evidence in the hearing. The Parties agree to waive any and all objections based on settlement communications in this matter, including, but not limited to the following:

- a. Objections related to prejudice or bias of any of the Regional Water Board members or their advisors, and any other objections that are premised in whole or in part on the fact that the Regional Water Board members or their advisors were exposed to some of the material facts and the Parties' settlement positions as a consequence of reviewing this Stipulated Order, and therefore may have formed impressions or conclusions prior to any contested evidentiary hearing on the violations alleged herein; or
- b. Laches or delay or other equitable defenses based on the time period for administrative or judicial review to the extent that this period has been extended by these settlement proceedings.
- 17. **Waiver of Hearing:** WCCSL and Republic have been informed of the rights provided by Water Code section 13323, subdivision (b), and hereby waive their rights to a hearing before the Regional Water Board prior to adoption of this Stipulated Order.
- 18. Waiver of Right to Petition or Appeal: WCCSL and Republic hereby waive their rights to petition the Regional Water Board's adoption of this Stipulated Order as written for review by the State Water Board, and further waive their rights, if any, to appeal the same to a California Superior Court and/or any California appellate court.
- 19. **Covenant Not to Sue:** WCCSL and Republic covenant not to sue or pursue any administrative or civil claim against any State agency, the State of California, or their officers, Board members, employees, representatives, agents, or attorneys arising out of or relating to any matter expressly addressed by this Stipulated Order.
- 20. No Admission of Liability/No Waiver of Defenses: In settling this matter, WCCSL and Republic do not admit to liability, admit to the truth of the findings or allegations made by the Prosecution Team, or admit to any of the findings in this Stipulated Order or its attachments, or admit to any violations of the Water Code, the Clean Water Act, any Regional Water Board order, or any other federal, State, or local laws or ordinances, but recognizes that this Stipulated Order may be used as evidence of a prior enforcement action consistent with Water Code sections 13327 and 13385, subdivision (e), and the Enforcement Policy. By entering into this agreement, WCCSL and Republic do not waive any defenses or arguments related to any new enforcement action that may be brought by the Regional Water Board, including any brought under its discretionary enforcement authority reserved herein.
- 21. **Regional Water Board is not Liable:** Neither the Regional Water Board nor its members, staff, attorneys, or representatives shall be liable for any injury or damage to persons or property resulting from acts or omissions by WCCSL, Republic, or their directors, officers, employees, agents, representatives, or contractors in carrying out activities pursuant to this Stipulated Order; nor shall the Regional Water Board, its members, or staff be held as parties to or guarantors of any contract entered into by

- WCCSL, Republic, or their directors, officers, employees, agents, representatives, or contractors in carrying out activities pursuant to this Stipulated Order.
- 22. WCCSL and Republic are Not Liable: Neither WCCSL, Republic, nor their directors, officers, employees, agents, representatives, or contractors shall be liable for any injury or damage to persons or property resulting from acts or omissions by the Regional Water Board or its members, staff, attorneys, or representatives in carrying out activities pursuant to this Stipulated Order; nor shall WCCSL, Republic, or their directors, officers, employees, agents, representatives, or contractors be held as parties to, or guarantors of, any contract entered into by the Regional Water Board, its members, or its staff in carrying out activities pursuant to this Stipulated Order.
- 23. Necessity for Written Approvals: All approvals and decisions of the Regional Water Board under the terms of this Stipulated Order shall be communicated to the WCCSL and Republic in writing. No oral advice, guidance, suggestions, or comments from Regional Water Board employees or officials regarding submissions or notices shall be construed to relieve WCCSL or Republic of their obligations to obtain any final written approval this Stipulated Order requires.
- 24. **Authority to Bind:** Each person executing this Stipulated Order in a representative capacity represents and warrants that he or she is authorized to execute this Stipulated Order on behalf of, and to bind, the entity on whose behalf he or she executes the Stipulated Order.
- 25. **No Third Party Beneficiaries:** This Stipulated Order is not intended to confer any rights or obligations on any third party, and no third party shall have any right of action under this Stipulated Order for any cause whatsoever.
- 26. **Severability:** This Stipulated Order is severable; if any provision is found to be invalid, the remainder shall remain in full force and effect.
- 27. Counterpart Signatures; Facsimile and Electronic Signature: This Stipulated Order may be executed and delivered in any number of counterparts, each of which when executed and delivered shall be deemed to be an original, but such counterparts shall together constitute one document. Further, this Stipulated Order may be executed by facsimile or electronic signature, and any such facsimile or electronic signature by any Party hereto shall be deemed to be an original signature and shall be binding on such Party to the same extent as if such facsimile or electronic signature were an original signature.
- 28. **Effective Date**: This Stipulated Order shall be effective and binding on the Parties upon the date the Regional Water Board or its delegate approves and enters the Order.

IT IS SO STIPULATED.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION, PROSECUTION TEAM

Date: March 26, 2021	By:	McCann	McCann Date: 2021,03,26 06:20:45 -07'00
		Lisa Horowitz M Assistant Execut	
Republic Services, Inc.			
Date:	By:	John Nickerson	Operations Services
West Contra Costa Sanitary	Landfill, l	Inc.	
03/30/21		Mickae	l Caprio
Date:	By:		
		Michael A. Capi West Area Presi	

ORDER OF THE REGIONAL WATER BOARD

- 1. This Stipulated Order incorporates the foregoing Sections I through III by this reference as if set forth fully herein.
- 2. In accepting this Stipulated Order, the Regional Water Board has considered, where applicable, each of the factors prescribed in Water Code sections 13327 and 13385, subdivision (e), and has applied the Penalty Calculation Methodology set forth in the Enforcement Policy, which is incorporated herein by this reference. The Regional Water Board's consideration of these factors and application of the Penalty Calculation Methodology is based on information obtained by the Prosecution Team in investigating the allegations set forth in this Stipulated Order or otherwise provided to the Regional Water Board. In addition to these considerations, this Stipulated Order recovers staff costs incurred by the Regional Water Board for this matter.
- 3. This is an action to enforce the laws and regulations administered by the Regional Water Board. The Regional Water Board finds that issuance of this Stipulated Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, § 21000 et seq.) in accordance with section 15321, subdivision (a)(2), Title 14, of the California Code of Regulations. Additionally, this Stipulated Order generally accepts the plans proposed for the SEPs prior to implementation. Mere submittal of plans is exempt from CEQA because submittal will not cause a direct or indirect physical change in the environment.
- 4. The Executive Officer of the Regional Water Board is authorized to refer this matter directly to the Attorney General for enforcement if Republic and/or WCCSL fail to perform any of their obligations under the Order.

IT IS HEREBY ORDERED pursuant to Water Code section 13323 and Government Code section 11415.60 on behalf of the California Regional Water Quality Control Board, San Francisco Bay Region.

Michael Montgomery	Date	
Executive Officer		
California Regional Water Quality Control Board		
San Francisco Bay Region		

EXHIBIT A

Factors in Determining Administrative Civil Liability

REPUBLIC SERVICES, INC. AND WEST CONTRA COSTA SANITARY LANDFILL, INC. VIOLATIONS OF WASTE DISCHARGE REQUIREMENTS AND INDUSTRIAL STORMWATER GENERAL PERMIT RICHMOND, CONTRA COSTA COUNTY

The State Water Resources Control Board Water Quality Enforcement Policy (Enforcement Policy¹) establishes a methodology for assessing administrative civil liability. Use of the methodology addresses the factors required by California Water Code (Water Code) sections 13327. Each factor in the Enforcement Policy and its corresponding category, adjustment, and amount for each alleged violation is presented below. The Enforcement Policy should be used as a companion document in conjunction with this administrative civil liability assessment since the penalty methodology and definition of terms are not replicated herein. The Enforcement Policy is at: https://www.waterboards.ca.gov/water_issues/programs/enforcement/water_quality_enforcement.shtml

ALLEGED VIOLATIONS

Republic Services, Inc. (Republic) and West Contra Costa Sanitary Landfill, Inc. (WCCSL) allegedly violated the requirements of their applicable permits at the West Contra Costa Sanitary Landfill (Landfill), located at 1 Parr Boulevard, Richmond. Republic and WCCSL are both named as dischargers under Waste Discharge Requirements Order No. R2-2002-0066 (WDR Permit) for the Landfill. Regional Board staff allege Republic and WCCSL violated the WDR Permit by failing to notify the Regional Water Board (one violation) and submit timely technical reports (two violations) about changes in site conditions at the Landfill. Regional Board staff assert that Republic and WCCSL are jointly and severally liable for Violations 1-3 in the amount of \$266,400.

Additionally, WCCSL is the permittee under the General Permit for Storm Water Discharges Associated with Industrial Activities, Order No. 2014-0057-DWQ, National Pollutant Discharge Elimination System (NPDES) No. CAS000001 (Industrial Stormwater Permit). WCCSL allegedly violated the requirements of the Industrial Stormwater Permit by failing to adequately implement best management practices for

¹ The version of the Enforcement Policy in effect at the time of each violation was used. The 2010 Enforcement Policy went into effect on May 20, 2010. The 2017 Enforcement Policy went into effect on October 5, 2017. Because Violations 1-3 occurred prior to October 5, 2017, the Prosecution Team used the 2010 Enforcement Policy to calculate the proposed administrative civil liability for those violations. However, because Violation 4 occurred after October 5, 2017, the Prosecution Team used the 2017 Enforcement Policy to calculate the proposed administrative civil liability for that violation.

closed Class II landfill slopes associated with compost materials and debris derived from its composting operations. Regional Board staff assert WCCSL is liable in the amount of \$218,400 for Violation 4.

The penalty calculations for Violation 1 through 3 and Violation 4 are provided below.

VIOLATION 1

Republic and WCCSL allegedly violated Water Code section 13267(b)(1) by failing to submit a technical report to the Regional Water Board 120 days prior to making material changes to working areas including the top deck and construction and demolition deck² as required by WDR Permit Provision C.19, *Changes to Post-Closure Development Design*. Republic and WCCSL extended the top deck in multiple phases between 2011 and 2017, and the construction and demolition deck in 2016. These extensions were material changes in site features that steepened the side slopes beyond the maximum slope of 3.5:1 (horizontal:vertical) specified in *Class II Landfill Final Closure Plan Volume I* (revised July 2008) and established through a comprehensive landfill stability analysis and independent geotechnical peer review. The extensions were constructed by pushing soil and compost onto the side slopes and using heavy equipment to compact the added materials (referred to as track walking), resulting in side slopes of 2:1 or steeper. The extension of the construction and demolition deck ultimately resulted in a slope failure in January 2017, as discussed in Violation 2.

Republic and WCCSL are subject to administrative civil liability for this alleged violation pursuant to Water Code section 13268(b)(1). The proposed liability is \$120,000 based on 120 days of violation and application of the factors in the 2010 Enforcement Policy. Steps 1-5 of the Enforcement Policy are detailed below.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
Potential for Harm for Discharge Violations	N/A	Not applicable – non-discharge violation is alleged.
Assessments for Discharge Violations	N/A	Not applicable – non-discharge violation is alleged.

² The top deck is a relatively flat (3 percent grade) working area located at the highest elevation of the closed Landfill. It is the primary location of composting operations. The construction and demolition deck is a smaller working area located midway down the south-facing Landfill slope, southeast of the top deck.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
Per-Day Factor for Non-Discharge Violations		Potential for Harm: Moderate Republic and WCCSL's failure to submit a technical report to the Regional Water Board prior to making material changes to the Landfill substantially impaired the Regional Water Board's ability to perform its statutory and regulatory functions and presented a substantial potential for harm. Republic and WCCSL extended the top deck and construction and demolition deck without Executive Officer approval. Material changes to the Landfill may have been a contributing factor to the slope failure (Violation 2) and seepage (Violation 3), both of which may have been prevented if Regional Water Board staff had had the opportunity to review and comment on plans to expand working areas (decks), steepen side slopes, and increase loading on the Landfill cap.
	0.7	Deviation from Requirements: Major Republic and WCCSL failed to prepare and submit a technical report in advance of extending the top deck and construction and demolition deck, which were material changes to the Landfill features. Earthmoving activities and placing new fill onto side slopes to expand working areas (decks) are activities that changed the side slope design and placed additional load on the Landfill cap. Such activities required specific designs to maintain the integrity of the cap and to protect water quality and should have been identified in a report as potentially affecting the Landfill. The WDR Permit requires Executive Officer approval prior to any material changes. Because Republic and WCCSL did not submit a report, Regional Water Board staff had no opportunity to review or comment on landfill changes that could affect the cap's integrity and water quality. Therefore, the deviation from requirement is considered major.
Adjustment for Multiple Day Violations	No	There is no downward adjustment for multiple days of violation.
Initial Liability	\$84,000	The initial liability is calculated as follows: per-day factor (0.7), multiplied by maximum per-day liability (\$1,000), multiplied by number of days of violation (120).
Culpability	1.3	As a permit holder since 2002 with responsibility for complying with WDR Permit requirements, including advance reporting of any proposed material change, Republic and WCCSL were aware of Provision C.19 and did not comply. Republic and WCCSL did not take reasonable and prudent action by seeking Executive Officer approval before making material changes to the Landfill that included extending the top deck and construction and demolition deck without evaluating slope stability and consulting with Regional Water Board staff. Changes resulted in steepened side slopes that exceeded design criteria established through a comprehensive landfill stability analysis, independent geotechnical peer review, and regulatory review and acceptance. Material used for deck construction included non-engineered fill (compost) and added up to 11 feet of material load onto the Landfill cap.
Cleanup and Cooperation	1.1	Regional Water Board staff discovered that deck extensions had been made without Executive Officer approval and notified Republic and WCCSL of the violation in an August 2017 letter. Republic and WCCSL initiated a global and final slope stability analysis in response to the notification, but a final determination has yet to be completed due to a need for additional site-specific data. Republic and WCCSL plans to collect site-specific data but have not yet done so.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
History of Violations	1.0	Republic has prior violations within the last five years at the Ox Mountain Sanitary Landfill (also known as Corinda Los Trancos Landfill), another facility that it owns and operates within the San Francisco Bay Region. However, because WCCSL does not have a history of violations, the Regional Board staff has taken a conservative approach and assessed a neutral multiplier of 1.0 for history of violations.
Base Liability	\$120,100	Each applicable factor relating to Republic and WCCSL's conduct is multiplied by the initial liability of \$84,000 to determine the Base Liability rounded to the nearest hundred dollars.

VIOLATION 2

Republic and WCCSL allegedly violated Water Code section 13267(b)(1) by failing to notify the Regional Water Board of a slope failure, make immediate repairs, and submit a timely technical report documenting corrective measures as required by WDR Permit Provision C.20, *Changes in Site Conditions*. Republic and WCCSL failed to provide the required information to the Regional Water Board from January 18 through June 26, 2017 (a total of 130 days of violation). The slope failure occurred on a section of oversteepened side slopes below an expanded section of the construction and demolition deck, as discussed under Violation 1. The side slopes were steepened beyond the design criteria in *Class II Landfill Final Closure Plan* (revised July 2008) when the Construction and Demolition deck was extended southward in 2016. The slope failure occurred on or before January 18, 2017, during the 2016/2017 winter.

A technical report was due to the Regional Water Board 30 days after the slope failure occurred, thus the report was due no later than February 17, 2017. Regional Water Board staff became aware of the slope failure during a site inspection in April 2017. At that time, staff verbally reminded Republic and WCCSL of the requirement to submit a technical report to address the slope failure. Republic and WCCSL submitted a report on June 26, 2017.³

Republic and WCCSL are subject to administrative civil liability for this alleged violation pursuant to Water Code section 13268(b)(1). The proposed liability is \$68,600 based on the factors in the 2010 Enforcement Policy. Steps 1-5 of the Enforcement Policy are detailed below.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
Potential for Harm for Discharge Violations	N/A	Not applicable – non-discharge violation is alleged.
Assessments for Discharge Violations	N/A	Not applicable – non-discharge violation is alleged.

³ The report submitted was titled *Work Plan – Slope Maintenance below the West Contra Costa County Sanitary Landfill Construction and Demolition Processing Area* (June 26, 2017). It included the immediate corrective actions taken and a proposed work plan to repair the slope during the dry season.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
		Potential for Harm: Moderate Republic's and WCCSL's failure to notify the Regional Water Board of a slope failure and late submittal of a technical report documenting corrective measures substantially impaired the Regional Water Board's ability to perform its statutory and regulatory functions and presented a substantial potential for harm. An unstable landfill poses a threat to water quality, and Regional Water Board staff did not have adequate notice or timely reporting of a slope stability issue at the Landfill.
Per-Day Factor for Non- Discharge Violations	0.4	Deviation from Requirements: Moderate Republic and WCCSL failed to notify the Regional Water Board and make immediate repairs to a slope failure that occurred during the 2016/2017 winter, and submitted a technical report documenting corrective actions late. Republic and WCCSL did not submit the report until after Regional Water Board staff observed the slope failure during a site inspection, which was several months after the incident occurred. Republic's and WCCSL's failure to notify the Regional Water Board and make immediate repairs are a significant deviation from requirement. The report submitted to document the slope failure and corrective measures taken (Work Plan – Slope Maintenance below the West Contra Costa County Sanitary Landfill Construction and Demolition Processing Area) was submitted on June 26, 2017, and was 130 days late. The report did not address the underlying cause of the slope failure. Considering the timeliness and missing element of the report with the failure to notify the Regional Water Board and make immediate repairs, the overall deviation from requirement is considered at least moderate.
Adjustment for Multiple Day Violations	No	There is no downward adjustment for multiple days of violation.
Initial Liability	\$52,000	The initial liability is calculated as follows: per-day factor (0.4), multiplied by maximum per-day liability (\$1,000), multiplied by number of days of violation (130).
Culpability	1.2	Republic and WCCSL were aware of the slope failure on January 18, 2017, recognized it as a reportable event, and notified the local enforcement agency (Contra Costa Health Services, Environmental Health Division). As a permit holder since 2002 with responsibility for complying with WDR Permit requirements, including reporting instances of changes to site features, Republic WCCSL were aware of Provision C.20 (which specifically lists slope failure as a change in condition that must be reported) and did not comply. Republic and WCCSL did not take reasonable and prudent action to notify all oversight agencies of the change in Landfill conditions, take immediate corrective action, and report the actions taken to the Regional Water Board.
Cleanup and Cooperation	1.1	Regional Water Board staff first observed the slope failure during an April 2017 site inspection and communicated concerns verbally. Regional Water Board staff observed the same conditions during a follow-up site inspection on June 12, 2017. Republic and WCCSL submitted a work plan, Work Plan – Slope Maintenance below the West Contra Costa County Sanitary Landfill Construction and Demolition Processing Area, on June 26, 2017, that included the immediate corrective actions taken and a proposed work plan to repair the slope, but did not address the underlying cause of the slope failure.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
History of Violations	1.0	Republic has prior violations within the last five years at the Ox Mountain Sanitary Landfill (also known as Corinda Los Trancos Landfill), another facility that it owns and operates within the San Francisco Bay Region. However, because WCCSL does not have a history of violations, the Regional Board staff has taken a conservative approach and assessed a neutral multiplier of 1.0 for history of violations.
Base Liability	\$68,600	Each applicable factor relating to Republic's conduct is multiplied by the initial liability of \$52,000 to determine the Base Liability rounded to the nearest hundred dollars.

VIOLATION 3

Republic and WCCSL allegedly violated Water Code section 13267(b)(1) by failing to report seepage from the disposal area immediately after it was discovered (sometime in March 2017) and file a written report with information on the seepage within five days thereafter, as required by WDR Permit Attachment A, Part A, section F, *Reports to be Filed with the Board*. Seepage occurred near the bottom of the south-facing Landfill slope and is visible in Google Earth historical images as early as April 1, 2015. Republic and WCCSL discovered the landfill seepage as early as March 2017, as indicated in *Information Regarding Area B Runoff Pond, Slope Inclination, Construction and Demolition Slope Maintenance Project Information, and Seepage Monitoring Data – West Contra Costa County Sanitary Landfill,* submitted to the Regional Water Board on August 27, 2017. Therefore, a seepage report should have been submitted no later than five days after the end of March (April 5, 2017). Because Republic and WCCSL did not submit a report until August 27, 2017, there were at least 145 days of violation.

Republic and WCCSL are subject to administrative civil liability for this alleged violation pursuant to Water Code section 13268(b)(1). The proposed liability is \$63,800 based on the factors in the 2010 Enforcement Policy. Steps 1-5 of the Enforcement Policy are detailed below.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
Potential for Harm for Discharge Violations	N/A	Not applicable – non-discharge violation is alleged.
Assessments for Discharge Violations	N/A	Not applicable – non-discharge violation is alleged.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
		Potential for Harm: Moderate Republic's and WCCSL's failure to notify the Regional Water Board of the seepage and late submittal of a technical report substantially impaired the Regional Water Board's ability to perform its statutory and regulatory functions and presented a substantial potential for harm. Republic's and WCCSL's failure to provide timely notification and reporting may have contributed to discharges of landfill and compost leachate to Pond B, a water of the State.
Per-Day Factor for Non- Discharge Violations	0.4	Deviation from Requirements: Moderate Republic and WCCSL failed to immediately notify the Regional Water Board of the seepage and submit a written technical report within five days of discovery. Republic and WCCSL did not submit the report until Regional Water Board staff independently observed the seepage during a site inspection on August 2, 2017, more than four months after Republic and WCCSL discovered the seepage. The report submitted on August 27, 2017, included information regarding the seepage observed in 2017, but did not include all the information required by WDR Permit Attachment A, Part A, section F.2.a, such as discharge locations and approximate flow rates. Considering the timeliness and missing elements of the report, and the failure to notify the Regional Water Board, the overall deviation from requirement is considered at least moderate.
Adjustment for Multiple Day Violations	No	There is no downward adjustment for multiple days of violation.
Initial Liability	\$58,000	The initial liability is calculated as follows: per-day factor (0.4), multiplied by maximum per-day liability (\$1,000), multiplied by number of days of violation (145).
Culpability	1.1	Republic and WCCSL were aware of the seepage at least as early as March 2017 and did not inform the Regional Water Board. As a permit holder since 2002 with responsibility for complying with WDR Permit requirements, Republic and WCCSL were aware of WDR Permit Attachment A, Part A, section F.2, and did not comply. Republic and WCCSL did not take reasonable and prudent action by immediately reporting the seepage upon discovery and filing a written report within five days of discovery. Republic and WCCSL collected samples of the seepage that were not reported to the Regional Water Board until after Regional Water Board staff prompted it to do so.
Cleanup and Cooperation	1.0	After Regional Water Board staff observed the seepage during the August 2, 2017, site inspection, Republic and WCCSL were responsive. It prepared and submitted required information in a report dated August 27, 2017. Republic and WCCSL also took corrective actions to stop the seepage.
History of Violations	1.0	Republic has prior violations within the last five years at the Ox Mountain Sanitary Landfill (also known as Corinda Los Trancos Landfill), another facility that it owns and operates within the San Francisco Bay Region. However, because WCCSL does not have a history of violations, the Regional Board staff has taken a conservative approach and assessed a neutral multiplier of 1.0 for history of violations.
Base Liability	\$63,800	Each applicable factor relating to Republic's conduct is multiplied by the initial liability of \$58,000 to determine the Base Liability.

Settlement Agreement and Stipulated Administrative Civil Liability Exhibit A Republic Services, Inc.

West Contra Costa Sanitary Landfill, Inc.

Steps 6 through 10 under the Enforcement Policy are performed after the Total Base Liability is calculated, which adds the amounts above for each violation. Since Republic and WCCSL are named jointly and severally liable for Violation 1 through 3, the table applies Steps 6 through 10 to those violations only. Violation 4, which is only assessed against WCCSL, will be calculated separately.

Adjustments for Violations 1-3

Total Base	\$252,500	The Base Liability for Violations 1-3 is added to determine the Total
Liability		Base Liability.
Ability to Pay and Continue in Business	No adjustment	The Enforcement Policy provides that if there is sufficient information to assess the violator's ability to pay the total base liability or to assess the effect of the total base liability on the violator's ability to continue in business, then the liability may be adjusted downward if warranted. There is sufficient information in the public record on file to support a finding of an ability to pay and continue to stay in business. Republic is a publicly traded company on the New York Stock Exchange with revenue of 2.65 billion dollars in the third quarter of 2019. WCCSL is the landowner ⁴ of the approximately 350-acre ⁵ Landfill with an assed total value of over 10 million dollars. ⁶ Regional Board staff have determined that WCCSL has an ability to pay and continue in business. ⁷
Other Factors as Justice May Require: Staff Costs	\$14,000	The staff costs incurred during the development of this enforcement case were \$14,000, which includes the following: \$400 (12.5 hours x \$32.34 hourly rate for Scientific Aid) + \$5,900 (78 hours x \$75.69 hourly rate for Water Resource Control Engineer)+ \$4,300 (32 hours x \$133.42 hourly rate for Senior Engineering Geologist) + \$2,200 (15 hours x \$146.41 hourly rate for Environmental Program Manager) + \$12,00 (12 hours x \$102.64 hourly rate for Assistant Executive Officer).
Economic Benefit	No Adjustment	The Economic Benefit, which includes any savings or monetary gain derived from the act or omission that constitutes the violation, must be compared to the adjusted Total Base Liability Amount. The adjusted Total Base Liability Amount must be at least ten percent higher than the Economic Benefit Amount. For Violations 1-3, Regional Board staff have determined the violations resulted in a negligible economic benefit. Therefore, no adjustment is warranted under this step.

⁴ CalRecycle Solid Waste Information System Facility Detail

⁵ September 30, 2019 Technical Report West Contra Costa Sanitary Landfill Information Required by San Francisco Bay Regional Water Board

⁶ Real Property Tax Assessor, 2018

⁷ Determination completed based on Irrevocable Standby Letter of Credit No. 1396754 and Financial Assurance Mechanism Documentation in Post Closure Maintenance Plan June 2018

Maximum Liability	\$395,000	The statutory maximum for under Water Code section 13268 is \$1,000 per day. Therefore, the statutory maximum for each violation is as follows: Violation 1 - \$120,000. Violation 2 - \$130,000. Violation 3 - \$145,000. Because the Base Liability Amount of Violation 1 (\$120,120) exceeds the statutory maximum liability amount, Regional Board staff have adjusted the Total Base Liability Amount for Violation 1 to be the
Minimum Liability	N/A	statutory maximum of \$120,000. The minimum liability that may be assessed is the economic benefit gained plus ten percent. The base economic benefit is assumed to be
214011105		negligible for Violations 1-3.
Final Liability	\$266,400	The final liability amount is the total base liability after adjusting for ability to pay, economic benefit, other factors, and maximum and
		minimum liabilities. It is rounded to the nearest hundred dollars.

VIOLATION 4

WCCSL allegedly violated Water Code section 13385(a)(2) by failing to implement best management practices (BMPs) as required by Industrial Stormwater Permit section X.H.1(a). Regional Water Board staff conducted inspections and observed organic materials and trash spread across the Landfill side slopes that documented inadequate management practices from November 9, 2017, through September 12, 2019, for a total of 672 days of violation.

WCCSL is subject to administrative civil liability for this alleged violation pursuant to Water Code section 13385(c)(1). The proposed liability is \$218,400 based on the factors in the 2017 Enforcement Policy. Steps 1-10 of the Enforcement Policy are detailed below.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
Potential for Harm for Discharge Violations	N/A	Not applicable – non-discharge violation is alleged.
Assessments for Discharge Violations	N/A	Not applicable – non-discharge violation is alleged.

West Contra Costa Sanitary Landfill, Inc.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
Per-Day Factor for Non- Discharge Violations	0.3	Potential for Harm: Moderate WCCSL's failure to implement adequate BMPs posed a moderate potential for harm. Plastics in trash are particularly harmful to wildlife, and trash, mostly various types of plastic, was embedded in organic materials including compost previously spread across landfill side slopes and the materials were exposed to wind and stormwater transport and discharge to San Pablo Bay, a water of the U.S. The source of the organic materials and trash appeared to be from the compost operations, where trash was both windblown from the top deck and the slopes had been spread with compost and processed green waste material, presumably to promote vegetation for erosion control. Compost applied to the side slopes for vegetative growth should not contain trash or contaminants. While there was a high potential for discharges of trash and organic materials to San Pablo Bay, significant trash was not observed near it (along the base of the landfill, perimeter road, or riprap that borders San Pablo Bay) during the inspection on October 30, 2018. Deviation from Requirements: Moderate Stormwater Permit section X.H.1(a) requires good management practices to prevent organic materials, debris and waste discharges from polluting stormwater and waters of the U.S., including San Pablo Bay. The permit requires observation of all outdoor areas, including drainage areas and perimeter areas, to identify, cleanup, and properly dispose of debris and waste. However, Regional Water Board staff observed accumulated organic materials and trash at locations susceptible to stormwater runoff and discharge to San Pablo Bay during inspections on January 25, August 2, and November 9, 2017, and January 9, 2018, and during a site visit on August 23, 2018. During the August 2018 site visit, Regional Water Board staff observed increased efforts by WCCSL employees to remove materials and trash from the side slopes. Because the effectiveness of the requirement was only partially achieved, the deviation from requirement is considered mo
Adjustment for Multiple Day Violations	Yes	In accordance with the 2017 Enforcement Policy, the 672 days of violation were collapsed to 56 days, which include the first 30 days of the period, plus 1 day for each 5 days of violations until the 60 th day, plus 1 day for each 30 days of violation thereafter. Daily detrimental impacts to the environment did not occur during this period. The potential for trash runoff is elevated during the winter season when wind and rain are more prevalent but does not runoff on a daily basis.
Initial Liability	\$168,000	The initial liability is calculated as follows: per-day factor (0.30), multiplied by maximum per-day liability (\$10,000), multiplied by number of days of violation (56).

⁸ Thompson, Richard C.; Moore, Charles J.; vom Saal, Frederick S.; Swan, Shanna H. "<u>Plastics, the Environment and Human Health: Current Consensus and Future Trends</u>," Biological Sciences 14 June 2009.

West Contra Costa Sanitary Landfill, Inc.

PENALTY FACTOR	ASSESS- MENT	DISCUSSION
Culpability	1.3	WCCSL spread trash-laden compost and organic materials over the side slopes without adequate BMPs. As a permit holder of the Stormwater Permit since 1992 with responsibility for complying with permit requirements, including implementation of minimum BMPs, WCCSL was aware of Stormwater Permit section X.H.1(a). Staff communicated its concerns during the inspections and to WCCSL's consultant through email exchanges in August 2017, but WCCSL did not take adequate action to cleanup existing materials and trash and prevent the spread of trash on the sideslopes of the Landfill.
Cleanup and Cooperation	1.0	WCCSL was cooperative and responded to correct the violation in a reasonable manner. WCCSL has added a number of measures to improve its BMPs to minimize or prevent the spreading of organic materials and trash at the Landfill. WCCSL assigned two dedicated staff to remove trash from the landfill side slopes on a daily basis. WCCSL purchased two new pieces of equipment: (1) an all-terrain litter picker (vacuum) to pick up debris along the fences; and (2) a wind sifter attachment for the screener to improve the separation of plastic and debris during compost processing.
History of Violations	1.0	WCCSL has no history of violations.
Total Base Liability	\$218,400	Each applicable factor relating to WCCSL's conduct is multiplied by the initial liability of \$168,000 to determine the Base Liability.
Ability to Pay and Continue in Business	No adjustment	WCCSL is the landowner ⁹ of the approximately 350-acre Landfill ¹⁰ s with an assed total value of over 10 million dollars. ¹¹ Regional Board staff have determined that WCCSL has an ability to pay and continue in business. ¹² Therefore, no adjustment is warranted under this step.
Other Factors as Justice May Require	No adjustment	If the Water Boards believe that the amount determined using the above factors is inappropriate, the amount may be adjusted under this provision if express findings are made to justify the adjustment. The Total Base Liability Amount is appropriate and no adjustment under this provision is warranted.
Economic Benefit	\$11,700	WCCSL made improvements to clean up existing trash that escaped the top deck. WCCSL would have avoided this penalty by cleaning all trash that escape the top deck. Thus, the economic benefit gained from WCCSL's noncompliance is the delayed costs of having daily litter pickers clean the side slopes.
Maximum Liability	\$6,720,000	Water Code section 13385 allows up to \$10,000 for each day in which a violation occurs. The maximum liability is based on 672 days of violation.
Minimum Liability	\$12,900	The minimum liability that may be assessed is the economic benefit gained plus ten percent.
Final Liability	\$218,400	The final liability is the total base liability after adjusting for ability to pay, economic benefit, other factors, and maximum and minimum liabilities. It is rounded to the nearest hundred.

 ⁹ CalRecycle Solid Waste Information System Facility Detail
 ¹⁰ September 30, 2019 Technical Report West Contra Costa Sanitary Landfill Information Required by San Francisco Bay Regional Water Board

¹¹ Real Property Tax Assessor, 2018
12 Determination completed based on Irrevocable Standby Letter of Credit No. 1396754 and Financial Assurance Mechanism Documentation in Post Closure Maintenance Plan June 2018

Exhibit B

Republic Services, Inc. and West Contra Costa Sanitary Landfill, Inc.

Study Description for San Francisco Bay Regional Monitoring Program
Supplemental Environmental Projects

Basic Information:

Study #1 Name: Integrated Watershed-Bay Modeling Strategy and Pilot Implementation

Study Budget: \$200,000

SFEI Contacts:

• Technical – Tan Zi, tanz@sfei.org, (510) 746-7338

• Financial – Jennifer Hunt, jhunt@sfei.org, (510) 746-7347

Study #2 Name: Regional Watershed Spreadsheet Model Update

Study Budget: \$23,300

SFEI Contacts:

• Technical – Alicia Gilbreath, alicia@sfei.org, (510) 746-7308

• Financial – Jennifer Hunt, jhunt@sfei.org, (510) 746-7347

Study Descriptions:

Study #1

This project will produce and implement a strategy that integrates, links, and advances modeling tools to evaluate transport and loading of pollutants and sediment to San Francisco Bay from its tributary watersheds and other sources and pathways, and to evaluate the fate and transport of the resulting exposure of the pollutants in the Bay. Currently available models include watershed and Bay dynamic simulation models, watershed spreadsheet models, food web models, and mass balance conceptual box models of the Bay and Bay margins. Integrated use of these modeling tools and monitoring data will provide improved understanding of the linkages between ecosystem components and will better answer management questions to inform preventive and corrective actions for pollutants of concern, including contaminants of emerging concern, and management of sediment sources and supply needed for sea level rise resilience and adaptation, and habitat protection and restoration.

Existing RMP workgroups, their science advisors, and stakeholders will be used to obtain input and feedback on the strategy and priority management questions that will be informed by the strategy. The strategy will include an implementation workplan. This project will implement and test the strategy on one or more pollutants associated with one or more management questions.

Study #2:

The Regional Watershed Spreadsheet Model (RWSM) was developed to estimate average annual regional and sub-regional scale pollutant loads to San Francisco Bay from stormwater runoff. It is part of a class of deterministic empirical models based on the volume-concentration method. In the Bay Area, it has so far been used for providing first approximations of regional (Baywide) and sub-regional (e.g., individual county, Bay segment, or priority margin unit) estimates of PCBs, mercury, copper, nutrients, and microplastics.

The model will be recalibrated for flow using a new calibration period (1991-2020) and updated land use data to be published by the Metropolitan Transportation Commission in March 2021. The recalibrated flow model will be used to improve the model calibration and load estimates for mercury and one or more other pollutants.

Compliance with SEP Criteria:

This study complies with the following SEP criteria:

- It is a monitoring program and/or study of surface water quality or quantity and/or the beneficial uses of the water.
- Its nexus to the violations is that it is located within the same Water Board region in which violations occurred.
- This study goes above and beyond the applicable obligations of the dischargers because goes above and beyond what is required of the dischargers in permits or orders issued by the Regional Water Board. It also goes beyond what can be accomplished with other dischargers' required monetary contributions to the Regional Monitoring Program.

Study Milestone and Performance Measures:

Study #1:

The integrated watershed-Bay modeling strategy and workplan will be developed in 2021 and a pilot project will be implemented in 2022. A technical report describing the workplan and pilot project results will be produced by January 2023.

Study #2:

Updates to the Regional Watershed Spreadsheet Model (RWSM) will be conducted during 2021 and early 2022, and a final technical report describing the updates will be produced by September 2022.

Study Budget and Reports to Water Board:

Pursuant to the October 2015 Supplemental to Memorandum of Understanding between SFEI and the Regional Water Board, SFEI is responsible for identifying in each annual work plan and annual budget for the RMP those studies or elements, or portions thereof, that are to be funded by SEP funds. SFEI will keep a copy of accounting records of SEP fund contributions and expenditures separately from regular RMP funds. In its annual and quarterly financial reports to the Regional Water Board, SFEI will separately itemize SEP fund contributions and expenditures by each SEP funder.