March 19, 2020

In the Matter of

Notice of Approval, Sonoma Water Nutrient Offset Project Proposal

Laguna de Santa Rosa Reaches 1 and 2

APPLICANT: City of Santa Rosa
RECEIVING WATER: Laguna de Santa Rosa
HYDROLOGIC AREA: 114.21 Laguna Hydrologic Subarea, 114.22 Santa Rosa Hydrologic Subarea, 114.23 Mark West Hydrologic Subarea
COUNTY: Sonoma County
FILE NAME: Santa Rosa Subregional Water Reclamation System (Nutrient Offset Program)

BY THE EXECUTIVE OFFICER:

1. The North Coast Regional Water Quality Control Board (Regional Water Board) approved the Nutrient Offset Program (NOP) in 2008 through Resolution No. R1-2008-0061. The NOP was incorporated as Attachment H to the City of Santa Rosa's National Pollutant Discharge Elimination System (NPDES) permit, Order No. R1-2013-0001. The NOP gives the City of Santa Rosa the option to offset the discharge of phosphorus contained in its treated wastewater effluent lawfully discharged during the winter season by conducting work that either prevents or removes equal or greater amounts of phosphorus from unregulated sources of discharge elsewhere in the Laguna watershed.

2. In collaboration with the City of Santa Rosa (City), Sonoma Water submitted the Sonoma Water Nutrient Offset Project Proposal Laguna de Santa Rosa Reaches 1 and 2 (Project) (Attachment A) in August 2017 for consideration under the NOP. The final version of the Project was submitted for consideration under the

NOP in April 2019. A revised page 6 was submitted on June 11, 2019 to address a minor typographical error.

3. The Project proposal underwent a 21-day public comment period from April 19 to May 10, 2019. Staff received a single public comment letter during that time, in which the Town of Windsor supported the Project. Following review of the Project, comment, and this approval, Staff finds the Project consistent with the requirements of the NOP.

4. Under Sonoma Water's Stream Maintenance Program (SMP), Sonoma Water implements stream maintenance projects within the corridor of engineered flood control channels in Sonoma County to provide flood control services and improve ecological function. The Project is located in the mainstem of the Laguna de Santa Rosa at the intersection of Stony Point Road and the Rohnert Park Expressway. Sonoma Water's SMP Manual[1] refers to the Project sites as Laguna 1 (West of Stony Point Road) and Laguna 2 (East of Stony Point Road). Currently, shallow water creates conditions conducive to the growth of *Ludwigia,* the presence of which further entrains phosphorus laden sediment. The Project proposes voluntary actions to modify hydraulic conditions in Laguna 1 and Laguna 2 by excavating phosphorus laden sediment, creating a low-flow channel, removing the invasive aquatic weed *Ludwigia*, and planting riparian vegetation.

5. Direct removal of phosphorus laden sediment eliminates phosphorus from the system through two mechanisms. The first mechanism is the removal of the phosphorus contained in the excavated sediments (Method A in Table 1). The second mechanism, described in the Project as internal loading, results from the reduction of the flux of phosphorus from the top two centimeters of sediment into the water column (Method B in Table 1). Flux occurs during low flow, anoxic conditions and is exacerbated by the presence of *Ludwigia*. Once the low-flow channel has been created and *Ludwigia* removed, a reduced area of the stream bed will be inundated, thereby reducing flux of phosphorus into the water column.

6. In drier weather, the narrower, deeper low-flow channel will prevent water from spreading across the full width of the flood control channel, allowing water to flow more quickly over a smaller area. This will limit phosphorus dissolution from sediment into the water column, minimize *Ludwigia* and mosquito habitat, reduce the potential for sediment deposition, and create better habitat for native aquatic and riparian species. The Project also contains a revegetation and vegetation management component to generate a canopy of native tree and shrub species that provide riparian habitat and shade, reducing water temperature.

[1] Sonoma Water's SMP Manual is available here: https://evogov.s3.amazonaws.com/185/media/159787.pdf

7. The Project reduces phosphorus loads to the Laguna de Santa Rosa and is eligible for nutrient reduction credits. The estimated nutrient offset credits and eligibility periods applicable to this Project are as follows (Table 1):

Table 1. Phosphorus credit generating methods and amounts.

Approved Crediting Option	Method and Stream Reach	Approved Total Eligibility Period	Estimated Annual Credits	Estimated Total Credits for Eligibility Period
Legacy Sediment Removal	A. Direct removal of P-laden sediment from channel, Reach 1	3 years	2,360 lbs P/yr	7,080 lbs P
Legacy Sediment Removal	A. Direct removal of P-laden sediment from channel, Reach 2	3 years	1,480 lbs P/yr	4,440 lbs P
Legacy Sediment Removal	B. Reduced water column contact with P-laden sediment, Reaches 1 and 2	10 years	100 lbs P/yr	1,000 lbs P

8. Detailed estimates of the mass of phosphorus removed are provided in the Project proposal. Sonoma Water provided Staff with further estimates based on samples of sediment on July 10, 2019 (Attachment B). Because of the large difference in the average P concentration of sediment between Laguna 1 (4.16 g/kg) and Laguna 2 (1.1 g/kg), Staff calculated total Phosphorus estimates for these reaches separately. Table 1 reflects these estimates for Method A. However, removed sediment is amenable to further testing for actual phosphorus content. Therefore, the credits awarded for direct removal (Method A in Table 1) will be based on the actual mass of phosphorus removed and verified. Reducing phosphorus flux into the water column (Method B in Table 1) represents a smaller load of phosphorus that manifests over time. Credits for the reduction of phosphorus flux are determined using values from the peer reviewed literature and will accrue annually over a 10-year period.

9. Sonoma Water will transmit verified phosphorus removal measurements in the form of a Verification Report to Staff once available. Verification will be pursuant to the requirements of the approved Project proposal. Staff will post the Verification Report on the Regional Board website.

Accordingly, based on an independent review of the record, the Regional Water Board Executive Officer approves the Sonoma Water Nutrient Offset Project Proposal Laguna de Santa Rosa Reaches 1 and 2 as eligible for nutrient offset credits in accordance with Order No. R1-2013-0001, provided that the project complies with the following terms and conditions:

1. Except as may be modified by any preceding conditions, all actions subject to this approval are contingent on: (a) all proposed activities and actions to mitigate potential water quality impacts being completed in strict compliance with Sonoma Water's project description, and (b) compliance with all applicable requirements of the Basin Plan.

2. Any change to the operation of the Project that would have a significant or material effect on the findings, conclusions, or conditions of this Notice of Approval must be submitted to the Executive Officer of the Regional Water Board for prior review and written approval.

3. The Project meets the eligibility criteria as specified in Order No. R1-2013-0001 and the Santa Rosa Nutrient Offset Program and, if constructed as described in Attachment A and in compliance with the above-listed conditions, the Project will adhere to applicable water quality standards. Therefore, the Project is eligible for nutrient offset credits, as proposed.

Matt St. John
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Date: 2020.03.19 16:05:24 -07'00'

Matthias St. John
Executive Officer

Attachment A: Sonoma Water Nutrient Offset Project Proposal Laguna de Santa Rosa Reaches 1 and 2
Attachment B: Revised total and annual phosphorus reduction and credit calculation

cc: Sean McNeail, Santa Rosa Utilities Department, smcneil@srcity.org
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