Attachment E – Notice of Intent

WATER QUALITY ORDER NO. 2013-0002-DWQ
GENERAL PERMIT NO. CAG990005

STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR RESIDUAL AQUATIC PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM ALGAE AND AQUATIC WEED CONTROL APPLICATIONS

I. NOTICE OF INTENT STATUS (see Instructions)

Mark only one item

☐ A. New Applicator

☑ B. Change of Information: WDID # 1 49AP00001

☐ C. Change of ownership or responsibility: WDID# _____

II. DISCHARGER INFORMATION

A. Name Waterworks Industries Inc.

B. Mailing Address 930 Shiloh Rd. Bldg. 38 Suite D

C. City Windsor

D. County Sonoma

E. State California

F. Zip Code 95492

G. Contact Person Rich Carnation

H. Email address Rich@waterworksindustries.com

I. Title CEO

J. Phone 707-837-7900

III. BILLING ADDRESS (Enter Information *only* if different from Section II above)

A. Name _____

B. Mailing Address _____

C. City _____

D. County _____

E. State _____

F. Zip Code _____

G. Email address _____

H. Title _____

I. Phone _____

IV. RECEIVING WATER INFORMATION

A. Algaecide and aquatic herbicides are used to treat (check all that apply):

☐ 1. Canals, ditches, or other constructed conveyance facilities owned and controlled by Discharger.

Name of the conveyance system: _____

☐ 2. Canals, ditches, or other constructed conveyance facilities owned and controlled by an entity other than the Discharger.

Owner's name: _____

Name of the conveyance system: _____

☑ 3. Directly to river, lake, creek, stream, bay, ocean, etc.

Name of water body: See attachment below

B. Regional Water Quality Control Board(s) where application areas are located (REGION 1, 2, 3, 4, 5, 6, 7, 8, or 9): Region 1, 2, 5

(List all regions where algaecide and aquatic herbicide application is proposed.)

V. ALGAECIDE AND AQUATIC HERBICIDE APPLICATION INFORMATION

A. Target Organisms:

See attachment below

B. Algaecide and Aquatic Herbicide Used: List Name and Active Ingredients

See attachment below

C. Period of Application:

Start Date January 1st (For life of permit) End Date December 31st (For life of permit)

D. Types of Adjuvants Used:

Surfactants (Agri-Dex, Competitor, Cygnet Plus, LI-700, Liberate, MSO Concentrate), Adjuvants containing ingredients represented by the surrogate nonylphenol will not be used.

VI. AQUATIC PESTICIDE APPLICATION PLAN

A. Has an Aquatic Pesticide Application Plan been prepared and is the applicator familiar with its contents?

☑ Yes ☐ No

If not, when will it be prepared?_____

VII. NOTIFICATION

Have potentially affected public and governmental agencies been notified?

☑ Yes ☐ No

VIII. FEE

Have you included payment of the filing fee (for first-time enrollees only) with this submittal?

☐ Yes ☑ No ☐ NA

IX. CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I certify that the provisions of the Order, including developing and implementing a monitoring program, will be complied with."

A. Printed Name: Rich Carnation

B. Signature: Richard Carnation Date: 3-18-2024

C. Title: CEO

XI. FOR STATE WATER BOARD STAFF USE ONLY

WDID: Date NOI Received: Date NOI Processed:

Case Handler's Initial: Fee Amount Received: $ Check#:_____

☐ Lyris List Notification of Posting of APAP Date: Confirmation Sent

IV. RECEIVING WATER INFORMATION

3. Directly to river, lake, creek, stream, bay, ocean, etc.

Name of water body:

Shiloh Lake, Fountaingrove Lake, Point Tiburon Lagoon, Marin Lagoon, Sonoma Greens Lake and Pond, Vineyard Club Lake, Lake Alhambra, Upper Ferrari Pond, Hidden Hills Pond, Lincoln Hills Golf Club Ponds, Marin Country Club Golf Course Reservoirs, Bayside Technology Park Engineered Channel, Windsor Golf Club Ponds, Rooster Run Golf Club Ponds, Airport Business Center Park Ponds, The Shores at Marina Bay Lakes, Elk Grove Nature Pond, Adobe Creek Golf Club Ponds, Cypress Pond, Emerson Ranch Pond, and Delaney Park Pond.

V. ALGAECIDE AND AQUATIC HERBICIDE APPLICATION INFORMATION

A. Target Organisms

Eurasian Water Milfoil (Myriophyllum spicatum), Sago Pondweed (Potamogeton pectinatus L.), American Pondweed (Potamogeton nodosus), Brazilian Elodea (Egeria densa), Widgeon Grass (Ruppia spp.), Curly-leaf pondweed (Potamogeton crispus), Coontail (Ceratophyllum demersum), Mosquito Fern (Azolla spp.), Duckweed (Lemna minor), Cattails (Typha spp.), Parrot Feather (Myriophyllum aquaticum), Bladderwort (Utricularia) Watershield (Bresenia shreberi), Creeping Water Primrose (Ludwigia), Bulrush (Schoenoplectus californicus), Coontail (Ceratophyllum demersum), Filamentous Algae, and Planktonic Algae.

B. Algaecide and Aquatic Herbicide Used: List Name and Active Ingredients

Diquat Dibromide (Reward, Tribune), Sodium Carbonate Peroxyhydrate (PAK27, GreenClean, Phycomycin), Hydrogen Dioxide, Peroxyacetic Acid (GreenClean Liquid), Fluridone (Sonar Formulations), Endothall (Aquathol K, Hydrothol 191), Glyphosate (Aquapro, Rodeo), Triclopyr (Renovate 3), Imazapyr (Habitat), Imazamox (Clearcast), Penoxsulam (Galleon SC), Flumioxazin (Clipper), Copper Formulations (Cutrine Plus, Captain, Nautique, Komeen, Earthtec, SeClear).



WATERWORKS INDUSTRIES INC.
AQUATIC PESTICIDE APPLICATION PLAN (APAP)

THE STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR RESIDUAL AQUATIC PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM ALGAE AND AQUATIC WEED CONTROL APPLICATIONS
WATER QUALITY ORDER NO. 2013-0002-DWQ
GENERAL PERMIT NO. CAG990005

Submitted To:

Gurgagn Chand,
State Water Resources Control Board
Division of Water Quality
1001 I Street, 15th Floor
Sacramento, CA 95814

Prepared By:

Waterworks Industries Inc.
930 Shiloh Rd, Bldg. 38, Suite D
Windsor, CA 95492

Table of Contents

CERTIFICATIONS **5**

NPDES PERMIT BACKROUND **22**

GENERAL PERMIT COVERAGE 22
AQUATIC PESTICIDE APPLICATION PLAN 23

DESCRIPTION OF THE SYSTEMS **24**

SHILOH HOMEOWNERS ASSOCIATION – SHILOH LAKE – REGION 1 24
VARENNA AT FOUNTAINGROVE – FOUNTAINGROVE LAKE - REGION 1 26
POINT TIBURON LAGOON OWNERS ASSOCIATION – POINT TIBURON LAGOON – REGION 2 28
MARIN LAGOON ASSOCIATION – MARIN LAGOON – REGION 2 30
SONOMA GREENS COMMUNITY ASSOCIATION – SONOMA GREENS LAKE AND POND – REGION 2 33
THE VINEYARD CLUB INC. – VINEYARD CLUB LAKE – REGION 1 35
LAKE ALHAMBRA HOMEOWNERS ASSOCIATION – LAKE ALHAMBRA – REGION 5 38
SUN CITY LINCOLN HILLS COMMUNITY ASSOCIATION IN ARRANGEMENT WITH LINCOLN HILLS GOLF CLUB – SHARED WATER SYSTEM WHICH INCLUDES UPPER FERRARI POND, HIDDEN HILLS POND, AND LINCOLN HILLS GOLF CLUB PONDS - REGION 5 40
MARIN COUNTRY CLUB GOLF COURSE – RESERVOIRS – REGION 2 44
BAYSIDE TECHNOLOGY PARK – ENGINEERED CHANNEL - REGION 2 47
WINDSOR GOLF CLUB – PONDS – REGION 1 50
ROOSTER RUN GOLF CLUB – PONDS – REGION 2 53
AIRPORT BUSINESS CENTER PARK – PONDS – REGION 1 56
THE SHORES AT MARINA BAY HOMEOWNERS ASSOCIATION – THE SHORES AT MARINA BAY LAKES – REGION 2 59
CITY OF ELK GROVE – ELK GROVE NATURE POND – REGION 5 62
ADOBE CREEK GOLF CLUB – PONDS – REGION 2 65
CITY OF OAKLEY – CYPRESS POND, EMERSON RANCH POND, DELANEY PARK POND – REGION 5 68

DESCRIPTION OF THE TREATMENT AREAS **71**

SHILOH HOMEOWNERS ASSOCIATION – SHILOH LAKE 71
VARENNA AT FOUNTAINGROVE – FOUNTAINGROVE LAKE 73
POINT TIBURON LAGOON OWNERS ASSOCIATION – POINT TIBURON LAGOON 74
MARIN LAGOON HOMEOWNERS ASSOCIATION – MARIN LAGOON 76
SONOMA GREENS COMMUNITY ASSOCIATION – SONOMA GREENS LAKE AND POND 78
THE VINEYARD CLUB INC. – VINEYARD CLUB LAKE 80
LAKE ALHAMBRA HOMEOWNERS ASSOCIATION – LAKE ALHAMBRA 82
SUN CITY LINCOLN HILLS COMMUNITY ASSOCIATION IN ARRANGEMENT WITH LINCOLN HILLS GOLF CLUB - UPPER FERRARI POND, HIDDEN HILLS POND, AND LINCOLN HILLS GOLF CLUB PONDS 84
MARIN COUNTRY CLUB GOLF COURSE RESERVOIRS 85
BAYSIDE TECHNOLOGY PARK – ENGINEERED CHANNEL 87
WINDSOR GOLF CLUB – PONDS 88
ROOSTER RUN GOLF CLUB – PONDS 90
AIRPORT BUSINESS CENTER PARK – PONDS 92

THE SHORES AT MARINA BAY – LAKES 94
CITY OF ELK GROVE – ELK GROVE NATURE POND 96
ADOBE CREEK GOLF CLUB - PONDS 98
CITY OF OAKLEY – CYPRESS POND, EMERSON RANCH POND, DELANEY POND 100

AQUATIC VEGETATION AND ALGAE BEING CONTROLLED 102

SHILOH HOMEOWNERS ASSOCIATION – SHILOH LAKE 102
VARENNA AT FOUNTAINGROVE – FOUNTAINGROVE LAKE 102
POINT TIBURON LAGOON OWNERS ASSOCIATION – POINT TIBURON LAGOON 102
MARIN LAGOON ASSOCIATION – MARIN LAGOON 102
SONOMA GREENS COMMUNITY ASSOCIATION – SONOMA GREENS LAKE AND POND 102
THE VINEYARD CLUB INC. – VINEYARD CLUB LAKE 103
LAKE ALHAMBRA HOMEOWNERS ASSOCIATION – LAKE ALHAMBRA 103
SUN CITY LINCOLN HILLS COMMUNITY ASSOCIATION IN ARRANGEMENT WITH LINCOLN HILLS GOLF CLUB – UPPER FERRARI POND, HIDDEN HILLS POND, LINCOLN HILLS GOLF CLUB PONDS 103
MARIN COUNTRY CLUB GOLF COURSE – RESERVOIRS 103
BAYSIDE TECHNOLOGY PARK – ENGINEERED CHANNEL 104
WINDSOR GOLF CLUB – PONDS 104
ROOSTER RUN GOLF CLUB – PONDS 104
AIRPORT BUSINESS CENTER – PONDS 104
THE SHORES AT MARINA BAY – LAKES 104
CITY OF ELK GROVE – ELK GROVE NATURE POND 105
ADOBE CREEK GOLF CLUB – PONDS 105
CITY OF OAKLEY – CYPRESS POND, EMERSON RANCH POND, DELANEY PARK POND 105

AQUATIC HERBICIDES AND ALGAECIDES TO BE USED, THEIR DEGRADATION BYPRODUCTS, METHODS OF APPLICATION. AND ADJUVANTS AND SURFACTANTS TO BE USED 106

FACTORS INFLUENCING THE DECISION TO USE HERBICIDES AND ALGAECIDES 108

GATES AND CONTROL STRUCTURES 109

SHILOH HOMEOWNERS ASSOCIATION – SHILOH LAKE 109
VARENNA AT FOUNTAINGROVE – FOUNTAINGROVE LAKE 110
POINT TIBURON LAGOON OWNERS ASSOCIATION – POINT TIBURON LAGOON 111
MARIN LAGOON ASSOCIATION – MARIN LAGOON 112
SONOMA GREENS COMMUNITY ASSOCIATION – SONOMA GREENS LAKE AND POND 114
THE VINEYARD CLUB INC. – VINEYARD CLUB LAKE 115
LAKE ALHAMBRA HOMEOWNERS ASSOCIATION – LAKE ALHAMBRA 116
SUN CITY LINCOLN HILLS COMMUNITY ASSOCIATION IN ARRANGEMENT WITH LINCOLN HILLS GOLF CLUB – UPPER FERRARI POND, HIDDEN HILLS POND, AND LINCOLN HILLS GOLF CLUB PONDS 117
MARIN COUNTRY CLUB GOLF COURSE - RESERVOIRS 118
BAYSIDE TECHNOLOGY PARK – ENGINEERED CHANNEL 119
WINDSOR GOLF CLUB – PONDS 120
ROOSTER RUN GOLF CLUB – PONDS 121
AIRPORT BUSINESS CENTER – PONDS 122
THE SHORES AT MARINA BAY – LAKES 123

CITY OF ELK GROVE – ELK GROVE NATURE POND 124
ADOBE CREEK GOLF CLUB 125
CITY OF OAKLEY 126

STATE IMPLEMENTATION POLICY (SECTION 5.3) EXCEPTIONS 127

DESCRIPTION OF MONITORING AND REPORTING PROGRAM (MRP) 127

MONITORING FREQUENCY AND LOCATIONS 129
SAMPLE COLLECTION METHODS 131
FIELD SAMPLING EQUIPMENT CHECKLIST GE132
RECEIVING WATER MONITORING TRIGGERS 133
SAMPLE PRESERVATION AND DELIVERY 134
CHAIN OF CUSTODY 134
SAMPLE CONTAMINATION PREVENTION PROCEDURES 135
FIELD SAMPLING PROCEDURES 135
QUALITY ASSURANCE-QUALITY CONTROL 138
DATA AND RECORDS MANANGEMENT 138
REPORTING REQUIREMENTS 138

BEST MANAGEMENT PRACTICES TO BE IMPLEMENTED 141

COORDINATION WITH NEARBY WATER USERS AND AGENCIES SO THAT BENEFICIAL USES OF THE WATER ARE NOT IMPACTED DURING THE TREATMENT PERIOD 142
SHILOH HOMEOWNERS ASSOCIATION – SHILOH LAKE 143
VARENNA AT FOUNTAINGROVE – FOUNTAINGROVE LAKE 143
POINT TIBURON LAGOON OWNERS ASSOCIATION – POINT TIBURON LAGOON 143
MARIN LAGOON ASSOCIATION – MARIN LAGOON 143
SONOMA GREENS COMMUNITY ASSOCIATION – SONOMA GREENS LAKE AND POND 143
THE VINEYARD CLUB INC. – VINEYARD CLUB LAKE 144
LAKE ALHAMBRA HOMEOWNERS ASSOCIATION – LAKE ALHAMBRA 144
SUN CITY LINCOLN HILLS COMMUNITY ASSOCIATION IN ARRANGEMENT WITH LINCOLN HILLS GOLF CLUB – UPPER FERRARI POND, HIDDEN HILLS POND, LINCOLN HILLS GOLF CLUB PONDS 144
MARIN COUNTRY CLUB GOLF COURSE – RESERVOIRS 144
BAYSIDE TECHNOLOGY PARK – ENGINEERED CHANNEL 145
WINDSOR GOLF CLUB – PONDS 145
ROOSTER RUN GOLF CLUB – PONDS 145
AIRPORT BUSINESS CENTER – PONDS 145
THE SHORES AT MARINA BAY – LAKES 145
CITY OF ELK GROVE – NATURE POND 145
ADOBE CREEK GOLF CLUB – PONDS 145
CITY OF OAKLEY – CYPRESS POND, EMERSON RANCH POND, DELANEY PARK POND 146

ALTERNATIVES TO AQUATIC HERBICIDES AND ALGAECIDES 146

NON-NATIVE INVASIVE SPECIES IN MARIN COUNTRY CLUB RESERVOIRS 147

AQUATIC HERBICIDE AND ALGAECIDE APPLICATION LOG 154

REFERENCES 157

CERTIFICATIONS

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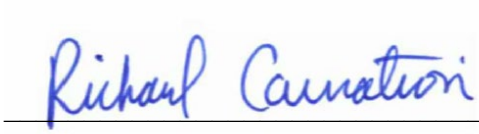
Board President – William Rothe
Shiloh Homeowners Association
C/o Steward Property Services, Inc.
1415 N. McDowell Blvd., Ste. B
Petaluma, CA 94954



Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

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Nathan Condie – Director
Varenna at Fountaingrove
1401 Fountaingrove Parkway
Santa Rosa, CA 95403

Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

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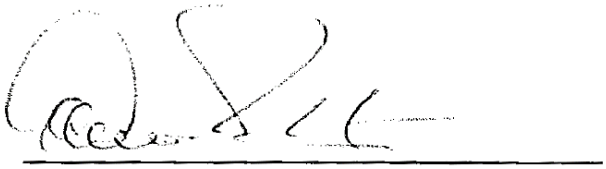
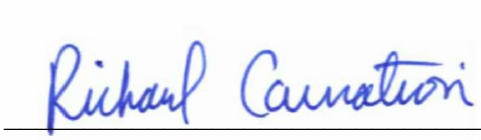


Laurence Sylvester (Board President)
Point Tiburon Lagoon Owners Association
C/o Charles Property Services, Inc.
35 Mitchell Blvd, Suite 5A
San Rafael, CA 94903



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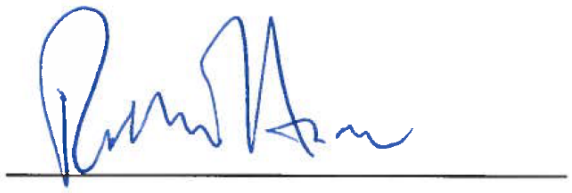

Bob Haar – President
Marin Lagoon Homeowners Association
C/o Steward Property Services, Inc.
1415 N. McDowell Blvd., Ste. B
Petaluma, CA 94954

Rich Carnation – CEO
Waterworks Industries, Inc.
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Board President – Mara Kahn
Sonoma Greens Community Association
C/o Steward Property Services, Inc.
1415 N. McDowell Blvd., Ste. B
Petaluma, CA 94954

Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
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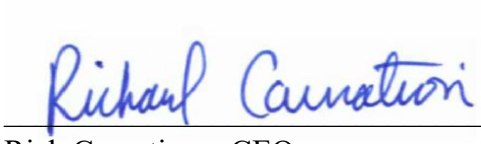
Bert Sandell
The Vineyard Club, Inc.
P.O Box 44
Geyserville, CA 95441



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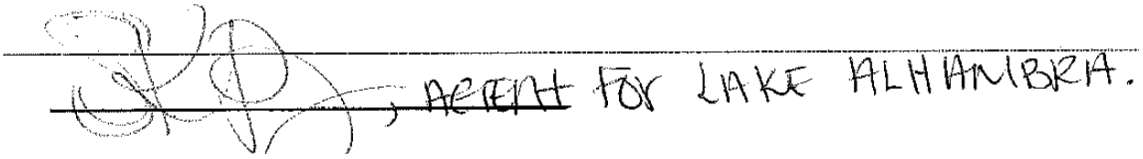

Sommer Perry
Lake Alhambra Homeowners Association
C/o Homeowners Management Company, LLC
2151 Salvio Street Ste 250
Concord, CA 94520

Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

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DocuSigned by:
Tony D. Q. 6/8/2018
B71385D8715544F...

Tony D. Cianci – Sr. VP, Operations
Lincoln Hills Golf Club
1405 E. Joiner Parkway
Lincoln, CA 95648

Erik Rosales – Facility Manager
Sun City Lincoln Hills Community Association
965 Orchard Creek Lane
Lincoln, CA 95648

Richard Carnation

Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

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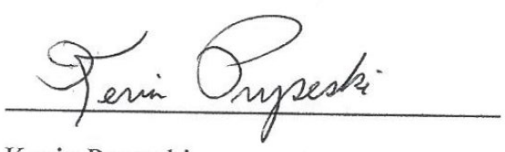

Kevin Pryseski
Marin Country Club
Golf Course Superintendent
500 Country Club Drive
Novato, CA 94949

Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

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Suzanne Hardman
Sr. Property Manager
as Managing Agent for
Bayside Technology Park CAM and Drainage
System Maintenance Associations

Bayside Tech Park
C/o GS Management Co.
Attn: Suzanne Hardman
5674 Sonoma Drive
Pleasanton, CA 94566

Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

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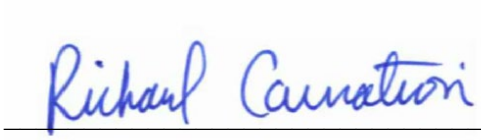
Bill Carson
Windsor Golf Club
1340 19th Hole Dr.
Windsor, CA 95492



Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

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Rooster Run Golf Club
C/o Bill Carson
2301 East Washington Street
Petaluma, CA 94954

Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

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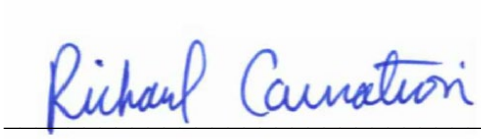
Airport Business Park
C/o Bill Carson
414 Aviation Blvd
Santa Rosa, CA 95403

Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The Shores at Marina Bay
C/o Associa Northern California
Attn: John Cafall
1 Shoreline Ct.
Richmond, CA 94804

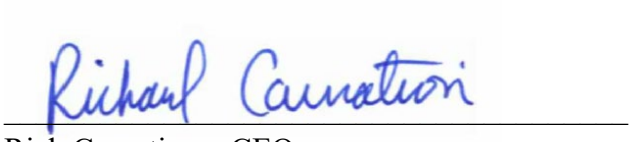


Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sean Gallagher, Deputy Public Works Director - Operations
City of Elk Grove
8401 Laguna Palms Way
Elk Grove, CA 95758



Rich Carnation – CEO
Waterworks Industries, Inc.
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Windsor, CA 95492

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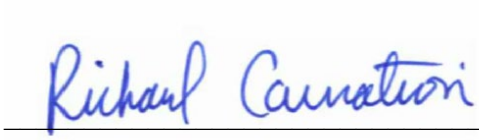
Bill Carson
Adobe Creek Golf Club
1901 Frates Rd.
Petaluma, CA 94954

Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Kevin Rohani, Public Works and Engineering Director/City Engineer
City of Oakley
3231 Main St.
Oakley, CA 94561



Rich Carnation – CEO
Waterworks Industries, Inc.
930 Shiloh Rd., Bldg. 38, Suite D
Windsor, CA 95492

NPDES PERMIT BACKROUND

On March 12, 2001, the Ninth Circuit Court of Appeals held that discharges of pollutants from the use of aquatic pesticides in waters of the United States require coverage under an NPDES permit. (*Headwaters, Inc. v. Talent Irrigation District).3* The *Talent* decision was issued just prior to the major season for applying aquatic pesticides.

Because of the serious public health, safety, and economic implications of delaying pesticide applications, in 2001 the State Water Board adopted Water Quality Order (Order) No. 2001-12-DWQ, Statewide General NPDES Permit for Discharges of Aquatic Pesticides to Waters of the United States on an emergency basis to provide immediate NPDES permit coverage for broad categories of aquatic pesticide use in California.

Order No. 2001-12-DWQ expired on January 31, 2004. In 2004, it was replaced by two general permits: a vector control permit for larvicides (Order No. 2004-0008-DWQ) and a weed control permit (Order No. 2004-0009-DWQ). The State Water Board determined that adoption of these two permits was consistent with the Ninth Circuit decisions.

The Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for residual aquatic pesticide discharges to waters of the United States from algae and aquatic weed control applications. Water Quality Order No. 2013-0002-DWQ General Permit No. CAG990005 was adopted by the State Water Resources Control Board on March 5, 2013 and became effective on December 1, 2013. This supersedes Order No. 2004-0009-DWQ except for enforcement purposes, and in order to meet the provisions contained in division 7 of the Water Code (commencing with §13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

REGIONAL WATER QUALITY CONTROL BOARD INVASIVE SPECIES ERADICATION PLAN BACKGROUND

Appendix D. Guidance for Developing Mitigation Plans
For projects that include on-stream dams, the applicant shall be required to prepare mitigation plans for the eradication of non-native species.

GENERAL PERMIT COVERAGE

This General Permit covers the point source discharge to waters of the United States of residues resulting from pesticide applications using products containing 2,4-D, acrolein, calcium hypochlorite, copper, diquat, endothall, flumioxazin, fluridone, glyphosate, hydrogen peroxide, imazamox, imazapyr, penoxsulam, peroxyacetic acid, sodium carbonate peroxyhydrate, sodium

hypochlorite, and triclopyr-based algaecides and aquatic herbicides, and adjuvants containing ingredients represented by the surrogate nonylphenol.

This General Permit covers only discharges of algaecides, and aquatic herbicides that are currently registered for use in California, or that become registered for use and contain the above-listed active ingredients and ingredients represented by the surrogate of nonylphenol.

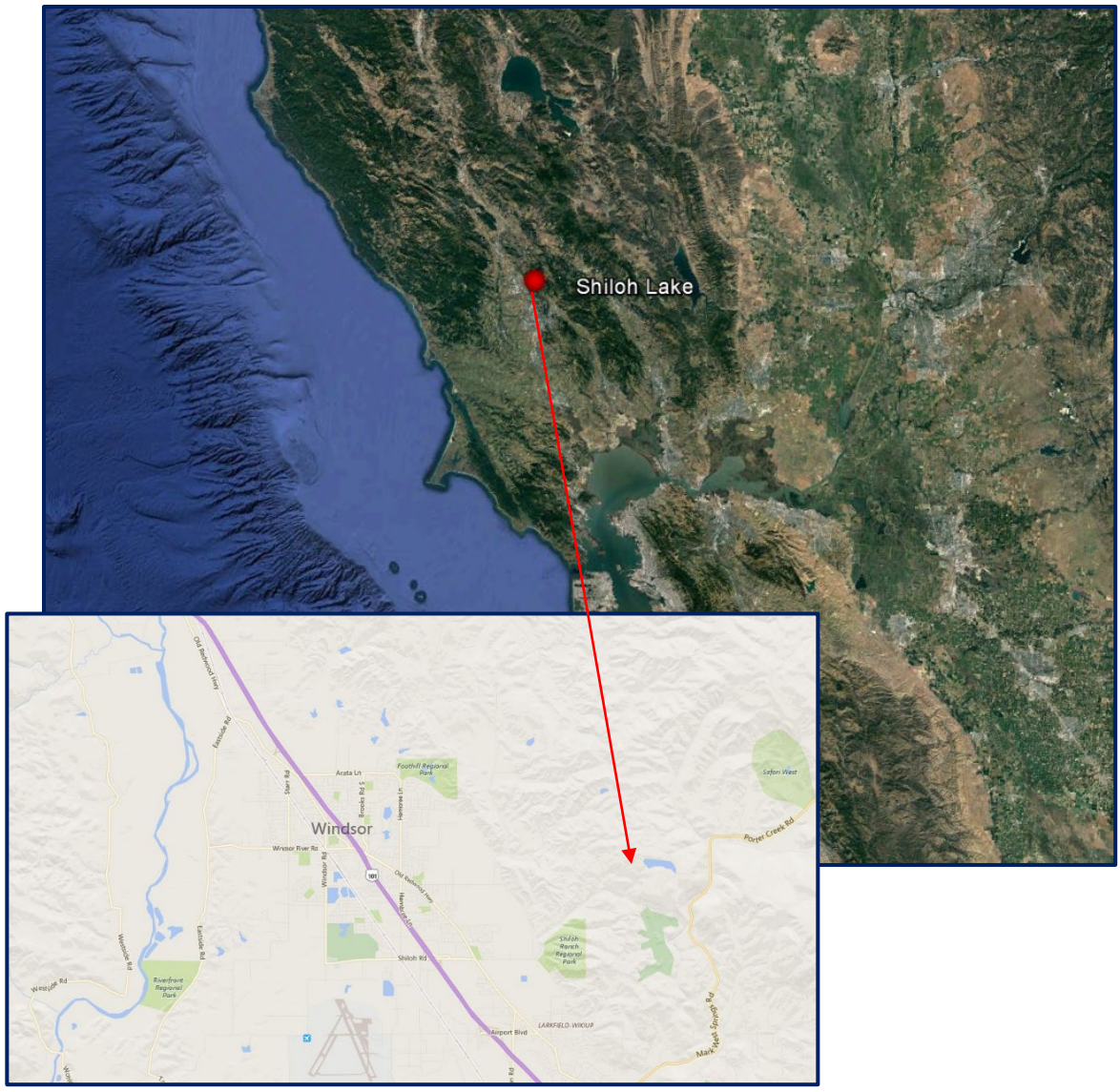
AQUATIC PESTICIDE APPLICATION PLAN

The following Aquatic Pesticide Application Plan (APAP) includes several Waterworks Industries Inc. clients including The Shiloh Homeowners Association, Varenna at Fountaingrove, Point Tiburon Lagoon Owners Association, Marin Lagoon Homeowners Association, Sonoma Greens Community Association, The Vineyard Club Inc., The Lake Alhambra Homeowners Association, Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club, Marin Country Club Golf Course, Bayside Technology Park, Windsor Golf Club, Rooster Run Golf Club, Airport Business Center Park, The Shores at Marina Bay Homeowners Association, City of Elk Grove, Adobe Creek Golf Club, and City of Oakley. The APAP outlined below is designed to follow the Statewide General NPDES Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications, Water Quality Order No. 2013-0002-DWQ, General Permit No. CAG990005, Section VIII.C.

In addition to the above this document is also being prepared to meet Regional Water Quality Control Board (RWQCB) requirements for content of the Invasive Species Eradication Plan (Appendix D) in the Instream Flow Policy for all clients that have instream flow. The intention of the Invasive Species Eradication Plan is to create and implement a working plan with the goal of total eradication of invasive plant species.

DESCRIPTION OF THE SYSTEMS

Shiloh Homeowners Association – Shiloh Lake – REGION 1

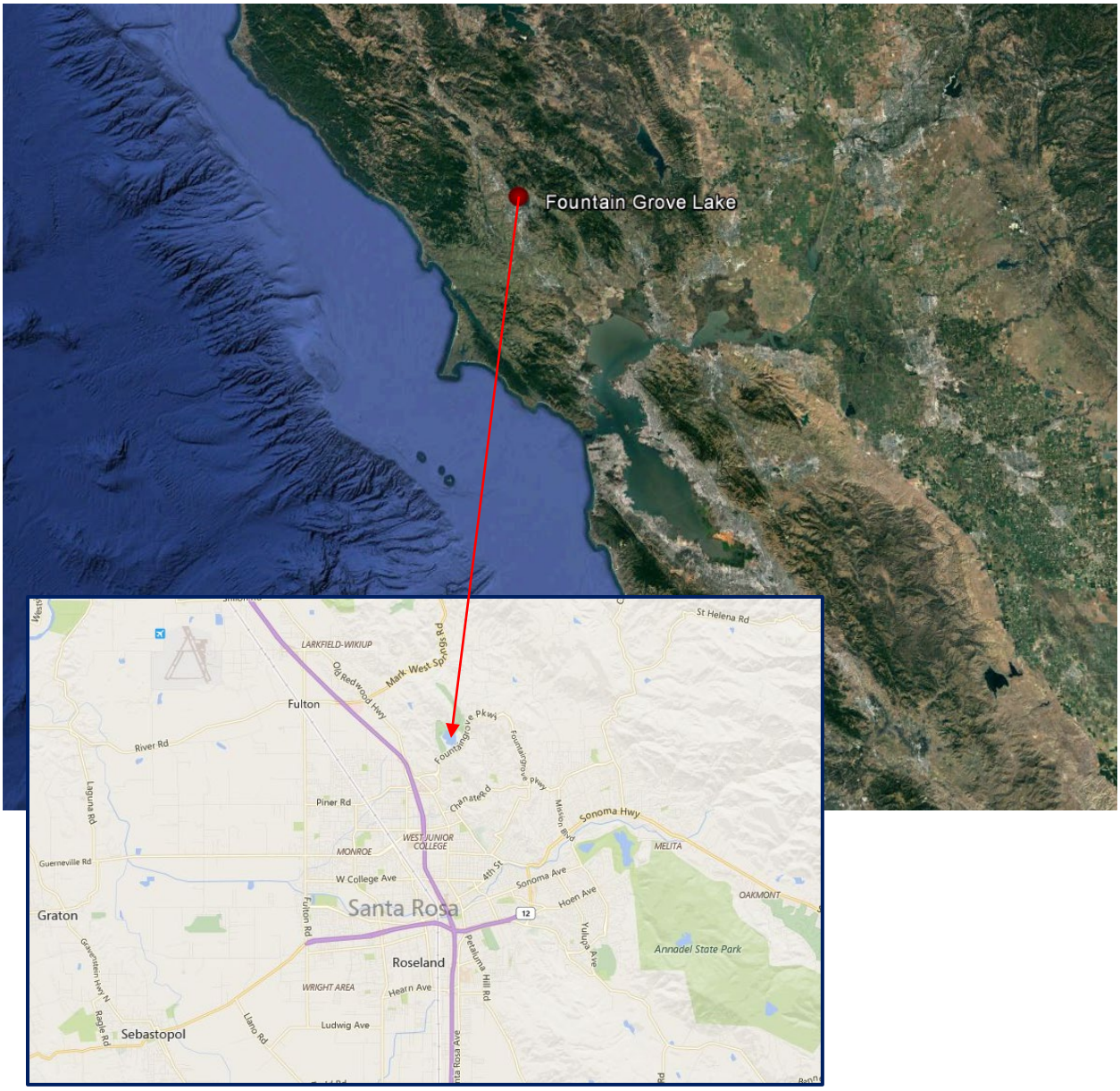


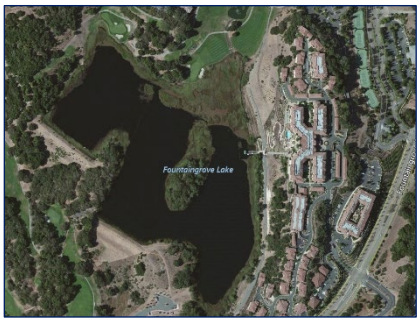
Shiloh Lake is a 19.3-acre lake located in Santa Rosa, California approximately five miles east of downtown Windsor off of Shiloh Ridge. There are several estates surrounding the lake which make up the Shiloh Homeowners Association. The local uses of the lake include habitat for fish and waterfowl, recreational activity such as swimming, non-motorized boating and fishing, and aesthetics for the surrounding homes and community.

The lake's maximum depth is forty feet at the dam and the average depth when full is ten foot. The water that fills the lake is from runoff of the surrounding watershed. The association also has a well that they use to fill the lake, only when necessary to add additional water if the winter runoff is not sufficient to fill the lake to the minimal level.

If water exits the lake through the overflow pipe, it travels down an unnamed waterway approximately four and a half miles until it intersects Pool Creek which then connects with Windsor Creek which then runs into Mark West Creek, which then flows into the Russian River which eventually empties into the Ocean.

Varenna at Fountaingrove – Fountaingrove Lake - REGION 1

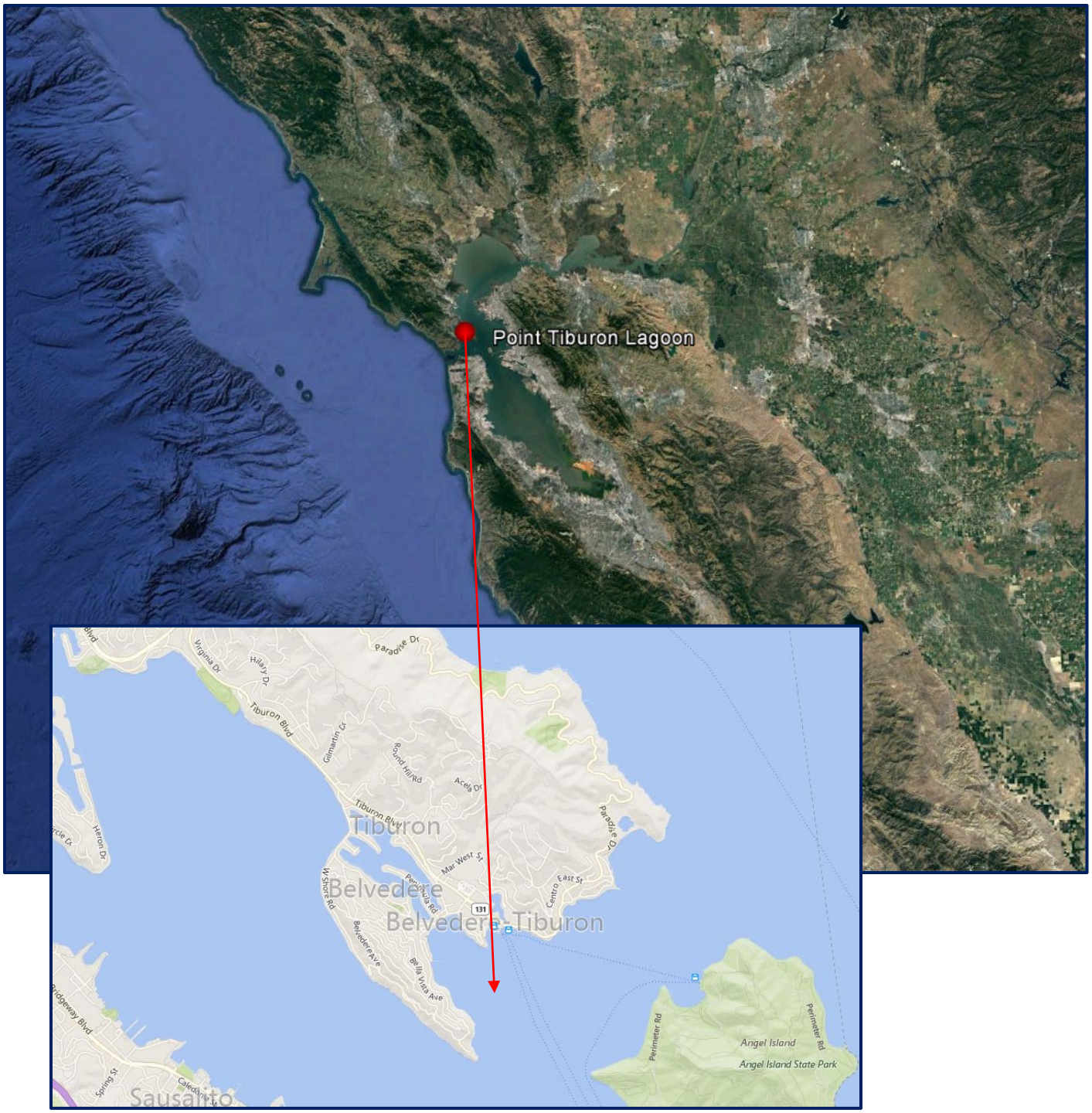




Fountaingrove Lake is a 25-surface acre lake located just northeast of downtown Santa Rosa, CA. The lake is shared with the City of Santa Rosa and the Fountain Grove Golf and Athletic Club. Varenna at Fountaingrove is an exclusive Senior Living community. The local uses of the lake include fishing, swimming, boating, flood control, wildlife habitat, and aesthetics.

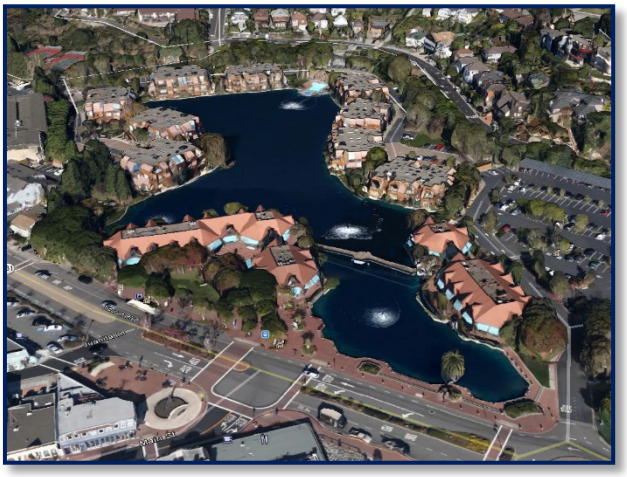
Fountaingrove Lake is approximately 28 feet at its deepest with an average depth of approximately 12 to 13 feet. Fountaingrove Lake is fed by storm water and if water leaves the lake in winter its primary outlet is Piner Creek. Piner Creek originates in the lower Mayacmas Mountains at Fountaingrove Lake. From its outlet at Fountaingrove Lake, Piner Creek flows down a relatively steep gradient, initially over a riprap lined channel, which has been modified in association with some alterations to lower Fountaingrove Lake. Thence Piner Creek flows northerly of an upscale modern office park before crossing under Redwood Highway and U.S. Highway 101. West of the U.S. 101 Freeway, Piner Creek winds through a retail and commercial/industrial area, before crossing under Piner Road near Coffey Lane. Piner Creek terminates at its confluence with Santa Rosa Creek, which watercourse discharges to the Laguna de Santa Rosa; the Laguna de Santa Rosa ultimately forms a confluence with the Russian River, which flows into the Pacific Ocean.

Point Tiburon Lagoon Owners Association – Point Tiburon Lagoon – REGION 2



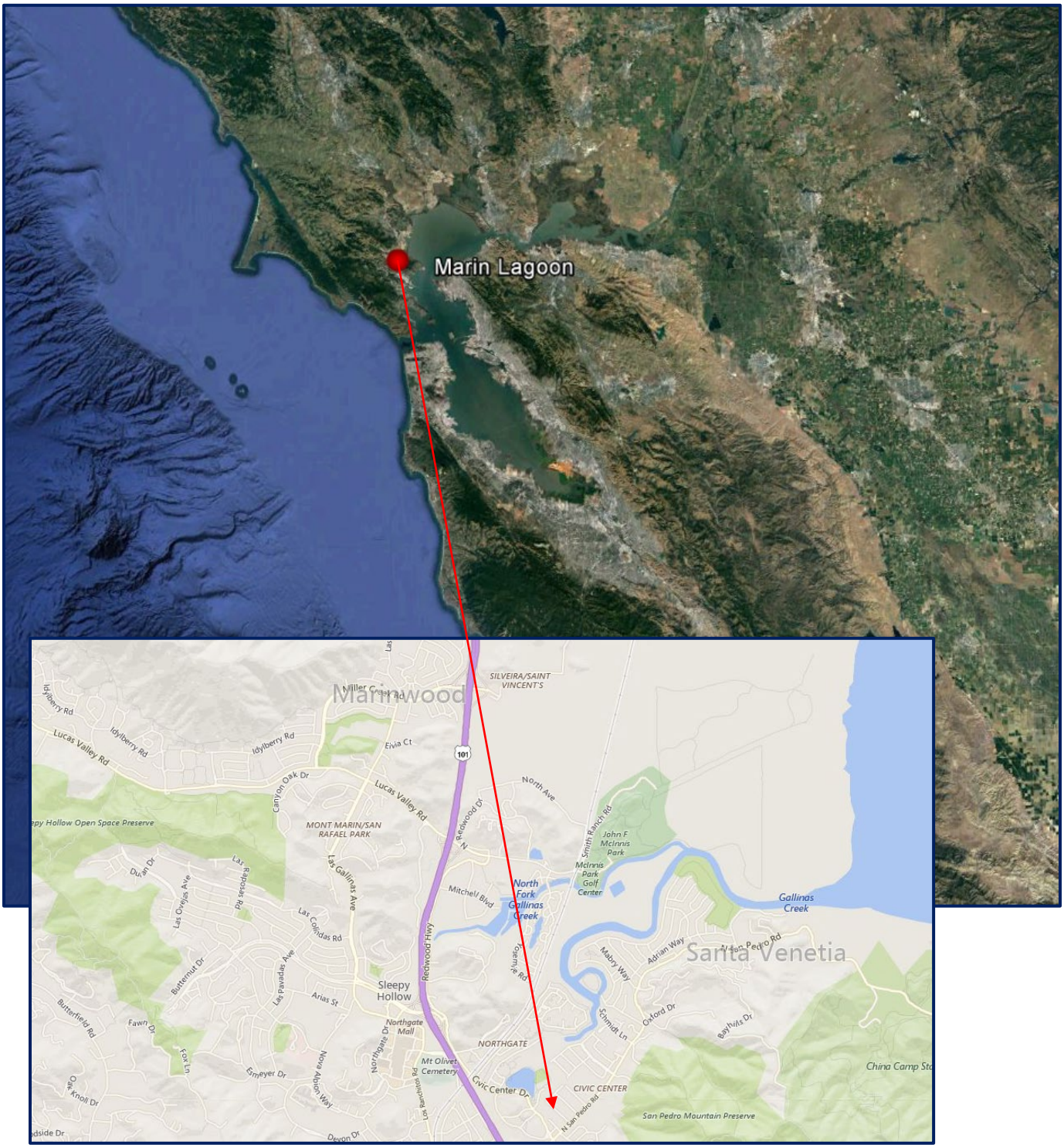


Point Tiburon Lagoon is a 3.5-acre lagoon with a surrounding master planned development of 54 condominiums which was built on San Francisco Bay in 1987 in the City of Tiburon. Within walking distance of Point Tiburon Lagoon is Tiburon's main street, the ferry to San Francisco and numerous public amenities including a shoreline park, tennis courts, wildlife sanctuary and public library. The primary use of the lagoon is aesthetics for the surrounding owners and the Town of Tiburon.



The lagoon is approximately six feet deep and has a total volume of approximately twenty-one acre-feet. The lagoon has an overflow weir structure which only allows for release of water during major storm events. Therefore, the lagoon is operated as a closed / static system. When water does overflow from the weir structure the water leaving the lagoon goes directly into San Francisco Bay.

Marin Lagoon Association – Marin Lagoon – REGION 2



Marin Lagoon is a 40.5 acre single and multi-family residential development located southeast of the Marin County Civic Center in the City of San Rafael. The site is bounded on the west by McInnis Parkway, on the north and east by the South Fork of Gallinas Creek, and on the south by a man-made channel designated as Auditorium Channel. The lagoon, around which the homes are built, is approximately 5 acres in area. Its primary purpose is to store storm water runoff during periods of high tide and discharge the runoff to Gallinas Creek via the Railroad Channel, which parallels McInnes Parkway, during low tides. It also contributes to the aesthetic setting of Marin Lagoon and offers the following uses: aesthetics for the surrounding homes and community, use as a storm water detention basin, and limited recreational activity such as kayaking. The lagoon's maximum and average depth varies depending on tidal water level fluctuations. The maximum depth averages around five to six feet and the average depth around three to four feet.

Water entering the lagoon comes from surrounding storm drains of the development as well as bay water from Gallinas Creek. Water leaving the lagoon flows into the Railroad Channel, then flows back into Gallinas creek and eventually drains into San Pablo Bay. The flow through the system is controlled by an inflow control structure, a junction structure, and two outlet structures as can be seen in the diagram to the left. The system was designed to monitor tidal water flow into and out of the lagoon at a controlled rate to and from Gallinas Creek.

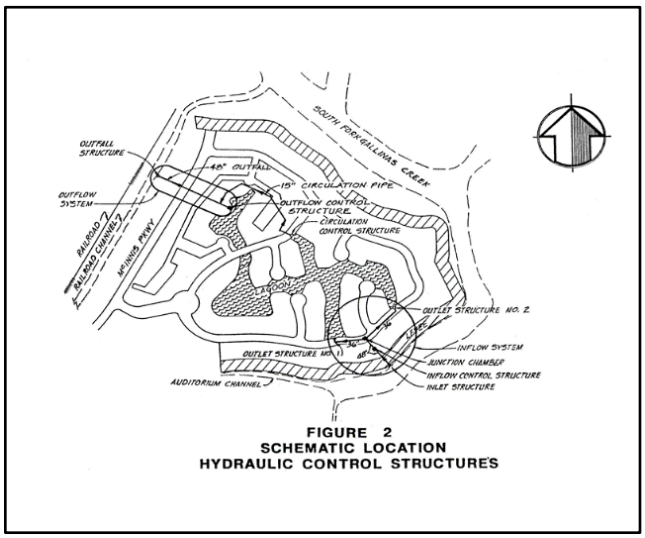
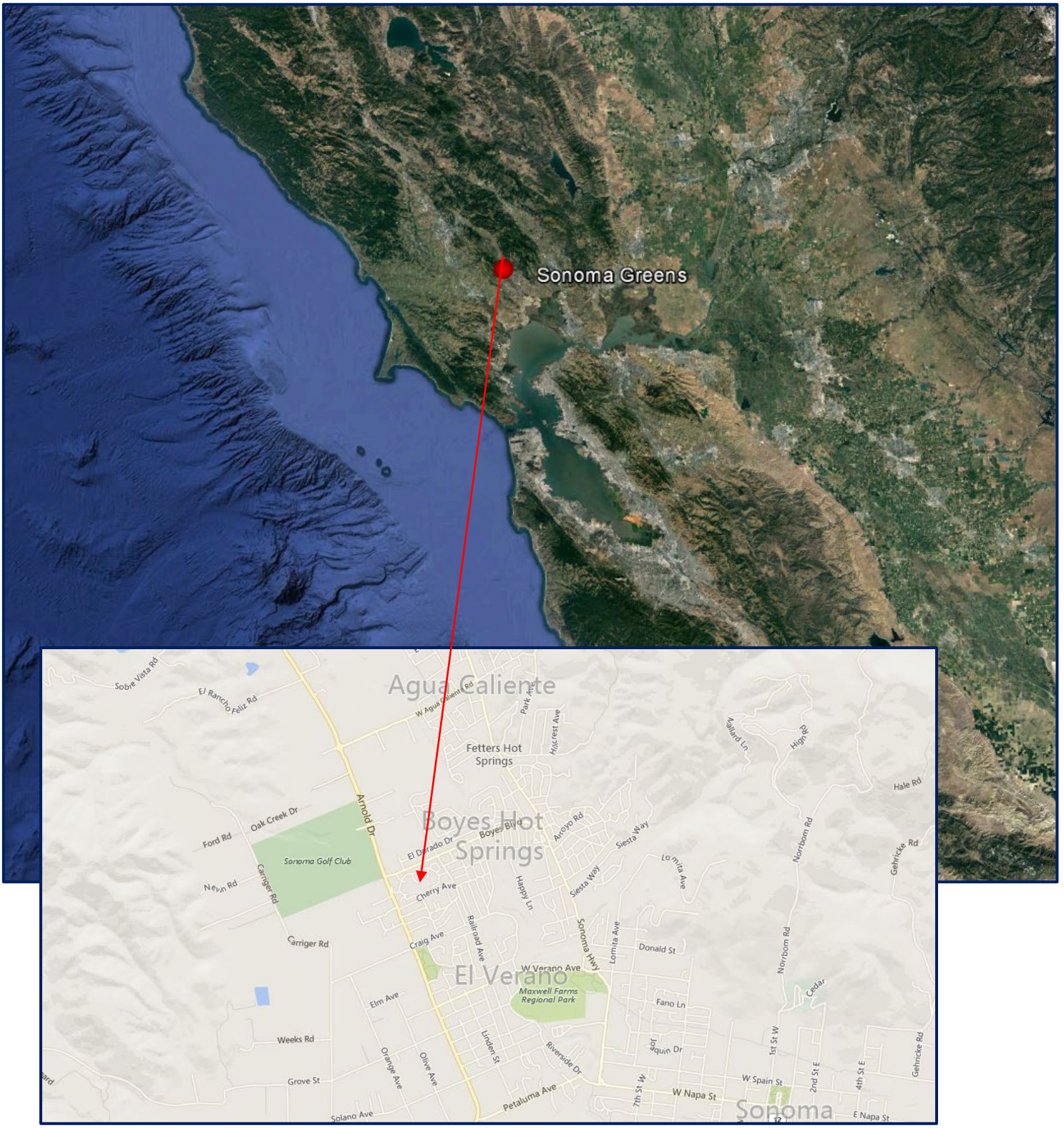


FIGURE 2
SCHEMATIC LOCATION
HYDRAULIC CONTROL STRUCTURES

The outlet structures can be closed for aquatic pesticide treatments creating a static system for treatments.

Sonoma Greens Community Association – Sonoma Greens Lake and Pond – REGION 2



Sonoma Greens Lake is a 1.11-acre lake and Sonoma Greens Pond is a 0.18-acre pond located in Sonoma, California approximately two and a half miles northwest of downtown Sonoma between Princeton Ave. and Cherry Ave. There are several homes and walking trails surrounding the lake and pond all of which are part of the Sonoma Greens Community Association. The local uses of the lake and pond include habitat for fish and waterfowl, fishing, aesthetics for the surrounding homes and community, and irrigation for the surrounding common property.

The lake's maximum depth is fourteen foot and the average depth when full is seven feet. The pond's maximum depth is nine foot and the average depth when full is five feet. The water that fills the lake and pond is from runoff of the surrounding watershed as well as from the Associations well which is used to keep the lake and pond full year-round. Use of the well is only necessary when winter runoff is not sufficient to fill the lake and pond to the desired level.

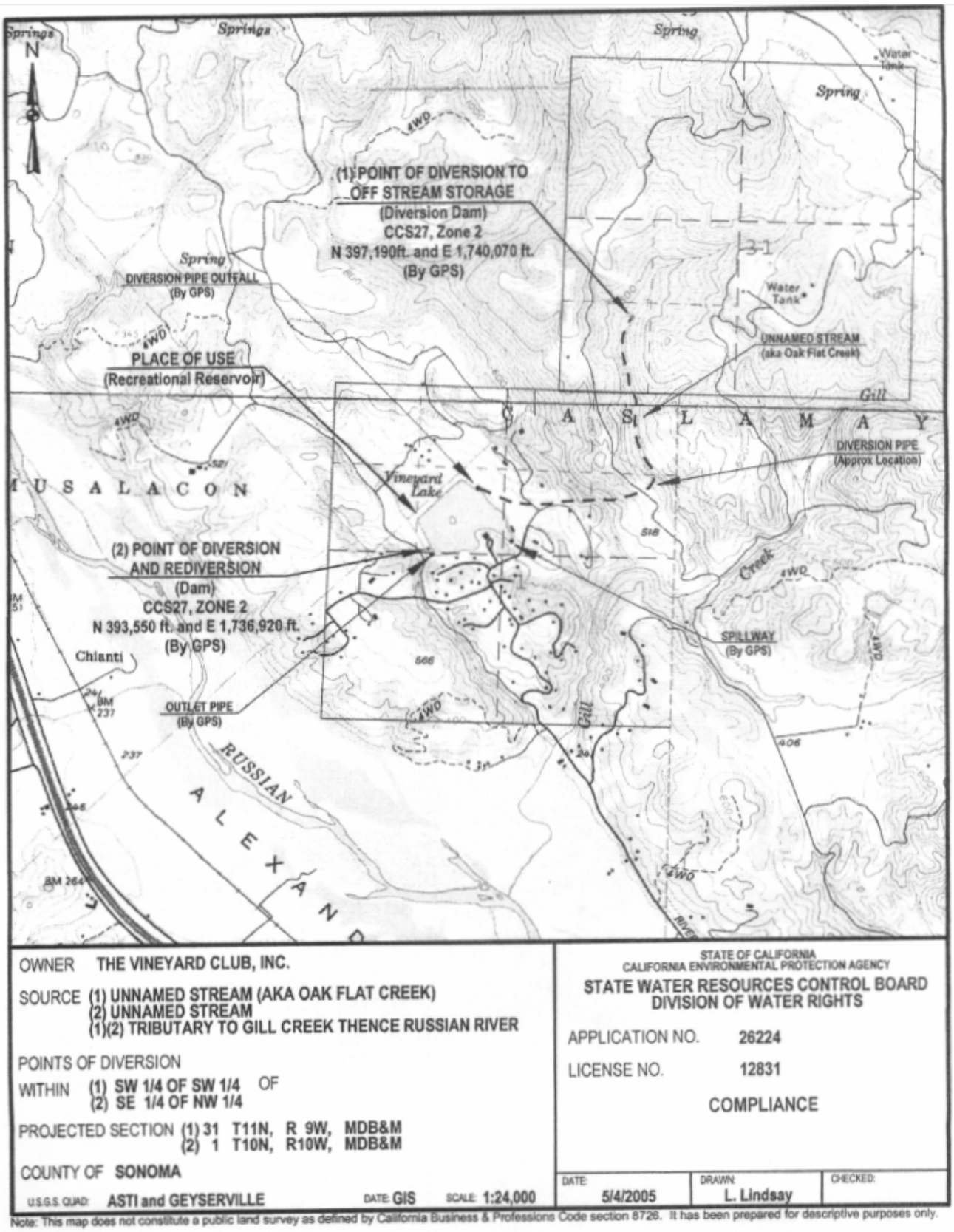
The water if it leaves the lake and pond over the spillway travels down an unknown unnamed waterway until it runs into Sonoma Creek. Once in Sonoma Creek it flows downstream and eventually empties into San Pablo Bay

The Vineyard Club Inc. – Vineyard Club Lake – REGION 1

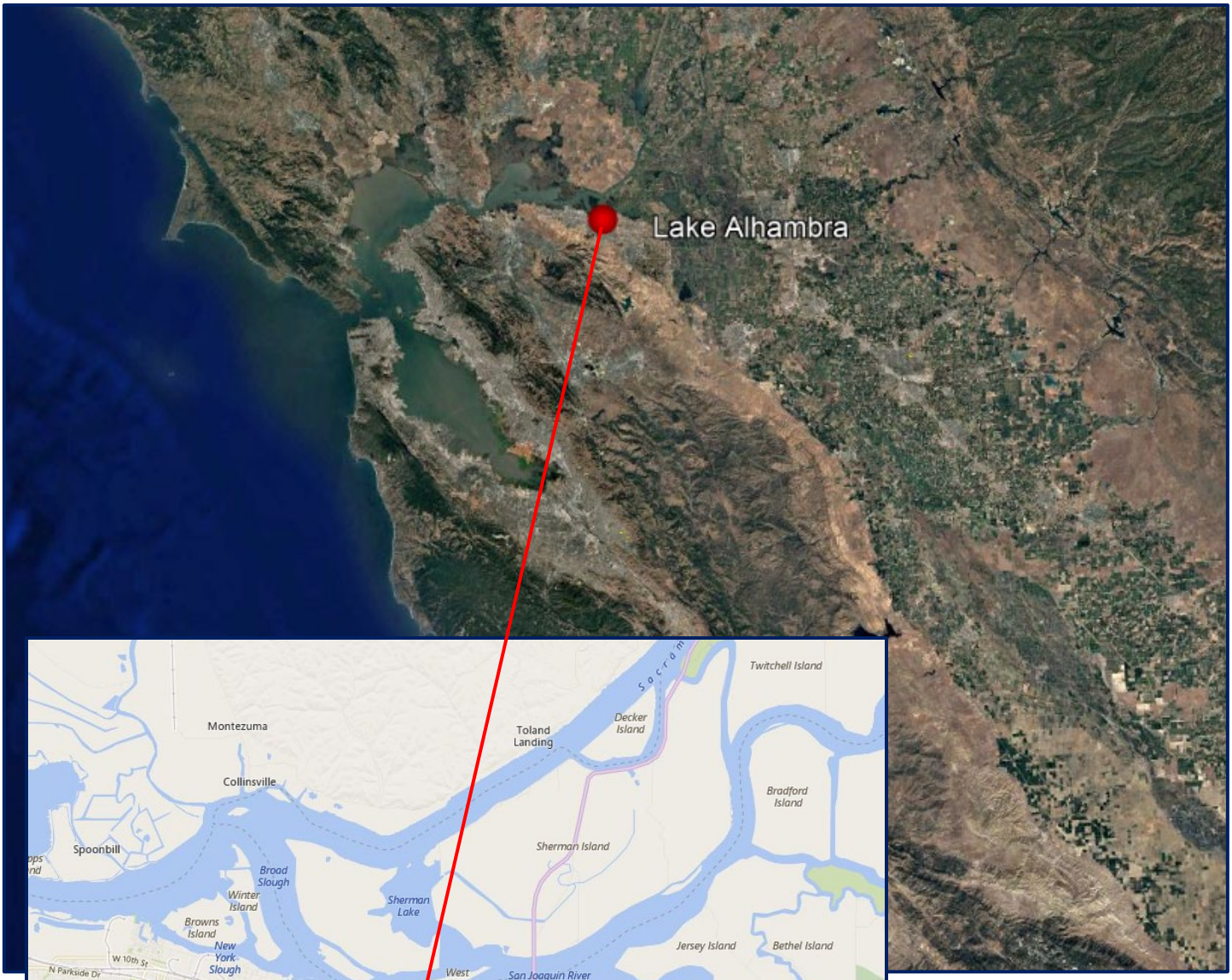
The Vineyard Club Lake is approximately twenty-three (23) surface acres. The lake was constructed by creating a levee in 1963 by using natural materials taken from the lakebed. The lake is part of The Vineyard Club Inc. which is a private club located approximately three (3) miles north of downtown Geyserville, CA off Rockmound Rd. The local uses of the lake include swimming, fishing, boating, habitat for fish and waterfowl and a resource for firefighting.

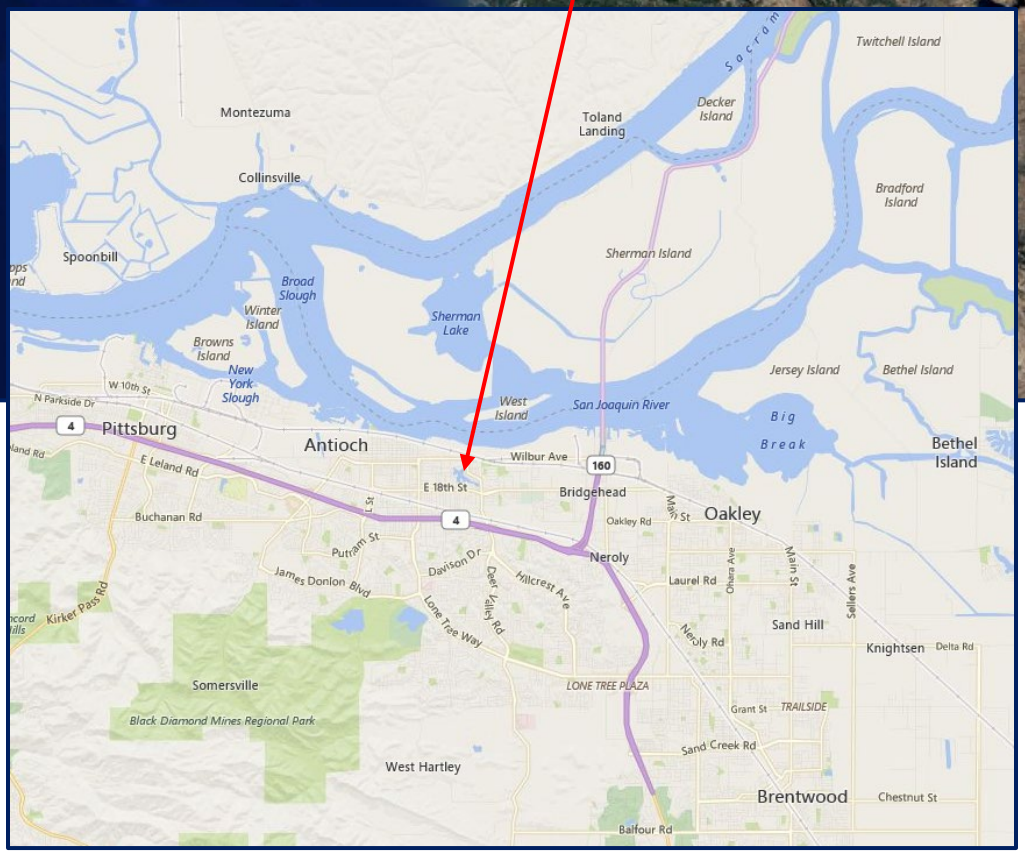
The maximum depth in Vineyard Club Lake is twenty (20') foot and the average depth when full is approximately ten (10') foot. Water enters Vineyard Club Lake primarily from rainfall and runoff from the surrounding watershed which is approximately twenty (20) to thirty (30) acres. The Vineyard Club Inc. management installed constructed wetlands to slow and filter the water that comes in from approximately fifteen (15) acres of this watershed. The secondary source of water entering the lake is a two (2) mile four (4") inch diversion pipeline from Oat Flat Creek. This diversion is operated under a license with the State Water Resources Control Board and has seasonal, bypass and other restrictions. The map located on the following page (page 37) shows the diversion pipe location and other information associated with the license.

If water leaves the lake, it does so over a small spillway at the southeast corner of the lake. The outflow does not occur every year and is dependent upon the amount of rainfall received. Once water does go over the spillway the outflow travels via Gill Creek to the Russian River which is located approximately three (3) miles away. Water also leaves the lake through evaporation and use by Cal Fire for seasonal firefighting using helicopter catch buckets.


N
(1) POINT OF DIVERSION TO OFF STREAM STORAGE
(Diversion Dam)
CCS27, Zone 2
N 397,190ft. and E 1,740,070 ft.
(By GPS)
DIVERSION PIPE OUTFALL
(By GPS)
PLACE OF USE
(Recreational Reservoir)
UNNAMED STREAM
(aka Oak Flat Creek)
DIVERSION PIPE
(Approx Location)
(2) POINT OF DIVERSION AND REDIVERSION
(Dam)
CCS27, ZONE 2
N 393,550 ft. and E 1,736,920 ft.
(By GPS)
SPILLWAY
(By GPS)
OUTLET PIPE
(By GPS)
Vineyard Lake
Chianti
RUSSIAN
OWNER THE VINEYARD CLUB, INC.
SOURCE (1) UNNAMED STREAM (AKA OAK FLAT CREEK)
(2) UNNAMED STREAM
(1)(2) TRIBUTARY TO GILL CREEK THENCE RUSSIAN RIVER
POINTS OF DIVERSION
WITHIN (1) SW 1/4 OF SW 1/4 OF
(2) SE 1/4 OF NW 1/4
PROJECTED SECTION (1) 31 T11N, R 9W, MDB&M
(2) 1 T10N, R10W, MDB&M
COUNTY OF SONOMA
U.S.G.S. QUAD: ASTI and GEYSERVILLE
DATE: GIS
SCALE: 1:24,000
STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD
DIVISION OF WATER RIGHTS
APPLICATION NO. 26224
LICENSE NO. 12831
COMPLIANCE
DATE: 5/4/2005
DRAWN: L. Lindsay
CHECKED:
Note: This map does not constitute a public land survey as defined by California Business & Professions Code section 8726. It has been prepared for descriptive purposes only.

Lake Alhambra Homeowners Association – Lake Alhambra – REGION 5





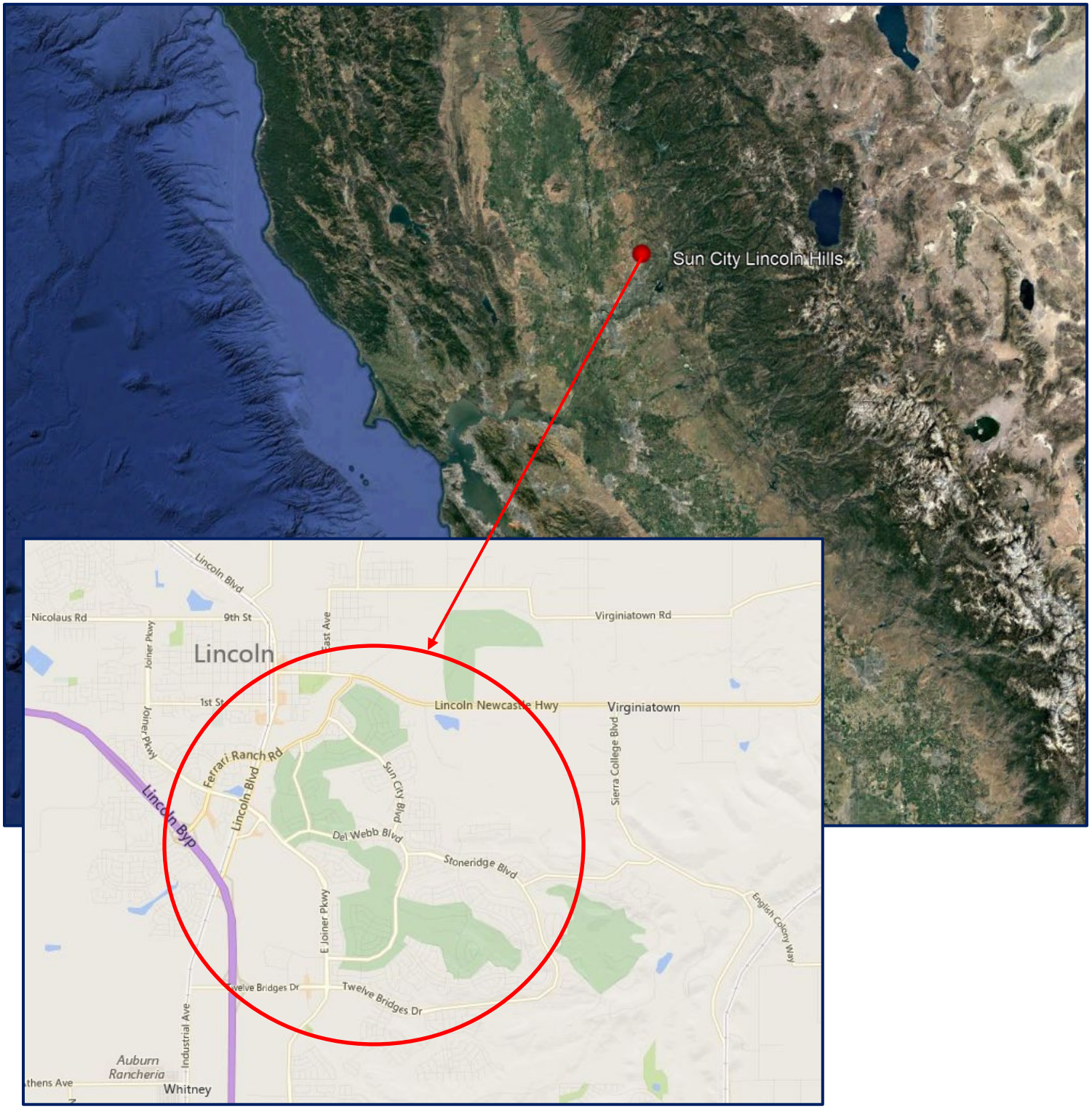


Lake Alhambra is an approximately eighteen (18) surface acre urban lake located within the Lake Alhambra Homeowners Association in Antioch, CA which was built thirty-five (35) years ago in 1983. Lake Alhambra has a maximum depth of approximately twelve (12) feet with an average depth of approximately six (6) foot.

Rainfall and watershed runoff are the primary sources of water that fill the lake. During rain events, water runs from the surrounding watershed through various flood control channels into the lake. Water leaves the lake if the control gates are opened during rain events to discharge excess water into a channel that leads to the San Joaquin River.

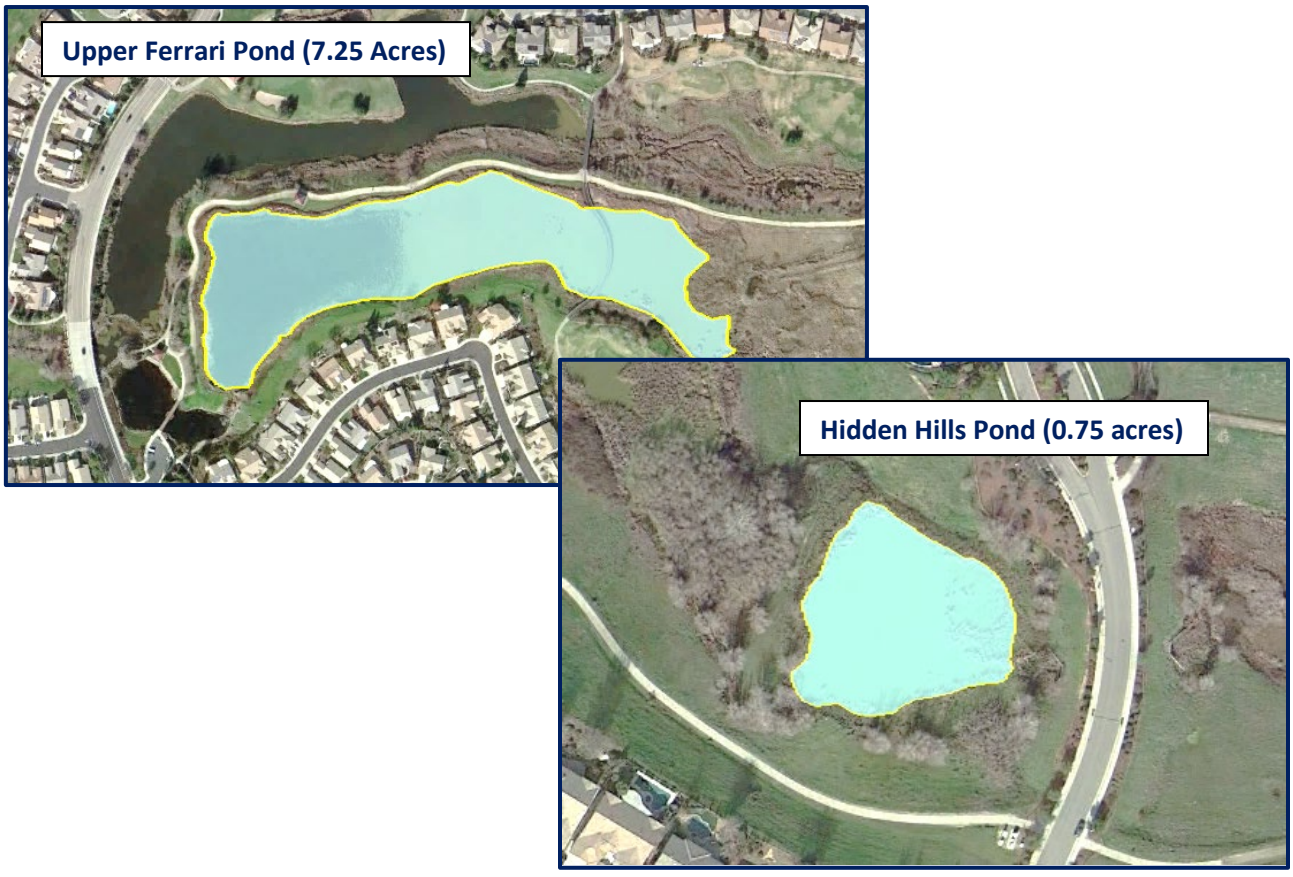
The local uses of the lake include acting as a drainage impoundment, recreational activities such as boating, fishing, and swimming and aesthetics for the surrounding community.

Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club – Shared water system which includes Upper Ferrari Pond, Hidden Hills Pond, and Lincoln Hills Golf Club Ponds - REGION 5

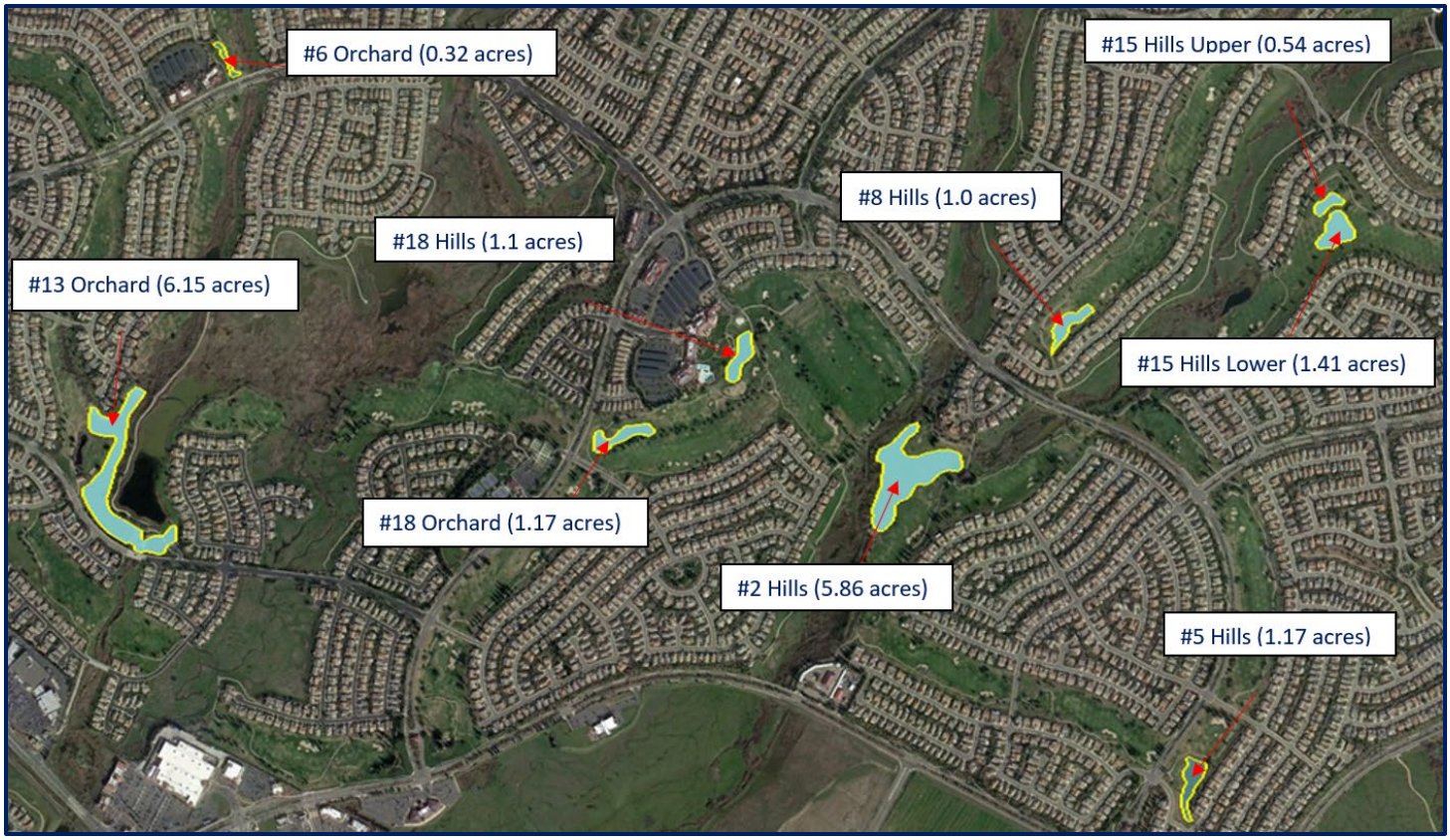


The Sun City Lincoln Hills Community Association is an adult community for residents fifty-five (55) years or older that was opened for residence in 1999. The community has 6,783-homes and is spread across 2,992 acres which includes two (Lincoln Hills Golf Course) 18-hole golf courses and several other amenities for the community. The Sun City Lincoln Hills Community Association and Lincoln Hills Golf Course share a large system of connected waterways that consist of several lakes, ponds, and streams that are spread throughout the community and golf course.

Sun City Lincoln Hills Community Association Ponds

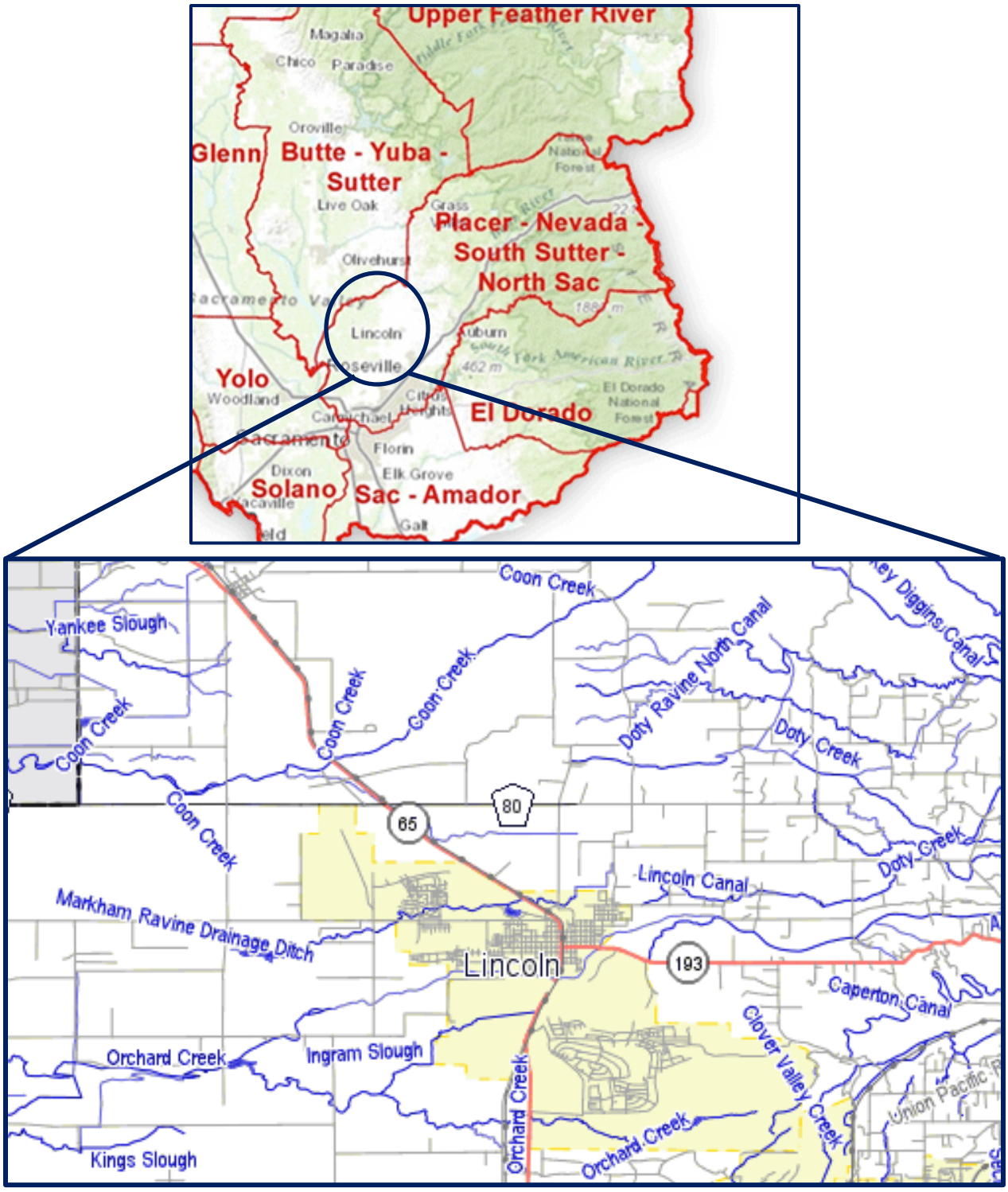


Lincoln Hills Golf Club Ponds

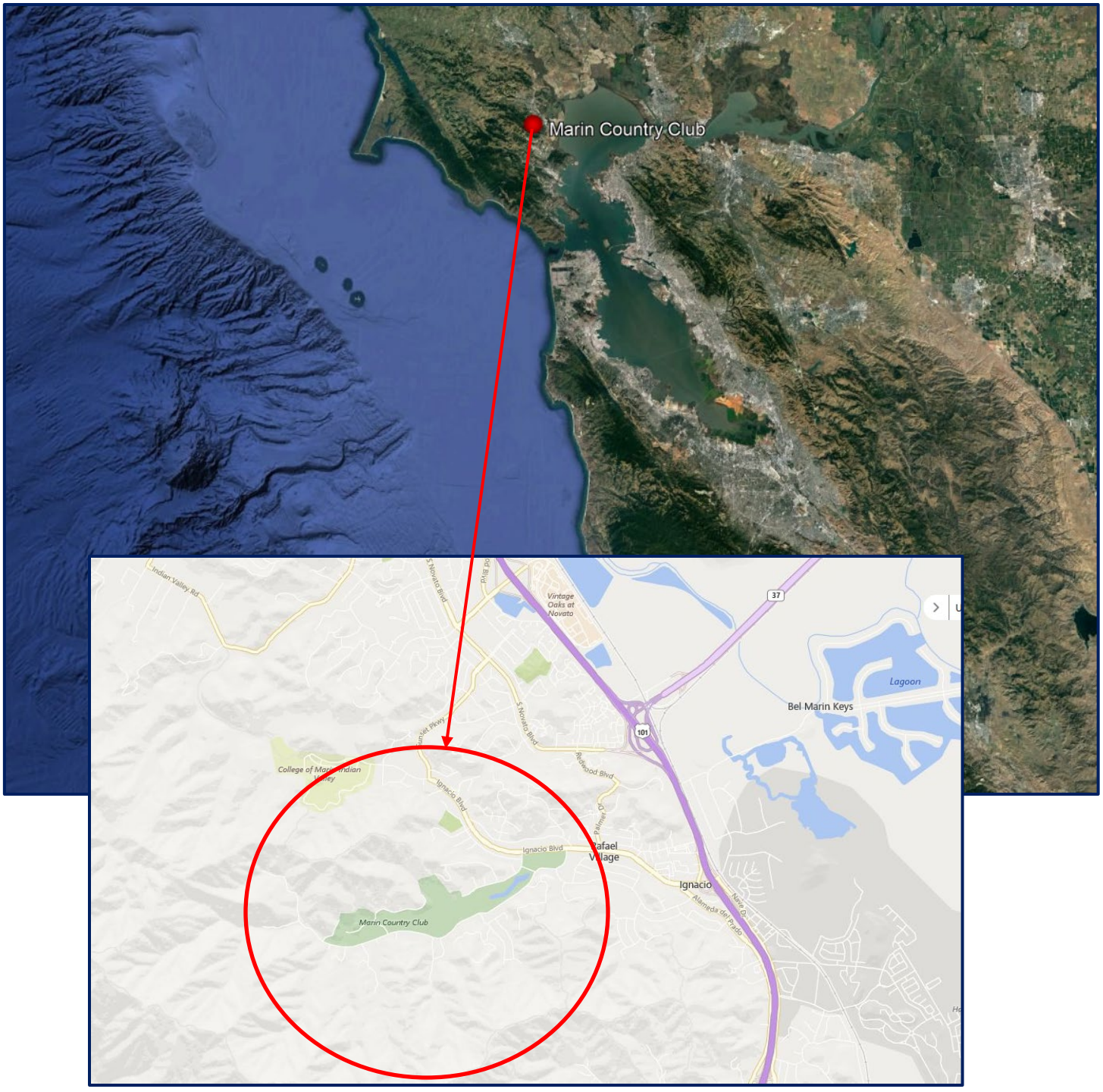


Nevada Irrigation District (NID) and Placer County Water Agency (PCWA) canals introduce water into the system as does rainfall and runoff from the Placer Nevada South Sutter North Sacramento Sun Watershed. Water that flows through the system fills Upper Ferrari Pond, Hidden Hills Pond, and all nine golf course ponds. Some of the ponds operate in a static state while others are flow-through systems. Water that flows through the system or flows due to rain events leaves the system via Ingram Slough which heads west to the cross-canal collection system, ultimately discharging into the Sacramento River near its confluence with the Feather River in Sutter County.

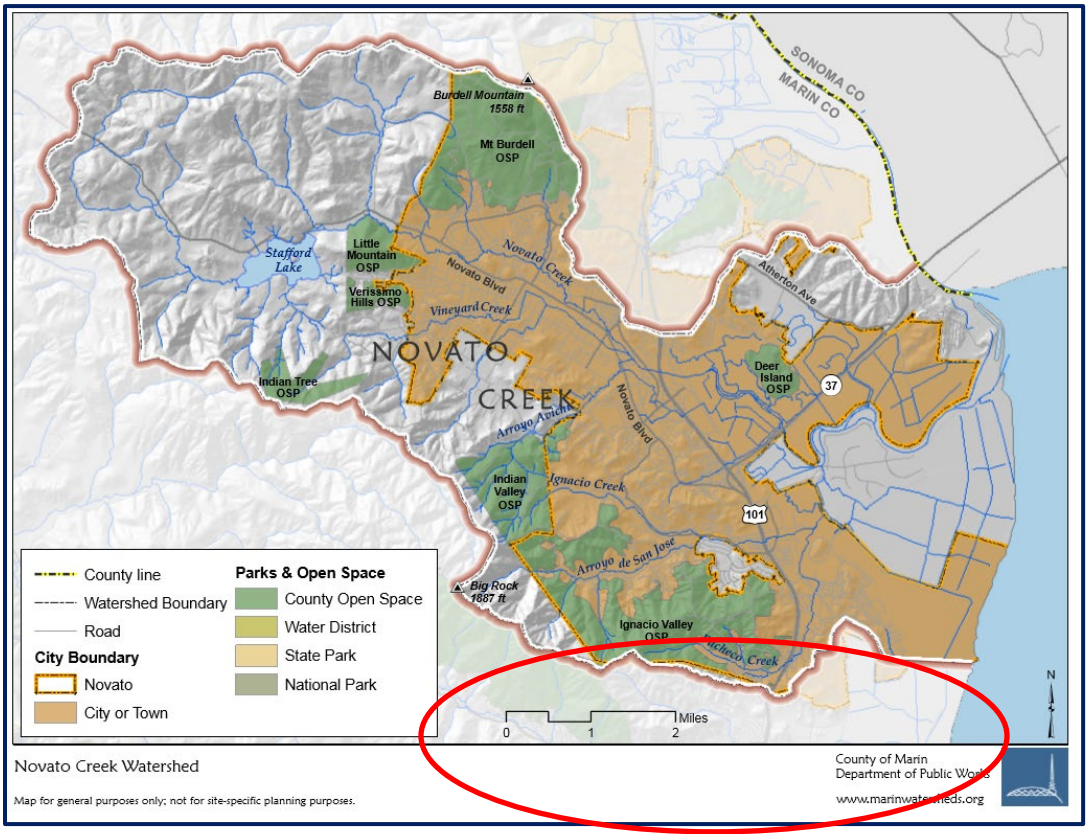
The local uses of the lakes and ponds include stormwater detention and recreation (fishing, golfing, and aesthetics) for the surrounding community.


Upper Feather River
Magalia
Chico
Paradise
Oroville
Glenn
Butte - Yuba - Sutter
Live Oak
Placer - Nevada - South Sutter - North Sac
Olivehurst
Lincoln
Auburn
Yolo
Woodland
El Dorado
Carmichael
Citrus Heights
Sacramento
Florin
Dixon
Elk Grove
Solano
Sac - Amador
Gait
Yankee Slough
Coon Creek
Doty Ravine North Canal
Doty Creek
65
80
Lincoln Canal
Markham Ravine Drainage Ditch
Lincoln
193
Caperton Canal
Clover Valley Creek
Orchard Creek
Ingram Slough
Kings Slough
Union Pacific

Marin Country Club Golf Course – Reservoirs – REGION 2

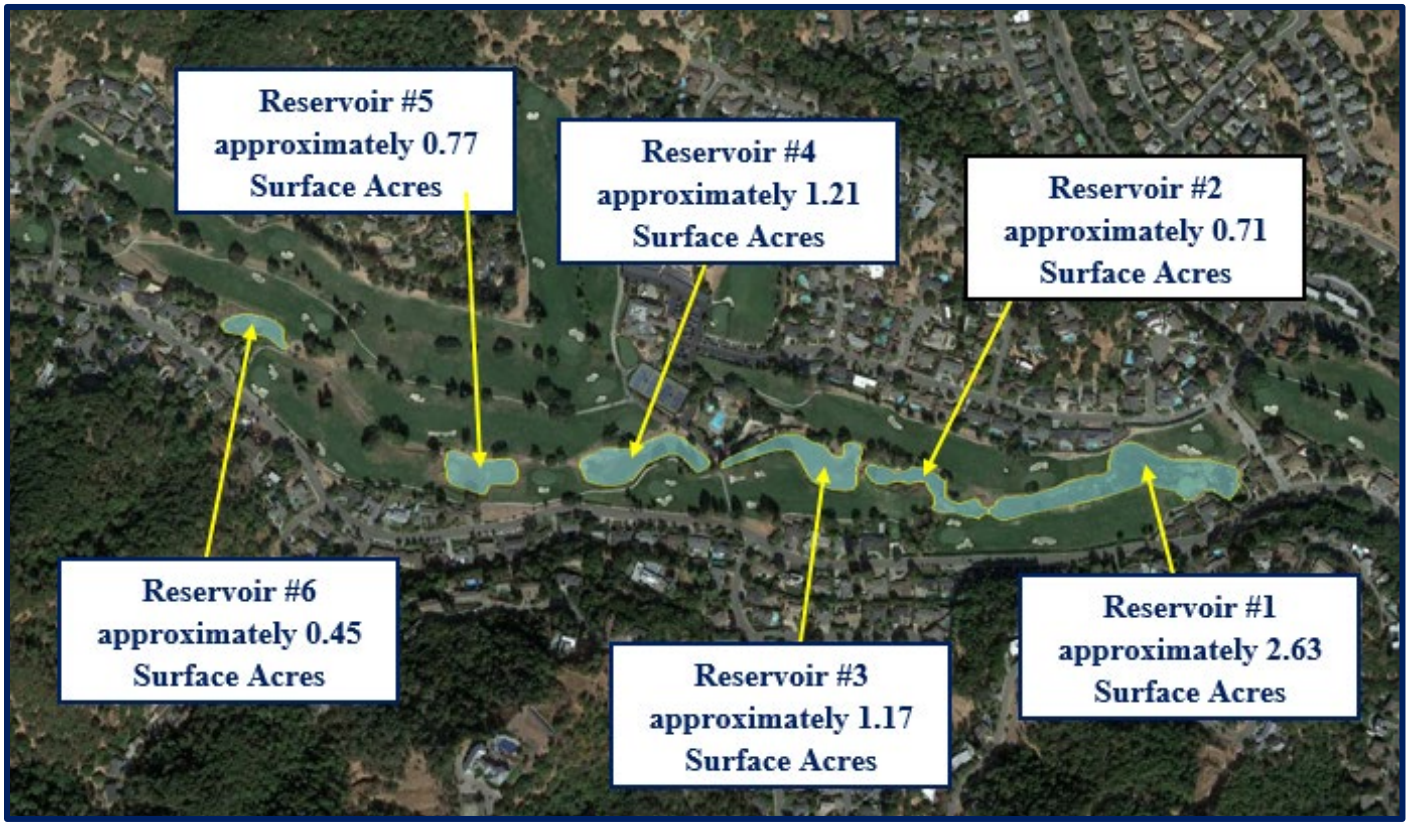


Marin Country Club is a private golf and country club located at 500 Country Club Dr. in Novato, CA approximately three miles south of downtown Novato. Marin Country Club opened in 1957 with amenities that include an 18-hole championship golf course, tennis courts, swimming pools, fitness area, kid's camps and dining. The golf course reservoirs were also constructed in the late 1950's for golf course irrigation and continue to act as storage for irrigation presently.

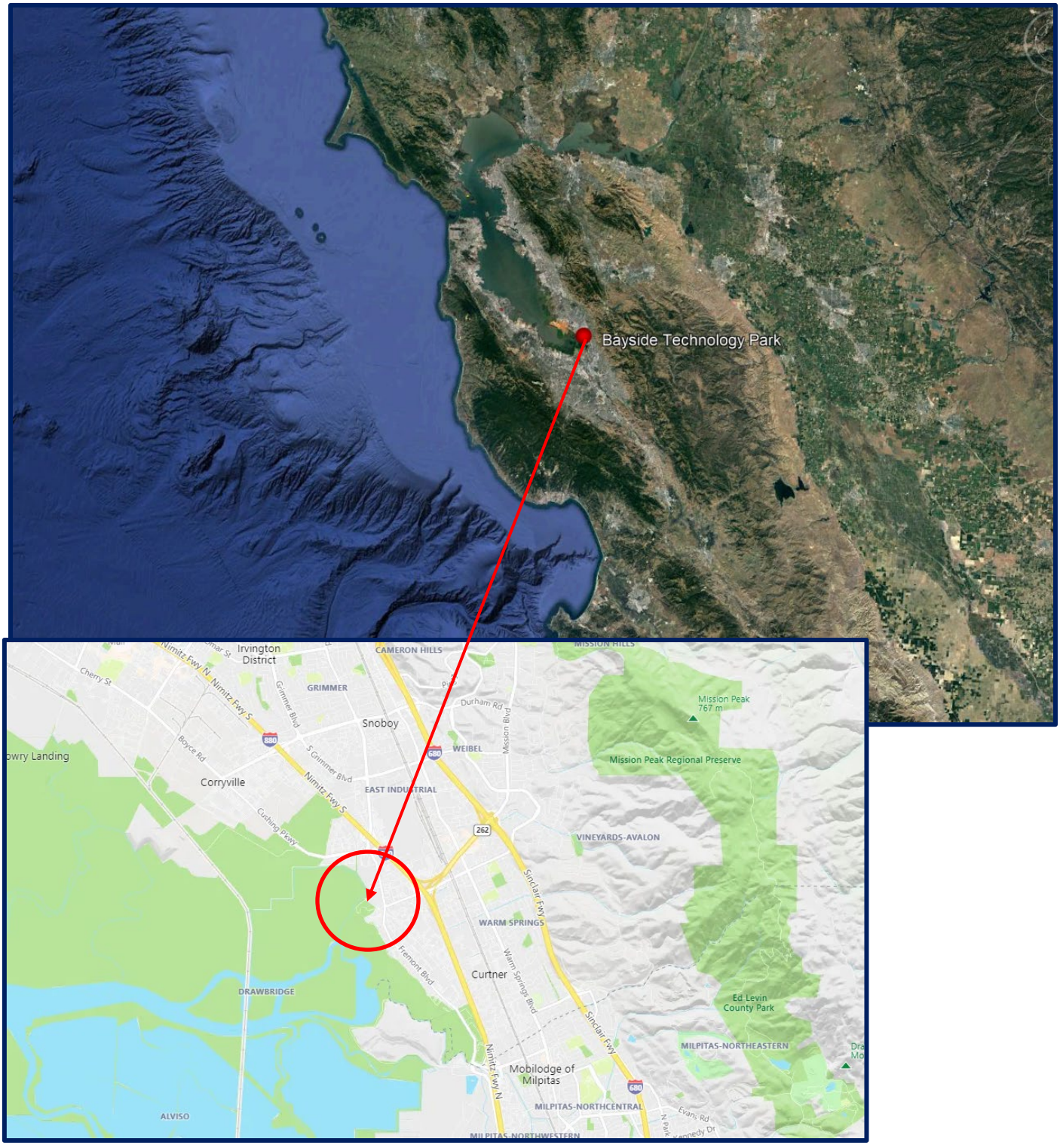


Water enters the Marin Country Club Reservoirs via Arroyo San Jose seasonal creek as well as from thirteen (13) street culverts and two onsite wells. Water that leaves the reservoirs exits into the Arroyo San Jose seasonal creek which eventually drains into San Pablo Bay.

Marin Country Club Golf Course Reservoirs

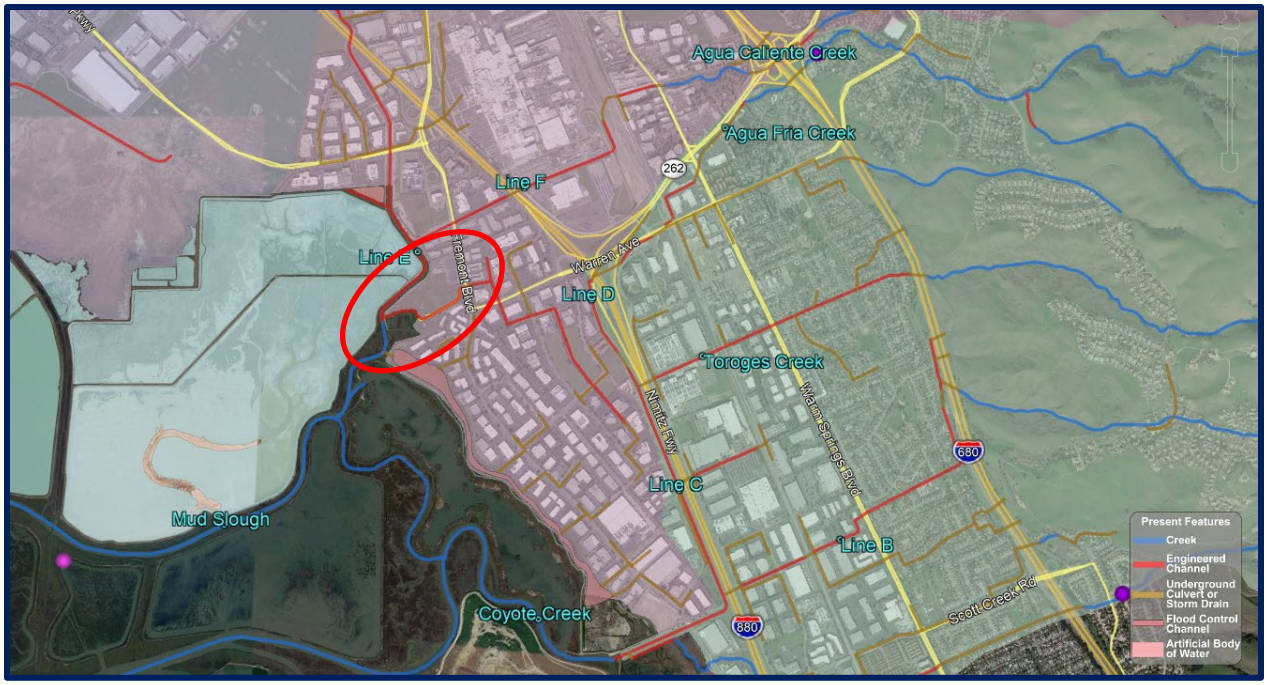


Bayside Technology Park – Engineered Channel - REGION 2

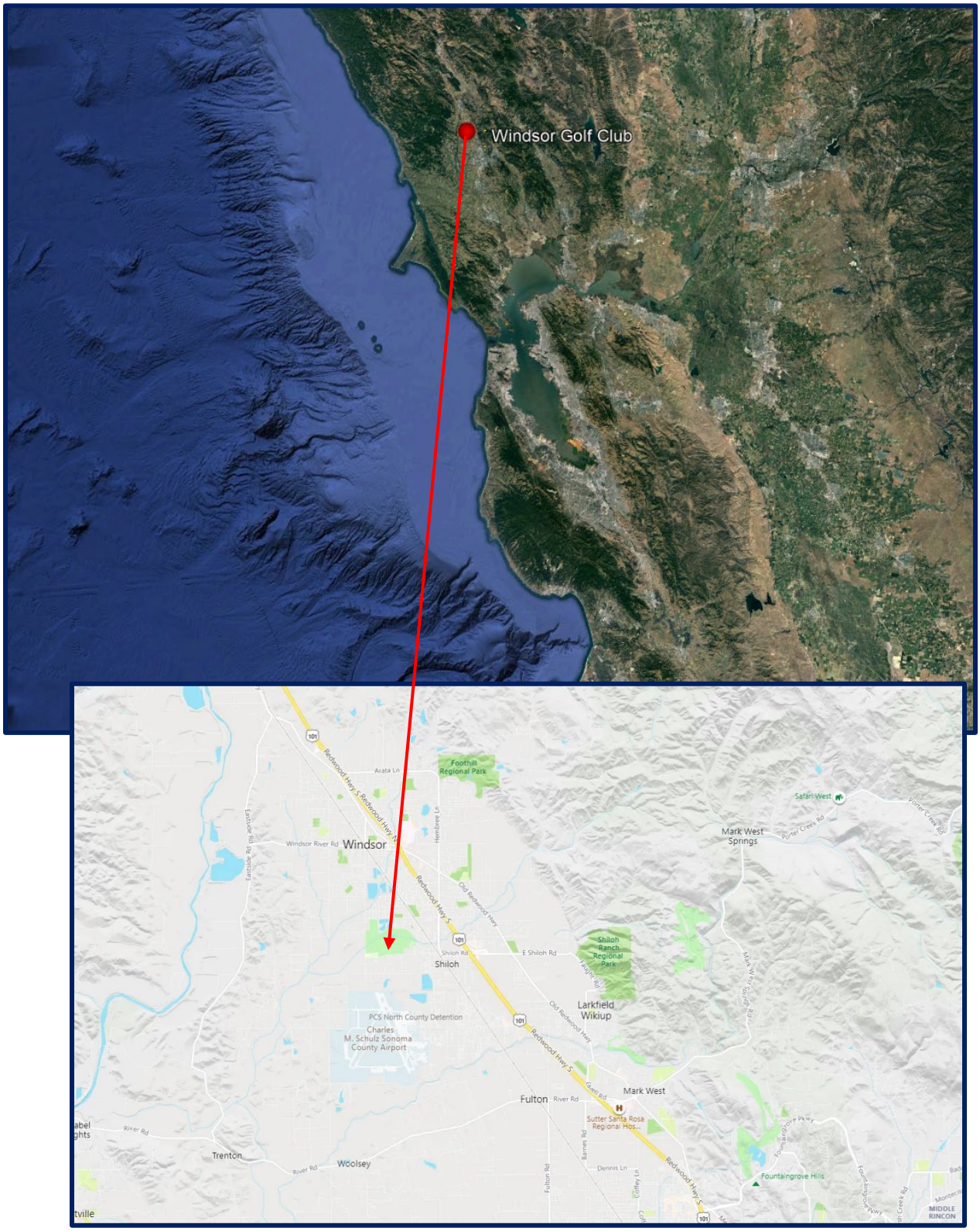


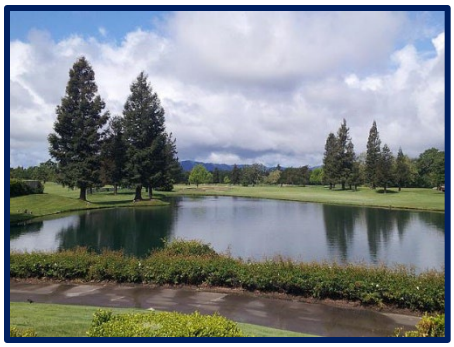
Bayside Technology Park is a large commercial property consisting of office and research and development space located in the southern industrial area of Fremont, CA. The property has an engineered channel connected to it that provides storm water drainage for the entire complex.

Water enters the engineered channel from a natural spring on the Bayside Technology Park property. Water also enters the engineered channel by tidal influence from an unnamed creek that feeds Mud Slough. Water leaving the engineered channel does so with the tides and flows into the unnamed creek then into Mud Slough, then Coyote Creek which eventually drains into San Francisco Bay.


Agua Caliente Creek
Agua Fria Creek
Line F
Line E
Fremont Blvd
Warren Ave
Line D
Toroges Creek
Nimitz Fwy
Warm Springs Blvd
Line C
Line B
Mud Slough
Coyote Creek
Scott Creek Rd
262
680
880
Present Features
Creek
Engineered Channel
Underground Culvert or Storm Drain
Flood Control Channel
Artificial Body of Water

Windsor Golf Club – Ponds – REGION 1



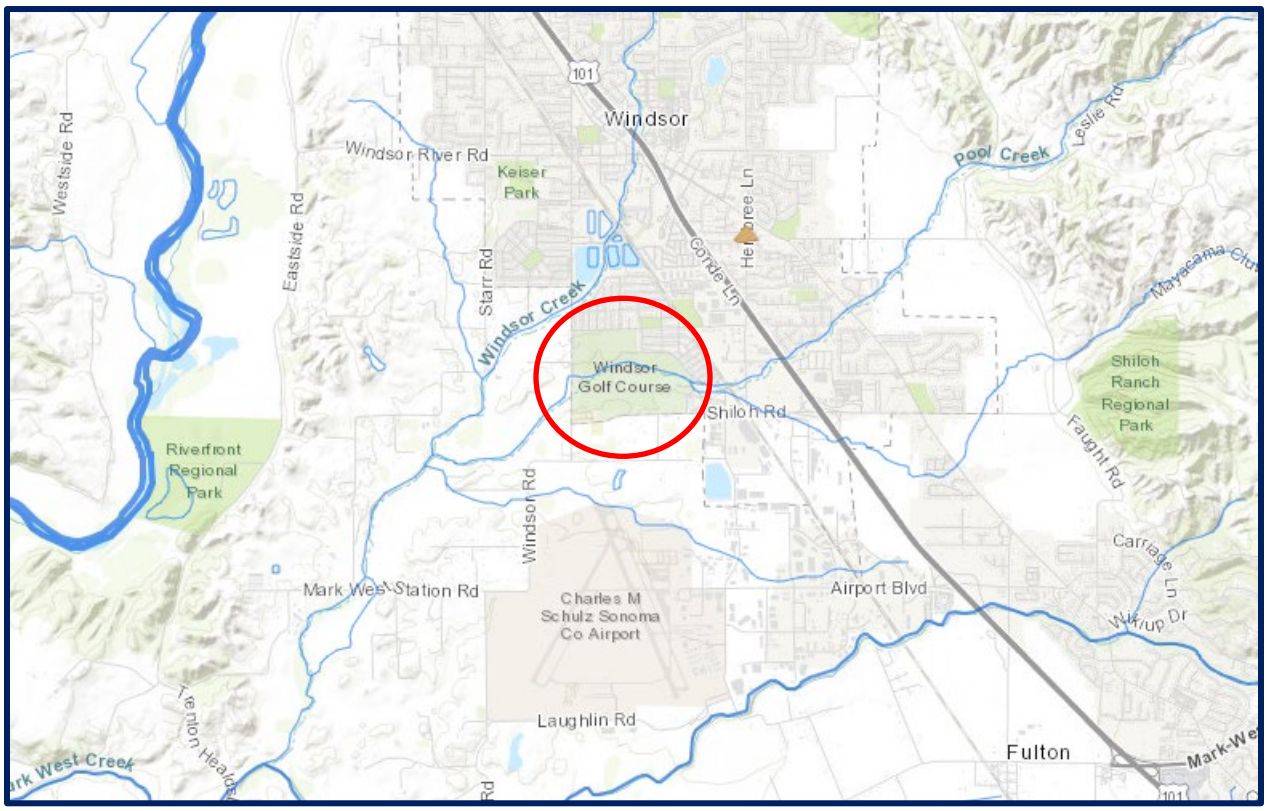


Windsor golf course is a par 72 championship golf course that opened in 1989 and has hosted several PGA and LPGA golf tournaments. The golf course is in southwest Windsor just off Highway 101 on 19th Hole Dr.

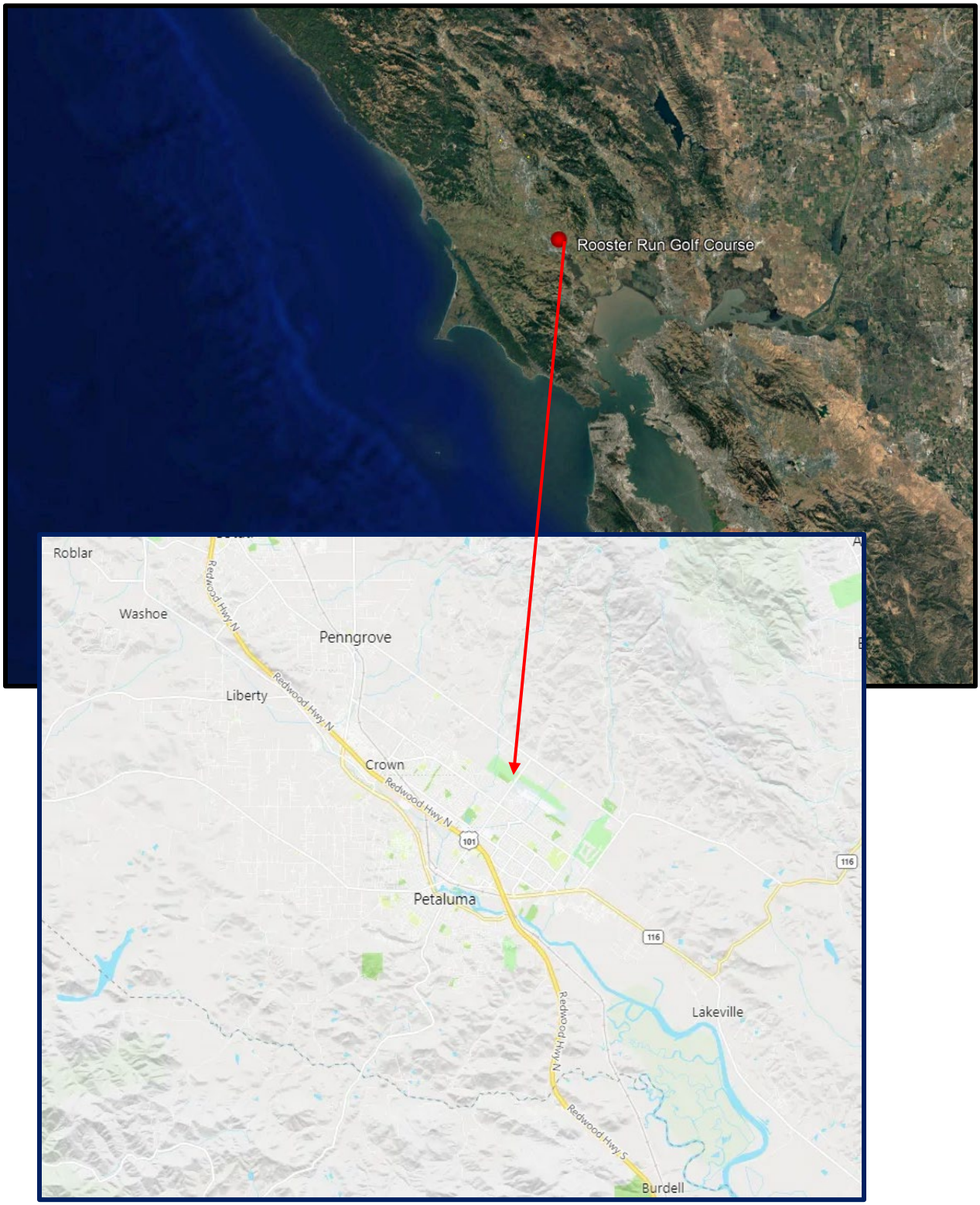
There are six ponds located throughout the golf course. The map of the ponds below shows their location and size. All of the ponds have a maximum depth of approximately eight (8) feet with an average depth of approximately four (4) feet.

The ponds are primarily filled by a well and are fed by rainfall and storm runoff from the surrounding storm water system. The ponds are maintained as a static system during the summer months by maintaining them below the spillway. All six (6) of the ponds are connected to each other through a pipe system so they are all connected and flow from one to another. Pond #6 is the last pond in the chain of connected ponds and has a spillway that is connected to Pool Creek. Water from Pond #6 does not flow into Pool Creek until storm events in the winter months. Water leaving Pond #6 flows into Pool Creek which then flows into Windsor Creek which flows into Mark West Creek which eventually flows into the Russian River.

The uses of the ponds include irrigation, aesthetics and acting as storm water detention.



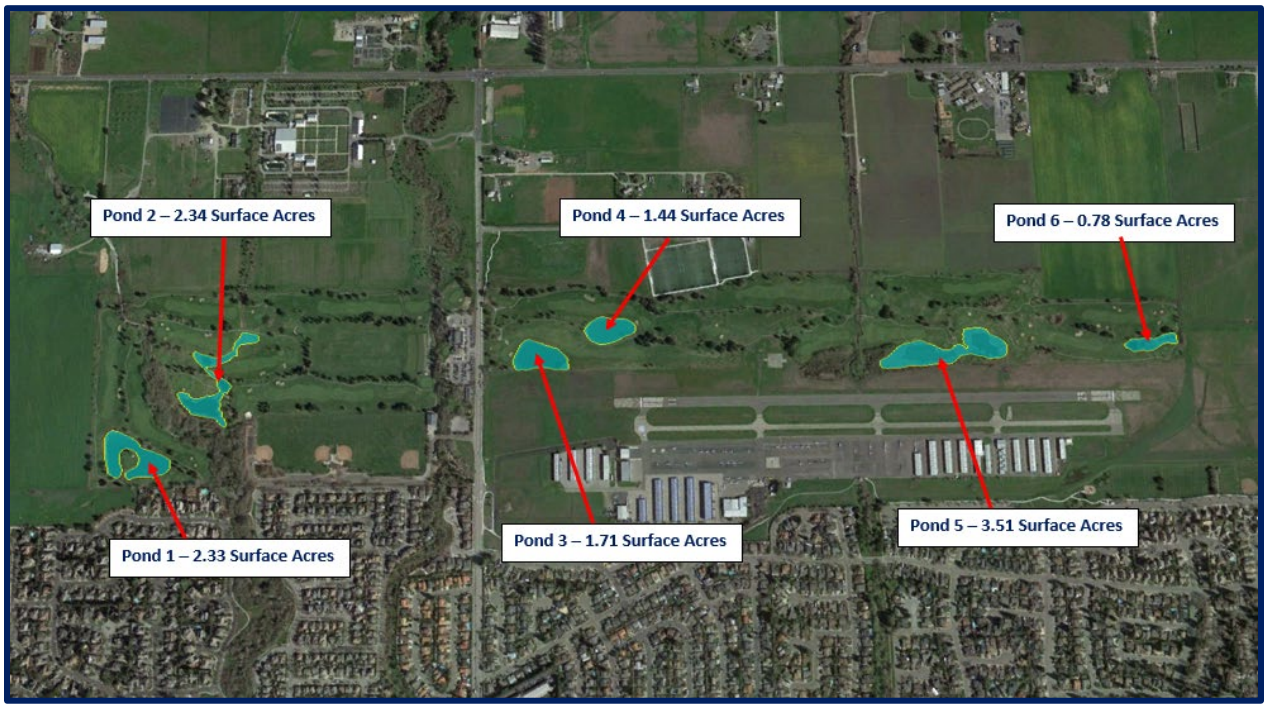
Rooster Run Golf Club – Ponds – REGION 2



ROOSTER RUN
GOLF CLUB

Rooster Run golf course is a par 72 public golf course that opened in 1998. The golf course is in Petaluma, CA just off of Highway 101 on E. Washington St. right next to Petaluma Municipal Airport.

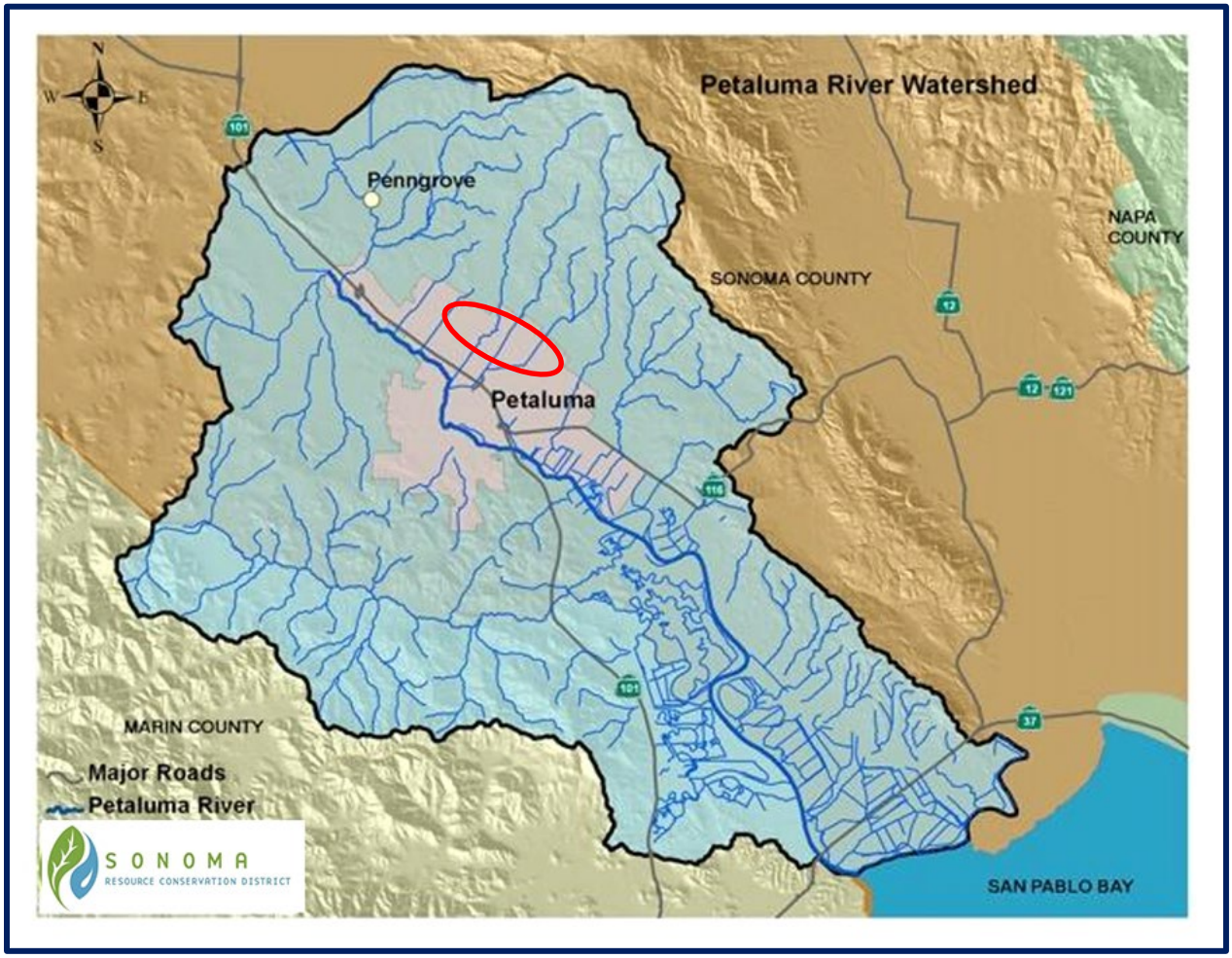
There are six ponds located throughout the golf course. The map of the ponds below shows their location and size. All ponds have a maximum depth of approximately eight (8) feet with an average depth of approximately four (4) foot.



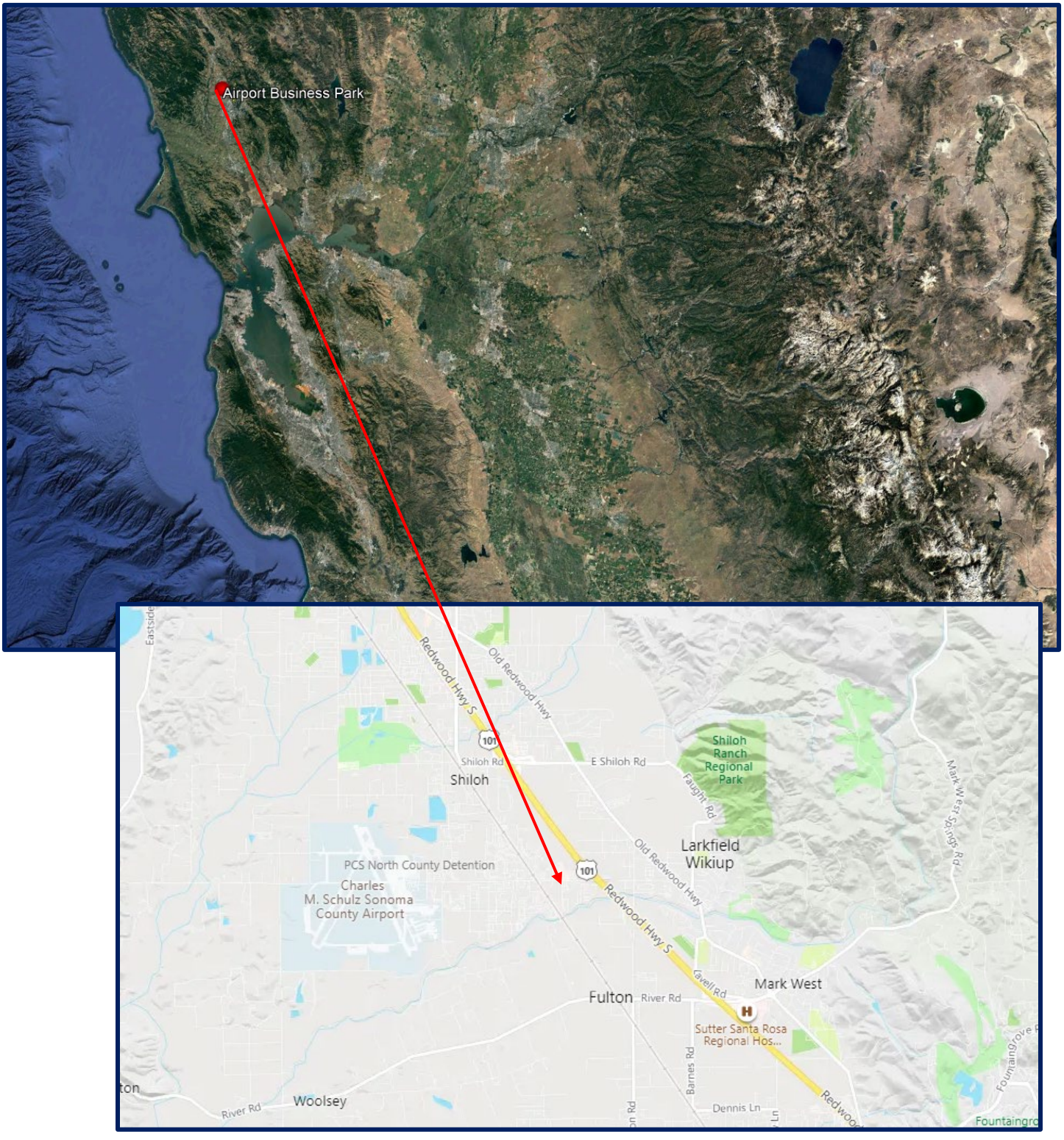
The ponds are primarily filled by a well and are fed by rainfall and storm runoff from the surrounding storm water system. The ponds are maintained as a static system during the summer months by maintaining them below the spillway. All six (6) of the ponds are connected to each other through a pipe system so they are all connected and flow from one to another. Pond #2 is

the last pond in the chain of connected ponds and has a spillway that is connected to Lynch Creek. Water from Pond #2 does not flow into Lynch Creek until storm events in the winter months. Water leaving Pond #2 flows into Lynch Creek which then flows into the Petaluma River which eventually flows into San Pablo Bay.

The uses of the ponds include irrigation, aesthetics and acting as storm water detention ponds.



Airport Business Center Park – Ponds – REGION 1

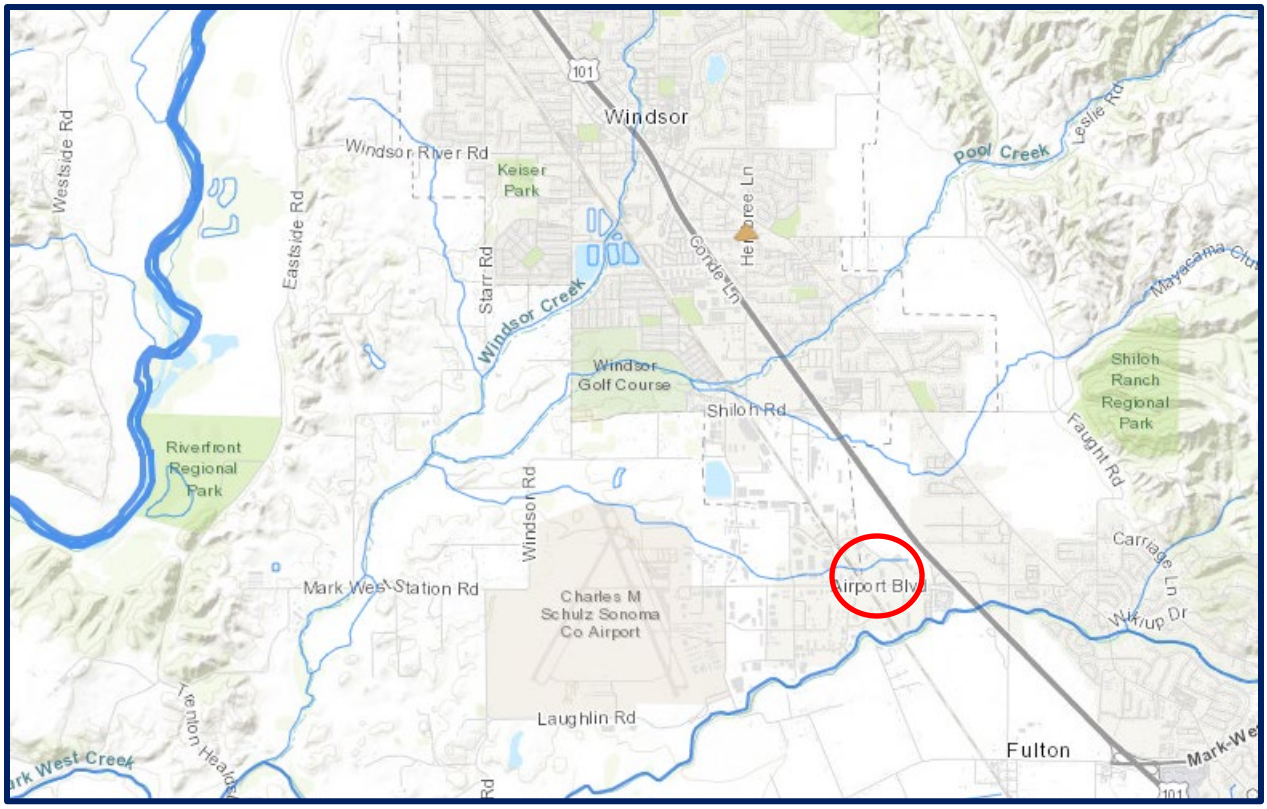


Airport Business Center Park (ABC) is within the Sonoma County Airport Industrial Area Specific Plan area, which accommodates 603 acres of industrial development (412 acres of industrial park and 191 acres of heavy industrial), 5 acres of retail commercial, and 140 acres of agricultural and open space. ABC is about five miles north of downtown Santa Rosa and lies close to U.S. Highway 101.

There are two ponds located within Airport Business Center Park. One pond is one (1) surface acre, and the other pond is one and a half (1.5) surface acres. Both ponds have a maximum depth of approximately eight (8) feet with an average depth of approximately four (4) foot.

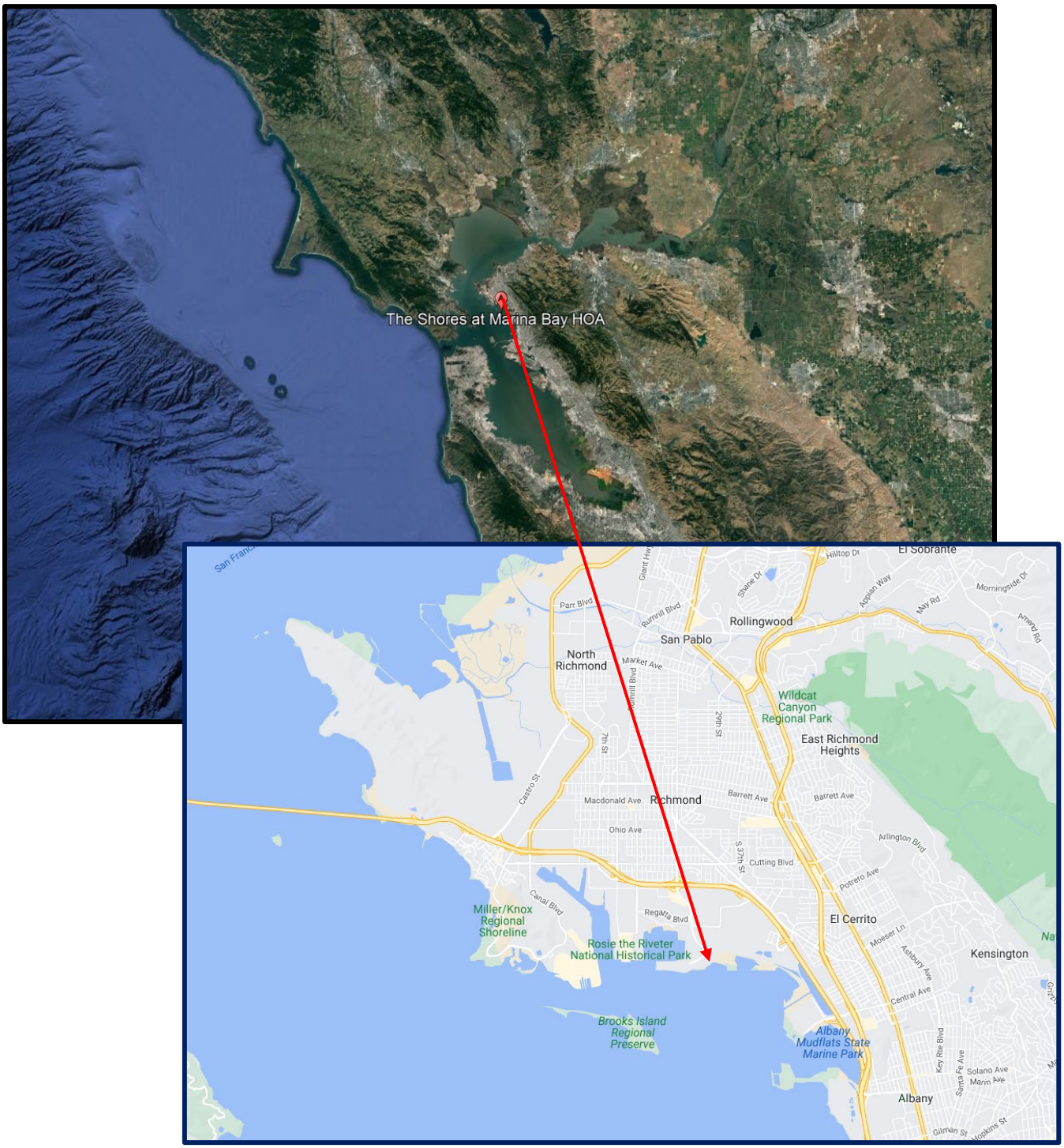
The ponds are primarily filled by a well and are fed by rainfall and storm runoff. The ponds are maintained as a static system during the summer months by capping the outflow pipes. The outflow pipes are uncapped in the winter for storm events. Water leaves the ponds primarily from irrigation but when the pipes are uncapped for storm events the water drains into an unnamed creek which then flows into Windsor Creek which flows into Mark West Creek which eventually flows into the Russian River.

The uses of the ponds include irrigation, aesthetics and acting as a drainage impoundment.


Windsor
Windsor River Rd
Keiser Park
Westside Rd
Eastside Rd
Starr Rd
Windsor Creek
Conde Ln
Pool Creek
Leslie Rd
Windsor Golf Course
Shiloh Rd
Shiloh Ranch Regional Park
Faught Rd
Riverfront Regional Park
Windsor Rd
Mark West Station Rd
Charles M Schulz Sonoma Co Airport
Airport Blvd
Carriage Ln
Laughlin Rd
Fulton
101

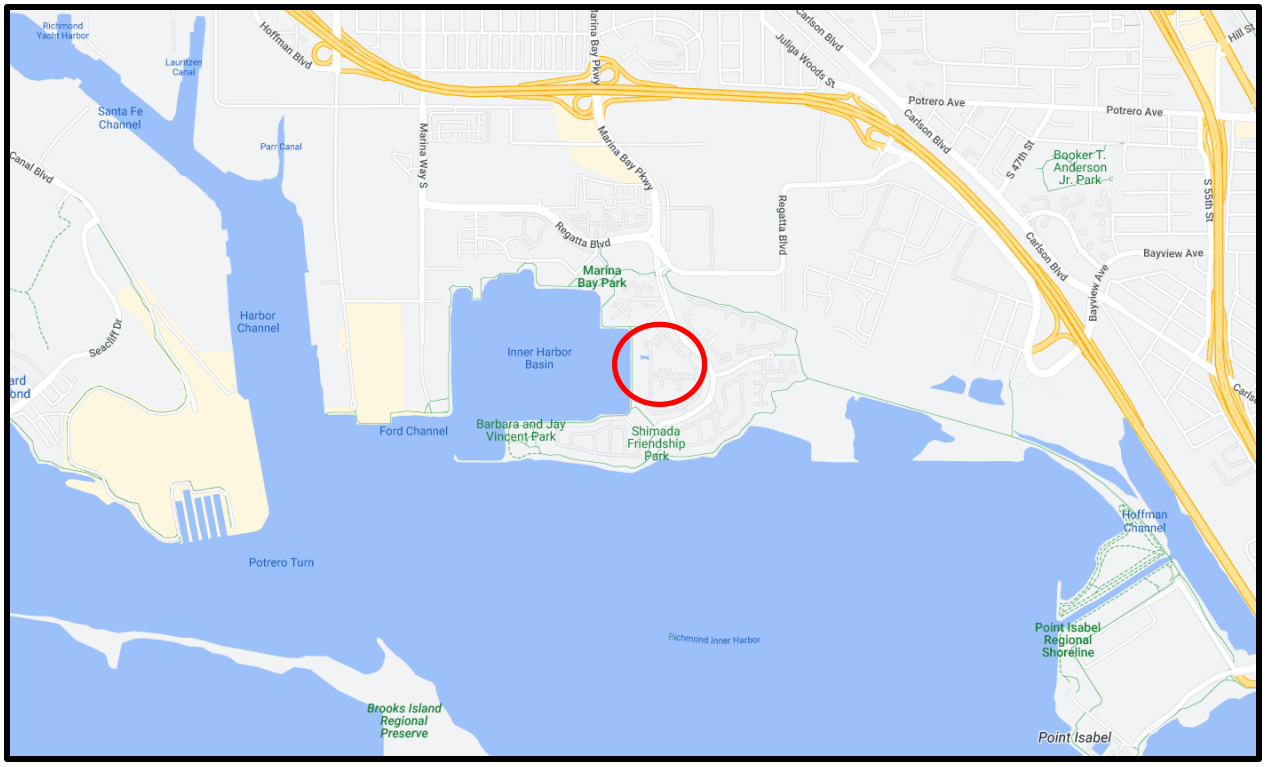
The Shores at Marina Bay Homeowners Association – The Shores at Marina Bay Lakes –

REGION 2

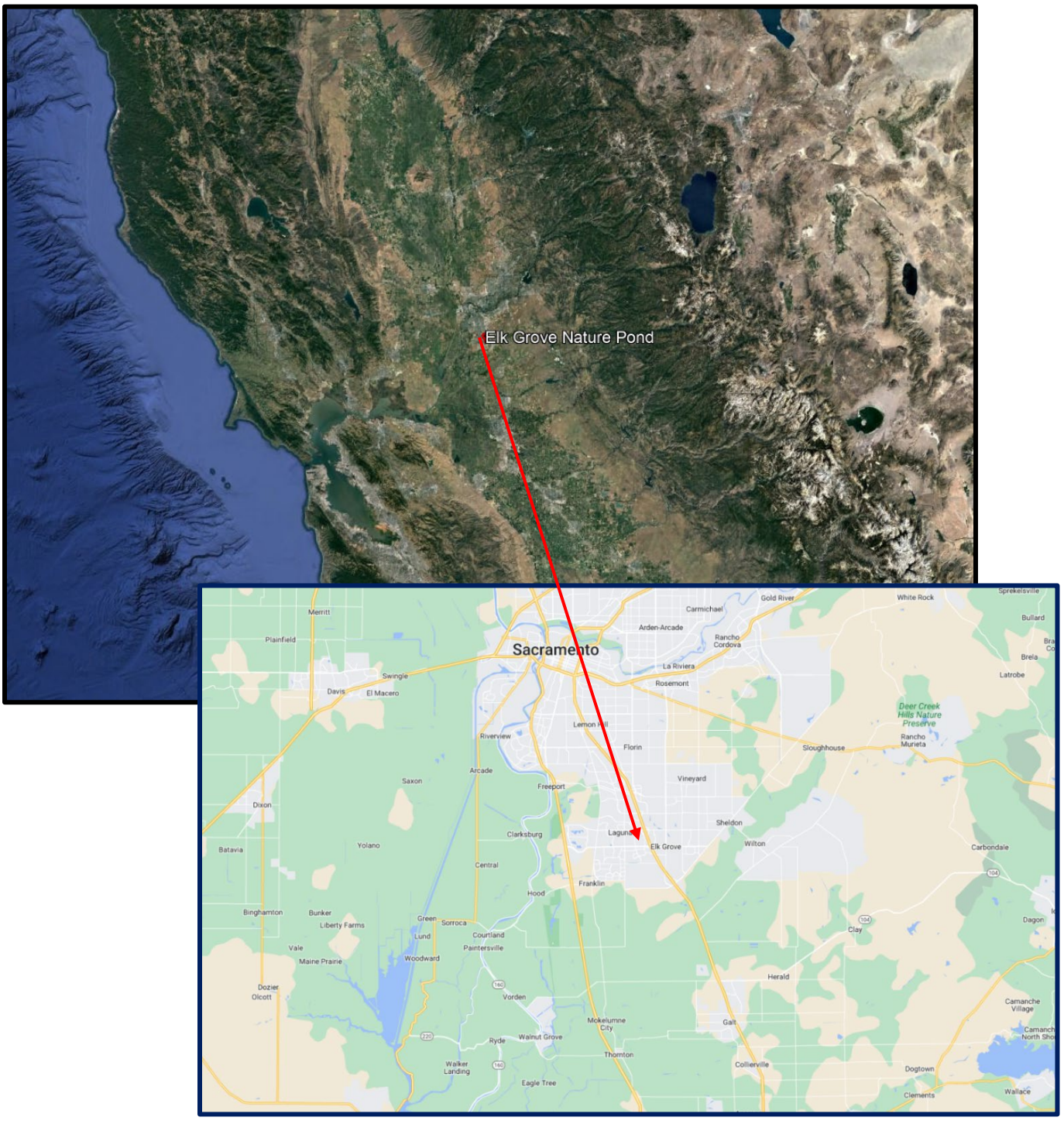


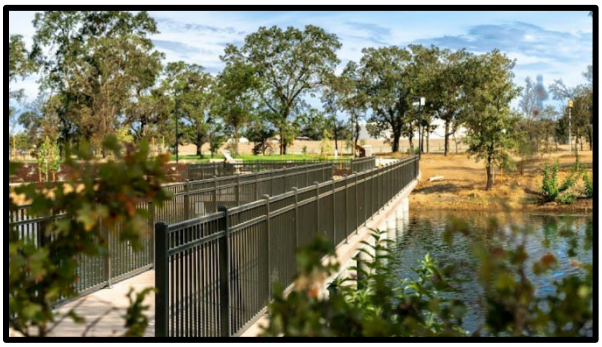
The Shores at Marina Bay is a master plan community on the waterfront of Richmond's Marina Bay inner harbor built in 1988. The community consists of 333 condominium residences located just thirty minutes from downtown San Francisco. The property has two separate lake systems built into the design to offer its residents the aesthetic of living on the bay.

Water is supplied to both lakes from potable water lines connected to East Bay Mud (EBMUD). Water exits both lakes only during winter storm events via overflows. These overflows are connected to the storm water system which drains directly into San Francisco Bay.


Richmond Yacht Harbor
Lauritzen Canal
Hoffman Blvd
Marina Bay Pkwy
Carlson Blvd
Julga Woods St
Potrero Ave
Hill St
Santa Fe Channel
Parr Canal
Canal Blvd
Marina Way S
Regatta Blvd
S 47th St
Booker T. Anderson Jr. Park
S 55th St
Bayview Ave
Marina Bay Park
Harbor Channel
Seacliff Dr
Inner Harbor Basin
Ford Channel
Barbara and Jay Vincent Park
Shimada Friendship Park
Hoffman Channel
Potrero Turn
Richmond Inner Harbor
Point Isabel Regional Shoreline
Brooks Island Regional Preserve
Point Isabel

City of Elk Grove – Elk Grove Nature Pond – REGION 5





The Nature Pond is located at the northeast corner of the intersection of Lotz Parkway and Big Horn Boulevard in the City of Elk Grove, California. It is owned by the City of Elk Grove, which will be responsible for maintenance. The project site is bounded on the east by residential development and on the south and west by major thoroughfares. Cosumnes Oaks High School and Elizabeth Pinkerton Middle School are located across Lotz Parkway to the south. Land Use to the west of the site is residential development. The site is located in the South Stone Lake – Snodgrass Slough watershed and is tributary to the Mokelumne River.

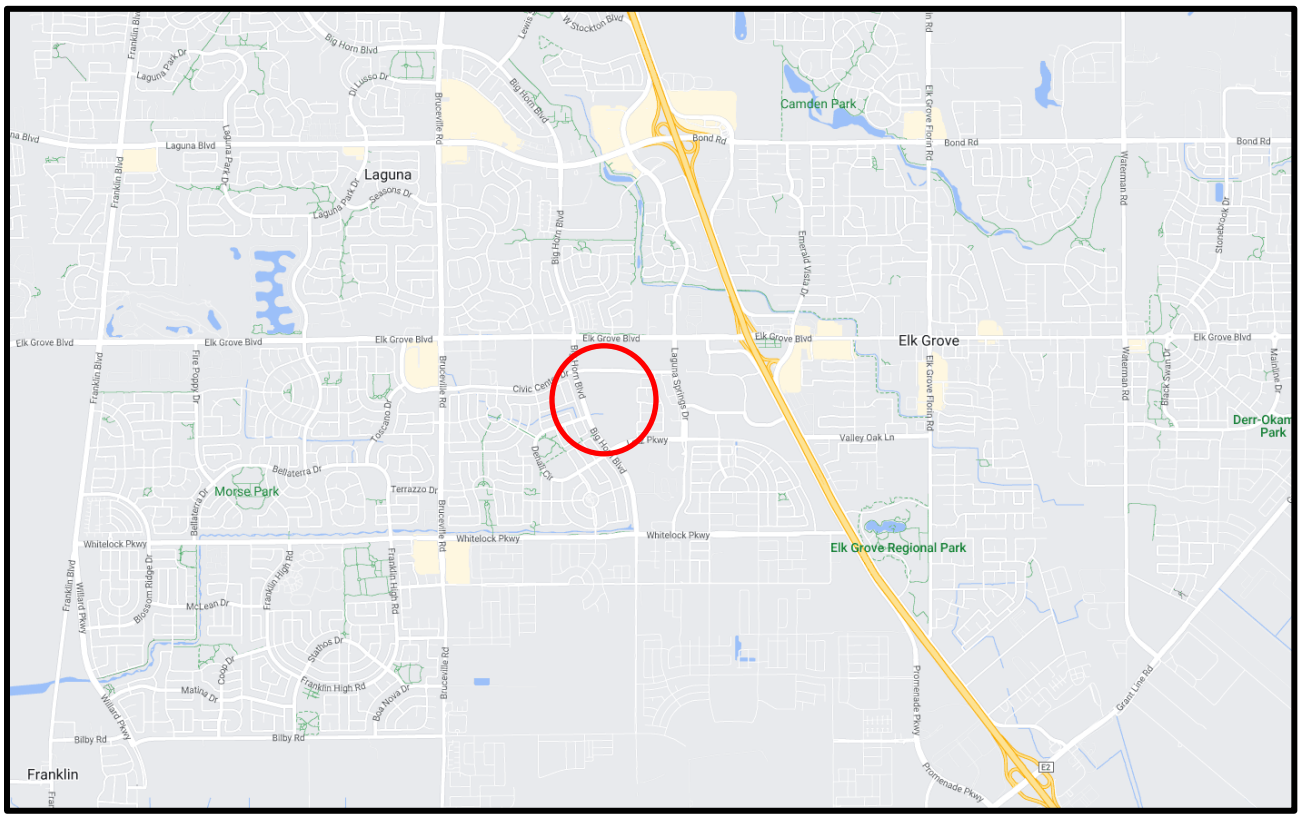
The 4.32-acre managed perennial pond with upland islands has an approximate length of 800 feet and a width of 300 feet. The pond slopes range from 2:1 to 6:1 with a maximum depth of 12 feet. This pond has a capacity of 10.5 million gallons or approximately 32 acre-feet which is filled by well water as necessary to maintain an elevation of 30.5 feet above mean sea level.

During the summer, water for the pond will be supplied from a well. During the wet season, excess water will exit the pond through the spillway to the existing drainage ditch. It will cross under the new trail in a box culvert, then flow through the existing rock-lined drainage ditch and into the existing storm drain system.

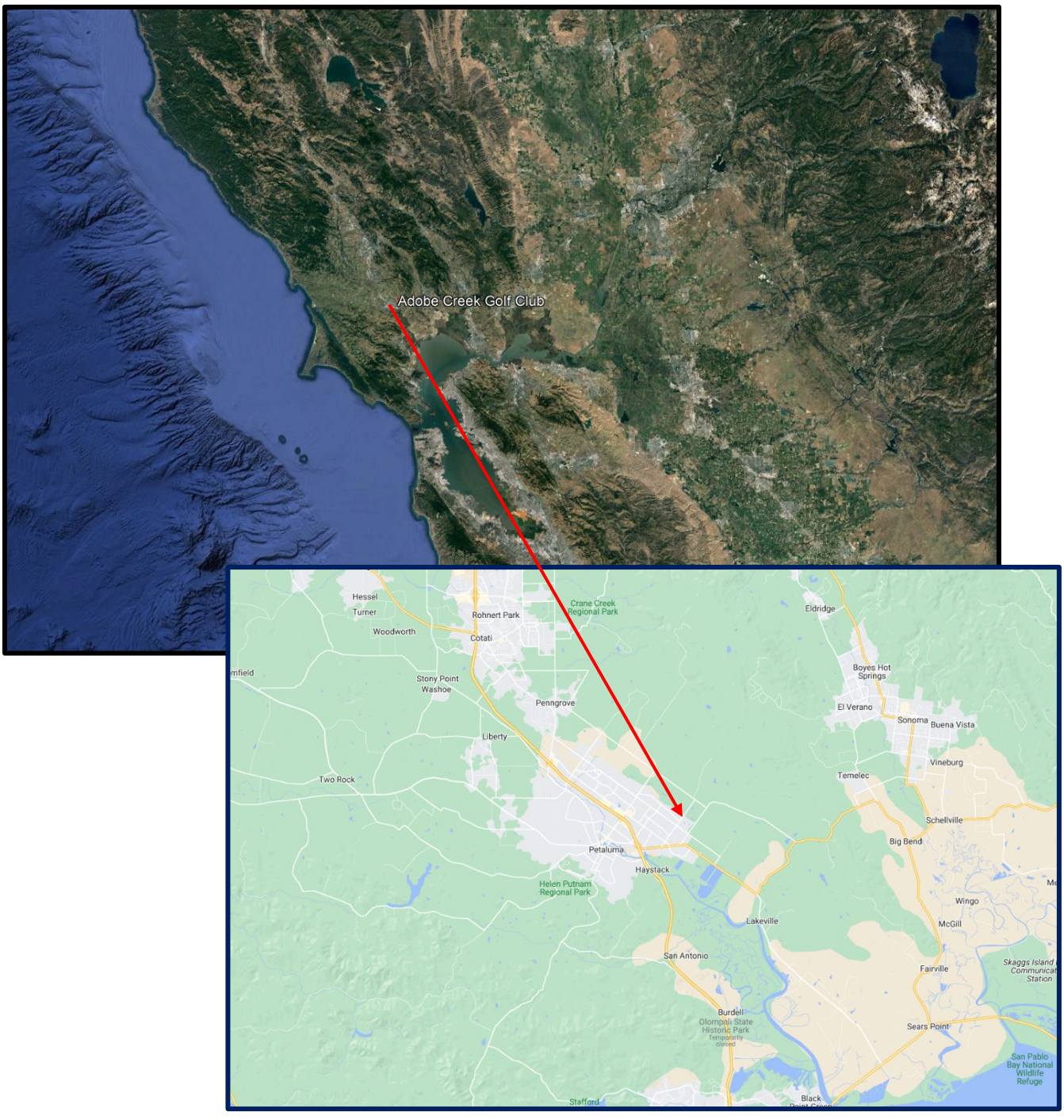
The design includes several features to avoid stagnation and maintain water quality. First, the depth of the pond encourages natural cycling of the water from the top to the bottom of the water column. Second, the existing islands were reduced to improve circulation throughout the pond

and subsurface circulation system will be installed in narrow channels to ensure water freely flows between deep areas of the pond. Thirdly, the water supply line enters the pond in the eastern end to promote water circulation through the pond. A subsurface aeration system will be installed on the floor of the pond, after the pond grading and liner installation are complete. This system releases air from eleven (11) diffusers spaced around the pond bottom. Finally, piping and electrical lines have been provided for a future recirculation system, if the Owner determines it is needed to meet aesthetic or water quality goals.

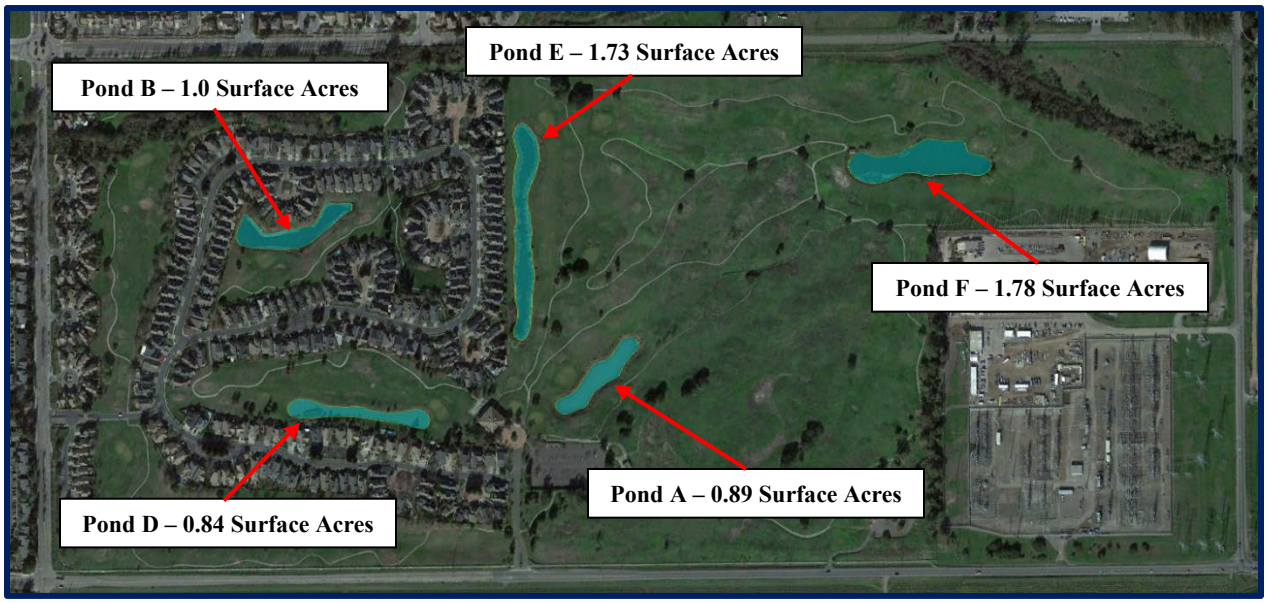
The storm drain system from the northern half of the site drains to the pond in two ways. Storm drains within the Natura Area drain directly to the pond through an outfall on the northern edge of the pond. Additionally, the storm water detention basin may overflow into the pond during high flows.



Adobe Creek Golf Club – Ponds – REGION 2

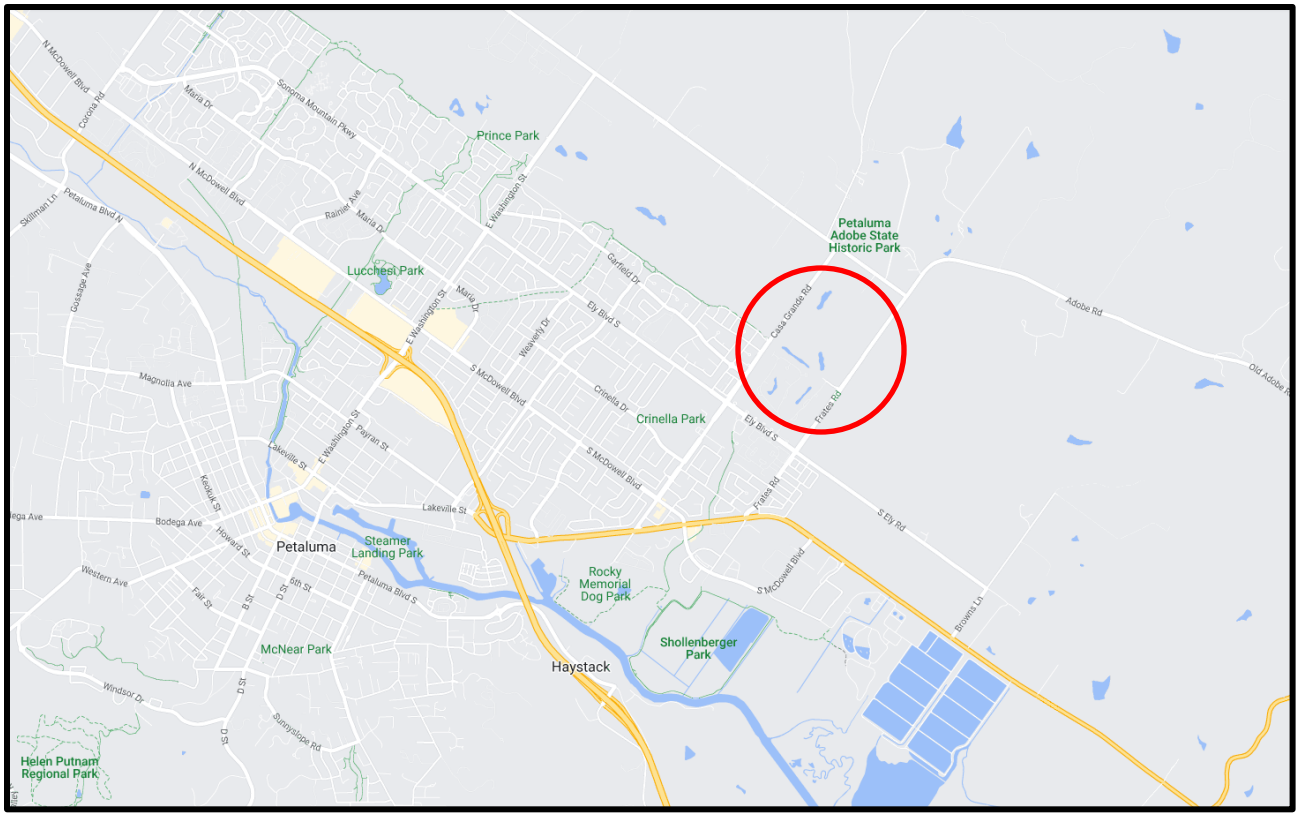


The Adobe Creek Golf Club is a 72-par public golf course opened in 1990. It is located on Frates Road between Adobe Road and Ely Boulevard South in Petaluma, California. There are five ponds located throughout the golf course. The map of the ponds below shows their location and size. The depth of the ponds when filled is between 8 and 12 feet.

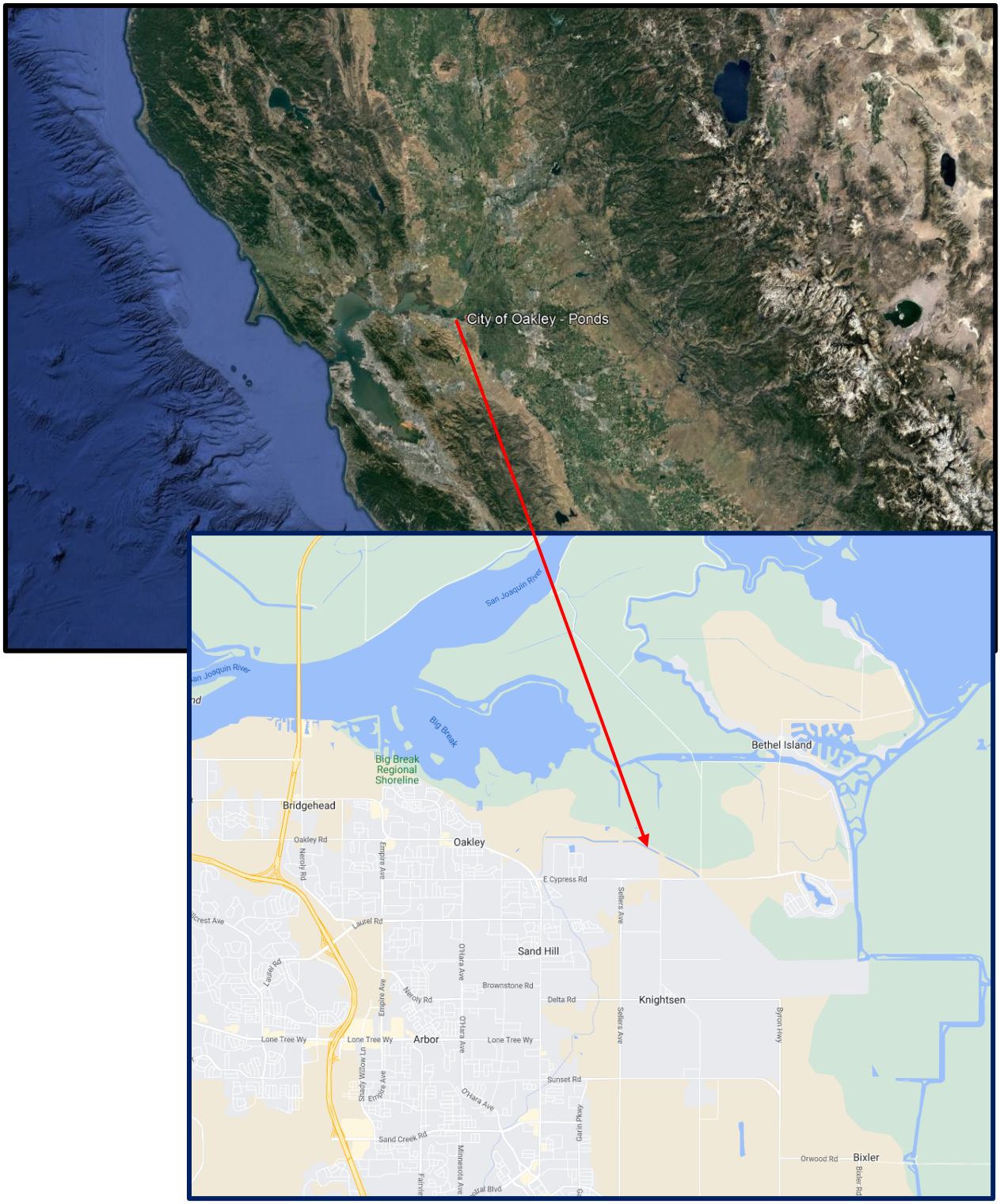


The ponds are primarily filled by rainfall in the winter, in the summer they are filled with reclaimed water from Ellis Creek. Ponds D and F are used for irrigation, while ponds A and B are ornamental. Pond A does not discharge and Pond B discharges directly into the city's wastewater system. Ponds D, E, and F are chained such that Pond F discharges into Pond E, Pond E discharges into Pond D, and Pond D discharges into the city's wastewater system.

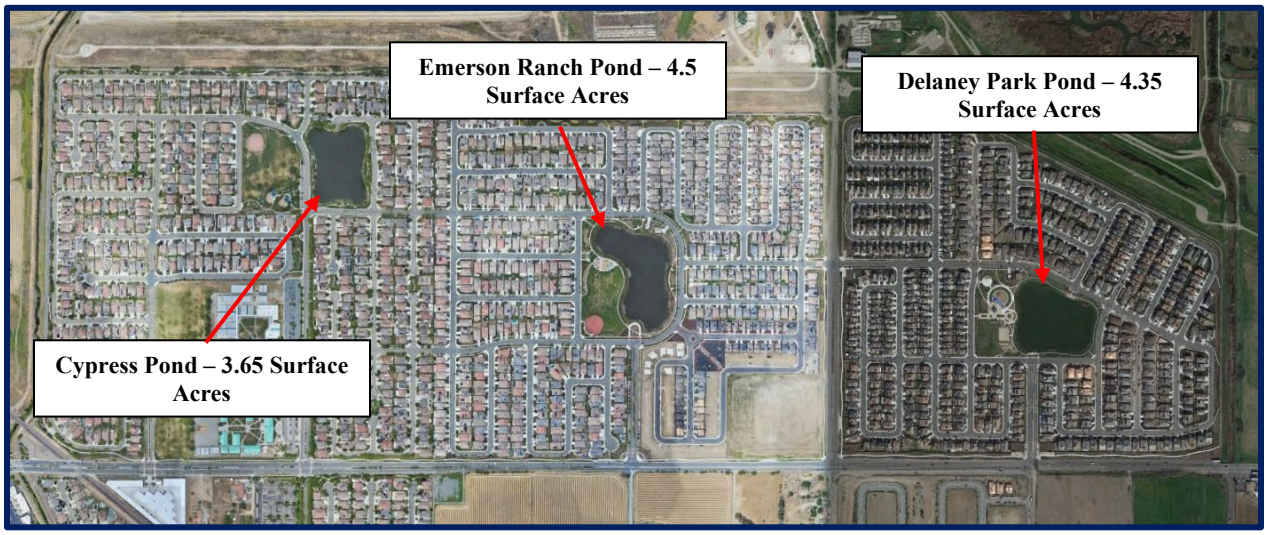
The uses of the ponds include irrigation, aesthetics and acting as storm water detention.


Prince Park
Petaluma Adobe State Historic Park
Lucchesi Park
Crinella Park
Petaluma
Steamer Landing Park
Rocky Memorial Dog Park
Shollenberger Park
Haystack
McNear Park
Helen Putnam Regional Park
Adobe Rd
Casa Grande Rd
Frates Rd
Ely Blvd S
S McDowell Blvd
E Washington St
Lakeville St
Petaluma Blvd S
Sonoma Mountain Pkwy
N McDowell Blvd
Magnolia Ave
Bodega Ave
Western Ave
Windsor Dr
Sunnyslope Rd
S Ely Rd
Browns Ln

City of Oakley – Cypress Pond, Emerson Ranch Pond, Delaney Park Pond – REGION 5

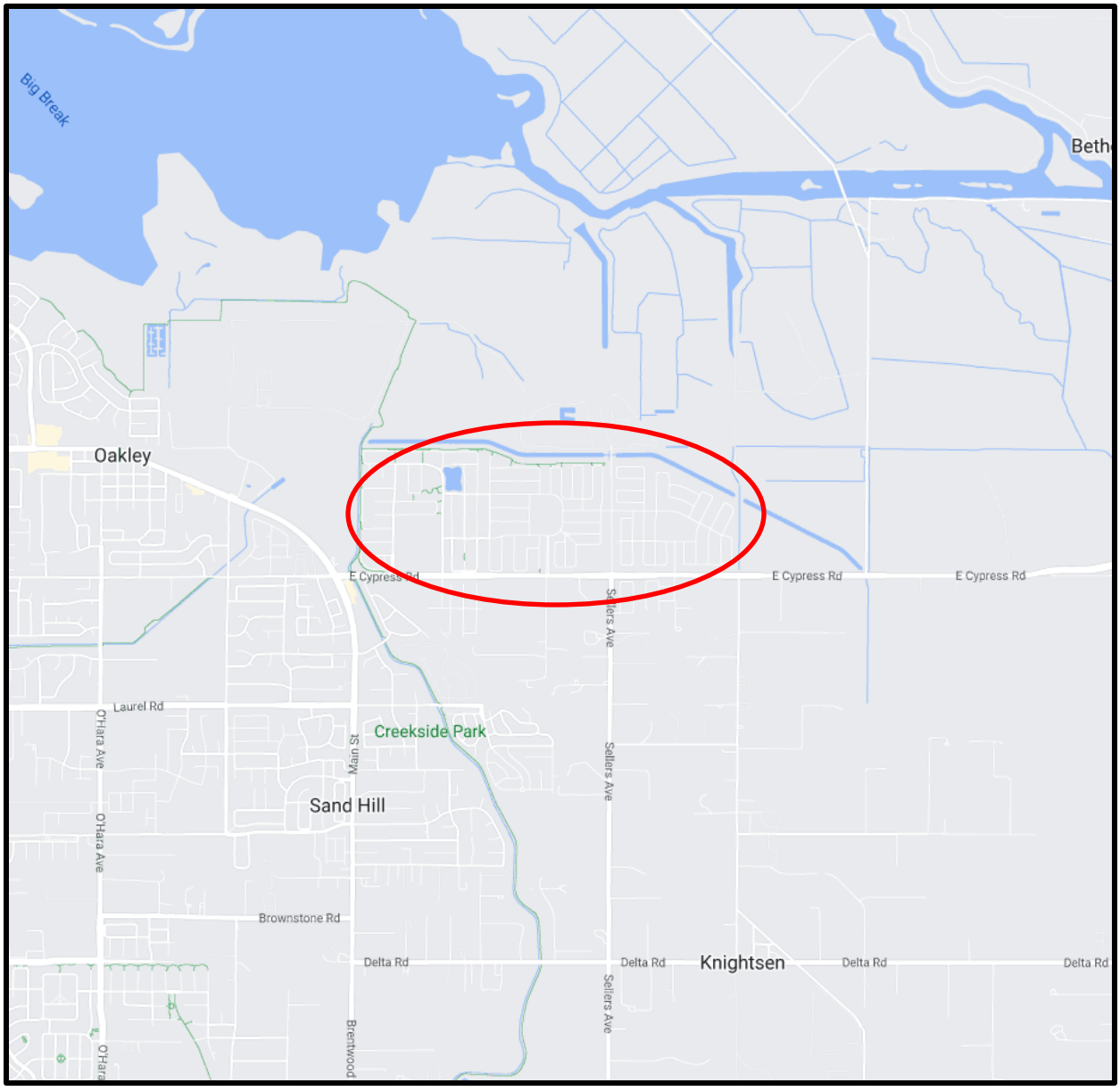


Cypress Pond, Emerson Ranch Pond, and Delaney Park Pond are in the City of Oakley, California. Cypress Pond is in Cypress Grove Park on the corner of Frank Hengel Way and Ibis Drive, Emerson Ranch Pond is located in Emerson Ranch Park off Hansford Way, and Delaney Park Pond is located in Delaney Park off Marathon Drive. They are owned by the City of Oakley, which will be responsible for maintenance. The project area is bounded on the south by a major thoroughfare and on the north by the Delta. Most of the area is residential homes with Delta Vista Middle School and Iron House Elementary School located to the southwest of Cypress Grove Park. The map of the ponds below shows their location and size.



During the summer, water for the pond will be supplied from groundwater. During the wet season, excess water will exit the pond via pump stations at the edges of each pond and will be discharged into the city's stormwater system.

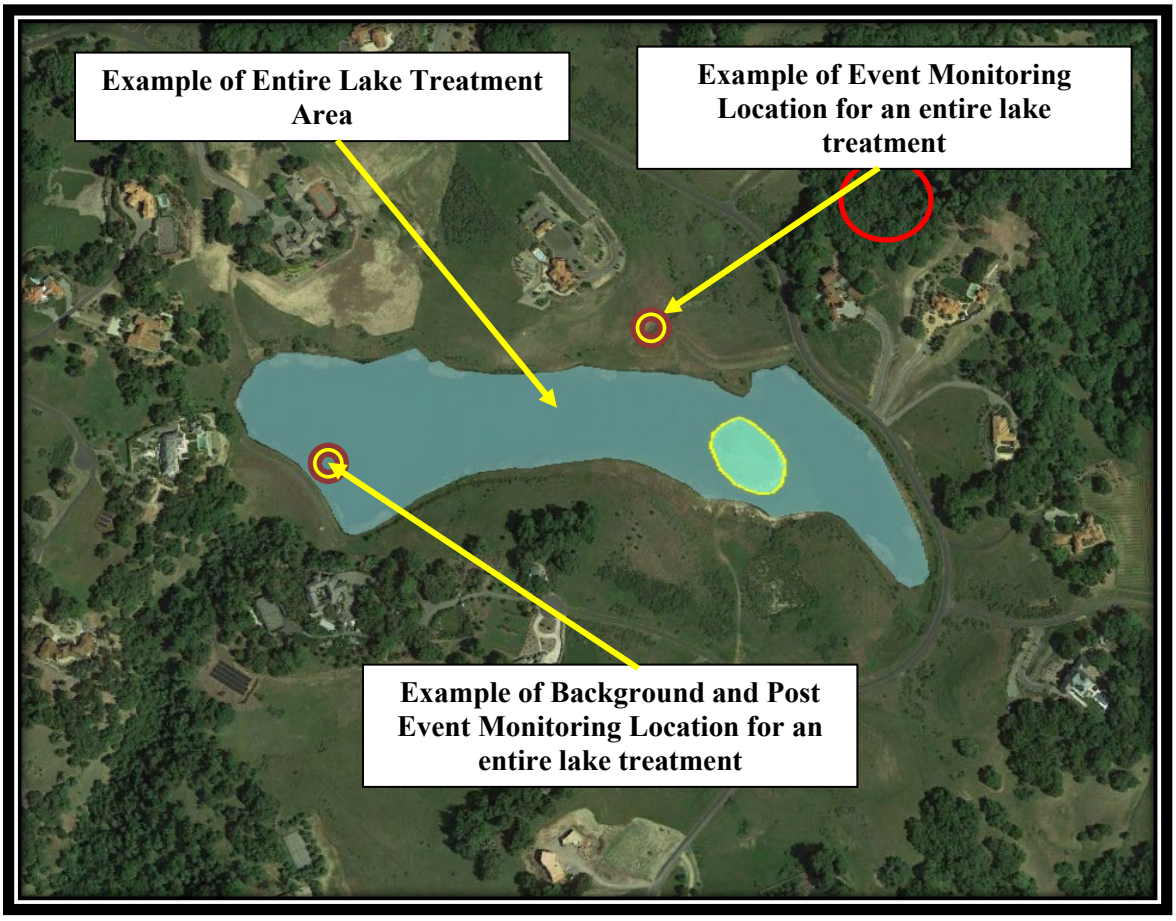
The uses of the ponds include irrigation, aesthetics and acting as storm water detention.

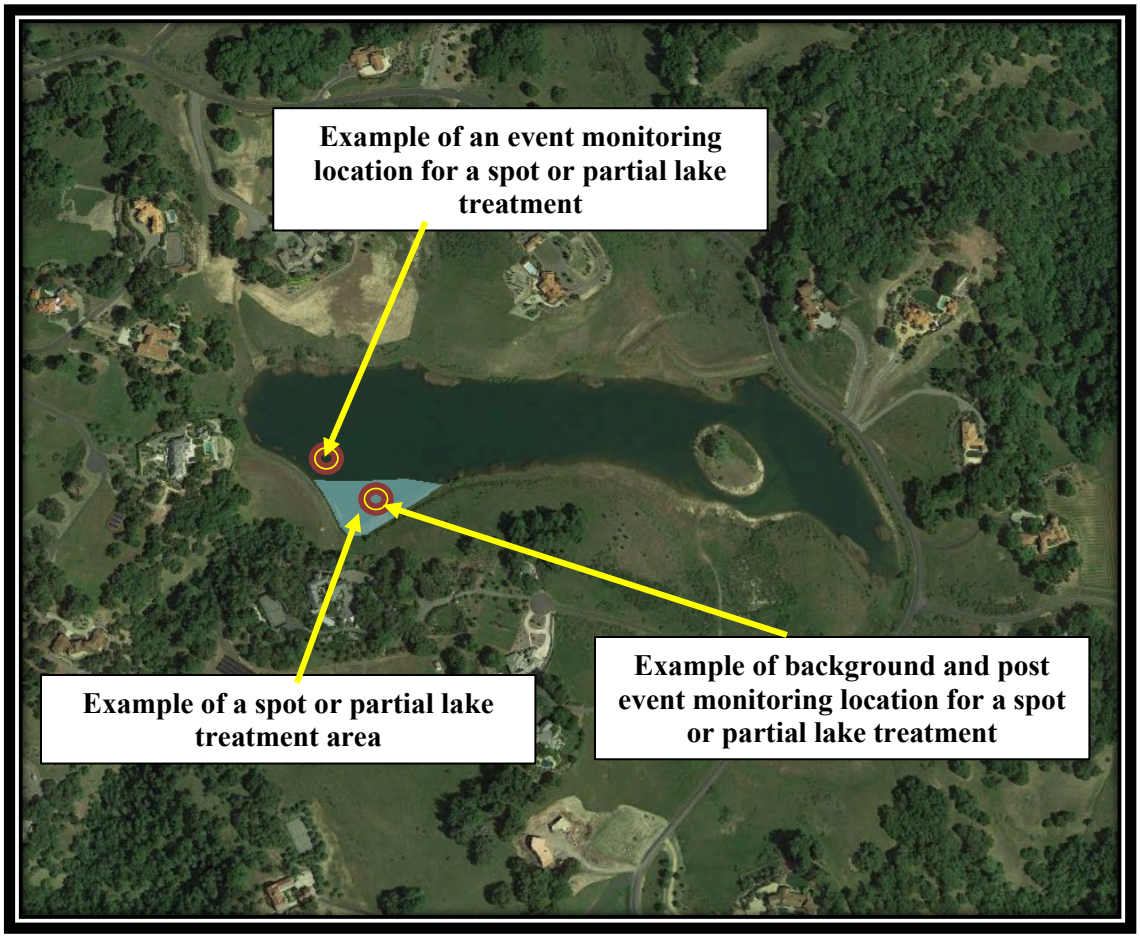

Big Break
Oakley
E Cypress Rd
E Cypress Rd
E Cypress Rd
Sellers Ave
Laurel Rd
O'Hara Ave
Creekside Park
Main St
Sand Hill
Sellers Ave
O'Hara Ave
Brownstone Rd
Delta Rd
Delta Rd
Knightsen
Delta Rd
Delta Rd
Sellers Ave
Brentwood
O'Hara

DESCRIPTION OF THE TREATMENT AREAS

Shiloh Homeowners Association – Shiloh Lake

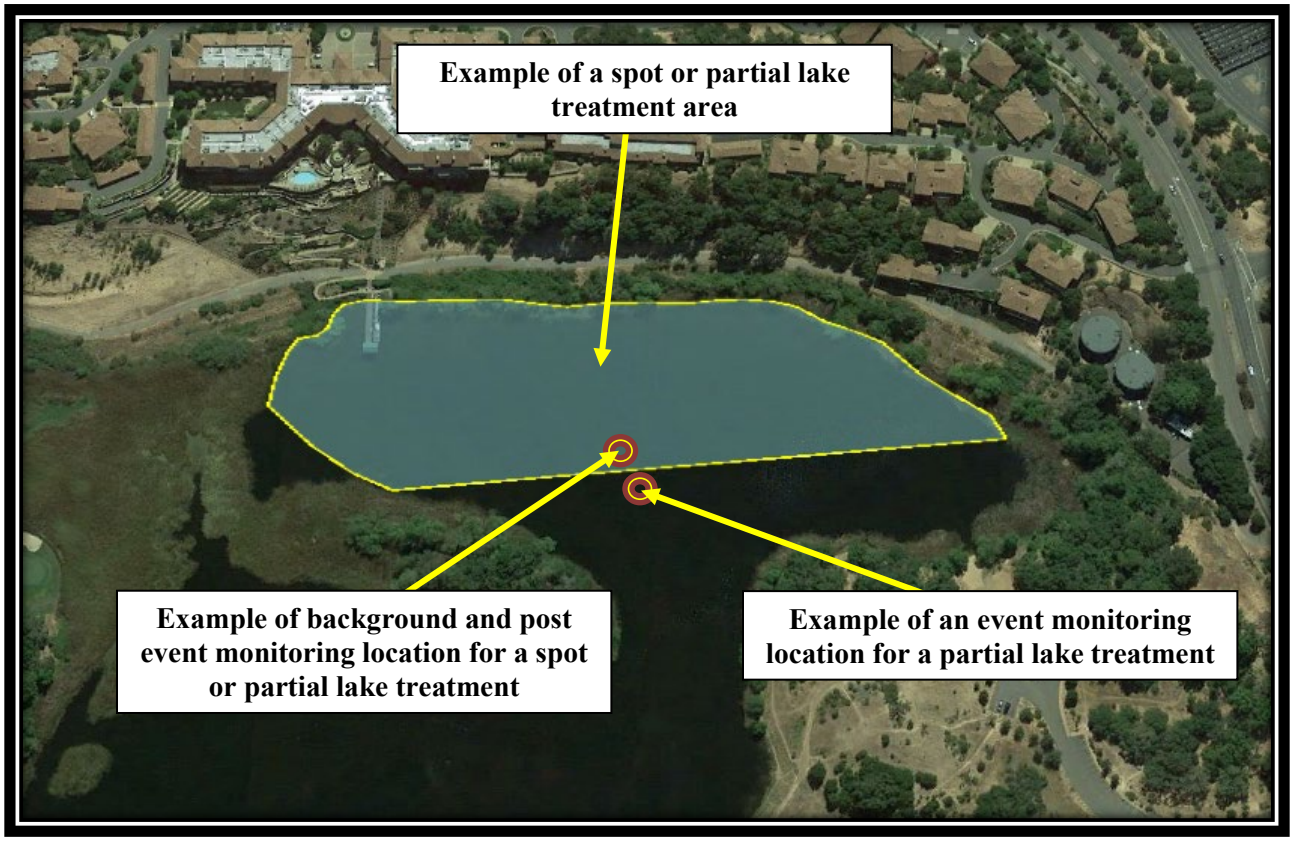
The treatment area in Shiloh Lake can be the entire lake for control of aquatic weeds and algae or the treatment area could be a spot or partial lake treatment. The two maps below show examples of an entire lake treatment area and a spot or partial lake treatment area.




Example of an event monitoring location for a spot or partial lake treatment
Example of a spot or partial lake treatment area
Example of background and post event monitoring location for a spot or partial lake treatment

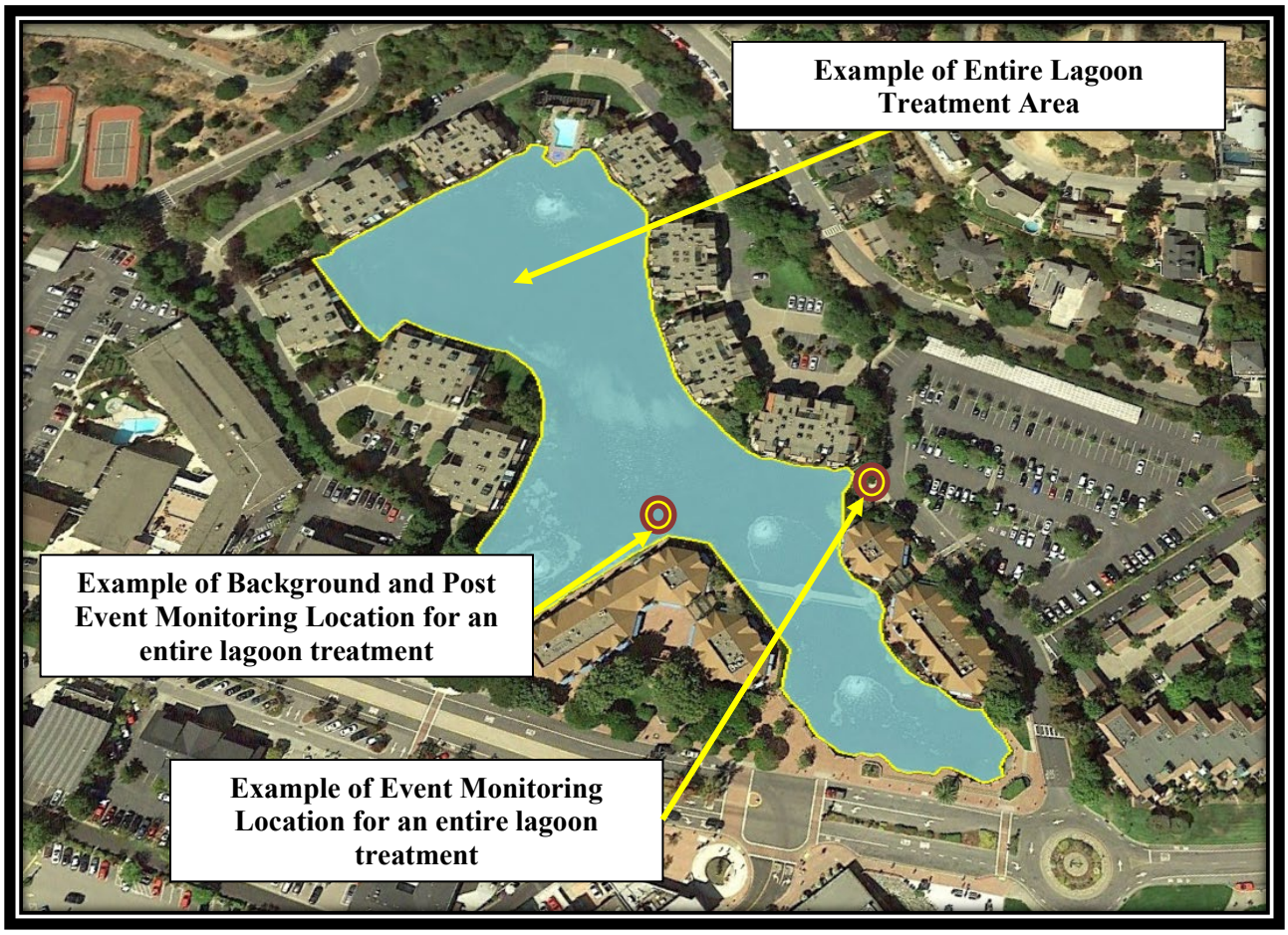
Varenna at Fountaingrove – Fountaingrove Lake

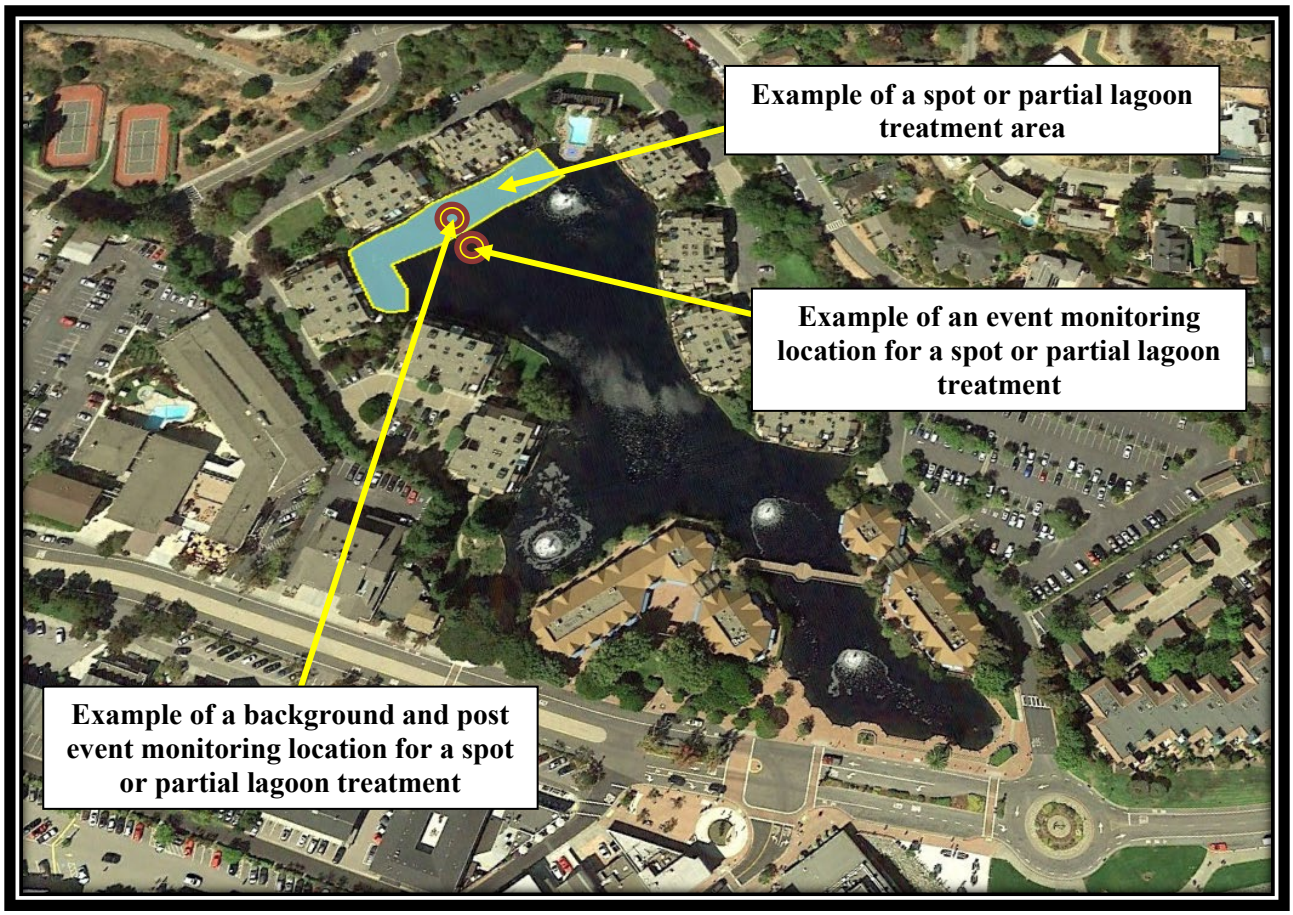
The treatment areas in Fountaingrove Lake will be partial lake treatments. The map below shows an example of a partial lake treatment area.



Point Tiburon Lagoon Owners Association – Point Tiburon Lagoon

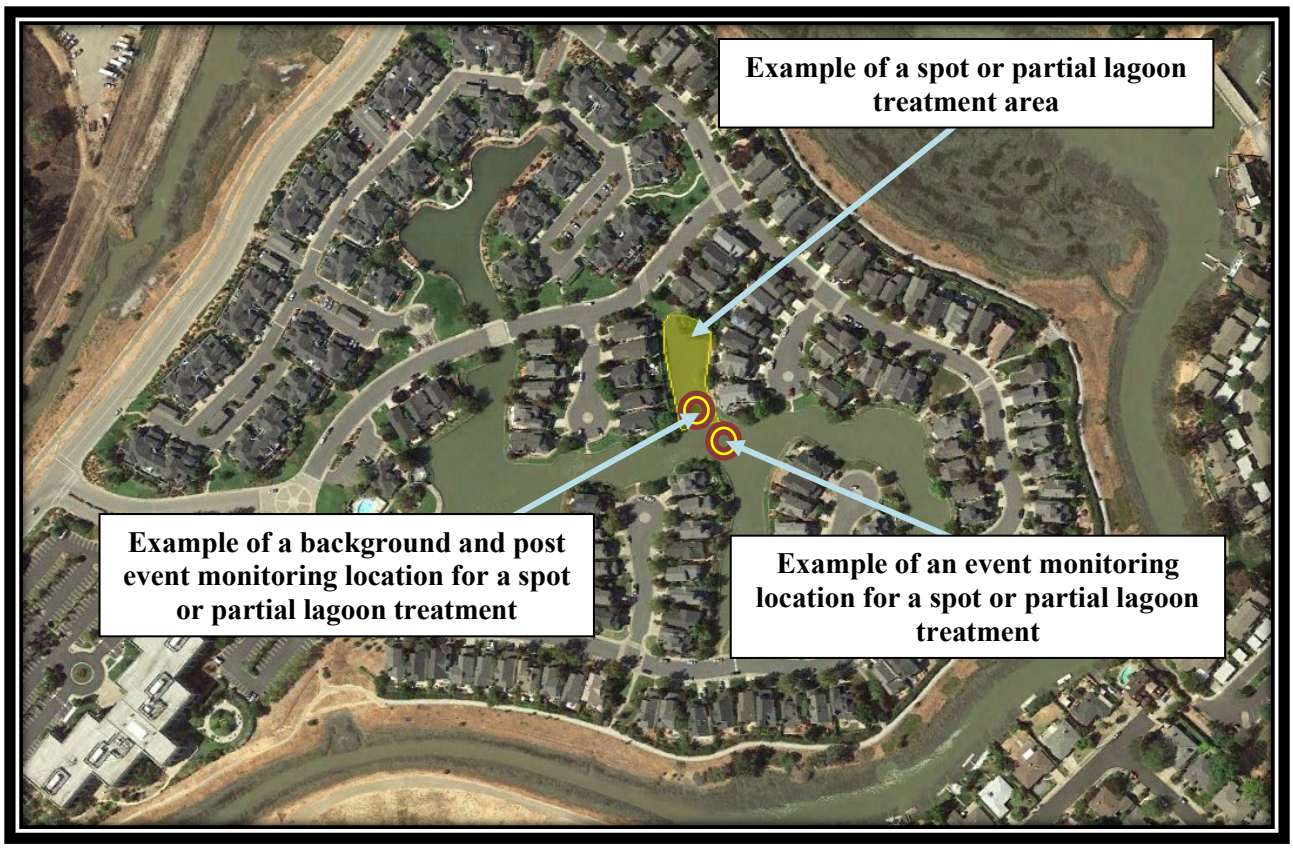
The treatment area in Point Tiburon Lagoon can be the entire lagoon for control of aquatic weeds and algae or the treatment area could be a spot or partial lagoon treatment. The two maps below show examples of an entire lagoon treatment and a spot or partial lagoon treatment. The maps also include example monitoring locations for each treatment.




Example of a spot or partial lagoon treatment area
Example of an event monitoring location for a spot or partial lagoon treatment
Example of a background and post event monitoring location for a spot or partial lagoon treatment

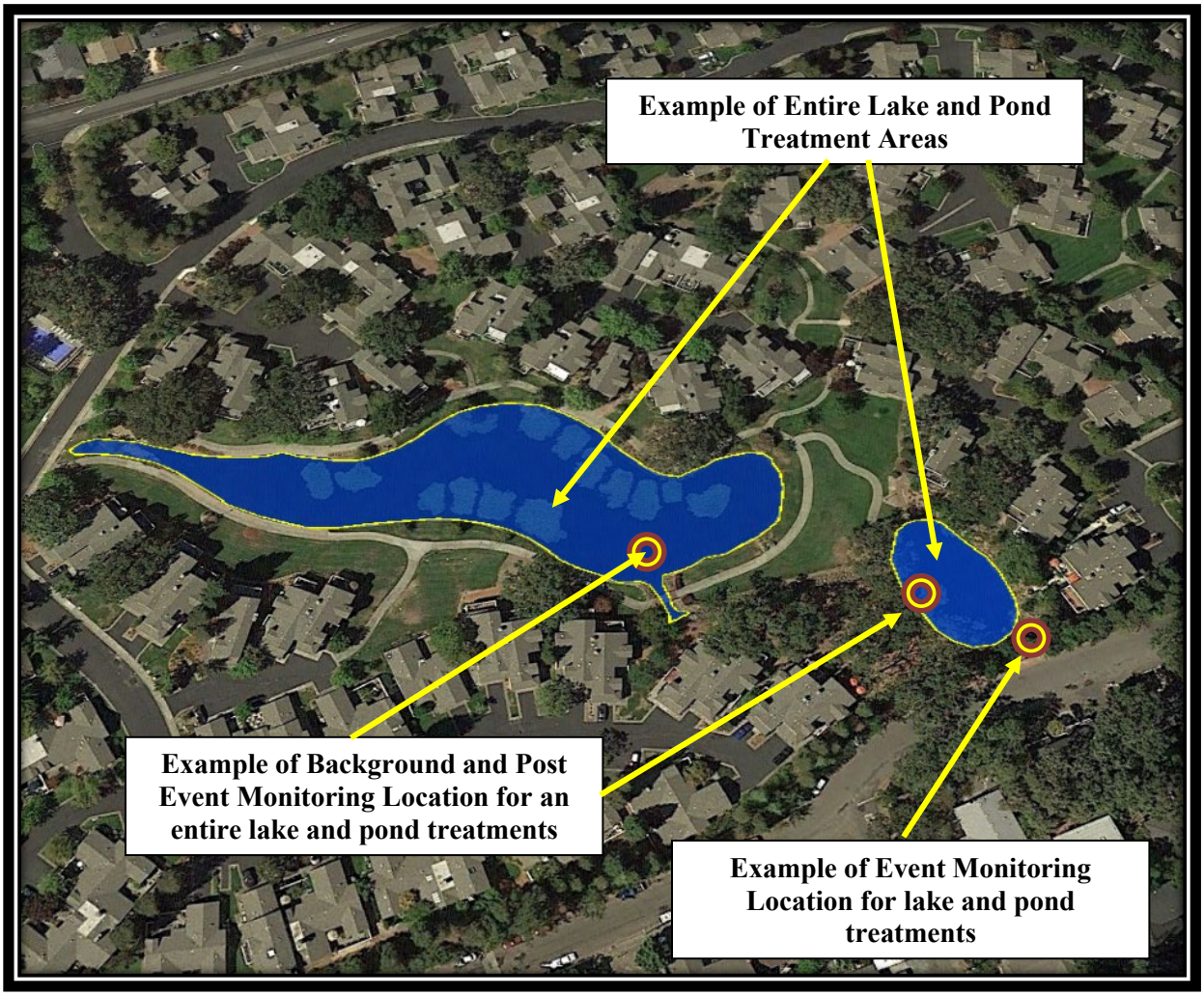
Marin Lagoon Homeowners Association – Marin Lagoon

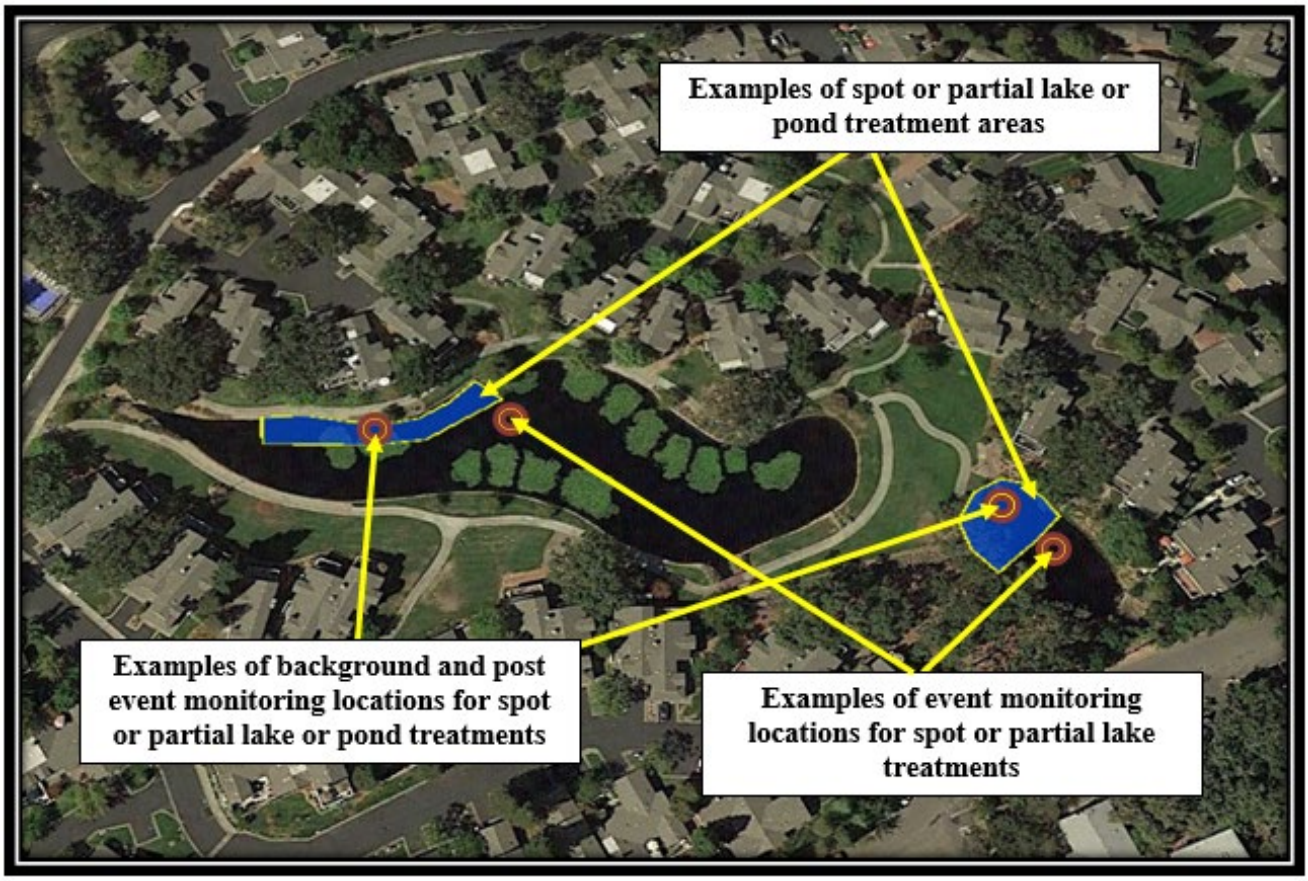
The treatment area in Marin Lagoon can be the entire lagoon for control of aquatic weeds and algae or the treatment area could be a spot or partial lagoon treatment. The two maps below show examples of an entire lagoon treatment area and a spot or partial lagoon treatment area.


Example of a spot or partial lagoon treatment area
Example of a background and post event monitoring location for a spot or partial lagoon treatment
Example of an event monitoring location for a spot or partial lagoon treatment

Sonoma Greens Community Association – Sonoma Greens Lake and Pond

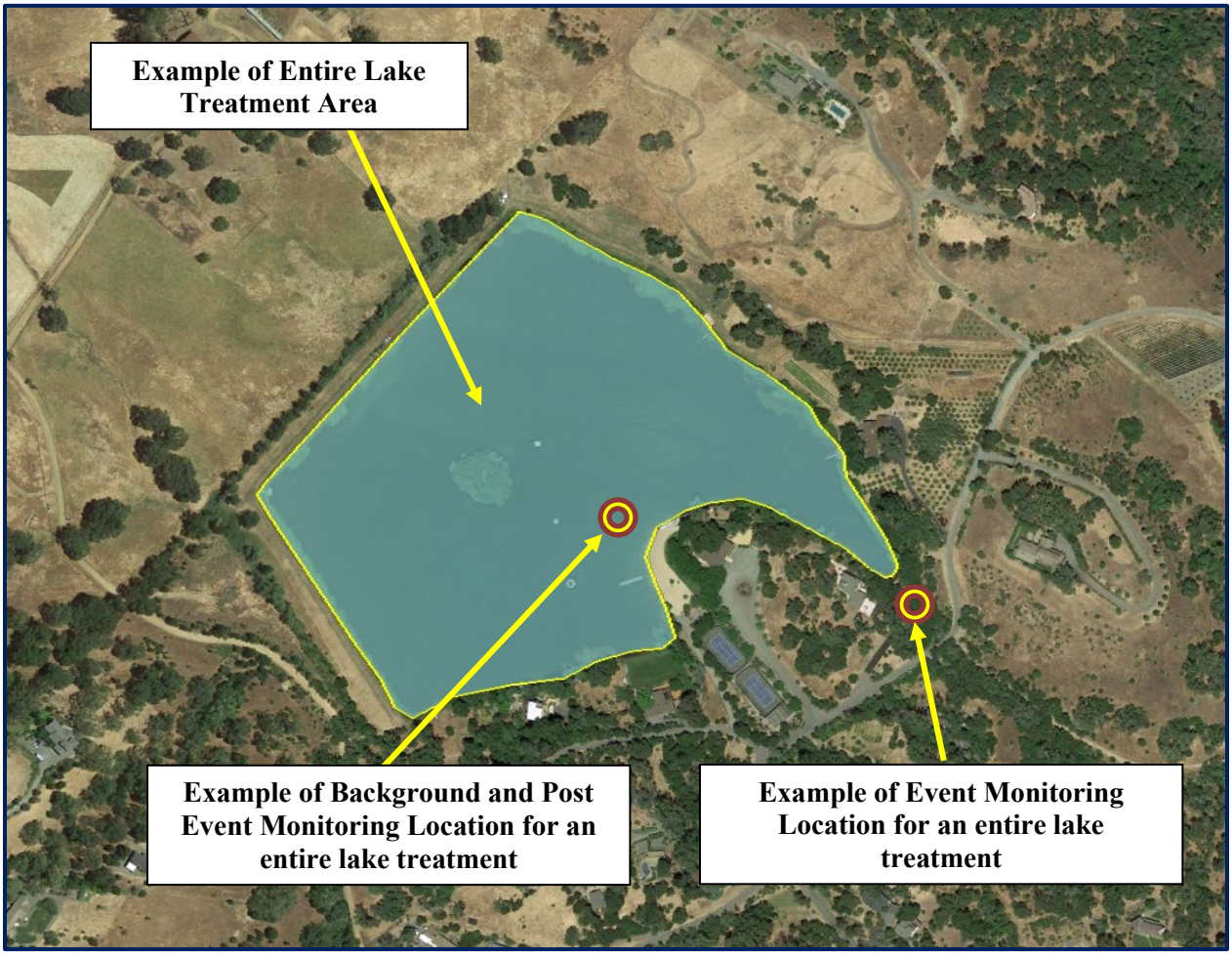
The treatment area in Sonoma Greens Lake and Pond can be the entire lake and pond for control of aquatic weeds and algae or the treatment area could be a spot or partial lake or pond treatment. The two maps below show examples of an entire lake or pond treatment area and a spot or partial lake or pond treatment area.

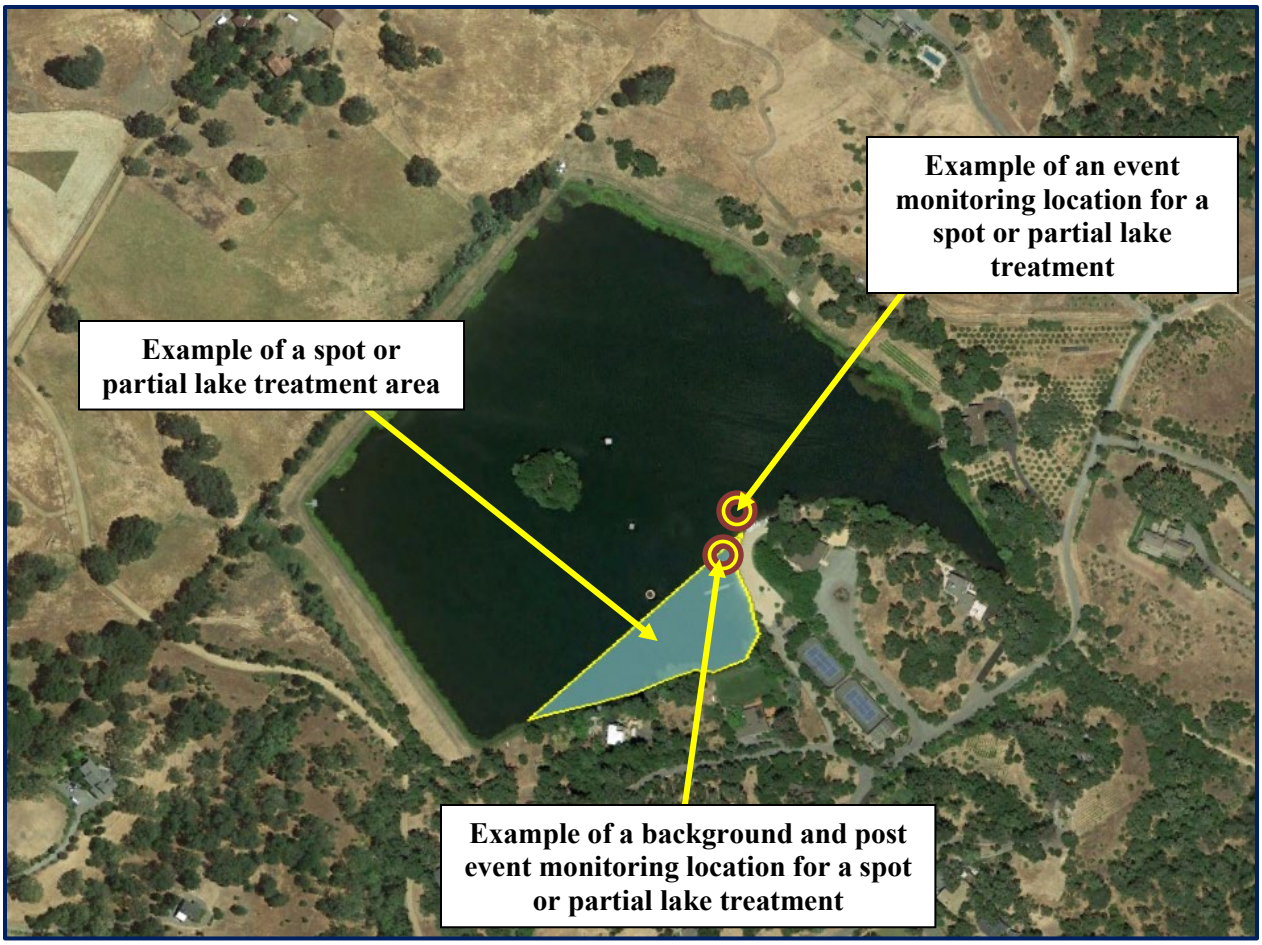



Examples of spot or partial lake or pond treatment areas
Examples of background and post event monitoring locations for spot or partial lake or pond treatments
Examples of event monitoring locations for spot or partial lake treatments

The Vineyard Club Inc. – Vineyard Club Lake

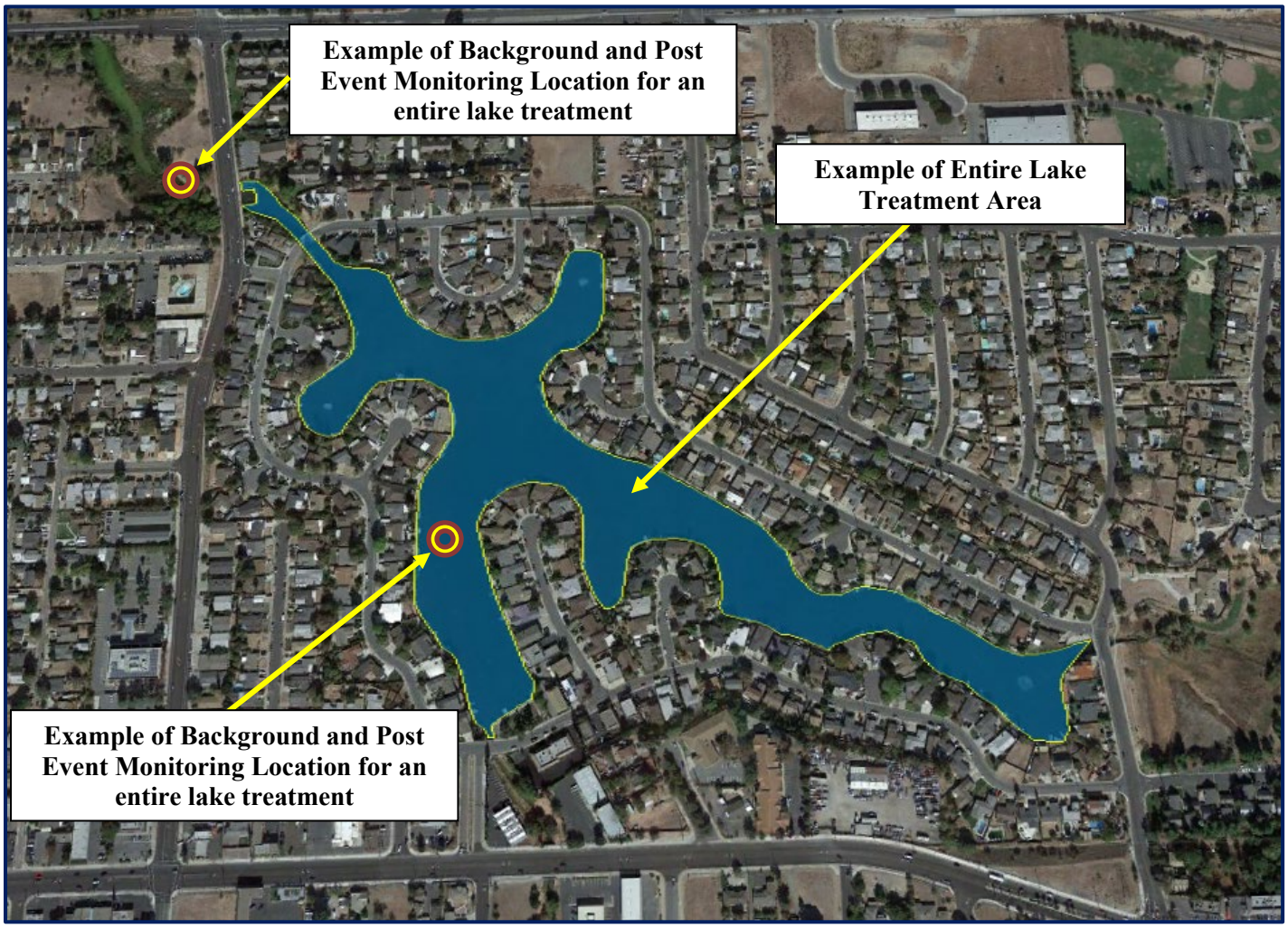
The treatment area in Vineyard Club Lake can be the entire lake for control of aquatic weeds and algae or the treatment area could be a spot or partial lake treatment. The two maps below show examples of an entire lake treatment area and a spot or partial lake treatment area.

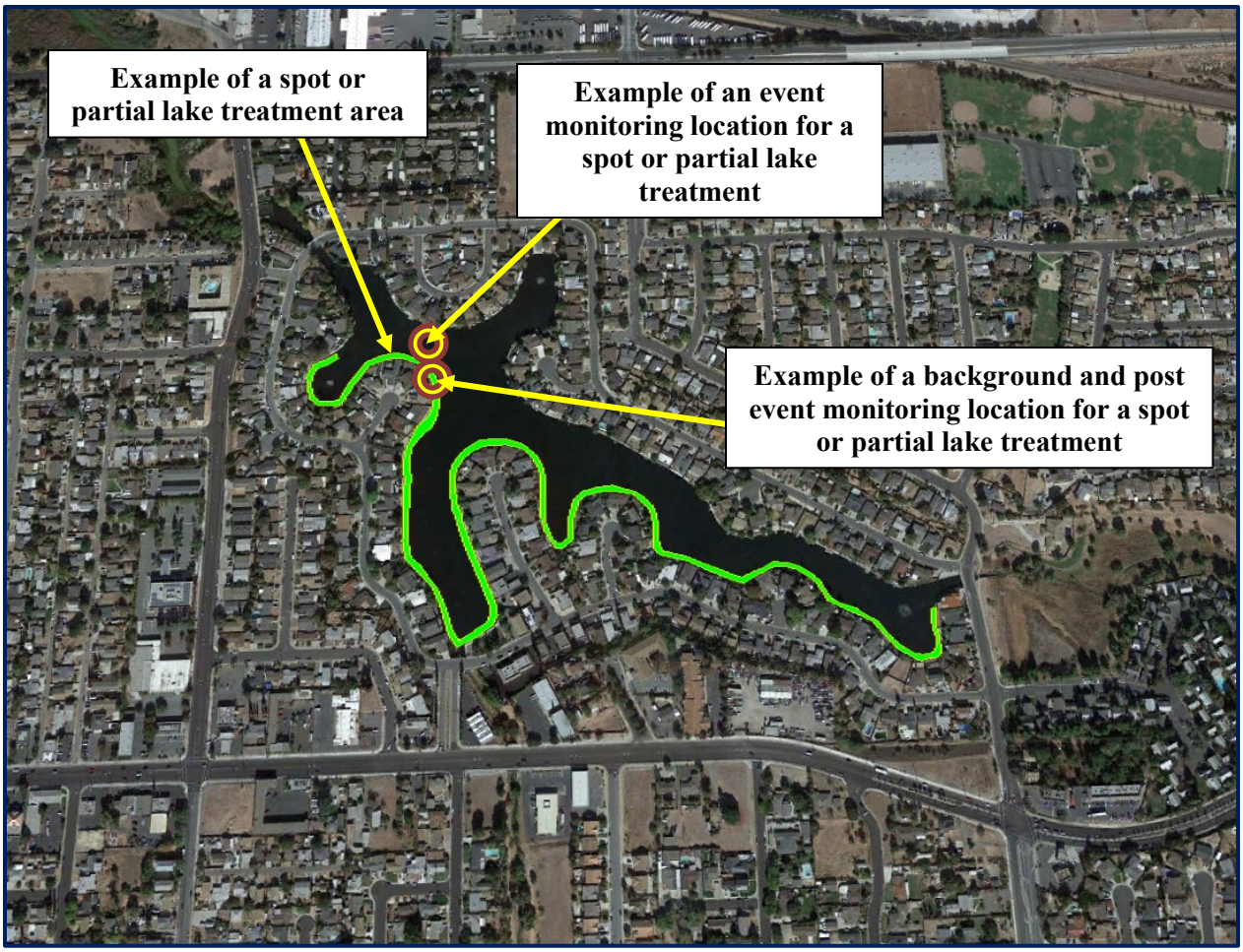



Example of an event monitoring location for a spot or partial lake treatment
Example of a spot or partial lake treatment area
Example of a background and post event monitoring location for a spot or partial lake treatment

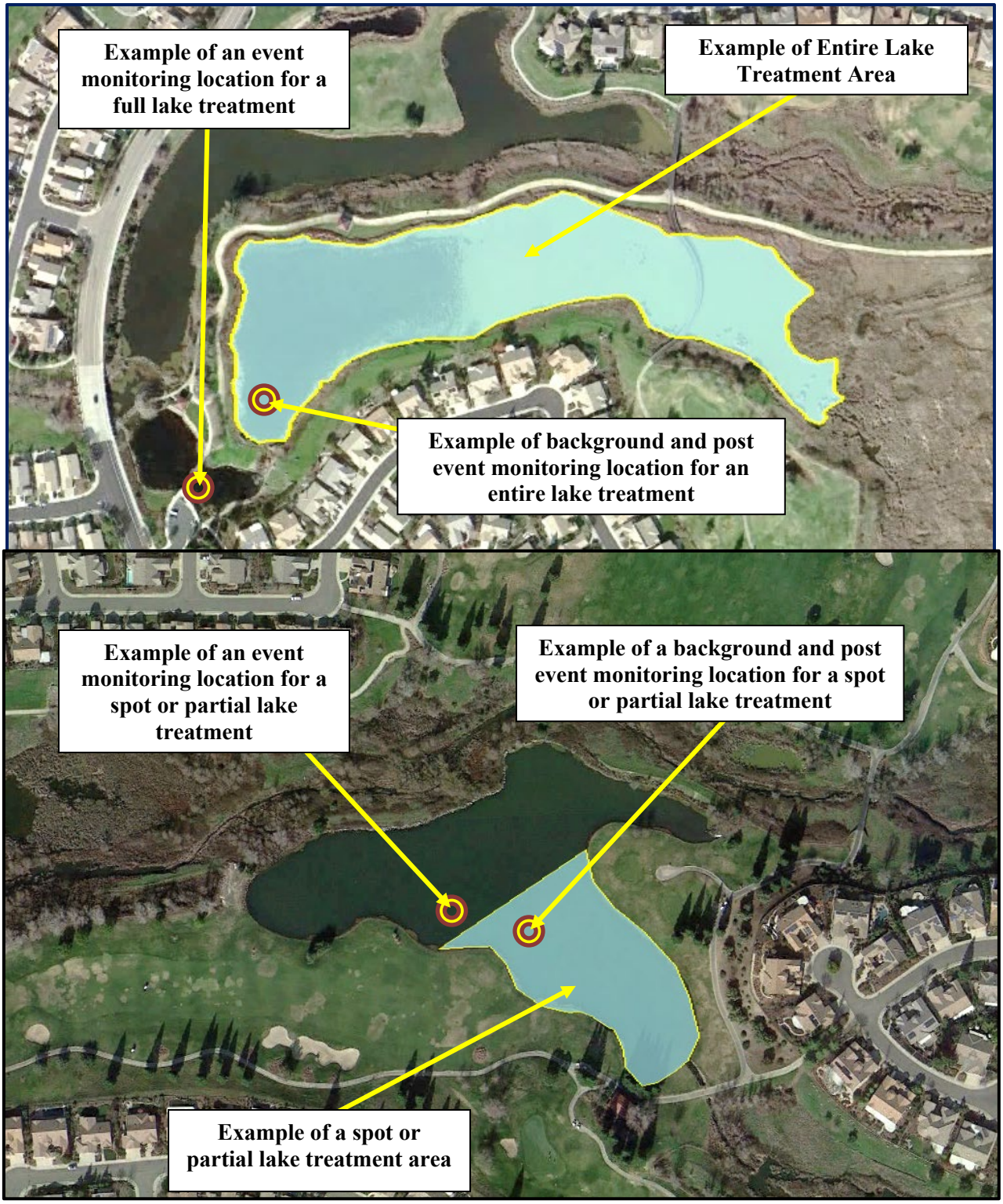
Lake Alhambra Homeowners Association – Lake Alhambra

The treatment area in Lake Alhambra can be an entire lake for control of aquatic weeds and algae or the treatment area could be a spot or partial lake treatment. The two maps below show examples of an entire lake treatment area and a spot or partial lake treatment area.



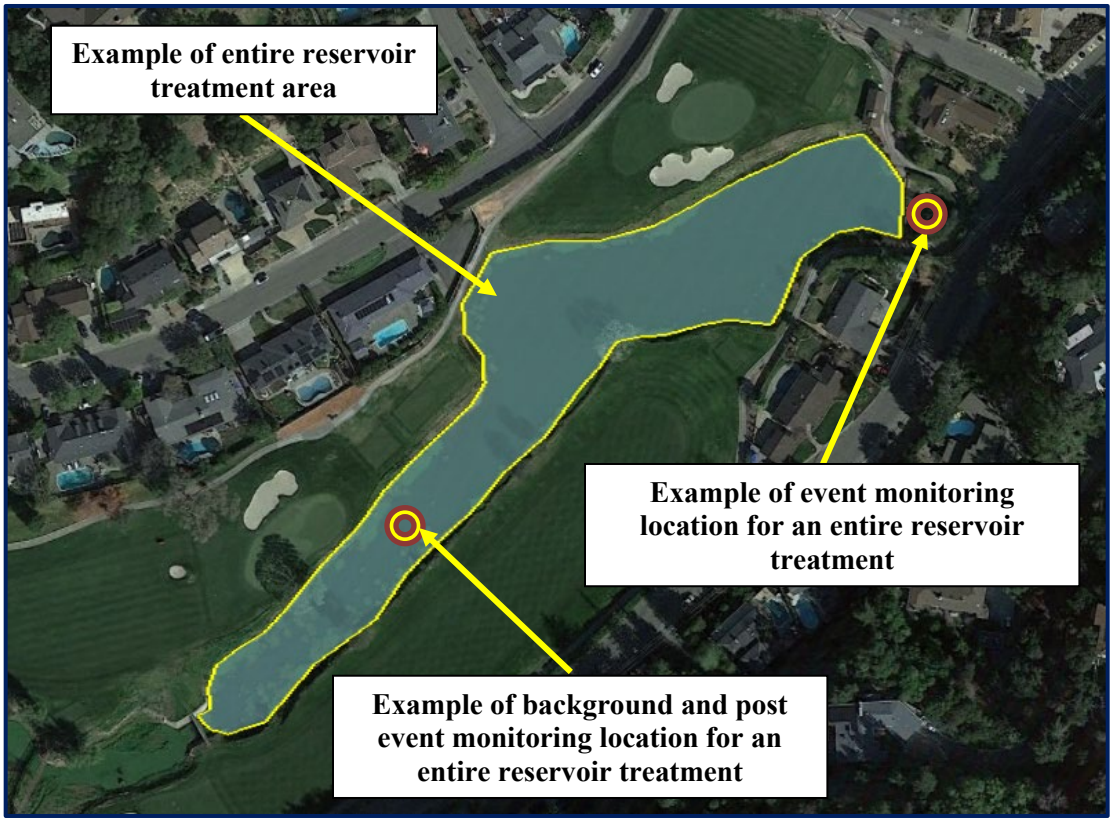

Example of a spot or partial lake treatment area
Example of an event monitoring location for a spot or partial lake treatment
Example of a background and post event monitoring location for a spot or partial lake treatment

Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club - Upper Ferrari Pond, Hidden Hills Pond, and Lincoln Hills Golf Club Ponds



Marin Country Club Golf Course Reservoirs

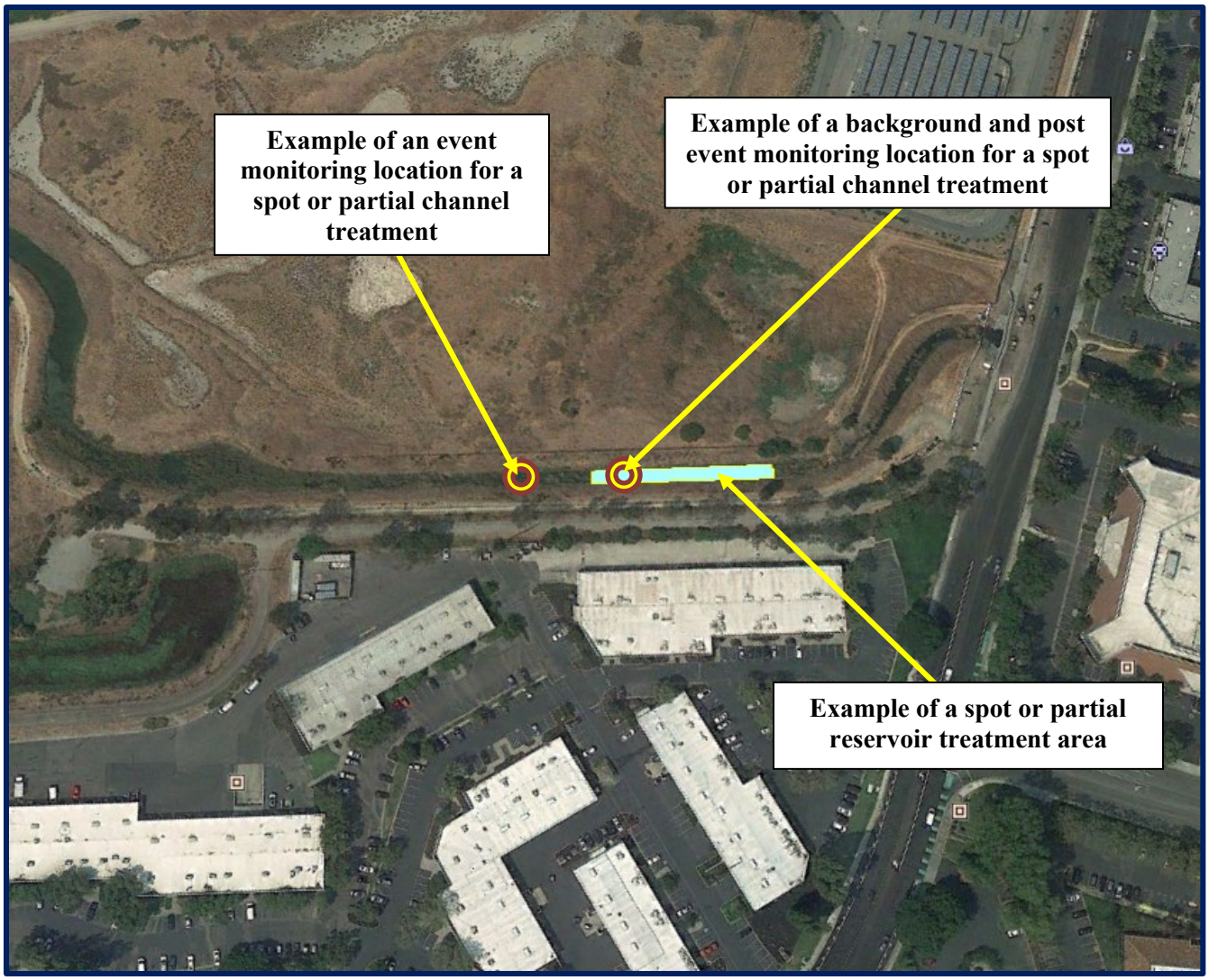
The treatment area in Marin Country Club Golf Course Reservoirs can be an entire reservoir for control of aquatic weeds and algae or the treatment area could be a spot or partial reservoir treatment. The two maps below show examples of an entire reservoir treatment area and a spot or partial reservoir treatment area.




Example of a spot or partial reservoir treatment area
Example of a background and post event monitoring location for a spot or partial reservoir treatment
Example of an event monitoring location for a spot or partial reservoir treatment

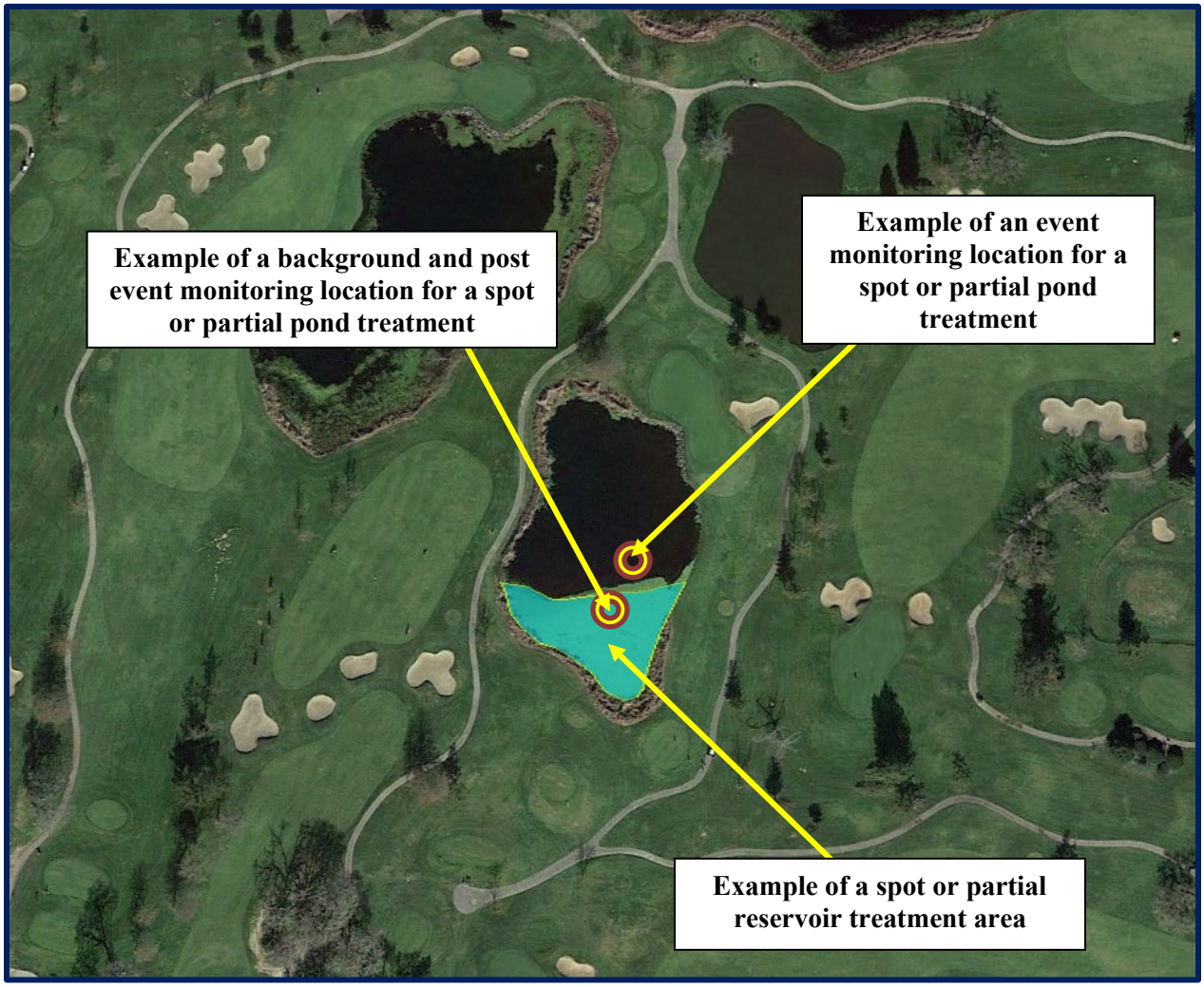
Bayside Technology Park – Engineered Channel

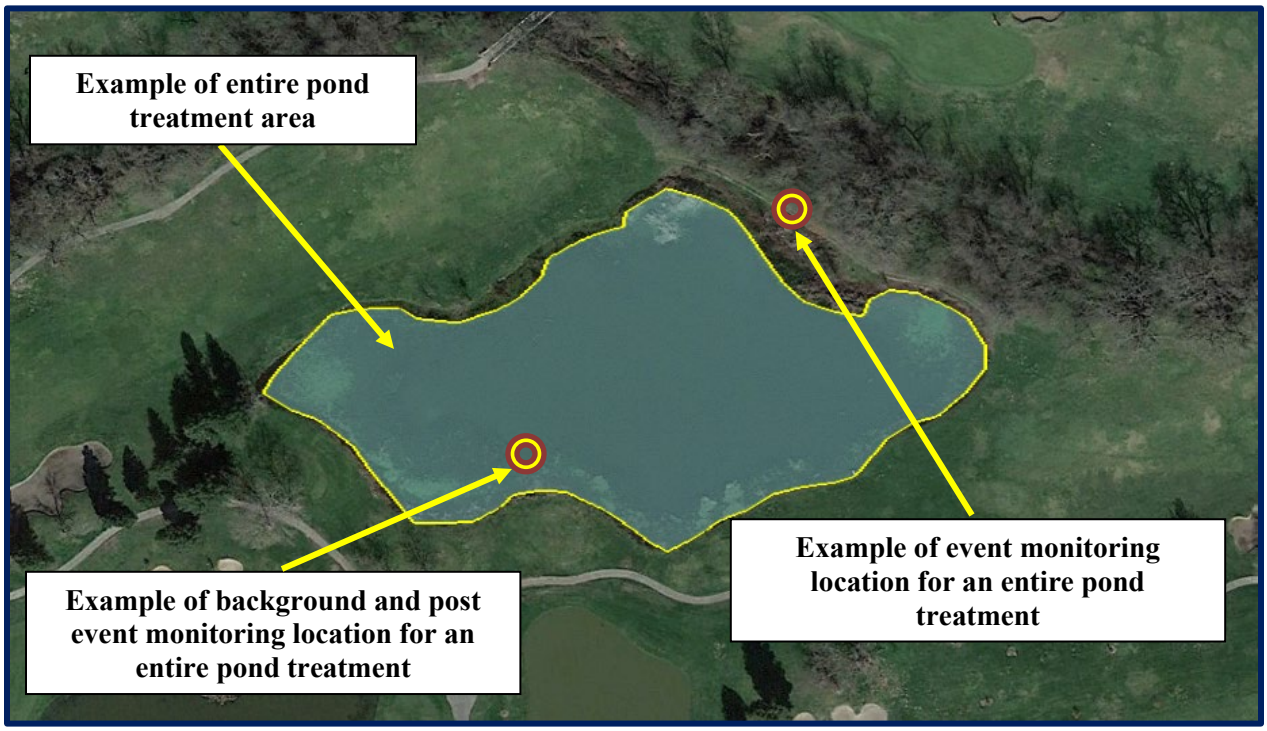
The treatment area in the Bayside Technology Park Engineered Channel would be a spot or partial channel treatment for control of emergent aquatic weeds. The map below shows an example of a spot or partial channel treatment area.



Windsor Golf Club – Ponds

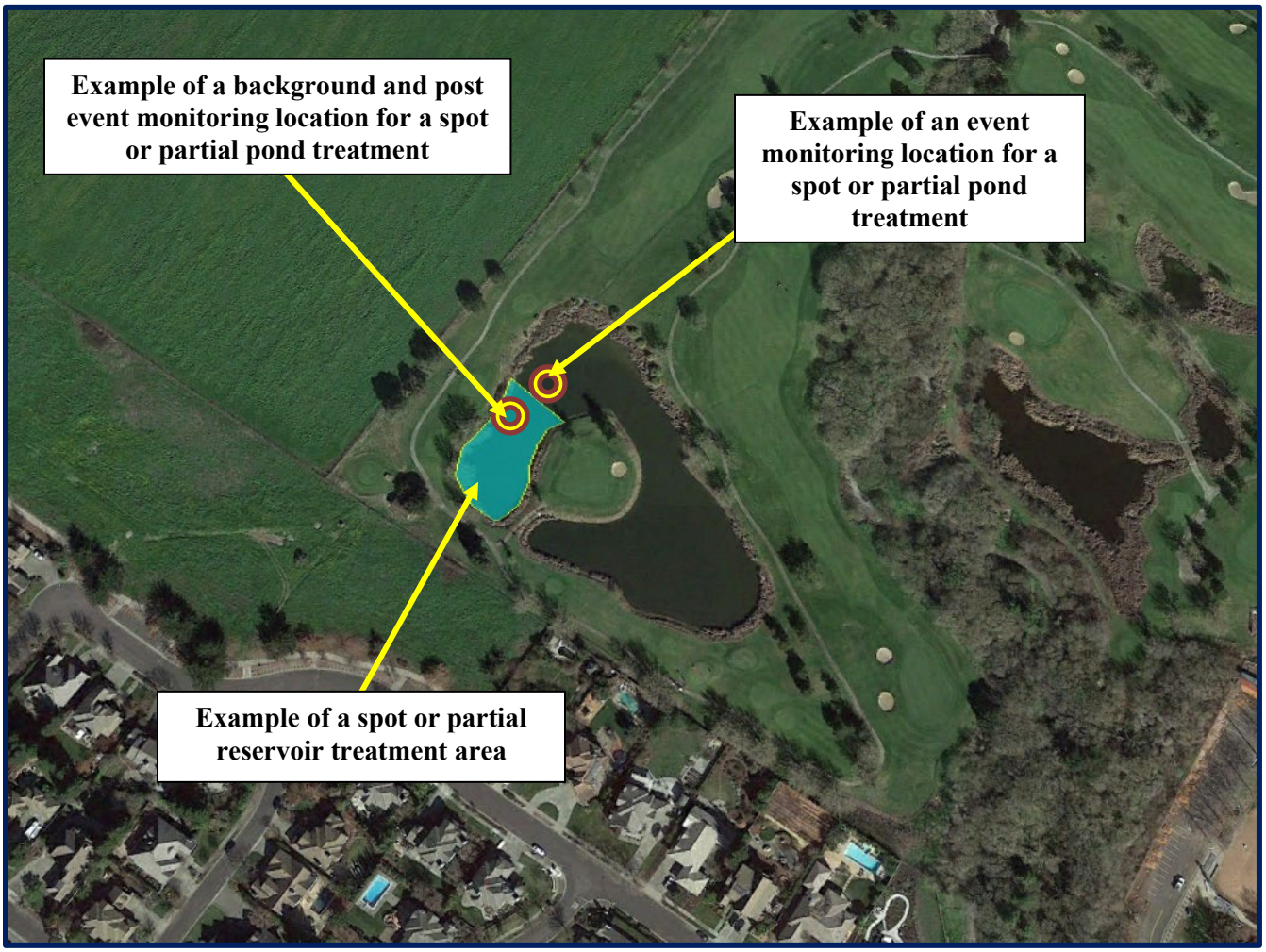
The treatment areas in Windsor Golf Club Ponds can be an entire pond for control of aquatic weeds and algae or the treatment area could be a spot or partial pond treatment. The two maps below show examples of an entire pond treatment area and a spot or partial pond treatment area.

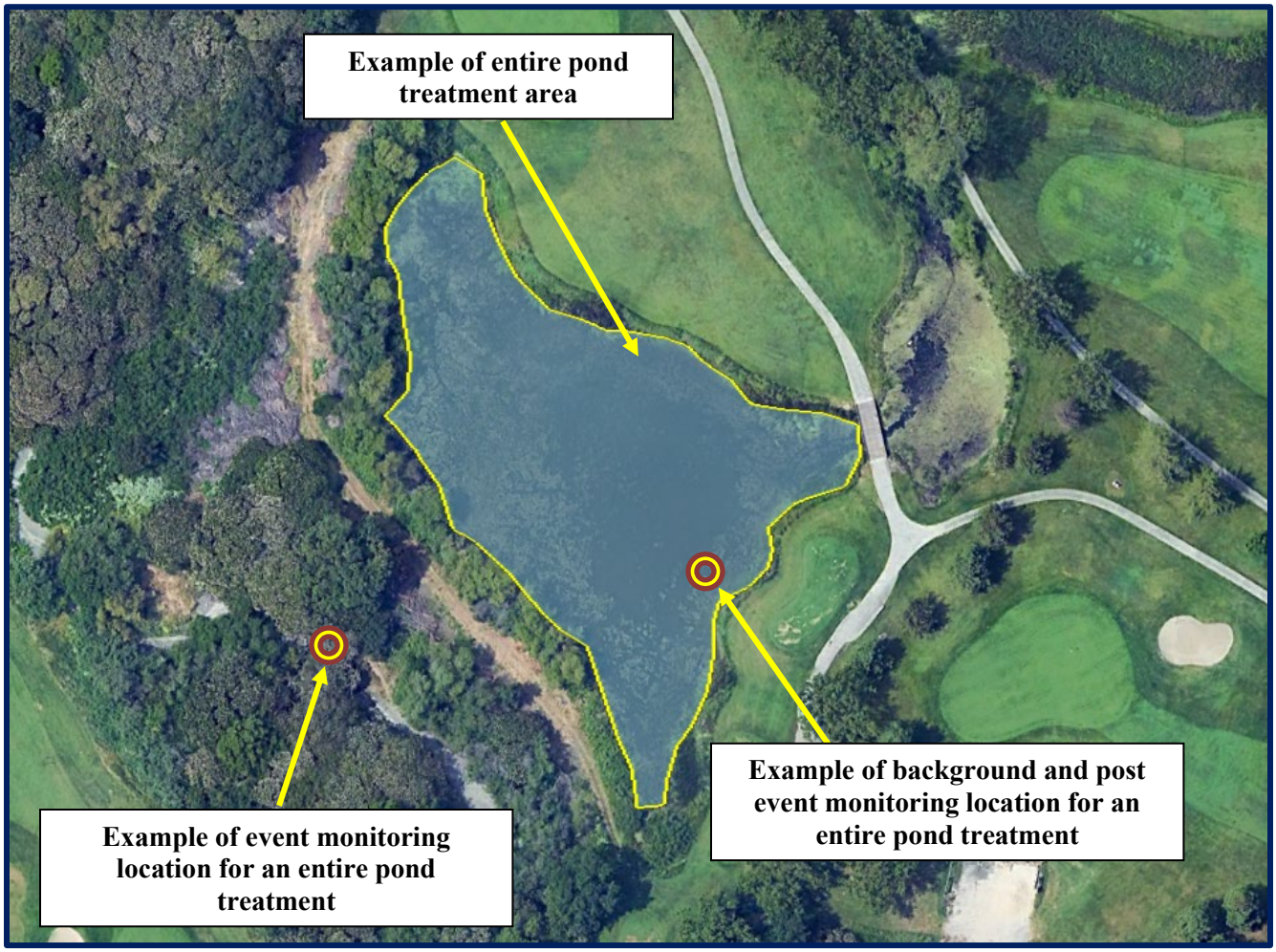



Example of entire pond treatment area
Example of background and post event monitoring location for an entire pond treatment
Example of event monitoring location for an entire pond treatment

Rooster Run Golf Club – Ponds

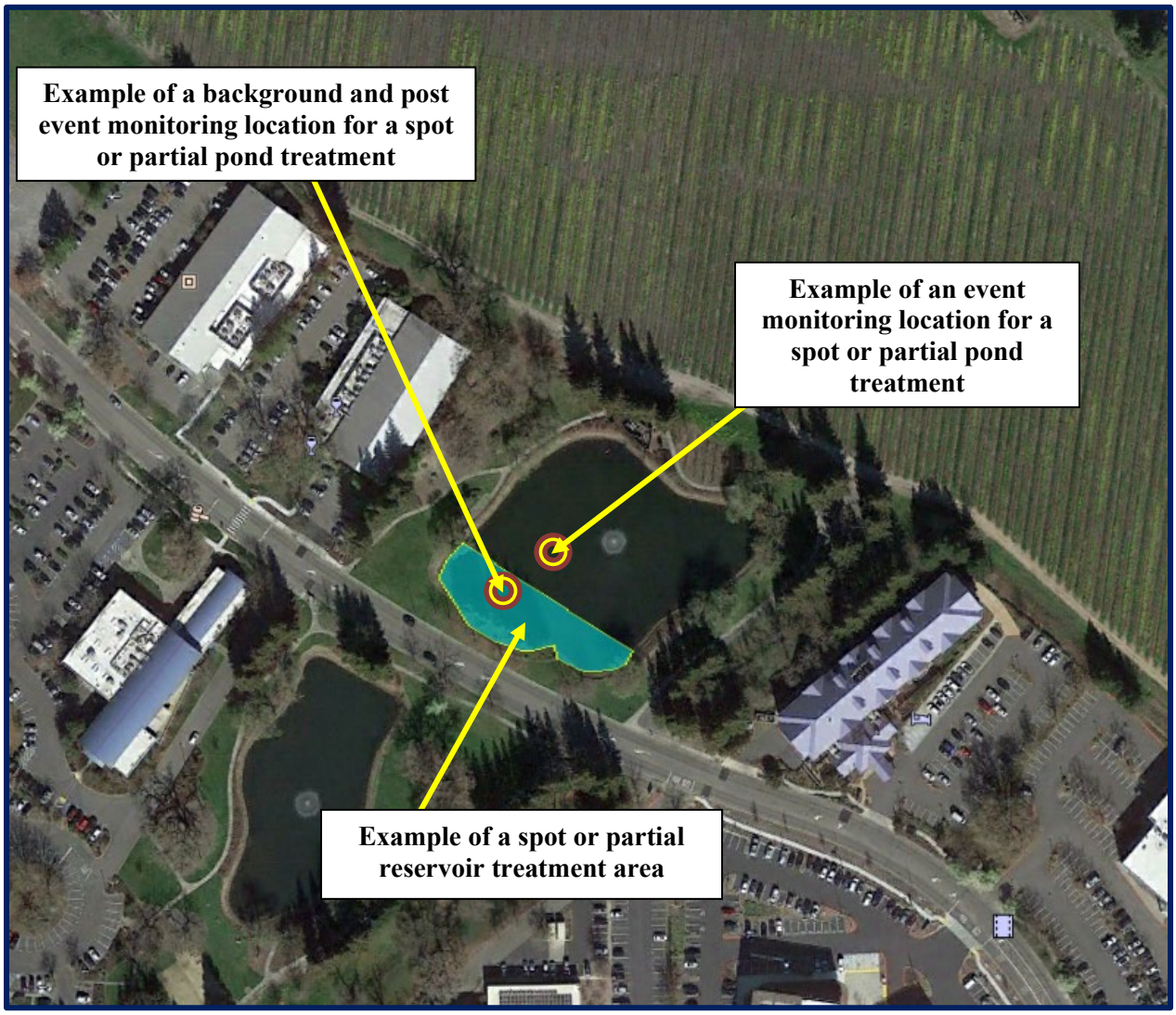
The treatment areas in Rooster Run Golf Club Ponds can be an entire pond for control of aquatic weeds and algae or the treatment area could be a spot or partial pond treatment. The two maps below show examples of an entire pond treatment area and a spot or partial pond treatment area.

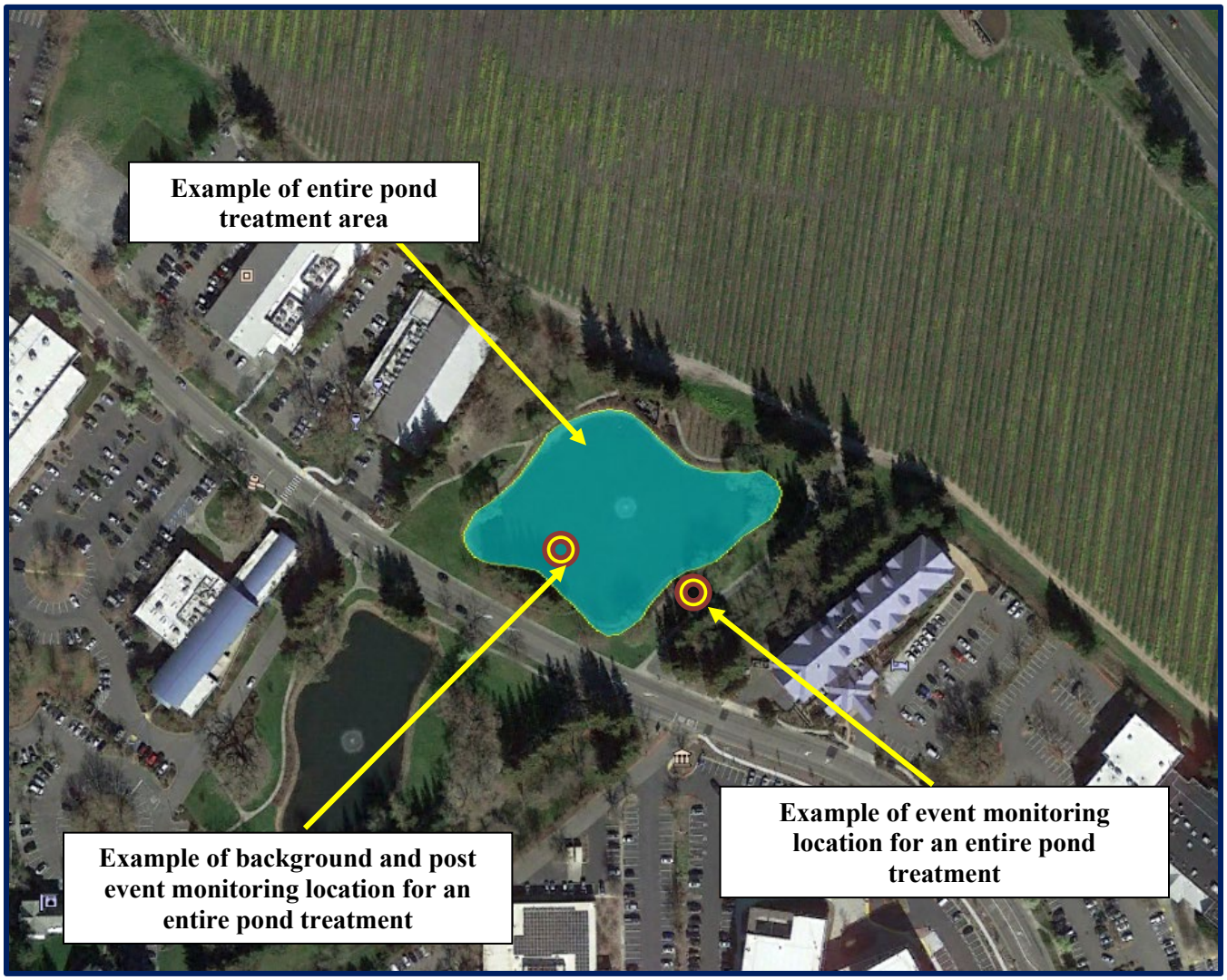



Example of entire pond treatment area
Example of event monitoring location for an entire pond treatment
Example of background and post event monitoring location for an entire pond treatment

Airport Business Center Park – Ponds

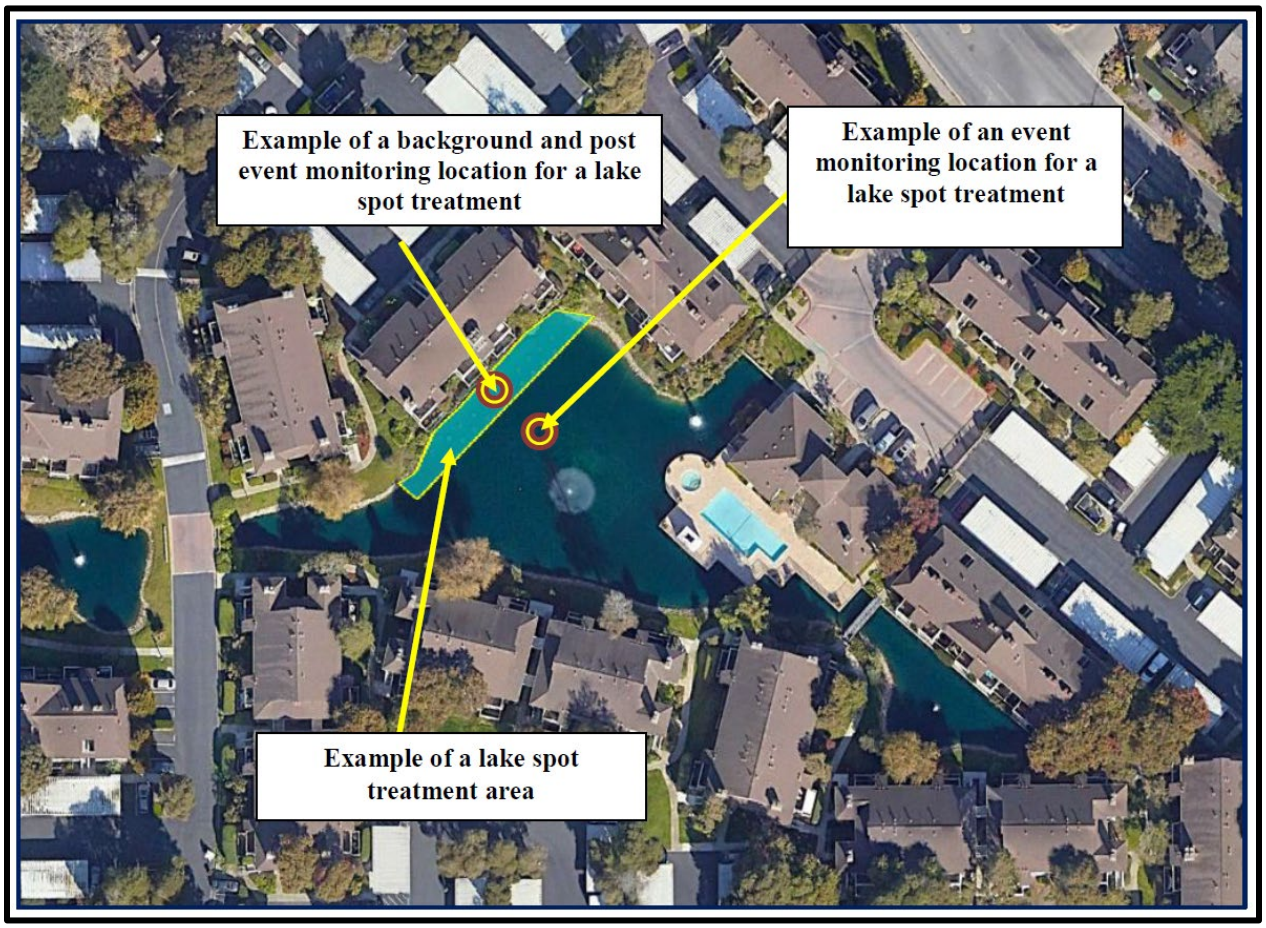
The treatment areas in Airport Business Center can be an entire pond for control of aquatic weeds and algae or the treatment area could be a spot or partial pond treatment. The two maps below show examples of an entire pond treatment area and a spot or partial pond treatment area.

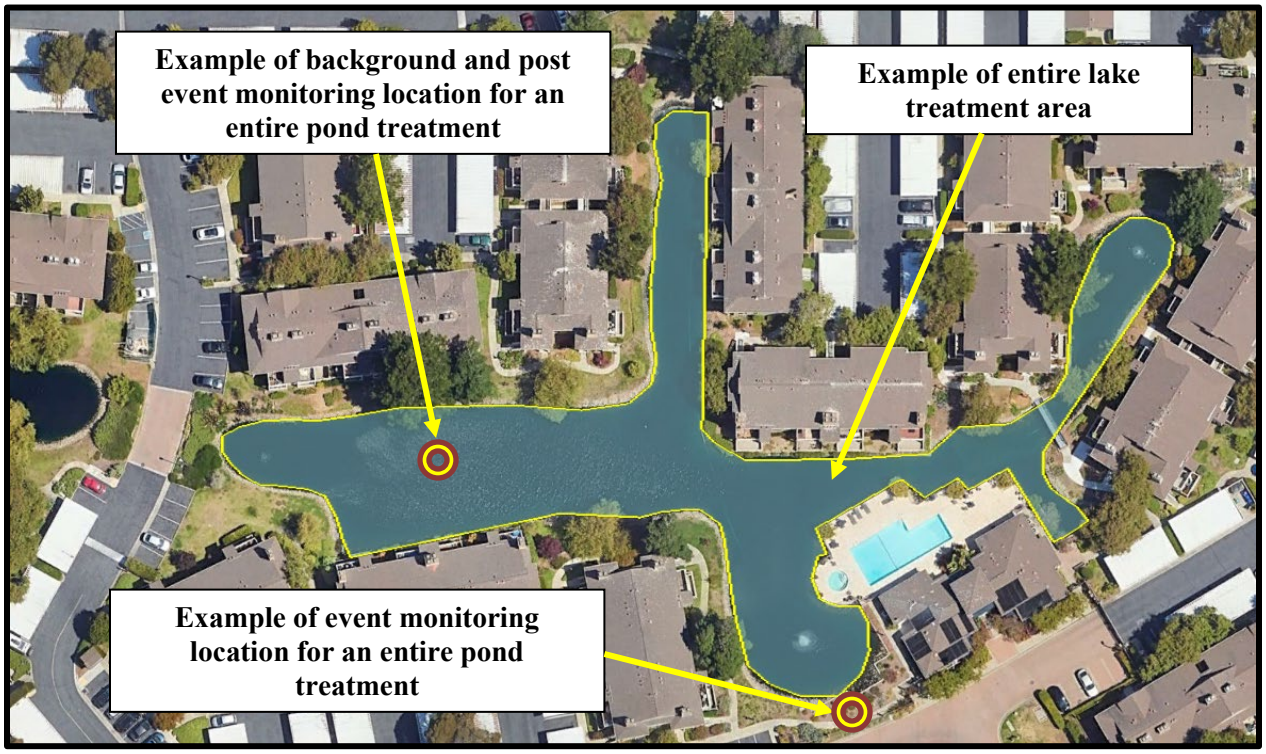



Example of entire pond treatment area
Example of background and post event monitoring location for an entire pond treatment
Example of event monitoring location for an entire pond treatment

The Shores at Marina Bay – Lakes

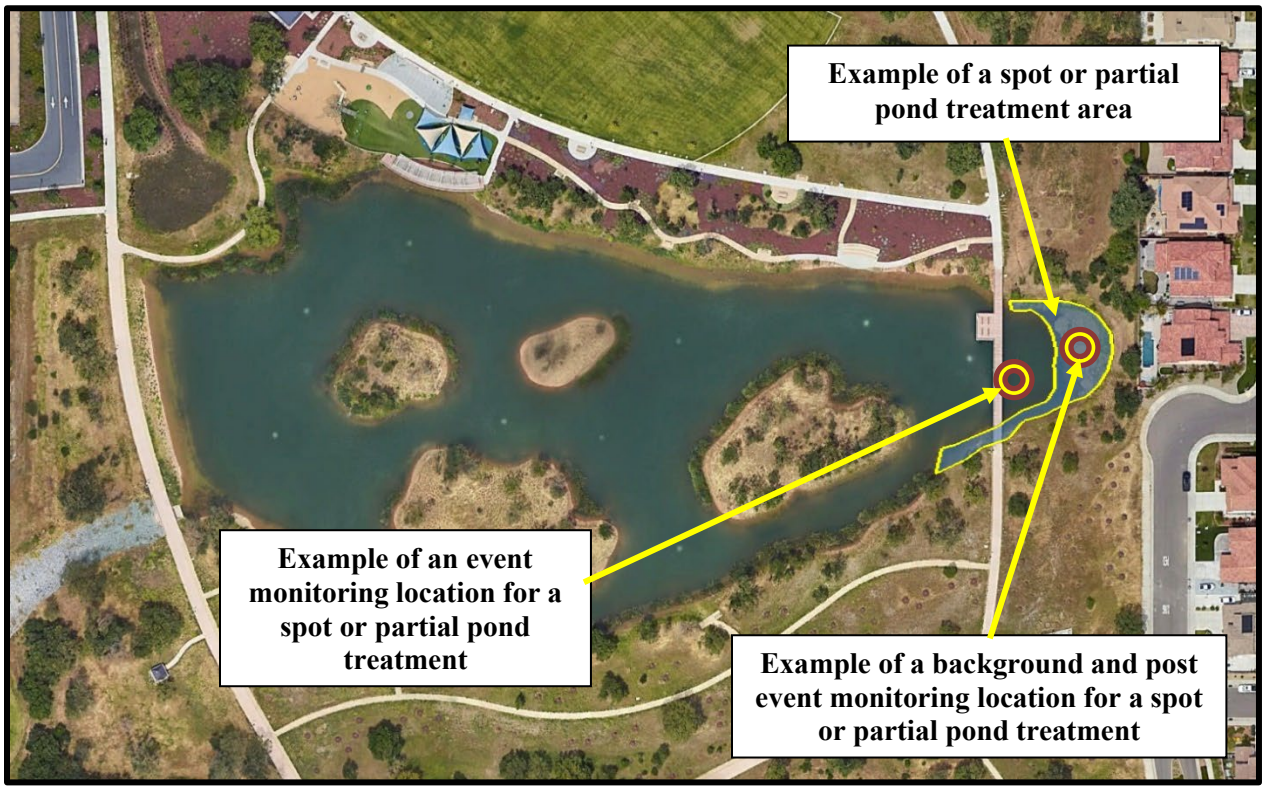
The treatment areas in The Shores at Marina Bay Lakes would either be full lake treatments or spot lake treatments for control of algae or submerged, floating, and emergent aquatic weeds. The maps below show examples of a full lake treatment or spot treatment.

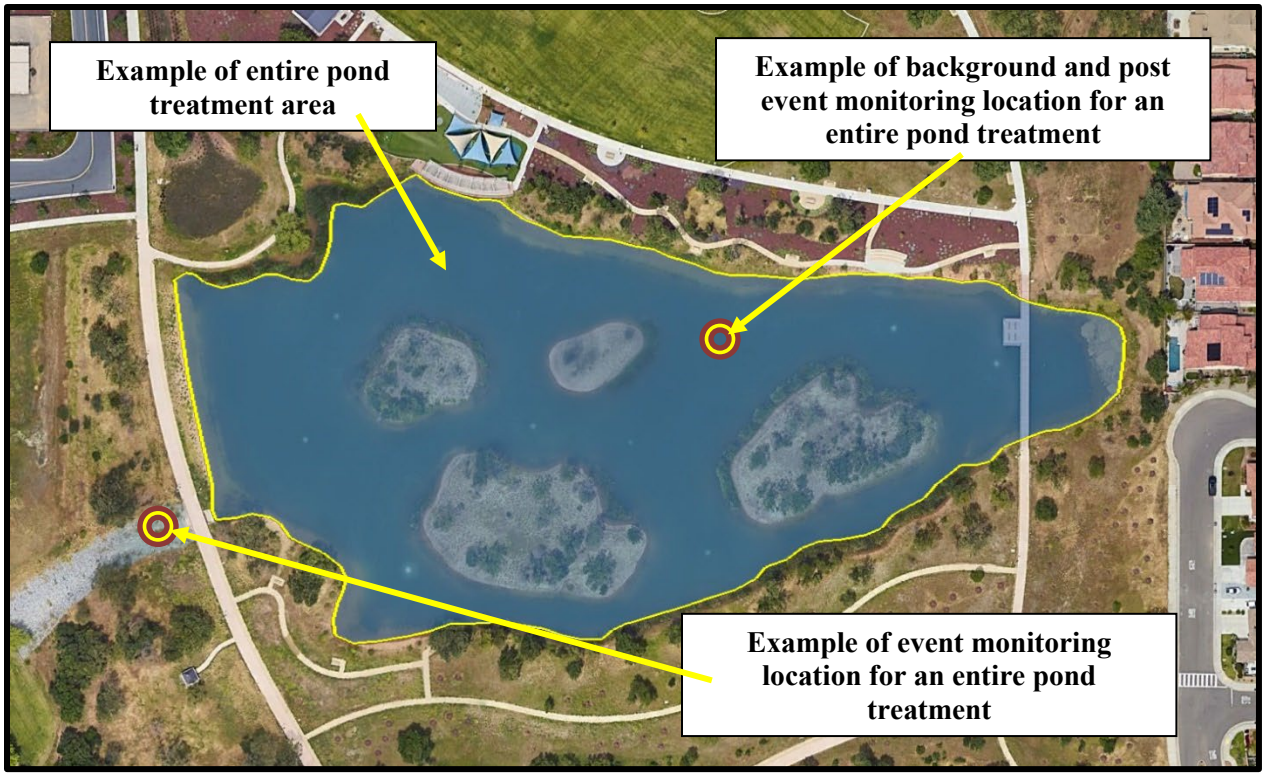



Example of background and post event monitoring location for an entire pond treatment
Example of entire lake treatment area
Example of event monitoring location for an entire pond treatment

City of Elk Grove – Elk Grove Nature Pond

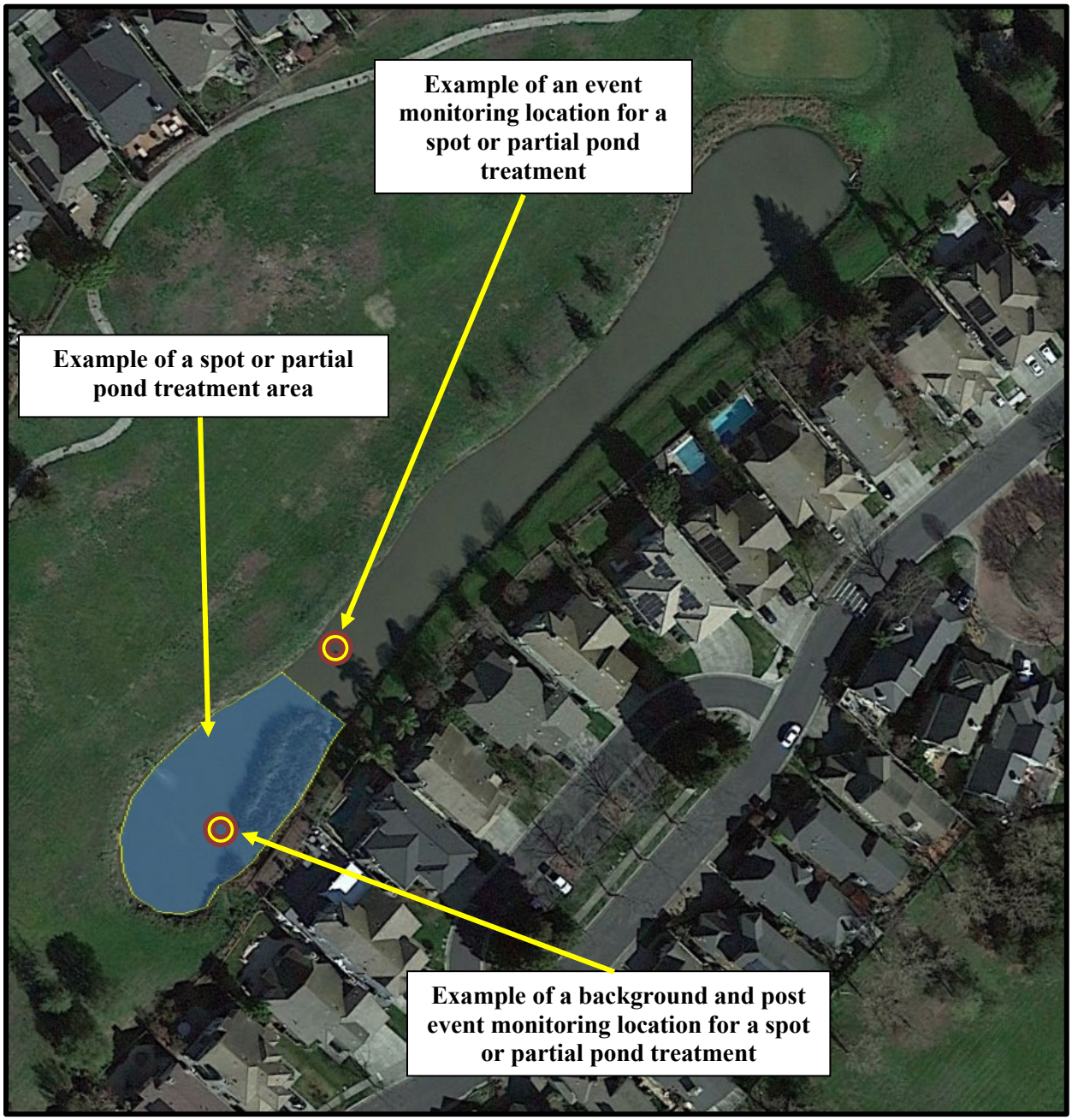
The treatment areas in Elk Grove Nature Pond can be an entire pond for control of aquatic weeds and algae or the treatment area could be a spot or partial pond treatment. The two maps below show examples of an entire pond treatment area and a spot or partial pond treatment area.

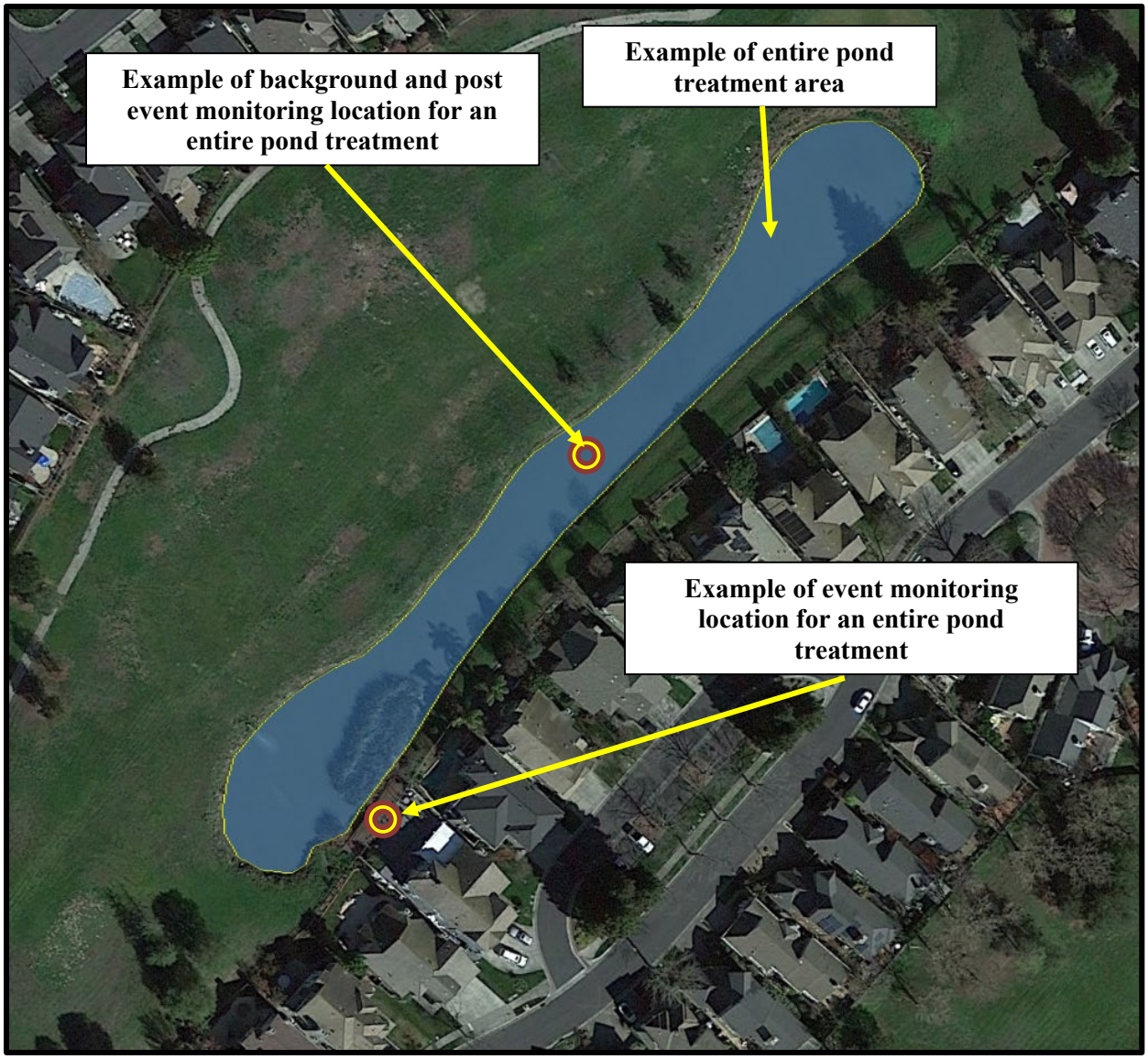



Example of entire pond treatment area
Example of background and post event monitoring location for an entire pond treatment
Example of event monitoring location for an entire pond treatment

Adobe Creek Golf Club - Ponds

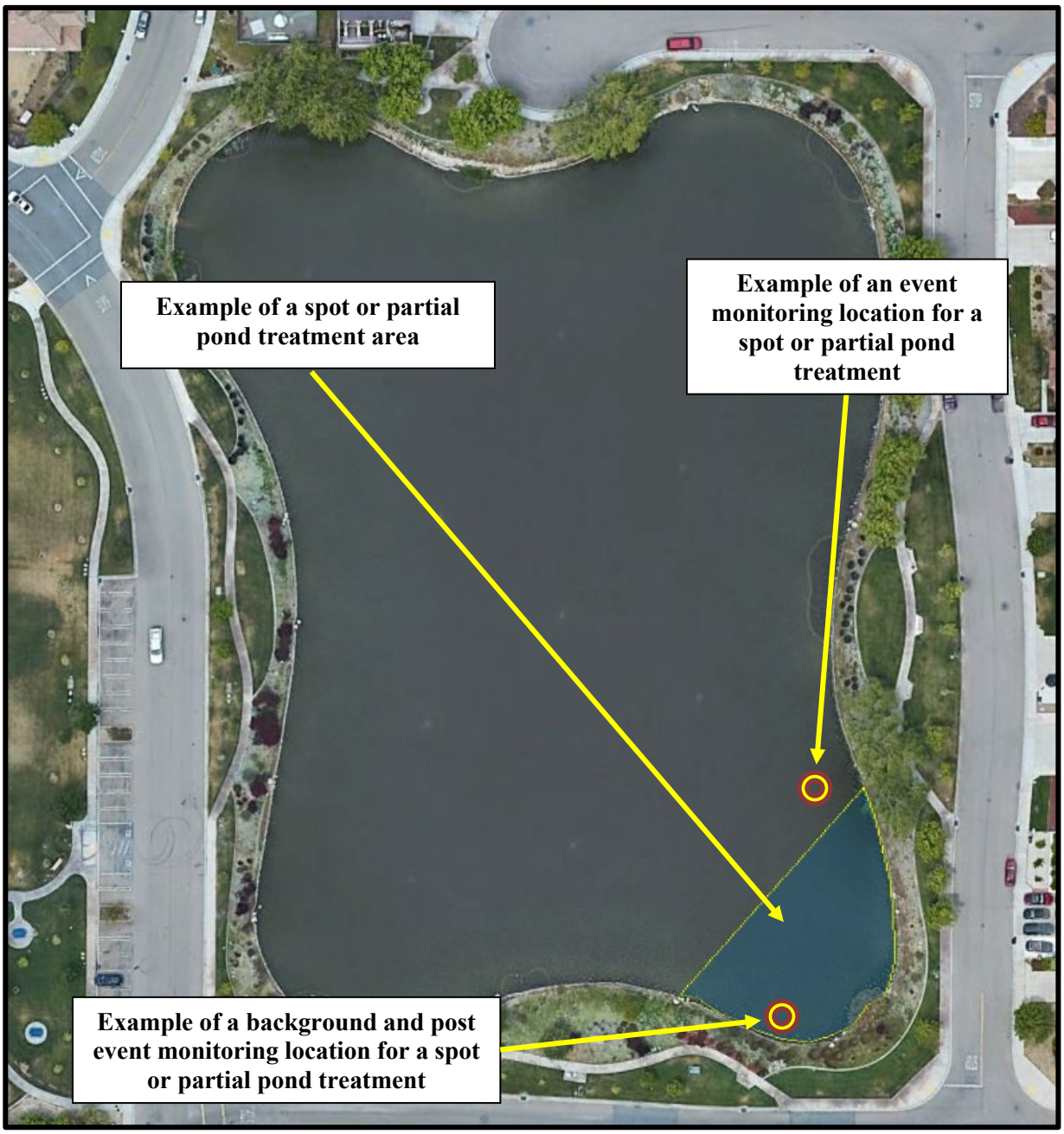
The treatment areas in the Adobe Creek Golf Club ponds can be an entire pond for control of aquatic weeds and algae or the treatment area could be a spot or partial pond treatment. The two maps below show examples of an entire pond treatment area and a spot or partial pond treatment area.




Example of background and post event monitoring location for an entire pond treatment
Example of entire pond treatment area
Example of event monitoring location for an entire pond treatment

City of Oakley – Cypress Pond, Emerson Ranch Pond, Delaney Pond

The treatment areas in the City of Oakley ponds can be an entire pond for control of aquatic weeds and algae or the treatment area could be a spot or partial pond treatment. The two maps below show examples of an entire pond treatment area and a spot or partial pond treatment area.




Example of event monitoring location for an entire pond treatment
Example of background and post event monitoring location for an entire pond treatment
Example of entire pond treatment area

AQUATIC VEGETATION AND ALGAE BEING CONTROLLED

Shiloh Homeowners Association – Shiloh Lake

Shiloh Lake currently and historically has had nuisance growths of Eurasian Water Milfoil (*Myriophyllum spicatum*), Sago Pondweed *(Potamogeton pectinatus L.),* American Pondweed (*Potamogeton nodosus*), Cattails (*Typha spp.)*, Bulrush (*Schoenoplectus californicus)* Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impacts recreational activities such as swimming, non-motorized boating, and fishing. It also has an impact on the aesthetics for the surrounding homes and community. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lake.

Varenna at Fountaingrove – Fountaingrove Lake

Fountaingrove Lake currently and historically has had nuisance growths of Eurasian Water Milfoil (*Myriophyllum spicatum*), Mosquito Fern (*Azolla spp.),* Duckweed (*Lemna minor),* Bladderwort *(Utricularia),* Cattails (*Typha spp.)*, Bulrush (*Schoenoplectus californicus)* Filamentous Algae, and Planktonic Algae. The aquatic weeds and filamentous algae growth primarily impacts recreational activities such as swimming, boating, and fishing. It also has an impact on the aesthetics for the Varenna residents. The planktonic algae can impact aesthetics and has potential (Harmful Blue Green Algae Blooms) health hazards for human and animal contact with the lake.

Point Tiburon Lagoon Owners Association – Point Tiburon Lagoon

Point Tiburon Lagoon currently and historically has had nuisance growths of Widgeon Grass *(Ruppia spp.),* Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impacts maintenance of the lagoon systems as well as aesthetics. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lagoon.

Marin Lagoon Association – Marin Lagoon

Marin Lagoon currently and historically has had nuisance growths of Widgeon Grass *(Ruppia spp.),* Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impacts maintenance of the lagoon system as well as aesthetics. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lagoon.

Sonoma Greens Community Association – Sonoma Greens Lake and Pond

Sonoma Greens Lake and pond currently and historically has had nuisance growths of Sago Pondweed *(Potamogeton pectinatus L.),* Curly-leaf pondweed *(Potamogeton crispus)*, Coontail (*Ceratophyllum demersum*) Cattails (*Typha spp.)*, Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impacts fishing, aesthetics for the

surrounding homes and community, and maintenance of the irrigation system for the common property. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lake.

The Vineyard Club Inc. – Vineyard Club Lake

The Vineyard Club Lake currently and historically has had nuisance growths of Eurasian Water Milfoil (*Myriophyllum spicatum*), Coontail (*Ceratophyllum demersum*) American Pondweed (*Potamogeton nodosus*), Creeping Water Primrose *(Ludwigia peploides),* Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impact fishing, boating, swimming, and aesthetics for the members. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lake.

Lake Alhambra Homeowners Association – Lake Alhambra

Lake Alhambra currently and historically has had nuisance growths of Duckweed (*Lemna minor),* Curly-leaf pondweed *(Potamogeton crispus)*, Eurasian Water Milfoil (*Myriophyllum spicatum*), Sago Pondweed *(Potamogeton pectinatus L.),* Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impact fishing, boating, swimming, and aesthetics for the association. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lake.

Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club – Upper Ferrari Pond, Hidden Hills Pond, Lincoln Hills Golf Club Ponds

The lakes and ponds throughout the system currently and historically have had nuisance growths of Mosquito Fern (*Azolla spp.),* Duckweed (*Lemna minor),* Curly-leaf pondweed *(Potamogeton crispus)*, Eurasian Water Milfoil (*Myriophyllum spicatum*), Sago Pondweed *(Potamogeton pectinatus L.),* Cattails (*Typha spp.)*, Bulrush (*Schoenoplectus californicus)*, Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impact fishing, irrigation, organic sediment buildup and aesthetics for the association. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lakes and ponds. And the emergent vegetation is causing issues with storm water capacity for flood control.

Marin Country Club Golf Course – Reservoirs

The reservoirs throughout the system currently and historically have had nuisance growths of Parrot Feather (*Myriophyllum aquaticum*), Eurasian Water Milfoil (*Myriophyllum spicatum*), Sago Pondweed *(Potamogeton pectinatus L.),* Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impact irrigation, organic sediment buildup and aesthetics for the country club. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the reservoirs. And the emergent vegetation is causing issues with storm water capacity for flood control.

Bayside Technology Park – Engineered Channel

The channel currently and historically has had nuisance growths of Cattails (*Typha spp.)*, and Bulrush (*Schoenoplectus californicus).* The emergent aquatic weed growth primarily impacts issues with storm water capacity and drainage for Bayside Tech Park as well as buildup of organic sediment in the channel.

Windsor Golf Club – Ponds

The ponds at Windsor Golf Club currently and historically has had nuisance growths of Eurasian Water Milfoil (*Myriophyllum spicatum*), Sago Pondweed *(Potamogeton pectinatus L.),* Creeping Water Primrose (*Ludwigia*), Mosquito Fern (*Azolla spp.),* Duckweed (*Lemna minor),* Cattails (*Typha spp.)*, Bulrush (*Schoenoplectus californicus)* Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impact irrigation, organic sediment buildup and aesthetics for the golf club. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the ponds. And the emergent vegetation is causing issues with storm water capacity for flood control.

Rooster Run Golf Club – Ponds

The ponds at Rooster Run Golf Club currently and historically have had nuisance growths of Eurasian Water Milfoil (*Myriophyllum spicatum*), Coontail (*Ceratophyllum demersum*), Mosquito Fern (*Azolla spp.),* Duckweed (*Lemna minor), Creeping* Water Primrose (*Ludwigia*), Cattails (*Typha spp.)*, Bulrush (*Schoenoplectus californicus)* Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impact irrigation, organic sediment buildup and aesthetics for the golf club. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the ponds. And the emergent vegetation is causing issues with storm water capacity for flood control.

Airport Business Center – Ponds

The Airport Business Center ponds currently and historically has had nuisance growths of Eurasian Water Milfoil (*Myriophyllum spicatum*), Sago Pondweed *(Potamogeton pectinatus L.)*, American Pondweed (*Potamogeton nodosus*), Coontail (*Ceratophyllum demersum*), Curly-leaf pondweed *(Potamogeton crispus),* Mosquito Fern (*Azolla spp.),* Duckweed (*Lemna minor),* Cattails (*Typha spp.)*, Bulrush (*Schoenoplectus californicus)*, Filamentous Algae, and Planktonic Algae. The aquatic weed and filamentous algae growth primarily impact irrigation, organic sediment buildup and aesthetics for the business center. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the ponds. And the emergent vegetation is causing issues with storm water capacity and overgrowth.

The Shores at Marina Bay – Lakes

The Shores at Marina Bay lakes currently and historically have had nuisance growths of Eurasian Water Milfoil (*Myriophyllum spicatum*), Sago Pondweed (*Potamogeton pectinatus L.*), and Filamentous Algae and Planktonic Algae. The Aquatic weed and filamentous algae growth

primarily impacts the aesthetics of the surrounding community. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lake.

City of Elk Grove – Elk Grove Nature Pond

The Elk Grove Nature Pond currently and historically have had nuisance growths of Sago Pondweed (*Stuckenia pectinata*), Leafy Pondweed (*Potamogeton foliosus*), Horned Pondweed (*Zannichellia palustris*), Cattails (*Typha spp.*), and Filamentous Algae and Planktonic Algae. The Aquatic weed and filamentous algae growth primarily impacts the aesthetics of the surrounding community. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lake.

Adobe Creek Golf Club – Ponds

The Adobe Creek Golf Club ponds currently and historically have had nuisance growths of Duckweed (*Lemna minor*), Cattails (*Typha spp.*), Yellow Nutsedge (*Cyperus esculentus*), Italian Thistle (*Carduus pycnocephalus*), and Filamentous Algae and Planktonic Algae. The Aquatic weed and filamentous algae growth primarily impacts the aesthetics of the surrounding community. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lake. And the emergent vegetation is causing issues with storm water capacity for flood control.

City of Oakley – Cypress Pond, Emerson Ranch Pond, Delaney Park Pond

The City of Oakley's ponds currently and historically have had nuisance growths of Eurasian watermilfoil (*Myriophyllum spicatum*), Sago Pondweed (*Potamogeton pectinatus*), Cattails (*Typha spp.*), Smartweed (*Polyganum spp.*), Duckweed (*Lemna spp.*), Mosquitofern (*Azolla spp.*), and Filamentous Algae and Planktonic Algae. The Aquatic weed and filamentous algae growth primarily impacts the aesthetics of the surrounding community. The planktonic algae can impact aesthetics and has potential health hazards for human and animal contact with the lakes.

AQUATIC HERBICIDES AND ALGAECIDES TO BE USED, THEIR DEGRADATION BYPRODUCTS, METHODS OF APPLICATION. AND ADJUVANTS AND SURFACTANTS TO BE USED

Below and on the following page (page 107) is a table of the herbicides and algaecides that would be utilized for control of the plant and algal species listed in the paragraphs above. Various adjuvants and surfactants labeled for aquatic use may be used in combination with these herbicides and algaecides. Adjuvants containing ingredients represented by the surrogate nonylphenol will not be used in the lakes, ponds, and lagoons.

Active Ingredient	Shiloh Lake HOA	Fountaingrove Lake	Green Valley Lake HOA	Point Tiburon Lagoon	Marin Lagoon	Sonoma Greens	Vineyard Club Lake	Lake Alhambra	Sun City Hills Community Association in Lincoln arrangement with Lincoln Hills Golf Club	Marin CC Reservoirs	Bayside Technology Park	Windsor Golf Club Ponds	Rooster Run Golf Club Ponds	Airport Business Center Ponds	The Shores at Marina Bay HOA	Elk Grove Nature Pond	Adobe Creek Golf Club Ponds	City of Oakley Ponds
Fluridone	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√
Endothall	√	√	√			√	√	√	√	√		√	√	√	√	√	√	√
Diquat Dibromide	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√
Glyphosate	√	√	√			√	√	√	√	√		√	√	√	√	√	√	√
Triclopyr	√	√	√			√	√	√	√	√		√	√	√	√	√	√	√
Imazapyr	√	√	√			√	√	√	√	√	√	√	√	√	√	√	√	√
Imazamox	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Penoxsulam	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√
Flumioxazin	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√
Sodium Carbonate Peroxyhydrate	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√
Hydrogen Dioxide	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√
Peroxyacetic Acid	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√
Copper Formulations	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√	√

Note: Adjuvants and surfactants could be used based on recommendations and the label. Adjuvants and surfactants containing nonylphenol will not be used.

Active Ingredient	Degradation Byproducts	Application Technique
Aquatic Herbicides		
Fluridone	n-methyl formamide (NMF) 3-trifluoromethyl benzoic acid	Boom, spreader
Endothall	Glutamic acid	Boom, handgun
Diquat Dibromide	Diquat binds with organic matter in the sediment indefinitely. It does not degrade and will accumulate in sediments.	Boom, handgun
Glyphosate	Aminomethyl phosphonic acid, carbon dioxide	Handgun, backpack sprayer
Triclopyr	TCP (3,5,6-trichloro-2-pyridinol) and TMP (3,5,6-trichloro-2-methoxypridine)	Boom, handgun
Imazapyr	Pyridine hydroxyl-dicarboxylic acid and nicotinic acid	Handgun, backpack sprayer
Imazamox	Nicotinic acid and di- and tricarboxylic acids	Boom, handgun, backpack sprayer
Penoxsulam	BSTCA (half-life 67-770 days), 2-amino-TCA, 5-OH-penoxsulam, SFA, sulfonamide, and 5,8-di-OH	Boom, handgun
Flumioxazin	APF (6-amino-7-fluoro-4-(2-propynyl)-1,4-benzoxazin-3(2H)-one) and THPA (3,4,5,6-tetrahydrophthalic acid)	Boom, handgun, backpack sprayer
Aquatic Algaecides		
Sodium Carbonate Peroxyhydrate	Breaks down to sodium carbonate and hydrogen peroxide in water - hydrogen peroxide breaks down into water and oxygen	Spreader
Hydrogen Dioxide	Water and oxygen	Boom, handgun
Peroxyacetic Acid	Water, oxygen, and carbon dioxide	Boom, handgun
Copper Formulations	Copper is an element and is not broken down like other herbicides into byproducts	Boom, handgun, spreader

FACTORS INFLUENCING THE DECISION TO USE HERBICIDES AND ALGAECIDES

The factors influencing the use of herbicides and algaecides are based on the nuisance threshold of the aquatic weed infestations or algae blooms. Shiloh Lake, Fountaingrove Lake, Point Tiburon Lagoon, Marin Lagoon, Sonoma Greens Lake and Pond, Vineyard Club Lake, Lake Alhambra, Upper Ferrari Pond, Hidden Hills Pond, Lincoln Hills Golf Club Ponds, Marin Country Club Golf Course Reservoirs, Bayside Technology Park Engineered Channel, Windsor Golf Club Ponds, Rooster Run Golf Club Ponds, Airport Business Center Park Ponds, The Shores at Marina Bay Lakes, Elk Grove Nature Pond, Adobe Creek Golf Club Ponds, Cypress Pond, Emerson Ranch Pond, and Delaney Park Pond are all managed with an Integrated Pest Management (IPM) approach that includes a variety of alternative strategies. When these alternative measures are not taking care of the nuisance growth of aquatic weeds or algae, aquatic herbicides and algaecides would be used to achieve the desired control before the growth has a chance to impact the beneficial uses of the system.

Marin Country Club and the Marin Country Club Reservoirs are following an eradication plan, therefore as soon as invasive non-native plants are identified plans are immediately put into place to treat the infestation. Mechanical removal of Parrot Feather and milfoil would only occur to remove dead and decomposing vegetation as mechanically removing live plants can result in spreading the infestation.

GATES AND CONTROL STRUCTURES

Shiloh Homeowners Association – Shiloh Lake

Shiloh Lake has a dam with an overflow with no gate or control structures. The only manner water exits the lake is if it fills to a level where it reaches the overflow. From there it drains to a large marsh area. Due to the fact that there is not a very large watershed feeding the lake, only once in the last ten years did the lake reach capacity and release water down the overflow.

Shiloh Lake Overflow Structure Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For algaecide or herbicide treatment check for any leaks or damage	X			
Remove any obstructions and trash	X			
Check Structure for Damage				X
Check Concrete for Deterioration				X

Varenna at Fountaingrove – Fountaingrove Lake

Two dams at Fountaingrove Lake impound water of sufficient volume to be regulated by the California Division of Safety of Dams. The City of Santa Rosa has both dams inspected annually by the state at which time the valves are exercised. These valves are exercised quarterly. Additionally, Fountaingrove Lake has an overflow spillway. The spillway is inspected prior to the onset of winter rains (prior to the spillways or pipe running) and after flow has ceased, generally in late spring. The table below identifies the structures, their location and inspection frequency at each site

Fountaingrove Lake Inspection Schedule	Quarterly	Bi-Annually
Spillway (West end of dam #1)		X
Drain Valve #1 (Lake)	X	
Drain Valve #2 (Base of Dam)	X	
Drain Valve #3 (15 feet west of #2)	X	

Point Tiburon Lagoon Owners Association – Point Tiburon Lagoon

Point Tiburon Lagoon has an overflow weir structure in place. The overflow weir structure is inspected and maintained following the inspection schedule below. This is to ensure that it is functioning correctly, structurally sound, and not leaking. In addition to the weekly inspections the weir will be inspected prior to any herbicide or algaecide applications.

Point Tiburon Lagoon is not tidally influenced and does not have a flow in which residual (treated water) would move. The Lagoon is maintained as a static system not a flow through or flowing system. The only way water leaves the system is during an overflow event such as a large winter storm.

Point Tiburon Lagoon Weir Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For algaecide or herbicide treatment	X			
Remove any obstructions and trash	X	X		
Check Weir for Damage			X	
Check Concrete for Deterioration				X
Remove Sediment and debris				X

Marin Lagoon Association – Marin Lagoon

Marin Lagoon has an inflow control structure, a junction structure, and two outlet structures. All gate structures are inspected and maintained following the inspection schedule on the following page (page 113) to ensure they are functioning correctly, structurally sound, and not leaking. In addition to the inspection schedule the gate structures will be inspected prior to any herbicide or algaecide applications.

Marin Lagoon is a (controlled) tidally influenced system. The lagoon is managed with an electronic gate system that allows tidal influence when in automatic mode. Automatic mode allows for the water levels in the lagoon to fluctuate with high and low tide. The automated system will allow the water at high tide to reach a maximum of three foot (3') above the mean surface elevation and at low tide allows the water level to settle out at zero point five feet (0.5'). The outflow gate system also has a backup air bladder system in place just in case of a gate failure. Regarding performing herbicide or algaecide treatments, Waterworks Industries Inc. would modify the electronic inflow and outflow system to completely shut down the system prior to any treatment. This would lock the existing water in the system for the duration of the treatment and for as long after until post treatment samples show residue levels below the threshold. Therefore, during treatments there is no flow in which residual (treated water) would move. The Lagoon would be treated as a static system not a flow through or flowing system.

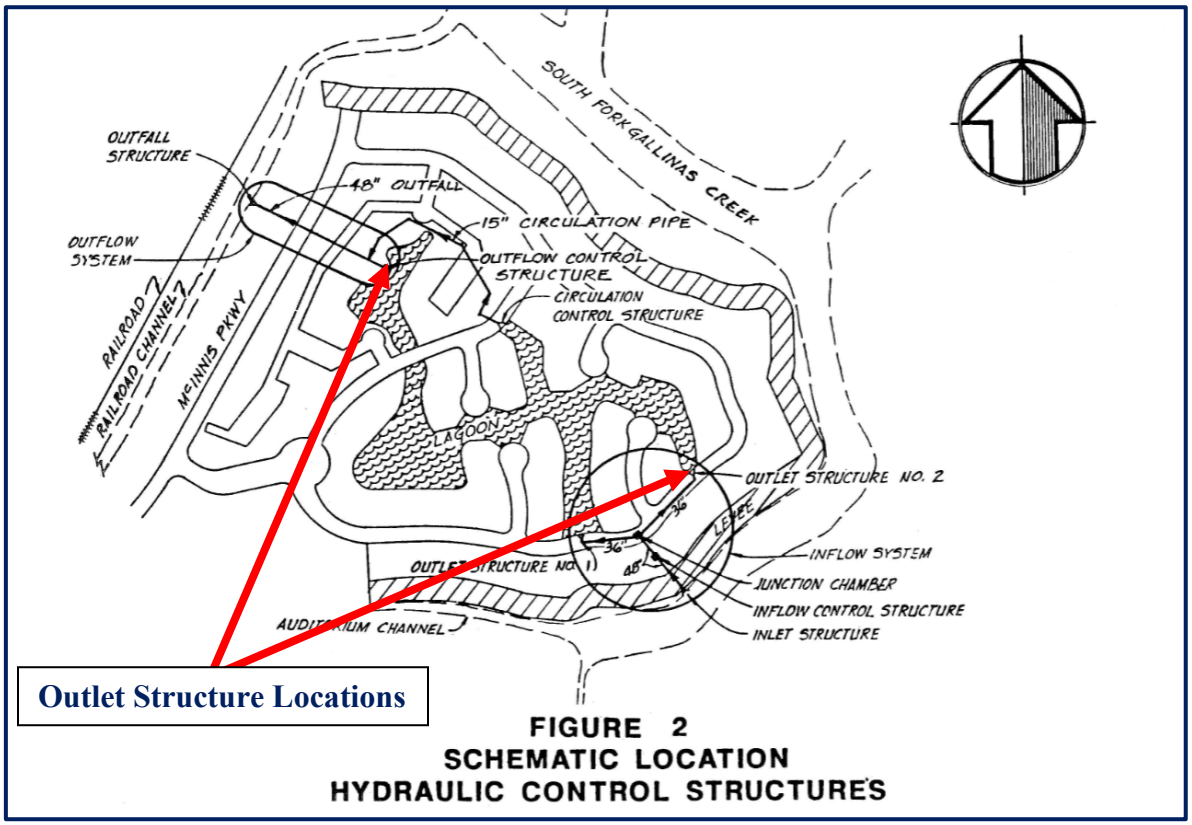


FIGURE 2
SCHEMATIC LOCATION
HYDRAULIC CONTROL STRUCTURES

INSPECTION SCHEDULE

	Weekly	Monthly	Annually
Inflow Control System			
Inflow Control Structure			
Bubbler Operating	X		
Simulate Lagoon Levels		X(1)	
Drain Air Filter Regulator		X(1)	
Check Grating	X		
Grease Sluice Gate Operator		X(1)	
Check Air Compressor and Controls	X		
Remove Sediment and Debris			X(1)
Check Sluice Gate Opening			X(1)
Check Concrete for Deterioration			X
Check Inlet Structure for Erosion			X
Junction Structure			
Inspect Interior for Blockages or Debris		X	
Outlet Structures			
Check Flap Gate for Leakage			X(1)
Check Flap Gate for Obstruction			X(1)
Clean Flap Gate Seat for Barnacles			X(1)
Remove Sediment and Debris			X
Outflow Control System			
Outflow Control Structure			
Check Weir Elevation and Alignment	X		
Clean Weir	X		
Exercise Slide Gate			X
Check Slide Gate for Leakage			X
Check Slide Gate for Corrosion			X
Remove Sediment and Debris			X(1)
Check Concrete for Deterioration		X	
Outfall Structure			
Check Flap Gate for Leakage			X(1)
Check Flap Gate for Obstruction			X(1)
Clean Flap Gate Seat			X(1)
Check Outfall Structure for Erosion			X
Circulation Control Structure			
Check Weir Elevation		X	
Clean Weir		X	

Sonoma Greens Community Association – Sonoma Greens Lake and Pond

Sonoma Greens Lake water exits into a small manmade stream that flows in Sonoma Greens Pond. Sonoma Greens Pond has a pumping system that recirculates the water from the lower pond back up into the upper lake. As both water bodies are connected, they share a spillway that is on the lower pond. The only manner water leaves the pond is if it fills to a level above the spillway.

Sonoma Greens Spillway Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For algaecide or herbicide treatment check for any leaks or damage	X			
Remove any obstructions and trash	X			
Check Structure for Damage			X	
Check Concrete for Deterioration				X

The Vineyard Club Inc. – Vineyard Club Lake

The Vineyard Club Lake has a small dam with a spillway that has no gate or control structures. The only manner water exits the lake is if during storm events it fills to a level where it spills over the spillway.

Vineyard Club Lake Spillway Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For algaecide or herbicide treatment check for any leaks or damage	X			
Remove any obstructions and trash			X	
Check Structure for Damage			X	
Check Concrete for Deterioration				X

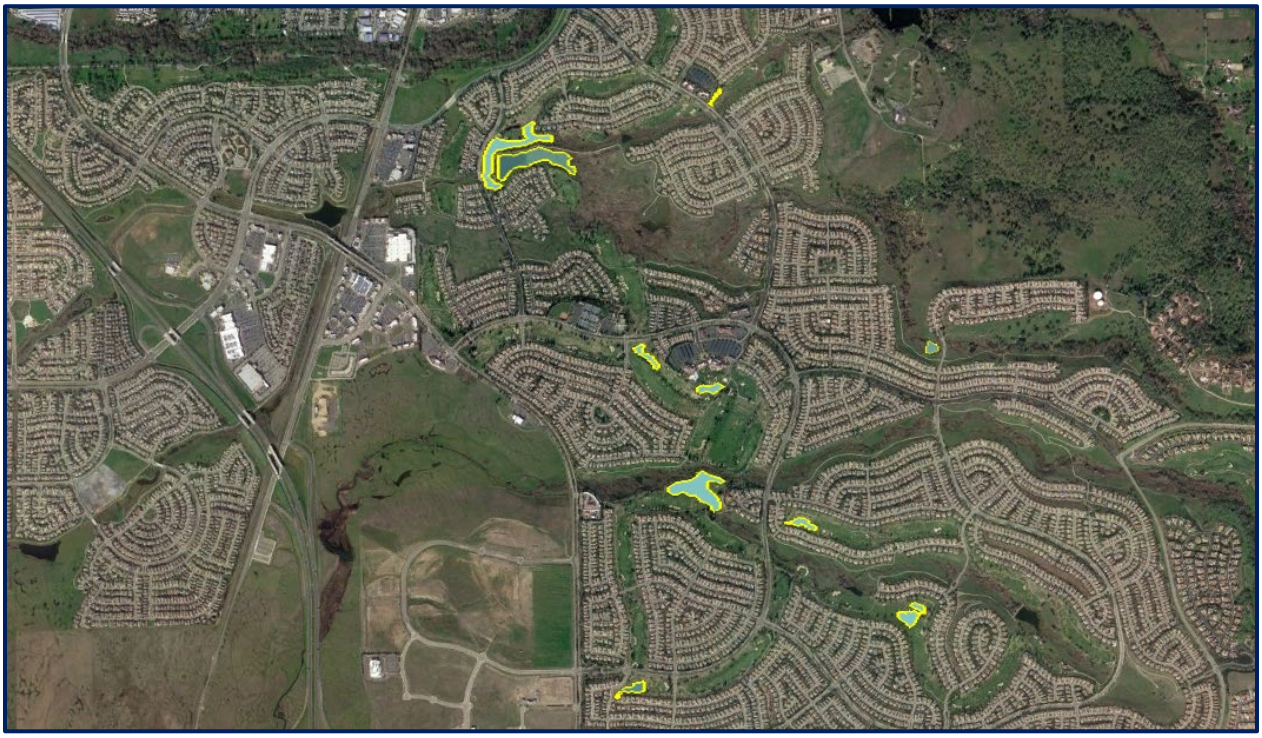
Lake Alhambra Homeowners Association – Lake Alhambra

Water flow leaving the Lake Alhambra system is controlled by a sluice gate located at the North West end of the lake. Water level is maintained by the City of Antioch in coordination with the Home Owners Association. In addition to the monthly inspections the sluice gate will be inspected prior to any herbicide or algaecide applications.

Lake Alhambra Spillway Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For algaecide or herbicide treatment check for any leaks or damage	X			
City of Antioch Inspection Schedule				
Remove any obstructions and trash			X	
Check Structure for Damage			X	
Check Concrete for Deterioration				X

Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club – Upper Ferrari Pond, Hidden Hills Pond, and Lincoln Hills Golf Club Ponds

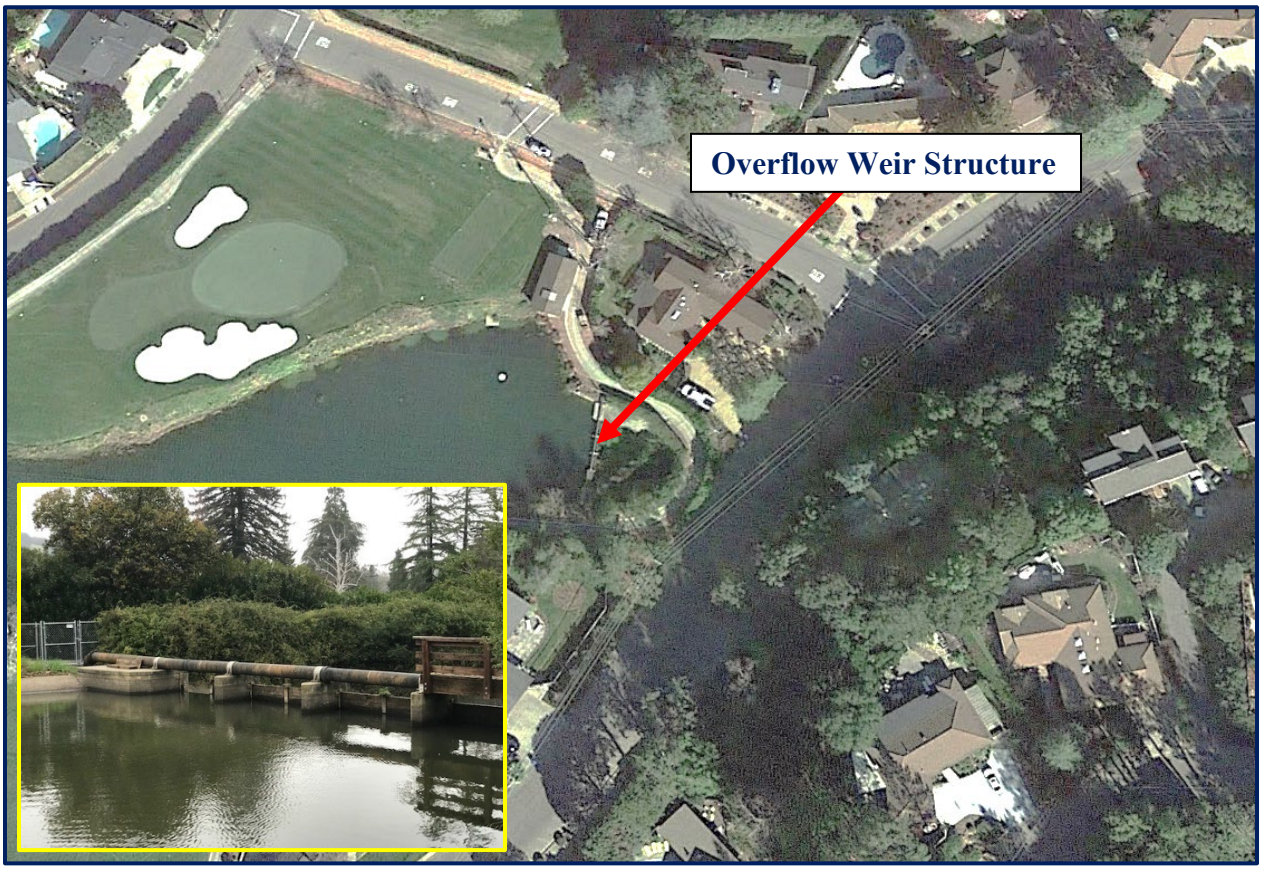
There are several overflow spillways throughout the Sun City Association and Lincoln Golf Club system and there are no gates or control structures. Several of the waterbodies operate as a constant flow through while several others only spill during storm events.



Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For algaecide or herbicide treatment check for any leaks or damage	X			
Remove any obstructions and trash		X		
Check Structure for Damage				X

Marin Country Club Golf Course - Reservoirs

The Marin Country Club Golf Course reservoirs have an overflow weir structure in place. The overflow weir structure is inspected and maintained following the inspection schedule below. This is to ensure that it is functioning correctly, structurally sound, and not leaking. In addition to the weekly inspections the weir will be inspected prior to any herbicide or algaecide applications.



Marin Country Club Weir Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For algaecide or herbicide treatment	X			
Remove any obstructions and trash	X	X		
Check Weir for Damage	X		X	
Check Concrete for Deterioration				X

Bayside Technology Park – Engineered Channel

Bayside Technology Park has an outflow weir control structure. Water flow leaving the channel is controlled by opening and closing the weir located at the west end of the channel. This weir will be closed during herbicide treatments to ensure that no herbicide residue flows downstream. The overflow weir control structure is inspected and maintained following the inspection schedule below. This is to ensure that it is functioning correctly, structurally sound, and not leaking. In addition to the annual inspections the weir will be inspected prior to any herbicide application.

Bayside Tech Park Outflow Weir Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For herbicide treatment check for any leaks or damage	X			
Remove any obstructions and trash	X			
Check Structure for Damage				X
Check Structure for Deterioration				X

Windsor Golf Club – Ponds

Windsor Golf Club has an overflow spillway. Water only spills over the spillway during winter storm events. The overflow spillway structure is inspected and maintained following the inspection schedule below. This is to ensure that it is functioning correctly, structurally sound, and not leaking. In addition to the monthly inspections the overflow spillway will be inspected prior to any herbicide application.

Windsor Golf Club Spillway Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For algaecide or herbicide treatment	X			
Remove any obstructions and trash	X	X		
Check Spillway for Damage	X		X	
Check Concrete for Deterioration				X

Rooster Run Golf Club – Ponds

Rooster Run Golf Club has an overflow spillway. Water only spills over the spillway during winter storm events. The overflow spillway structure is inspected and maintained following the inspection schedule below. This is to ensure that it is functioning correctly, structurally sound, and not leaking. In addition to the monthly inspections the overflow spillway will be inspected prior to any herbicide or algaecide application.

Rooster Run Golf Club Spillway Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For algaecide or herbicide treatment	X			
Remove any obstructions and trash	X	X		
Check Spillway for Damage	X		X	
Check Concrete for Deterioration				X

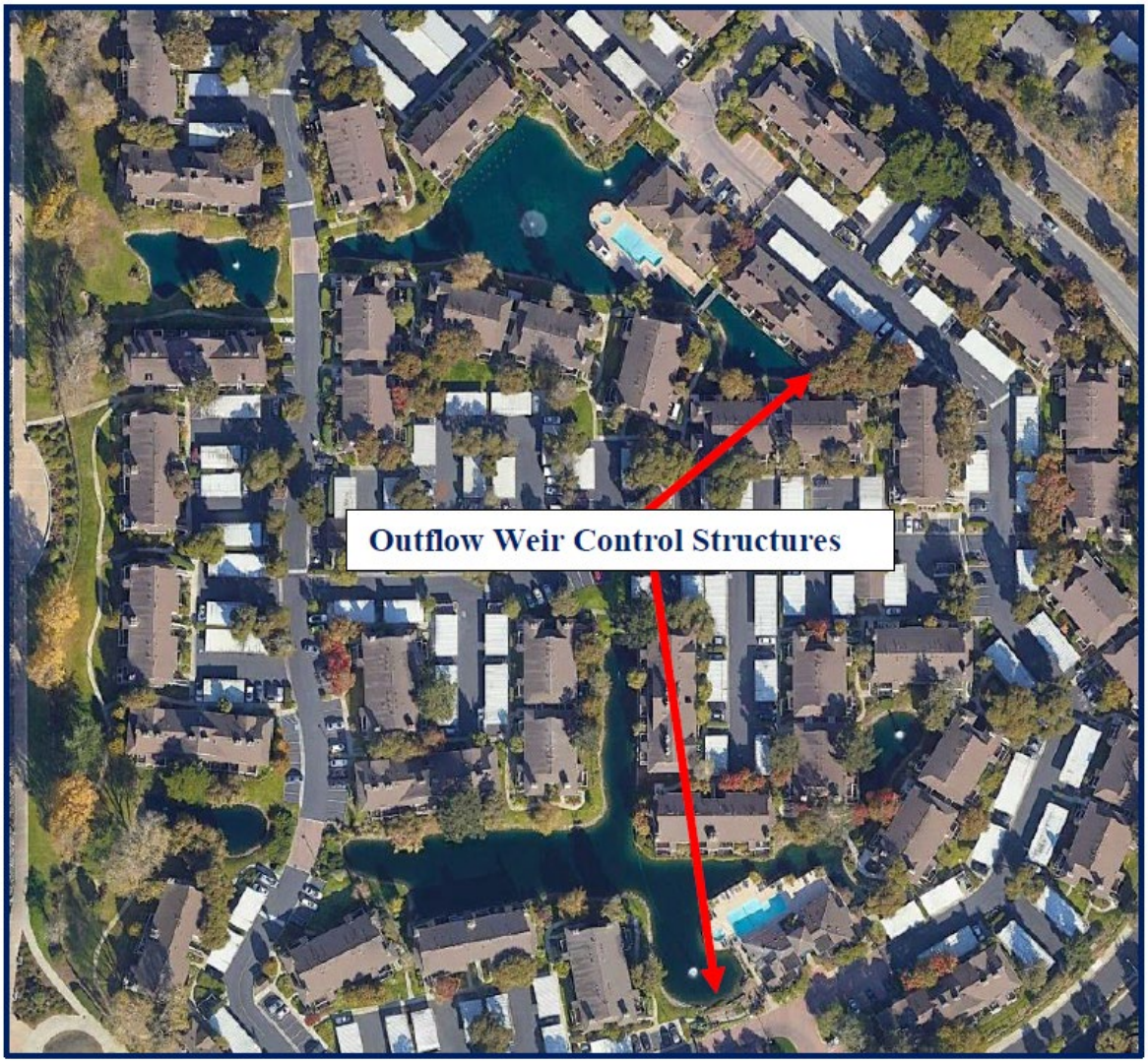
Airport Business Center – Ponds

The Airport Business Center ponds are connected and have a single outflow pipe. This pipe is capped year-round except for during winter storm events. The overflow pipe is inspected and maintained following the inspection schedule below. This is to ensure that it is functioning correctly, structurally sound, and not leaking. In addition to the monthly inspections the pipe will be inspected prior to any herbicide or algaecide application.

Airport Business Center Overflow Pipe Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For algaecide or herbicide treatment	X			
Remove any obstructions and trash	X	X		
Check Overflow Pipe for Damage	X		X	

The Shores at Marina Bay – Lakes

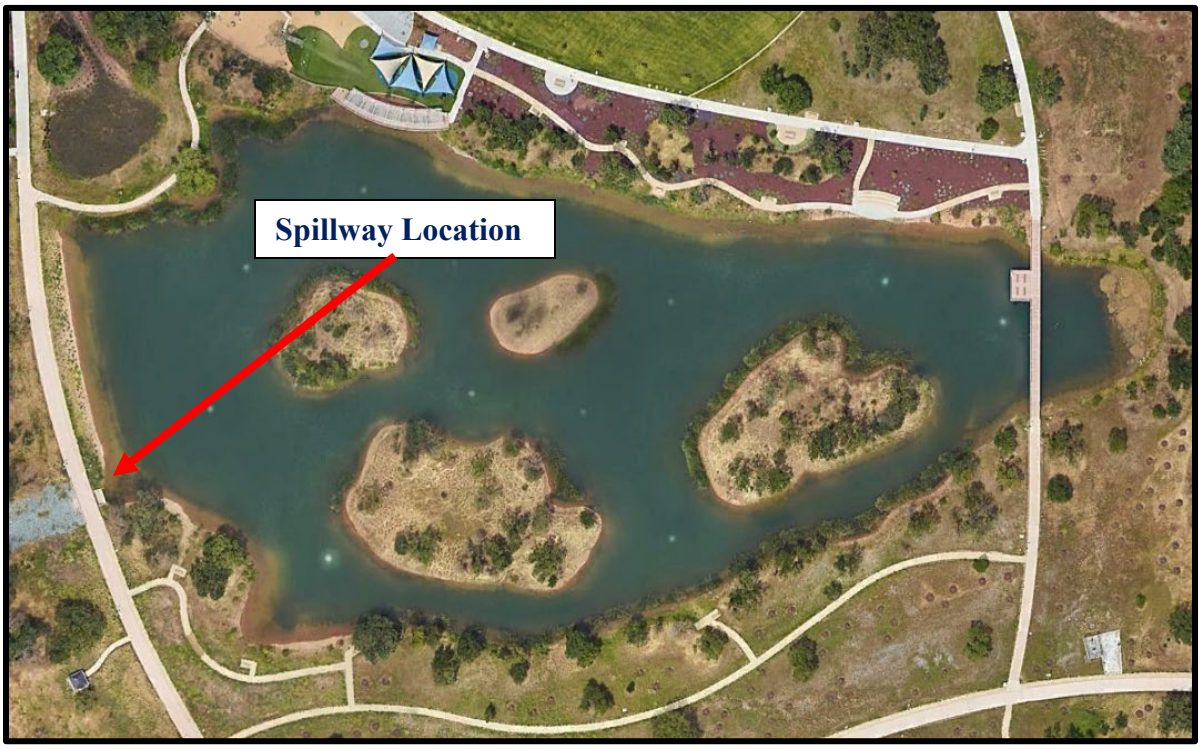
The Shores at Marina Bay lakes have overflow weir structures. The overflow weir structures are inspected and maintained following the inspection schedule below. This is to ensure that they are functioning correctly, structurally sound, and not leaking. In addition to the weekly inspections the weirs will be inspected prior to any herbicide or algaecide applications.



The Shores at Marina Bay Outflow Weir Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For herbicide treatment check for any leaks or damage	X			
Remove any obstructions and trash	X			
Check Structure for Damage				X
Check Structure for Deterioration				X

City of Elk Grove – Elk Grove Nature Pond

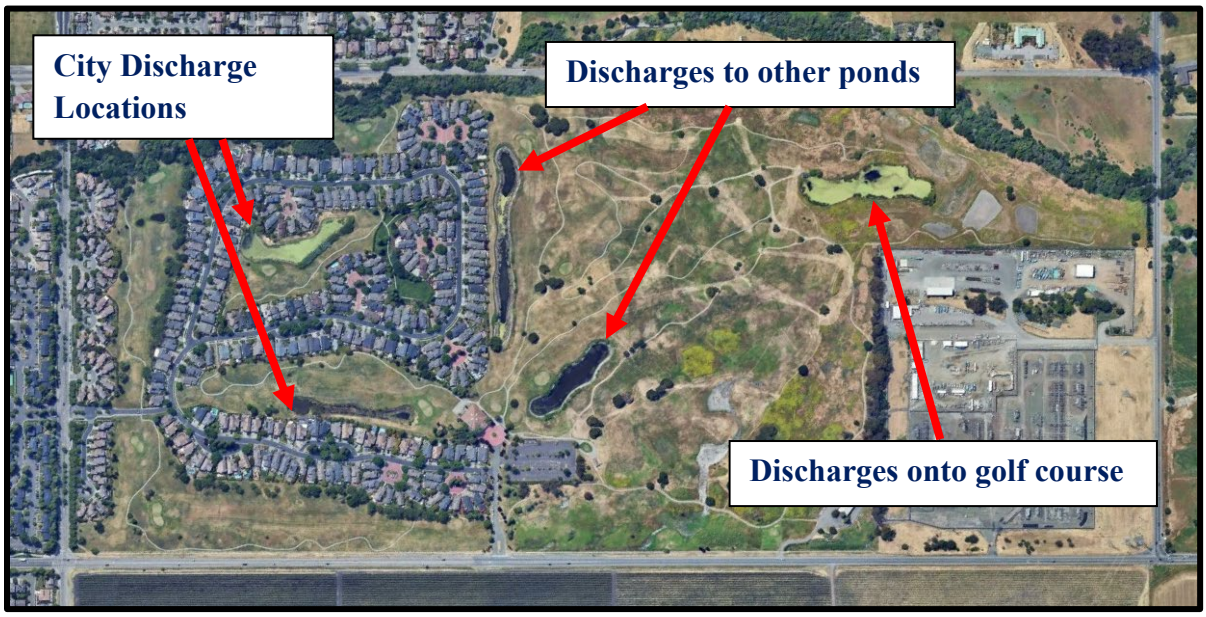
The Nature Pond does not contain any gates or control structures. Excess water will exit the pond through the spillway to the existing drainage ditch. It will cross under the new trail in a box culvert, then flow through the existing rock-lined drainage ditch and into the existing storm drain system.



Nature Pond Outflow Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For herbicide treatment check for any leaks or damage	X			
Remove any obstructions and trash	X			
Check Structure for Damage				X
Check Structure for Deterioration				X

Adobe Creek Golf Club

The ponds at Adobe Creek Golf Club are connected but do not have any gates or control structures. All of the ponds discharge either into each other or into the city drain, save for one which discharges onto the golf course.



Adobe Creek Golf Club Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For herbicide treatment check for any leaks or damage	X			
Remove any obstructions and trash	X			
Check Structure for Damage				X
Check Structure for Deterioration				X

City of Oakley

Each of the ponds in Oakley have their own pumping plant which can be left off during applications to avoid discharge. Any water that is pumped through these systems is discharged into the city's stormwater drainage system.

City of Oakley Pumping Stations Inspection Schedule	Prior to every treatment	Weekly	Monthly	Annually
For herbicide treatment check for any leaks or damage	X			
Remove any obstructions and trash	X			
Check Structure for Damage				X
Check Structure for Deterioration				X

STATE IMPLEMENTATION POLICY (SECTION 5.3) EXCEPTIONS

The Shiloh Homeowners Association, Varenna at Fountaingrove, Point Tiburon Lagoon Owners Association, Marin Lagoon Homeowners Association, Sonoma Greens Community Association, The Vineyard Club Inc., The Lake Alhambra Homeowners Association, Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club, Marin Country Club Golf Course, Bayside Technology Park, Windsor Golf Club, Rooster Run Golf Club, Airport Business Center Park, The Shores at Marina Bay Homeowners Association, City of Elk Grove, Adobe Creek Golf Club, and City of Oakley have not applied for or been granted a short-term or seasonal exception under State Water Board Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California.

DESCRIPTION OF MONITORING AND REPORTING PROGRAM (MRP)

Section 122.48 of title 40 of the Code of Federal Regulations (40 C.F.R. §122.48) requires that all NPDES permits specify monitoring and reporting requirements. As such the following monitoring and reporting program has been developed for The Shiloh Homeowners Association, Varenna at Fountaingrove, Point Tiburon Lagoon Owners Association, Marin Lagoon Homeowners Association, Sonoma Greens Community Association, The Vineyard Club Inc., The Lake Alhambra Homeowners Association, Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club, Marin Country Club Golf Course, Bayside Technology Park, Windsor Golf Club, Rooster Run Golf Club, Airport Business Center Park, The Shores at Marina Bay Homeowners Association, City of Elk Grove, Adobe Creek Golf Club, and City of Oakley under the guidance of Attachment C –Monitoring and Reporting Program as well as MRP guidelines table attached on the following page (page 128)

Table C-1. Monitoring Requirements

Sample Type	Constituent/Parameter	Units	Sample Method	Minimum Sampling Frequency	Sample Type Requirement	Required Analytical Test Method
Visual	1. Monitoring area description (pond, lake, open waterway, channel, etc.) 2. Appearance of waterway (sheen, color, clarity, etc.) 3. Weather conditions (fog, rain, wind, etc.)	Not applicable	Visual Observation	[1]	Background, Event and Post-event Monitoring	Not applicable
Physical	1. Temperature[2]	ºF	Grab[4]	[5]	Background, Event and Post-event Monitoring	[6]
	2. pH[3]	Number				
	3. Turbidity[3]	NTU				
	4. Electric Conductivity[3] @ 25°C	µmhos/cm				
Chemical	1. Active Ingredient[7]	µg/L	Grab[4]	[5]	Background, Event and Post-event Monitoring	[6]
	2. Nonylphenol[8]	µg/L				
	3. Hardness (if copper is monitored)	mg/L				
	4. Dissolved Oxygen[2]	mg/L				

[1] All applications at all sites.

[2] Field testing.

[3] Field or laboratory testing.

[4] Samples shall be collected at three feet below the surface of the water body or at mid water column depth if the depth is less than three feet.

[5] Collect samples from a minimum of six application events for each active ingredient in each environmental setting (flowing water and non-flowing water) per year, except for glyphosate. If there are less than six application events in a year, collect samples during each application event for each active ingredient in each environmental setting (flowing water and non-flowing water). If the results of monitoring from six consecutive application events show concentrations that are less than the receiving water limitation/trigger for an active ingredient in an environmental setting, sampling shall be reduced to one application event per year for that active ingredient in that environmental setting. To support a reduction in monitoring frequency, the six sampling events showing concentrations that are less than the receiving water limitation/trigger for an active ingredient must be consecutive and can span more than one year or application season. The reduction in monitoring frequency under this provision applies to all listed active ingredients including SIP listed active ingredients If the yearly sampling event shows exceedance of the receiving water limitation/trigger for an active ingredient in an environmental setting, then sampling shall return to six application events for that active ingredient in each environmental setting. For glyphosate, collect samples from one application event from each environmental setting (flowing water and non-flowing water) per year.

[6] Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136.

[7] 2,4-D, acrolein, chlorine, dissolved copper, diquat, endothall, flumioxazin, fluridone, glyphosate, imazamox, imazapyr, penoxsulam, and triclopyr.

[8] It is required only when a surfactant is used.

MONITORING FREQUENCY AND LOCATIONS

Shiloh Lake, Fountaingrove Lake, Point Tiburon Lagoon, Marin Lagoon, Sonoma Greens Lake and Pond, Vineyard Club Lake, Lake Alhambra, Marin Country Club Golf Course Reservoirs, Bayside Technology Park Engineered Channel, Windsor Golf Club Ponds, Rooster Run Golf Club Ponds, Airport Business Center Park Ponds, The Shores at Marina Bay Lakes, Elk Grove Nature Pond, Adobe Creek Golf Club Ponds, Cypress Pond, Emerson Ranch Pond, and Delaney Park Pond are all small water bodies that have the same environmental setting throughout the systems. All waterbodies are also operated in static conditions. Therefore, monitoring locations will be selected to represent the two types of treatments performed. The monitoring locations for entire lake, reservoir or lagoon treatments will be selected from a location close to the lake, pond, or lagoon outlet. The background and post event monitoring locations for spot lake or lagoon treatments will be within the treatment areas. The event monitoring locations for spot lake or lagoon treatments will be collected immediately outside of the treatment areas. The event monitoring locations for full lake or lagoon treatments will be collected immediately downstream of the treatment area if there is discharge observed from the waterbody throughout the application.

Upper Ferrari Pond, Hidden Hills Pond, and Lincoln Hills Golf Club Ponds are all small water bodies that have two different environmental settings with some lakes and ponds operating in a static condition and some operating as flow through systems. Therefore, the lakes and ponds that are operated in static conditions will be monitored the same as those outlined in the paragraph above. The monitoring locations for the flow through systems will be as follows:

- Background monitoring samples will be collected upstream at the time of the application event or in the application area just prior to (up to 24 hours in advance of) the application event.
- Event monitoring samples will be collected immediately downstream of the treatment area.
- Post-event monitoring samples will be collected within the treatment area within one week after application.

Samples will be collected from a minimum of six application events for each active ingredient in each environmental setting. If there are less than six application events in a year, samples will be collected at each application event for each active ingredient in each environmental setting. If the results from six consecutive sampling events show concentrations that are less than the receiving water limitation/trigger for an active ingredient in an environmental setting, sampling shall be reduced to one application event per year for that active ingredient in that environmental setting. If the yearly sampling event shows exceedance of the receiving water limitation/trigger for an active ingredient in an environmental setting, then sampling shall return to six application events for that active ingredient in each environmental setting.

- Background monitoring samples will be collected upstream at the time of the application event or in the application area just prior to (up to 24 hours in advance of) the application event.
- Event monitoring samples will be collected immediately downstream of the treatment area in flowing waters or immediately outside of the treatment area in non-flowing waters, immediately after the application event, but after sufficient time has elapsed such that treated water would have exited the treatment area.
- Post-event monitoring samples will be collected within the treatment area within one week after application.

The background, event, and post event monitoring samples for Shiloh Lake, Fountaingrove Lake, Point Tiburon Lagoon, Marin Lagoon, Sonoma Greens Lake and Pond, Vineyard Club Lake, Lake Alhambra, Upper Ferrari Pond, Hidden Hills Pond, Lincoln Hills Golf Club Ponds, Marin Country Club Golf Course Reservoirs, Bayside Technology Park Engineered Channel, Windsor Golf Club Ponds, Rooster Run Golf Club Ponds, Airport Business Center Park Ponds, The Shores at Marina Bay Lakes, Elk Grove Nature Pond, Adobe Creek Golf Club Ponds, Cypress Pond, Emerson Ranch Pond, and Delaney Park Pond will have the sampling location identification labels as outlined in the below table. The XXX will be replaced by the specific location in the waterbody or the product used which will be accompanied by GPS coordinates.

Waterbody	**Background**	**Event**	**Post Event**
Shiloh Lake	SL-BGXXX	SL-EXXX	SL-PEXXX
Fountaingrove Lake	FL-BGXXX	FL-EXXX	FL-PEXXX
Point Tiburon Lagoon	PTL-BGXXX	PTL-EXXX	PTL-PEXXX
Marin Lagoon	ML-BGXXX	ML-EXXX	ML-PEXXX
Sonoma Greens Lake and Pond	SG-BGXXX	SG-EXXX	SG-PEXXX
Vineyard Club Lake	VCL-BGXXX	VCL-EXXX	VCL-PEXXX
Lake Alhambra	LA-BGXXX	LA-EXXX	LA-PEXXX
Upper Ferrari Pond, Hidden Hills Pond, Lincoln Hills Golf Club Ponds	SCLH-BGXXX	SCLH-EXXX	SCLH-PEXXX
Marin Country Club Golf Course Reservoirs	MCC-BGXXX	MCC-EXXX	MCC-PEXXX
Bayside Technology Park Engineered Channel	BTP-BGXXX	BTP-EXXX	BTP-PEXXX
Windsor Golf Club Ponds	WGC-BGXXX	WGC-EXXX	WGC-PEXXX
Rooster Run Golf Club Ponds	RRGC-BGXXX	RRGC-EXXX	RRGC-PEXXX
Airport Business Center Park Ponds	ABC-BGXXX	ABC-EXXX	ABC-PEXXX
The Shores at Marina Bay Lakes	SMB-BGXXX	SMB-EXXX	SMB-PEXXX
Elk Grove Nature Pond	EG-BGXXX	EG-EXXX	EG-PEXXX
Adobe Creek Golf Club Ponds	ACGC-BGXXX	ACGC-EXXX	ACGC-PEXXX
Cypress Pond, Emerson Ranch Pond, Delaney Park Pond	CO-BGXXX	CO-EXXX	CO-PEXXX

SAMPLE COLLECTION METHODS

Samples will be collected at three feet below the surface of the water body or at mid water column depth if the depth is less than three feet. A horizontal / vertical Van Dorn sampler, Kemmerer sampler, or a telescopic / long handled sampling pole will be used to collect the samples at depths greater than two feet.

All steps will be taken to prevent samplers from physically entering the water body to collect samples. If it is required because a sampling location cannot be reached by shoreline, boat, dock, etc.… the following steps will be taken:

- The sampler will enter the waterbody downstream to prevent disturbance of the sampling location.
- All personal protection equipment, (PPE's) including a life vest will be worn to protect the sampler.

Sampling personnel that collect samples will be required to wear powder free plastic or nitrile gloves when preparing the sample bottles and equipment, washing, or decontaminating sampling equipment and while performing the following procedures:

When collecting an unpreserved sample with a water bottle sampler (by hand) the following steps will be followed:

- The sample container will be lowered to mid water column depth if the depth is less than three feet. The capped end of the container will be placed away from the flow of water to minimize potential debris from entering the sample.
- Once the container is at the correct depth and positioned correctly the cap will be removed to allow the sample container to fill. Once full the cap will be replaced, and the pre-labeled container will be removed from the water and placed in a cooler.

When collecting samples with a water bottle sampler (by hand) with bottles containing preservatives, a clean unpreserved sample bottle will be used to collect the sample. The collection procedure will be the same steps outlined above with the additional following step:

- Remove the cap and immediately transfer the sample from the unpreserved sample bottle to the pre-labeled sample bottle containing the appropriate preservative. Cap the bottle and place in the cooler.

When collecting samples with a telescopic / long handled sampling pole the instrument will be thoroughly washed with appropriate cleaner and distilled water before use. The sampler will then be washed once again with the water from the new sampling location before samples are collected. Once the sampler is ready the following steps will be followed

- Invert and lower the telescopic / long handled sampling pole sampler to three feet below the surface of the water body or at mid water column depth if the depth is less than three feet.
- Turn the inverted telescopic / long handled sampling pole sampler upright at the desired depth to fill the sample and then remove from the water.
- Immediately transfer the sample from the telescopic / long handled sampling pole sampler to the pre-labeled unpreserved or preserved sample bottle. Cap the new bottle and place in the cooler.

When collecting a sample with a subsurface water sampler (Horizontal / Vertical Van Dorn sampler, Kemmerer sampler) the following steps will be followed:

- Lower the subsurface water sampler to three feet below the surface of the water body or at mid water column depth if the depth is less than three feet.
- Once it is confirmed that the sampler is at the correct depth, release the weighted messenger or comparable trigger device to close the sampling device.
- Raise the sampler back to the shoreline or collection vessel and immediately transfer the sample to the pre-labeled unpreserved or preserved sample bottle. Cap the new bottle and place in the cooler.

FIELD SAMPLING EQUIPMENT CHECKLIST

- NPDES treatment and monitoring forms
- Chain of Custody (COC) forms
- Non-powdered plastic or nitrile gloves
- Boots or waders if needed
- Appropriate sampling bottles and labels from or approved by the certified laboratory being used for analysis.
- Ice Chest / Cooler with ice or ice packs
- YSI data sonde or equivalent - for onsite field measurements such as electric conductivity, dissolved oxygen, pH, turbidity, and temperature
- Backup batteries
- Field logbook and QA/QC manual
- Sampling devices for collecting subsurface samples
- Distilled and deionized water
- Eyewash
- GPS for recording sampling locations
- Plastic bags to separate out samples and protect forms and manuals
- Tape
- Shipping labels

- Secchi Disk

All laboratory analyses will be conducted at a laboratory certified for such analyses by the California Department of Public Health in accordance with California Water Code section 13176. The chosen Laboratory that will perform sample analyses will be identified in all monitoring reports. The receiving water limitations and monitoring triggers listed in the permit that may be sampled for are listed in the tables 3 and 4 below.

Table 3. Receiving Water Limitations

Constituent/ Parameter	BENEFICIAL USE[1]				Basis
	MUN, µg/L	WARM or COLD, µg/L	Other than MUN, WARM, or COLD, µg/L	All Designations	
2,4-D	70				U.S. EPA MCL
Acrolein[2]	320	21	780		U.S. EPA Water Quality Criteria, 1986.
Copper[2]				Dissolved Freshwater[3] Copper Chronic = 0.960exp{0.8545 [ln(hardness[4])] – 1.702}[5, 6] Dissolved saltwater[3] Copper Chronic = 0.83exp{0.8545 [ln(hardness[4])] – 1.702}[5,6]	California Toxics Rule
Diquat	20				U.S. EPA MCL
Endothall	100				U.S. EPA MCL
Fluridone	560				U.S. EPA Integrated Risk Information System
Glyphosate	700				U.S. EPA MCL
Nonylphenol				Freshwater Chronic Criterion = 6.6 µg/L Saltwater Chronic Criterion = 1.7 µg/L	U.S. EPA National Recommended Ambient Water Quality Criteria
Toxicity	Algaecide and aquatic herbicide applications shall not cause or contribute to toxicity in receiving water(s).				Regional Water Boards' Basin Plans

Notes:
1. See Regional Water Boards' Water Quality Control Plans (Basin Plans) for beneficial use definitions.
2. Public entities and mutual water companies* listed in Attachment G are not required to meet these limitations in receiving waters during the exception period described in the APAP and Section VIII.C.10 below.
3. For waters in which the salinity is equal to or less than 1 part per thousand 95% or more of the time, the freshwater criteria apply. For waters in which the salinity is equal to or greater than 10 parts per thousand 95% or more of the time, saltwater criteria apply. For waters in which the salinity is between 1 and 10 parts per thousand, the applicable criteria are the more stringent of the freshwater or saltwater criteria.
4. For freshwater aquatic life criteria, waters with a hardness 400 mg/L or less as calcium carbonate, the actual ambient hardness of surface water shall be used. For waters with a hardness of over 400 mg/L as calcium carbonate, a hardness of 400 mg/L as calcium carbonate shall be used with a default Water-Effect Ratio of 1.
5. Values should be rounded to two significant figures.
6. This limitation does not apply to the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City. See Table III-1 of the Basin Plan for the Sacramento and San Joaquin River Basins for copper limitation.

RECEIVING WATER MONITORING TRIGGERS

In the absence of Receiving Water Limitations, the Receiving Water Monitoring Triggers shown in Table 4 below (page 134) will be used to assess compliance with the narrative receiving water toxicity limitation. However, exceeding the monitoring trigger does not constitute a violation of this General Permit as long as the Discharger (Waterworks Industries Inc.) performs the following actions: (1) initiates additional investigations for the cause of the exceedance; (2) implements additional BMPs to reduce the algaecide and aquatic herbicide residue concentration to be below the monitoring triggers in future applications; and (3) evaluates the appropriateness of using alternative products.

Table 4. Receiving Water Monitoring Triggers

Ingredient	Unit	Instantaneous Maximum Monitoring Trigger	Basis
Imazapyr	mg/L	11.2	U.S. EPA Office of Pesticides *Ecotoxicity Database*
Triclopyr Triethylamine	mg/L	13.0	U.S. EPA Office of Pesticides *Ecotoxicity Database*
Flumioxazin	mg/l	0.23	U.S. EPA Office of Pesticides *Ecotoxicity Database*

SAMPLE PRESERVATION AND DELIVERY

Based on sample requirements samples will either be collected in preserved or unpreserved containers. Samples collected in unpreserved containers will be preserved at the laboratory when the sample(s) are delivered if required.

All samples will be placed on ice in a cooler immediately following the collection of the sample(s). Background, Event, and Post Event monitoring samples will be separated and properly labeled in plastic bags within the cooler to avoid any cross contamination. Delivery of the sample(s) will occur following the sampling event if feasible. If samples cannot be delivered on the day of the sampling event they will remain on ice in a cooler until delivered to the lab within the appropriate holding time.

CHAIN OF CUSTODY

All samples collected and submitted to the lab for analysis will be accompanied by a chain of custody (COC) record. The COC form will include at a minimum:

- A unique field sample number which identifies each individual sample to be analyzed
- Location
- The method/parameter for analysis
- Collection date and time
- Sampler information
- Custody transfer signatures

When transferring the samples into the custody of the laboratory the individuals relinquishing and receiving the samples will sign, date, and record the time the transfer was made on the COC form. The original COC form will remain with the lab and a copy will be given to the individuals

delivering the samples which will be placed with the monitoring forms in the project folder or binder. If samples are shipped to the laboratory a signed copy of the COC will be included with the shipment and a signed copy will be requested from the lab. The shipping information and COC copy would also be placed with the monitoring forms in the project folder or binder.

SAMPLE CONTAMINATION PREVENTION PROCEDURES

Personal decontamination will be done in an area detached from sampling locations to prevent contamination at sampling points. All personal protective equipment (PPE) such as coveralls, disposable gloves, and respirators used in the application process will be removed and disposed of in this area using sealed bags / containers for proper disposal. Sampler(s) will wash hands and face with soap and clean water. New boots and safety glasses will be worn for sampling. The used boots and glasses will be containerized until they are washed with an appropriate solution offsite.

New PPE's will be worn for sampling and disposable gloves will be changed at each sampling location.

Samples will be collected away from any equipment, containers, or PPE's that were used as part of the application process. After each sampling event all sampling collection and water quality monitoring equipment will be thoroughly washed with appropriate cleaner and distilled water. All equipment will be washed once again with the water from the new sampling location before samples or readings are collected.

FIELD SAMPLING PROCEDURES

Visual parameters including the monitoring area description, appearance of the waterway, weather conditions, and notes on receiving water conditions will be summarized on the NPDES Monitoring Data Form below on page 137.

In conducting the receiving water sampling, a log will be kept of the receiving water conditions throughout the reach bounded by the treatment area. Attention shall be given to the presence or absence of:

- Floating or suspended matter
- Discoloration
- Bottom deposits
- Aquatic life
- Visible films, sheens, or coatings

- Fungi, slimes, or objectionable growths
- Potential nuisance conditions

All monitoring and treatment forms will be placed in a project logbook or binder designated for all project documentation.

Field measured water quality parameters including Temperature, pH, Turbidity, Dissolved Oxygen and Electrical Conductivity will be measured in the field as grab samples with a multi-parameter data logging meter. (YSI, Horiba, or equivalent) Field personnel will be properly trained on how to operate the meter to ensure quality control. The meter will be calibrated regularly following manufacturer's specifications. Methods will conform to United States Environmental Protection Agency (U.S. EPA) guidelines or to procedures approved by the State.

NPDES Monitoring Data Form

Application and Monitoring area location:	Sampler	Herbicide or Algaecide (pesticide used, surfactant used)

Sampler Certification: I [ ] certify that the Aquatic Pesticide Application Plan has been followed

Signature: _____ Date: _____

Background Monitoring - Background monitoring samples shall be collected upstream at the time of the application event or in the application area just prior to (up to 24 hours in advance of) the application event.

Date:	Time:	GPS Coordinates:
Visual Monitoring		
Weather: (fog, rain, cloudy, etc.)		Wind Speed: (mph)
Appearance of waterway: (sheen, color, clarity, films, coatings, etc.)		
Floating / Suspended Matter:		Bottom Deposits: Yes ☐ No ☐
Aquatic Life: Yes ☐ No ☐ Description:		Nuisance Conditions Yes ☐ No ☐
Fungi , Slimes, Objectionable Growth:		Water Clarity: (Secchi)

Water Sampling Parameters (Physical an Chemical Monitoring)

Temp (F')	pH (Number)		Electric Conductivity (µmhos / cm)	Turbidity (NTU)
Active Ingriedient	Hardness (mg $CaCO_3$)	Sal (ppt)	Nonylphenol (µg/l)	DO (mg/l)

Event Monitoring - Event monitoring samples shall be collected immediately downstream of the treatment area in flowing waters or immediately outside of the treatment area in non-flowing waters, immediately after the application event, but after sufficient time has elapsed such that treated water would have exited the treatment area.

Date:	Time:	GPS Coordinates:
Visual Monitoring		
Weather: (fog, rain, cloudy, etc.)		Wind Speed: (mph)
Appearance of waterway: (sheen, color, clarity, films, coatings, etc.)		
Floating / Suspended Matter:		Bottom Deposits: Yes ☐ No ☐
Aquatic Life: Yes ☐ No ☐ Description:		Nuisance Conditions Yes ☐ No ☐
Fungi , Slimes, Objectionable Growth:		Water Clarity: (Secchi)

Water Sampling Parameters (Physical an Chemical Monitoring)

Temp (F')	pH (Number)		Electric Conductivity (µmhos / cm)	Turbidity (NTU)
Active Ingriedient	Hardness (mg $CaCO_3$)	Sal (ppt)	Nonylphenol (µg/l)	DO (mg/l)

Post-Event Monitoring - Post-event monitoring samples shall be collected within the treatment area within one week after application.

Date:	Time:	GPS Coordinates:
Visual Monitoring		
Weather: (fog, rain, cloudy, etc.)		Wind Speed: (mph)
Appearance of waterway: (sheen, color, clarity, films, coatings, etc.)		
Floating / Suspended Matter:		Bottom Deposits: Yes ☐ No ☐
Aquatic Life: Yes ☐ No ☐ Description:		Nuisance Conditions Yes ☐ No ☐
Fungi , Slimes, Objectionable Growth:		Water Clarity: (Secchi)

Water Sampling Parameters (Physical an Chemical Monitoring)

Temp (F')	pH (Number)		Electric Conductivity (µmhos / cm)	Turbidity (NTU)
Active Ingriedient	Hardness (mg $CaCO_3$)	Sal (ppt)	Nonylphenol (µg/l)	DO (mg/l)

QUALITY ASSURANCE-QUALITY CONTROL

Waterworks Industries Inc. will keep a Quality Assurance-Quality Control maintenance and calibration manual for any onsite field measurements such as electrical conductivity, dissolved oxygen, pH, turbidity, and temperature. The Quality Assurance-Quality Control Program must conform to United States Environmental Protection Agency (U.S. EPA) guidelines or to procedures approved by the State Water Board and the appropriate Regional Water Board. The manual containing the steps followed in this program will be kept by Waterworks Industries Inc. and will be available for inspection by the State Water Board and the appropriate Regional Water Board staff.

DATA AND RECORDS MANANGEMENT

All sampling, treatment, and reporting records will be filed and stored at Waterworks Industries Inc.'s main office in Windsor, CA which will be available for inspection by the State Water Board and the appropriate Regional Water Board staff.

REPORTING REQUIREMENTS

Annual Report

Waterworks Industries Inc. will submit to the Deputy Director and the appropriate Regional Water Board Executive Officer an annual report consisting of a summary of the past year's activities and certify compliance with all requirements of the General Permit. If there is no discharge of algaecides and aquatic herbicides, their residues, or their degradation byproducts, Waterworks Industries Inc. shall provide the Deputy Director and the appropriate Regional Water Board Executive Officer a certification that algaecide and aquatic herbicide application activities did not result in a discharge to any water body. The annual report will contain the following information:

1. An executive summary discussing compliance or violation of the General Permit and the effectiveness of the APAP to reduce or prevent the discharge of pollutants associated with algaecide and aquatic herbicide applications

2. A summary of monitoring data, including the identification of water quality improvements or degradation as a result of the algaecide or aquatic pesticide application, if appropriate, and recommendations for improvements to the APAP [including proposed best management practices (BMPs)] and monitoring program based on the monitoring results.

3. All receiving water monitoring data will be compared to receiving water limitations and receiving water monitoring triggers.

4. Identification of BMPs currently in use and a discussion of their effectiveness in meeting the requirements in this General Permit. And if needed, a discussion of BMP modifications addressing violations of the General Permit.

5. A map showing the location of each treatment area which will include all sampling and monitoring areas and their GPS coordinates.

6. Types and amounts of algaecides and aquatic herbicides used at each application event.

7. Information on surface area and/or volume of treatment areas and any other information used to calculate dosage, concentration, and quantity of each algaecide and aquatic herbicide used.

8. Sampling results will indicate the name of the sampling agency or organization, detailed sampling location information (including latitude and longitude) detailed map or description of each sampling area (address, cross roads, etc.), collection date, name of constituent/parameter and its concentration detected, minimum levels, method detection limits for each constituent analysis, name or description of water body sampled, and a comparison with applicable water quality standards, description of analytical QA/quality control plan. Sampling results shall be tabulated so that they are readily discernible.

9. Summary of algaecide and aquatic herbicide application log.

10. Waterworks Industries Inc. will submit the annual report before March 1st of the following year. The annual report will contain all data from January 1st through December 31st of the previous year.

Twenty-Four Hour Report

Waterworks Industries Inc. will report to the State Water Quality Control Board and appropriate Regional Water Quality Control Board any noncompliance, including any unexpected or unintended effect of an algaecide or aquatic herbicide use that may endanger health or the environment.

Any information will be provided orally within 24 hours from the time Waterworks Industries Inc. becomes aware of the circumstances and will include the following information:

a. The caller's name and telephone number;
b. Applicator name and mailing address;
c. Waste Discharge Identification (WDID) number;

d. The name and telephone number of a contact person;
e. How and when Waterworks Industries Inc. became aware of the noncompliance;
f. Description of the location of the noncompliance;
g. Description of the noncompliance identified and the U.S. EPA pesticide registration number for each product the Discharger applied in the area of the noncompliance;
h. Description of any steps that Waterworks Industries Inc. took or will take to correct, repair, remedy, cleanup, or otherwise address any adverse effects. If Waterworks Industries Inc. is unable to notify the State and the appropriate Regional Water Board within 24 hours, Waterworks Industries Inc. will do so as soon as possible and also provide the rationale for why Waterworks Industries Inc. was unable to provide such notification within 24 hours.

Five-Day Written Report

Waterworks Industries Inc. will also provide a written submission within five (5) days of the time Waterworks Industries Inc. becomes aware of the noncompliance. The written submission will contain the following information:

a. Date and time Waterworks Industries Inc. contacted the State Water Board and the appropriate Regional Water Board notifying of the noncompliance and any instructions received from the State and/or Regional Water Board.

b. A description of the noncompliance and its cause, including exact date and time and species affected, estimated number of individual and approximate size of dead or distressed organisms (other than the pests to be eliminated);

c. Location of incident, including the names of any waters affected and appearance of those waters (sheen, color, clarity, etc.);

d. Magnitude and scope of the affected area (e.g., aquatic square area or total stream distance affected);

e. Algaecide and aquatic herbicide application rate, intended use site (e.g., banks, above, or direct to water), method of application, and name of algaecide and herbicide product, description of algaecide and herbicide ingredients, and U.S. EPA registration number;

f. Description of the habitat and the circumstances under which the noncompliance activity occurred (including any available ambient water data for aquatic algaecides and aquatic herbicides applied);

g. Laboratory tests performed, if any, and timing of tests. Provide a summary of the test results within five days after they become available;

h. If applicable, explain why the Coalition or Discharger believes the noncompliance could not have been caused by exposure to the algaecides or aquatic herbicides from Waterworks Industries Inc. application;

i. Actions to be taken to prevent recurrence of adverse incidents. The State Water Board staff or Regional Water Board staff may waive the above- required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours.

BEST MANAGEMENT PRACTICES TO BE IMPLEMENTED

Measures to prevent algaecide and aquatic herbicide spill and for spill containment during the event of a spill

The following preventative measures will be taken to prevent algaecide and herbicide spills.

- Applicators applying herbicides and algaecides will have State of California Department of Pesticide Regulation (DPR) issued Qualified Applicator Licenses, (QAL) Qualified Applicator Certificates, (QAC) or be under the supervision of a licensed applicator.
- Applicators receive annual and project specific safety training that includes spill prevention and containment procedures.
- Labels and MSDS sheets are reviewed before arriving for treatments and are on site during treatments. Information on the labels and MSDS sheets are followed to ensure the proper transportation, handling, and loading of the pesticides used.
- Regular maintenance of all application and herbicide transfer equipment is performed to prevent or correct leaks.
- Herbicide containers are tied down or secured when transporting to prevent them from falling from vehicles.

The following containment measures will be taken in the event of a spill

- Applicators will have training in spill response and containment and will follow label and MSDS instructions to insure spill containment and cleanup is done properly and to completion.
- Spill kits will be located on all vehicles which contain an assortment of containment booms and absorbent materials. (Ex: manufacturer recommended materials, pads, mats, sawdust, sand, etc.)
- In the event of a spill the materials from the spill kits will be used to cover and contain the spill area in order to prevent the spill from spreading and to soak up the herbicide. The used absorbent materials would then be cleaned up with brooms and shovels and placed into properly contained drums specifically designated for this use.
- Any spill will be reported as required by State and Federal laws.

Measures to ensure that only an appropriate rate of application is used

A Licensed Pest Control Advisor (PCA) will provide recommendations for the appropriate rate of application based on their review of the treatment area to determine if thresholds have been reached or exceeded. If it is determined that a threshold has been reached and aquatic herbicides or algaecides are the most appropriate method of control, the PCA will provide a written recommendation for control. PCA recommendations include precise rates of application and include potential impacts on the surrounding environment, non-target organisms, and human health.

Specific to Marin Country Club a Licensed Pest Control Advisor (PCA) will provide recommendations for the appropriate rate of application for chemicals that are approved for use around western pond turtles. If the non-native aquatic plants discussed above are identified the PCA will provide a written recommendation for control, and it will be planned and performed. If native plants are impacting the beneficial uses of the reservoir the PCA will determine if a nuisance threshold has been reached and if aquatic herbicides or algaecides are the most appropriate method of control. PCA recommendations include precise rates of application and include potential impacts on the surrounding environment, non-target organisms, and human health.

The PCA written recommendation as well as the licensed applicators will follow product labels to ensure applications are performed in accordance with California DPR regulations and guidelines as well as are appropriate for use in western pond turtle habitat.

Education on Potential Adverse Effects from algaecide and aquatic herbicide applications

Licensed applicators receive annual and project specific training on all potential herbicides being used. The training includes review of the current labels and material safety data sheets which outline the potential adverse effects that can occur from applications with each specific herbicide or algaecide. In addition, PCA's, QAL's, and QAC's are required to complete continued education hours every two years to remain licensed with the DPR. The approved continued education courses and seminars educate PCA's, QAL's, and QAC's in a wide variety of topics including pesticide laws, regulations, and pest control methods.

Coordination with nearby water users and agencies so that beneficial uses of the water are not impacted during the treatment period.

Waterworks Industries Inc. will ensure that all control gates and weirs are closed and that the water level is well below the overflow structures prior to herbicide and algaecide application. These structures will also be inspected for damage or leaks prior to any application of herbicides and algaecides to prevent any residues from leaving the water bodies into waters of the United States.

As required by law Waterworks Industries Inc. will follow and adhere to all approved aquatic herbicide and algaecide labels to determine the potential impacts to downstream water users (agencies, farms, etc.) If there are potential impacts to the beneficial uses of the water such as irrigation, drinking water supply, domestic stock water, etc. Waterworks Industries Inc. will contact all potentially affected downstream water users before application of the algaecide and or herbicide to coordinate a treatment plan to ensure that there are no negative impacts to the beneficial uses of their water.

The outreach and coordination will begin immediately after identification of the target species, and determination if the product selected for use has any potential downstream impacts. This will ensure a high level of communication and organization.

Shiloh Homeowners Association – Shiloh Lake

There are no agencies, farms, or downstream water users within miles of the Shiloh Lake overflow. Therefore, no downstream water users need to be contacted for Shiloh Lake treatments.

Varenna at Fountaingrove – Fountaingrove Lake

Waterworks Industries Inc. will notify the City of Santa Rosa – Recreation and Parks Department prior to aquatic herbicide and algaecide applications that have potential impacts to the beneficial uses of the water such as irrigation, drinking water supply, domestic stock water, etc. as they are the agency that manages the flow and gate structures associated with Fountaingrove Lake.

Point Tiburon Lagoon Owners Association – Point Tiburon Lagoon

If Point Tiburon Lagoon discharges, it discharges directly into Richardson Bay / Belvedere Cove. There are no downstream water users drawing bay water for miles in all directions. Therefore, no downstream water users need to be contacted for Point Tiburon treatments.

Marin Lagoon Association – Marin Lagoon

There are no downstream water users from the Marin Lagoon discharge gates through Gallinas Creek to San Pablo Bay as well as for miles along the shores of San Pablo Bay. Therefore, no downstream water users need to be contacted for Marin Lagoon treatments.

Sonoma Greens Community Association – Sonoma Greens Lake and Pond

Waterworks Industries Inc. investigated two (2) miles downstream of Sonoma Greens Community Association and Pond and no agencies, farms, or other downstream water users were located on Sonoma Creek. Therefore, no downstream water users need to be contacted for Sonoma Greens treatments.

The Vineyard Club Inc. – Vineyard Club Lake

Waterworks Industries Inc. will notify Gill Creek Mutual Water Co. prior to any herbicide and algaecide applications that have potential impacts to the beneficial uses of the water such as irrigation, drinking water supply, domestic stock water, etc.

Lake Alhambra Homeowners Association – Lake Alhambra

Waterworks Industries will notify the City of Antioch prior to aquatic herbicide and algaecide applications that have potential impacts to the beneficial uses of the water such as irrigation, drinking water supply, domestic stock water, etc. as they are the agency that manages the flow and gate structures associated with Lake Alhambra. From the control structure to the San Joaquin River there are no downstream water users need to be contacted for Lake Alhambra treatments.

Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club – Upper Ferrari Pond, Hidden Hills Pond, Lincoln Hills Golf Club Ponds

Waterworks Industries Inc. will contact the Nevada Irrigation District (NID) and Placer County Water Agency (PCWA) prior to aquatic herbicide and algaecide applications that have potential impacts to the beneficial uses of the water such as irrigation, drinking water supply, domestic stock water, etc. Currently both agencies have been contacted and we plan to coordinate closely to ensure that all downstream water users are properly notified.

Marin Country Club Golf Course – Reservoirs

Waterworks Industries Inc. will contact the Marin County Department of Agriculture/Weights and Measures to register each year and will notify their staff of when treatments will begin. Waterworks Industries Inc. investigated Arroyo San Jose and followed it 1.7 miles downstream of Marin Country Club and no agencies, farms, or other downstream water users were located on Arroyo San Jose as it travels through residential and industrial areas then into wetlands then the bay. Therefore, no downstream water users need to be contacted for Marin Country Club.

Bayside Technology Park – Engineered Channel

There are no agencies, farms, or downstream water users between the weir control structure and San Francisco Bay. Therefore, no downstream water users need to be contacted for Bayside Technology Park treatments.

Windsor Golf Club – Ponds

Waterworks Industries Inc. investigated two (2) miles downstream of Windsor Golf Club and no agencies, farms, or other downstream water users were pulling water from Pool Creek and or Windsor Creek. Therefore, no downstream water users need to be contacted for Windsor Golf Club treatments.

Rooster Run Golf Club – Ponds

Waterworks Industries Inc. investigated two (2) miles downstream of Rooster Run Golf Club and no agencies, farms, or other downstream water users were located along Lynch Creek all the way to the Petaluma River. Therefore, no downstream water users need to be contacted for Rooster Run Golf Club treatments.

Airport Business Center – Ponds

There are no agencies, farms, or downstream water users pulling water from Windsor Creek all the way to Mark West Creek. Therefore, no downstream water users need to be contacted for Airport Business Center treatments.

The Shores at Marina Bay – Lakes

There are no agencies, farms, or downstream water users between the weir control structure and San Francisco Bay. Therefore, no downstream water users need to be contacted for The Shores at Marina Bay treatments.

City of Elk Grove – Nature Pond

There are no agencies, farms, or downstream water users between the spillway and the discharge creek. Therefore, no downstream water users need to be contacted for Elk Grove Nature Pond treatments.

Adobe Creek Golf Club – Ponds

If the ponds at Adobe Creek Golf Club discharge, they discharge directly into the city's stormwater system. Therefore, no downstream water users need to be contacted for Adobe Creek Golf Club pond treatments.

City of Oakley – Cypress Pond, Emerson Ranch Pond, Delaney Park Pond

If the ponds at the City of Oakley discharge, they discharge directly into the Dutch Slough. There are no agencies, farms, or downstream water users pulling water from Dutch Slough all the way to the Sacramento-San Joaquin Delta. Therefore, no downstream water users need to be contacted for City of Oakley's pond treatments.

A description of measures that will be used for preventing fish kills

Herbicide and algaecide applications will be performed at an action threshold that will prevent a significant amount of decomposing algae and plants which can contribute to oxygen depletion and cause fish kills.

Dissolved Oxygen (DO) measurements taken pre-treatment as part of the MRP will be analyzed and if levels are low, partial treatments may be performed at appropriate intervals to limit the amount of decomposing algae or plants at a given time. Or an alternative method of control will be used if the levels are extremely low.

Aquatic herbicides and algaecides will be applied by licensed applicators that will have specially designed application equipment that is calibrated to ensure proper treatment rate and distribution, so that herbicides and algaecides are not highly concentrated in any given area of the treatment plot.

The PCA and licensed applicators will review and follow the current labels and material safety data sheets which outline the potential adverse effects (Potential impacts on fish, turtles, and all wildlife) that can occur from applications with each specific herbicide or algaecide.

ALTERNATIVES TO AQUATIC HERBICIDES AND ALGAECIDES

Waterworks Industries Inc. will follow an Integrated Pest Management Program (IPM) to ensure that the pest management strategy concentrates on long term prevention of aquatic pests.

"Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment." (EPA IPM Principles)

Action threshold levels will be developed so that when pest levels reach a certain growth point, action will be taken to ensure that the beneficial uses of the water bodies are not impacted. Waterworks Industries Inc.'s IPM program will insure that all alternative methods will be

discussed and if feasible will be implemented in order to minimize the use of herbicides and algaecides in the lake or lagoon systems. Herbicides and algaecides will be considered if the feasible alternative methods do not provide sufficient control or if herbicides and algaecides are determined to be the most feasible option.

There are situations where herbicides and algaecides may be used before an action threshold is met. One example of this would be when treating early aquatic weed growth with an herbicide that is most effective in controlling the plant species in this early growth stage. This type of treatment can minimize herbicide use by treating small infestations before they spread, thus reducing the amount of herbicide needed if the plants were allowed to reach mature levels.

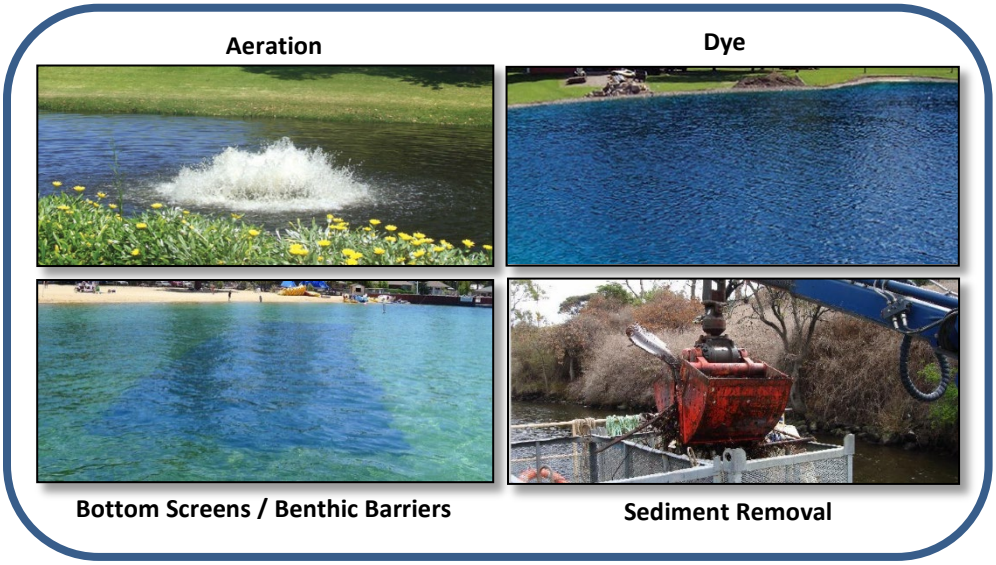
NO ACTION

There are times when no action may be the most feasible option and will be the first option discussed in Waterworks Industries Inc.'s IPM Plan. No action can result in the pest species naturally dying back or dissipating before reaching nuisance levels based on water quality parameters and weather conditions. However, if the pest species reaches the action threshold other management and control options will be considered.

NON-NATIVE INVASIVE SPECIES IN MARIN COUNTRY CLUB RESERVOIRS

When dealing with the non-native invasive species in the Marin Country Club reservoirs, an eradication approach will be used opposed to an IPM approach. This eradication approach is to regularly monitor and identify invasive plants and then follow through with a rapid response to treat the infestation as soon as possible with the goal of eliminating it from the system completely.

PREVENTION / CULTURAL METHODS



Early Detection

Early detection of invasive species by regular monitoring of water bodies can be a very effective preventative measure by removing the invasive(s) before they become established and have sufficient time to spread. Managing early infestations has a significant environmental and economic advantage over managing extensive infestations as much fewer resources such as equipment, herbicide, and manpower are needed.

Circulation and Aeration

Circulation can be used in lakes and lagoons to physically mix the water column, and aeration systems can be installed to intersperse the water with surface air. Both methods help maintain oxygen levels throughout the water column in order to potentially help reduce algae production by reducing the rate of nutrient recycling into the water.

Beneficial Bacteria

Beneficial bacteria and enzyme solutions can be used to increase the bacterial populations in lakes and lagoons. This option can be applied to create competition with potential pests, which in theory limits nutrient availability essential for macrophyte and algal growth and reproduction.

Dye / Shading

Aquatic dyes can be used in lakes and lagoons to reduce the depths to which light penetrates down into the water column, thus decreasing the availability to aquatic plants and algae which are essential for photosynthesis.

Sediment Removal

Sediment removal can be implemented throughout water bodies to remove nutrient rich sediments from the benthic zone. This is done to reduce the overall nutrient load available for aquatic weeds and algae in the system, as well as maintain desired depths.

Bottom Screens / Benthic Barriers

Bottom screens and benthic barriers can be applied to the sediment like a blanket in water bodies, constricting aquatic plants while blocking out light. There are several materials that have been used as bottom screens with some common materials being plastics and burlap. Benthic barriers have been proven to be successful in controlling aquatic plants but due to high costs are usually only feasible around docks and swimming areas and not for large scale control areas.

A few other disadvantages of benthic barriers are they require regular maintenance and inspection to ensure safety and proper performance. If benthic barriers are not regularly maintained sediment can quickly build up on top of the barrier, providing adequate conditions for aquatic weeds to reestablish. If benthic barriers are not properly anchored, they can become a hazard for swimmers and boaters. It is also important that recreational and maintenance personnel are aware of barriers that are in place because they can be damaged or displaced from the bottom by activities like fishing, boating, mechanical harvesting, and dredging.

The Shiloh Homeowners Association, Varenna at Fountaingrove, Point Tiburon Lagoon Owners Association, Marin Lagoon Homeowners Association, Sonoma Greens Community Association, The Vineyard Club Inc., The Lake Alhambra Homeowners Association, Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club, Marin Country Club Golf Course, Bayside Technology Park, Windsor Golf Club, Rooster Run Golf Club, Airport Business Center Park, The Shores at Marina Bay Homeowners Association, City of Elk Grove, Adobe Creek Golf Club, City of Oakley, and The Lakes at Discovery Bay are currently applying several of the management strategies outlined above such as early detection, beneficial bacteria treatments, circulation/aeration, aquatic dye treatments and sediment removal.

MECHANICAL AND PHYSICAL

Mechanical Harvesting

Mechanical Harvesters are large machines that use cutter bars and conveyor belts to cut and collect aquatic weeds to depths of approximately five to ten feet depending on the size of the harvester. Plants are then transferred or offloaded onto the shore where they can be properly disposed of. Mechanical harvesting is effective in removing aquatic weeds instantaneously and can clear large areas fairly quickly. However mechanical cutting does not provide long term reduction of the plant species, therefore regular maintenance is needed. Due to the regular maintenance required and potential need for hauling and disposal of the cut vegetation this method can become costly. When reviewing the use of mechanical harvesting, it is important to analyze the potential impacts on water quality, fish populations, and the potential to spread invasive plants. There are several species of aquatic plants that can regrow from fragmentation, which can spread and start new infestations.

Hand Pulling, Cutting, and Raking

Cutting, hand pulling, and weed raking can be effective in removing and controlling aquatic plants. This is especially the case in small scale situations such as eliminating early infestations that have not reached levels where other methods would be more cost effective and efficient. The downside to these methods is they are labor intensive, slow, and require regular maintenance which can be costly depending on the size of the infestation and if it is required to haul and dispose of the vegetation offsite.

Rotovation

Rotovation is a method for cutting and disturbing the base and submerged portions of aquatic plants. Rotovation is usually done from a large piece of equipment such as an aquamog or barge equipped with a hydraulic powered rototilling head that can be lowered to the water body bottom and penetrate up to ten inches into the sediment where it is then activated to cut and destroy the root system. Rotovation is best implemented in large lake and river systems that have adequate access and depths. Rotovation can be an expensive option especially if it is required to remove and dispose of the rotovated vegetation with mechanical harvesters or other equipment. . When reviewing the use of rotovation it is important to analyze the potential impacts on water quality (sediment disturbance could result in unwanted contaminants being released and nutrients that have settled into the sediment can be re-suspended throughout the water column), fish populations, and the potential to spread invasive plants.

Excavating

Excavation can be used to remove emergent, floating, and submerged aquatic plants as well as the surface sediment that contains seeds, fragments, rhizomes, stolons, and tubers. This method is frequently used in irrigation canals and water bodies that have openly accessible shorelines. Excavation can be costly especially when it comes to the disposal of the excavated aquatic vegetation and sediment. When reviewing the use of excavation, it is important to analyze the potential impacts on water quality (sediment disturbance could result in unwanted contaminants being released and nutrients that have settled into the sediment can be re-suspended throughout the water column), fish populations, and the potential to spread invasive plants.

Diver Suction Dredging

Diver suction dredging is a method that is implemented by using trained divers to use suction dredge pump systems to pull aquatic plants and their root systems from the sediment. The divers use long vacuum hoses with a cutting attachment to detach the vegetation from the sediment and transfer it through the hoses that are attached to the pumps and dredging equipment that is secured to work boats or barges. This equipment is designed to retain the vacuumed vegetation and discharge the sediment and water back into the system. This method has shown to work well for removal of early infestations on invasive weeds and follow up removal following alternative methods for larger infestations. Diver dredging can be an expensive control option as it is a slow process and trained and certified dive teams generally have high prevailing wage and regulation requirements.

The Shiloh Homeowners Association, Varenna at Fountaingrove, Point Tiburon Lagoon Owners Association, Marin Lagoon Homeowners Association, Sonoma Greens Community Association, The Vineyard Club Inc., The Lake Alhambra Homeowners Association, Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club, Marin Country Club Golf

Course, Bayside Technology Park, Windsor Golf Club, Rooster Run Golf Club, Airport Business Center Park, The Shores at Marina Bay Homeowners Association, City of Elk Grove, Adobe Creek Golf Club, and City of Oakley are currently applying a few of the management strategies outlined above such as mechanical Harvesting, hand pulling, cutting, and raking.

BIOLOGICAL CONTROL METHODS

Biological control methods are based on selecting and introducing biological organisms such as animals, plants, and insects that have an impact on target plants. The objective of this method is to have the organism reduce the density, growth, reproduction, and overall survival of the target plants. Usually these biological control organisms are found in the native area of where the aquatic plants originated. Extensive research is done before any biological control agent is allowed or approved to insure that the biological control organisms are host specific and only go after the species of concern.

Due to the plant species in the lakes, reservoirs and lagoons, regulatory requirements, costs, and the uncertainty of the potential for success, these methods of control are not practical for use in The Shiloh Homeowners Association, Varenna at Fountaingrove, Point Tiburon Lagoon Owners Association, Marin Lagoon Homeowners Association, Sonoma Greens Community Association, The Vineyard Club Inc., The Lake Alhambra Homeowners Association, Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club, Marin Country Club Golf Course, Bayside Technology Park, Windsor Golf Club, Rooster Run Golf Club, Airport Business Center Park, The Shores at Marina Bay Homeowners Association, City of Elk Grove, Adobe Creek Golf Club, and City of Oakley.

ALGAECIDES AND AQUATIC HERBICIDES

If preventative control measures do not hold back nuisance algae blooms or aquatic weed infestations all control methods will be reviewed. Waterworks Industries Inc. and a PCA will analyze the various methods and will provide a recommendation that could include any of the methods outlined above or a combination of several of these methods. If it is determined that algaecides and aquatic herbicides are the most feasible option they would be implemented.

The Shiloh Homeowners Association, Varenna at Fountaingrove, Point Tiburon Lagoon Owners Association, Marin Lagoon Homeowners Association, Sonoma Greens Community Association, The Vineyard Club Inc., The Lake Alhambra Homeowners Association, Sun City Lincoln Hills Community Association in arrangement with Lincoln Hills Golf Club, Marin Country Club Golf Course, Bayside Technology Park, Windsor Golf Club, Rooster Run Golf Club, Airport Business Center Park, The Shores at Marina Bay Homeowners Association, City of Elk Grove, Adobe

Creek Golf Club, and City of Oakley would like to use herbicides and algaecides that are safe for use with all species of concern and protection to control nuisance aquatic weed and algae growth and want to have them as a tool in their IPM plan.

USING THE LEAST INTRUSIVE METHOD OF AQUATIC HERBICIDE APPLICATION

Waterworks Industries Inc. and a PCA will evaluate each treatment zone to determine the least intrusive method of aquatic herbicide or algaecide treatment. When evaluating which method will be the least intrusive the group will discuss which method will have the least impact on the surrounding environment, non-target organisms, and human health. The trained applicator(s) will also follow the PCA recommendations, pesticide label(s), and safety plan to ensure successful applications.

DECISION MATRIX CONCEPT FOR CHOOSING THE MOST APPROPRIATE FORMULATION

When it comes to deciding what the most appropriate formulation is, Waterworks Industries Inc. will rely on the expertise of the PCA to determine the formulation and write a recommendation after reviewing the following:

- Species present in the lake(s)
- Water quality parameters
- Which formulation has the least impact on the surrounding environment, non-target organisms, and human health (Including all protected species such as the western pond turtle)

Review of product labels, material safety data sheets and the California Pesticide Information Portal (CalPIP) PRESCRIBE recommendations to protect western pond turtles and any other species on concern or protection.

AQUATIC HERBICIDE AND ALGAECIDE APPLICATION LOG

The aquatic herbicide and algaecide application log form (below on page 156) was designed based on the following criteria listed in the General Permit.

The Discharger shall maintain a log for each algaecide and aquatic herbicide application. The application log shall contain, at a minimum, the following information:

- Date of application;
- Location of application;
- Name of applicator;
- Type and amount of algaecide and aquatic herbicide used;
- Application details, such as flow and level of water body, time application started and stopped, algaecide and aquatic herbicide application rate and concentration;
- Visual monitoring assessment; and
- Certification that applicator(s) followed the APAP.

NPDES AQUATIC HERBICIDE AND ALGAECIDE APPLICATION LOG FORM

Location of Application:					**Weather:**		
Applicator(s)					**Date of Application:**		
Species Controlled:							
Discharge Gates / Control Structures							
Date and time inspected:	Date:	Time:					
Inspection Performed By: Notes:							
Date and Time Opened	Date:	Time:					
Date and Time Closed	Date:	Time:					
Applicator Certification: I [ ] certify that the Aquatic Pesticide Application Plan has been followed Signature: _____ Date: _____							
Application Start Time: **Application Stop Time:**							
Application details: (surface acres treated, flow, level of water body, depth, type and amount of algaecide and aquatic herbicide used, application rate, concentration)							
Treatment Area	Acres treated (Surface Acres)	Water level / Flow	Depth (Average depth of treatment area)	Herbicide or Algaecide Used	Amount	Application Rate	Concentration
Visual Monitoring assessment – See NPDES Monitoring Data Form							

REFERENCES

The below references were used as guidelines when developing this Aquatic Pesticide Application Plan.

California State Water Resources Control Board. (n.d.). *National Pollutant Discharge Elimination System (NPDES) pesticides - weed control*. SWRCB.gov. https://www.waterboards.ca.gov/water_issues/programs/npdes/pesticides/weed_control.html

United States Environmental Protection Agency. (n.d.) *Integrated Pest Management (IPM) Principles.* Integrated Pest Management (IPM) principles | US EPA. (n.d.). https://www.epa.gov/safepestcontrol/integrated-pest-management-ipm-principles

United States Environmental Protection Agency. (n.d.) *Surface water sampling | US EPA*. epa.gov. https://www.epa.gov/quality/surface-water-sampling

Wisconsin Department of Natural Resources. (n.d.) *Chemical Fact Sheets*. Chemical Fact Sheets | | Wisconsin DNR. https://dnr.wisconsin.gov/topic/lakes/plants/factsheets