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AUG 1 2 2015
DIVISION OF WATER QUALITY

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# **9000001288**	
	C. ☐ Change of ownership or responsibility: WDID#		

II. DISCHARGER INFORMATION

A. Name **City of San Diego Park and Recreation Department, Open Space Division**			
B. Mailing Address **202 C Street, Floor 5, M.S. 5 D**			
C. City **San Diego**	D. County **San Diego**	E. State **California**	F. Zip **92101**
G. Contact Person **Michael Cook**	H. E-mail address **MCook@sandiego.gov**	I. Title **Grounds Maintenance Manager**	J. Phone **(619) 685-1304**

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
G. E-mail 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: **San Diego River**

B. Regional Water Quality Control Board(s) where treatment areas are located (REGION 1, 2, 3, 4, 5, 6, 7, 8, or 9): Region **9**
(List all regions where algaecide and aquatic herbicide application is proposed.)

V. ALGAECIDE AND AQUATIC HERBICIDE APPLICATION INFORMATION

A. Target Organisms: Aquatic weeds such as ludwigia, water hyacinth, water lettuce, mosquito fern, etc.

B. Algaecide and Aquatic Herbicide Used: List Name and Active ingredients **AquaMaster, AquaStar, or AquaPro - all contain glyphosate as the active ingredient; may also use Reward Landscape and Aquatic Herbicide – contains diquat as the active ingredient**

C. Period of Application: Start Date **11 October 2015** End Date ~~**30 November 2015**~~ Permit Expiration Date

D. Types of Adjuvants Used: **X-77 Spreader, Agri-dex, Pro Spreader, and/or Cygnet Plus**

VI. AQUATIC PESTICIDE APPLICATION PLAN

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 General Permit, including developing and implementing a monitoring program, will be complied with."

A. Printed Name: CHRIS ZIRKLE

B. Signature: Chris Z **Date:** 8/4/15

C. Title: Deputy Director

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** _____

Aquatic Pesticide Application Action Plan
First San Diego River Improvement Project (FSDRIP)
For the
San Diego Park & Recreation Department
Park Development/Open Space Division

For Submittal to:
Regional Water Quality Control Board
San Diego Region (9)
9174 Sky Park Court, Suite 100
San Diego, California 92123

Prepared for:
City of San Diego
Park & Recreation Department
Park Development/Open Space Division
202 C Street, Floor 5, M.S. 5 D
San Diego, California 92101
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April 2015

Aquatic Pesticide Application Action Plan
First San Diego River Improvement Project (FSDRIP)
San Diego Park & Recreation Department
Park Development/Open Space Division

Introduction

This Aquatic Pesticide Application Plan (APAP) is required by the conditions of the California State Water Resources Control Board Water Quality Order No. 2013-0002-DWQ, Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Discharge of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States, General Permit No. 990005.

Nothing in this plan supercedes label directions, applicable laws, regulations, and safety precautions for any pesticide.

1. **Description of the water system to which algaecides and aquatic herbicides are being applied;**

This APAP is being implemented on the San Diego River in the First San Diego River Improvement Project (FSDRIP), located between State Highway 163 on the western end and Qualcomm Way on the eastern end (Figure 1) (Thomas Guide map page 1269, A-3, B-2, C-2, and D-2). The river in the project area is crossed by Mission Center Road and Camino del Este. The river passes under Mission Center Road, Camino del Este, and Qualcomm Way in concrete box culverts. The San Diego River in FSDRIP was altered in the late 1980's into a series of three connected flow-through detention basins to provide flood protection to adjacent property in the area.

2. **Description of the treatment area in the water system;**

The application area includes all locations on the San Diego River in FSDRIP between State Highway 163 and Qualcomm Way where creeping waterprimrose and/or other aquatic weeds and plants are growing (Figure 1). The total open water area is approximately 8.7 acres, with approximately 9.7 acres of freshwater marsh. There is also 2.2 acres of riprap present in the project area. The amount of floating aquatic weeds present varies by year and time of year, depending on environmental variables, mostly related to rainfall.

3. **Description of the types of weed(s) and algae that are being controlled and why;**

The primary weed being controlled on the river in the project area is creeping waterprimrose (*Ludwigia peploides*). Also subject to control are cattails (*Typha* sp.) and tules (*Scirpus* sp.). Water hyacinth (*Eichhornia crassipes*) and water lettuce (*Pistia stratiotes*) are occasionally discovered in the project area and will be controlled whenever

they are discovered. Mosquito fern (*Azolla filiculoides, A. mexicana*) is also sometimes present and might be controlled.

These aquatic weeds are being controlled as required in accordance with the Natural Resource Management Plan prepared for FSDRIP, and to stay in compliance with permit conditions imposed by the U.S. Army Corps of Engineers (ACOE), U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW). Permit conditions require that open water habitat be maintained for the benefit of aquatic birds and other wildlife. By the mid-1990s, creeping waterprimrose covered nearly all the open water surface within FSDRIP, so an aquatic herbicide spraying program was instituted. Controlling aquatic floating weeds like creeping waterprimrose has also been shown to reduce the incidence of mosquitos in the area, which provides an additional public benefit for park users and nearby residents and businesses.

4. **Algaecide and aquatic herbicide products or types of algaecides and aquatic herbicides expected to be used and if known degradation byproducts, the method in which they area applied, and if applicable, the adjuvants and surfactants used;**

The primary aquatic pesticide that will be used to treat emergent aquatic weeds at FSDRIP is glyphosate, a broad spectrum post-emergent systemic herbicide. Brand names of the herbicide that may be used include, but are not limited to AquaMaster, AquaStar, and/or AquaPro, all aquatic registered formulations of glyphosate. Adjuvants used with the glyphosate include, but are not limited to Pro-Spreader Activator, Cygnet Plus, X-77 Spreader, and/or Agri-dex, all approved for aquatic applications.

Glyphosate degrades to aminomethyl phosphonic acid, phosphate, and carbon dioxide through microbial action in soil and water. The half-life of glyphosate in water is approximately 7 to 14 days, depending on environmental variables.

Diquat, a broad spectrum post-emergent contact herbicide, might also be used to treat floating aquatic weeds at FSDRIP. Reward Landscape and Aquatic Herbicide is the brand name for diquat. Diquat is effective for both emergent and submerged aquatic weeds.

Diquat degrades to 1,2,3,4-tetrahydro-1-oxopyrido[1,2a]-5-pyrazinium ion (TOPPS). TOPPS degrades to picolinamide, picolinic acid, formic acid, oxalic acid, carbon dioxide, and other volatile fragments.

The herbicide(s) will be applied to the foliage as a diluted spray from the shore and from a small boat, using hand-held equipment. The diluted pesticide solutions shall only be applied where aquatic weeds are present, not onto the entire open water area. All work will be done in accordance with label directions, as required by law, as well as this APAP.

5. **Discussion of the factors influencing the decision to select algaecide and aquatic herbicide applications for algae and weed control;**

Potential methods of controlling creeping waterprimrose and other aquatic weeds include the use of herbicides, biological control agents, physical control, and mechanical removal.

Using aquatic herbicides to control the aquatic weeds at FSDRIP has been determined to be the most environmentally friendly control method available. Water quality impacts have been demonstrated by way of water quality monitoring to be minimal or non-existent when used according to label directions. It is also the most efficacious and most cost effective method available, though the costly and duplicative requirements mandated to comply with the court ordered NPDES permit process makes the cost effectiveness much less dramatic than it was previously.

6. **If applicable, list the gates or control structures to be used to control the extent of receiving waters potentially affected by algaecide and aquatic herbicide application and provide an inspection schedule of those gates or control structures to ensure they are not leaking;**

Not applicable to this project.

7. **If the Discharger has 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* (Policy) section 5.3 for meeting acrolein and copper receiving water limitations, provide the beginning and ending dates of the exception period, and justification for the needed time for the exception. If algaecide and aquatic herbicide applications occur outside of the exception period, describe plans to ensure that receiving water criteria are not exceeded because the Dischargers must comply with the acrolein and copper receiving water limitations for all applications that occur outside of the exception period;**

Not applicable to this project.

8. **Description of the monitoring program;**

The monitoring program shall be performed in accordance with the requirements of the State Water Resources Control Board Monitoring and Reporting Program (MRP) for Water Quality Order No. 2013-0002-DWQ Statewide General National Pollutant Discharge Elimination System Permit for Discharge of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States, General Permit No. CAG 990005.

The Contractor performing the aquatic weed treatment program will maintain a log documenting the herbicide applications. The application log will include the following information: 1) date of application; 2) location of application; 3) name of applicator; 4)

type and amount of aquatic herbicide used; 5) application details, such as flow and level of water body, time application started and stopped, aquatic herbicide application rate and concentration; 6) visual monitoring assessment; and 7) certification that applicator(s) followed the APAP.

Water samples shall be collected, analyzed, records will be kept, and reports submitted in accordance with the MRP requirements. Because this APAP is only for one site, multiple sampling locations are not required. Background, event, and post-event water samples shall be collected at the specified locations within the project site and chemically analyzed at a certified laboratory. Data will also be collected from the water onsite at the time samples are collected, including date, time, location, appearance of the waterway (sheen, color, clarity, etc.), weather conditions, temperature, pH, turbidity, electrical conductivity, and dissolved oxygen level.

Annual reports shall be prepared and submitted to the RWQCB by March 1 of the year following treatment. The annual reports shall describe the herbicide treatment, monitoring results, and make recommendations, if necessary, for subsequent herbicide treatments.

Should there be a permit non-compliance event, the Regional Board will be notified within 24 hours from the time the City becomes aware of the circumstances. A written report will then be prepared and submitted documenting the non-compliance within 5 days, as specified in the permit.

9. **Description of procedures used to prevent sample contamination from persons, equipment, and vehicles associated with algaecide and aquatic herbicide application;**

Water quality sampling will be performed by trained staff following established procedures and protocols designed to prevent sample contamination. Lab provided sample bottles will be used for all water samples collected. Nitrile gloves and safety glasses will be worn when collecting and handling sample bottles. Water samples will be immediately placed in an ice chest provided by the sampling lab and delivered directly to the lab following sample collection. The meter used to collect data from the river water onsite will be rinsed with distilled water following sampling at each location.

10. **Description of the BMPs to be implemented. The BMPs shall include, at the minimum:**

Many best management practices (BMPs) are incorporated in the pesticide label directions, and by law, must be followed. It is not the intent of this APAP to repeat label directions and the BMPs incorporated within. BMPs listed on the pesticide label are incorporated into this document by reference. If BMPs listed in this APAP conflict with label directions, label directions must take precedence over the APAP. Among the BMPs to be implemented include, but are not limited to:

- Always apply pesticides in accordance with label directions and applicable laws, regulations, and safety precautions.
- Perform the work under the direction of a licensed qualified applicator.
- Keep the spray equipment clean, calibrated, and in good operating order.
- Use the lowest application rate that will provide good results.
- Do not mix more pesticide than can be applied at a given time.
- Do not apply more herbicide than is necessary to cover the foliage as directed on the pesticide label.
- Do not delay the application of pesticides once treatment thresholds have been reached.
- Apply the herbicide from downstream to upstream in the project area.
- Do not apply herbicide when wind or weather conditions will result in drift to non-target plants or open water. Apply herbicide in the early morning before the breeze typically strengthens.
- Do not apply herbicide to areas that do not contain target aquatic weeds.
- Do not apply herbicide when rainfall is imminent.
- Maintain a spill kit in the Contractor's truck.
- Review the application procedures and make appropriate modifications if improvements can be made to reduce potential impacts to the environment.

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

BMPs to prevent spills include keeping all equipment in good working order, inspecting it regularly, and replacing it when it becomes worn. The most likely time a spill could occur is during mixing and loading. Mixing and loading will be done in a contained area (for applications being done by boat, the boat itself serves as the containment tray), which will intercept any herbicide spilled and prevents it from entering the waters. Any herbicide spilled in the containment tray may be recaptured and used; it would not necessarily need to be disposed. The applicator will have a spill cleanup kit present onsite and available if needed for any spills while performing the work. In addition, the product label and safety data sheet (SDS) contain specific information regarding the physical, chemical, and environmental hazards of the product, as well as first aid measures, fire-fighting measures, accidental release measures, and toxicological data, among other information. The herbicide applicator will have copies of these documents present with him in the Contractor's service truck.

b. Measures to ensure that only an appropriate rate of application consistent with product label requirements is applied for the targeted weeds or algae;

The City hires a licensed aquatic weed control contractor to perform the aquatic herbicide applications. The contractor is a licensed Pest Control Business using a person with a qualified applicator license (QAL) with a category "F" for aquatic to perform the herbicide applications. As part of the licensing program, the California Department of Pesticide Regulation requires agency approved continuing education related to pesticides

and pest management. The QAL is required to follow label directions, along with any applicable laws, regulations, and safety precautions. All equipment will be inspected daily for damage, wear, and leaks.

c. The Discharger's plan in educating its staff and algaecide and aquatic herbicide applicators on how to avoid any potential adverse effects from the algaecide and aquatic herbicide applications;

The City hires a licensed aquatic weed control contractor to perform the aquatic herbicide applications. The contractor is a licensed Pest Control Business using a QAL to perform the herbicide applications. As part of the licensing program, the California Department of Pesticide Regulation requires agency approved continuing education related to pesticides and pest management. Continuing education programs are certified by the Department of Pesticide Regulation as to content and hours. In addition, the Contractor will review and follow the provisions in this APAP and will certify in writing that he has followed the APAP.

d. Discussion on planning and coordination with nearby farmers and agencies with water rights diversion so that beneficial uses of the water (irrigation, drinking water supply, domestic stock water, etc.) are not impacted during the treatment period; and

Not applicable to this project.

e. A description of measures that will be used for preventing fish kill when algaecides and aquatic herbicides will be used for algae and aquatic weed controls.

The herbicide(s) selected are registered with the Environmental Protection Agency and labeled for aquatic use due to minimal toxicity to fish and other aquatic organisms other than plants. The herbicide will be applied in accordance with label directions. Herbicide will only be applied to the aquatic weeds to be controlled, minimizing the quantity of herbicide applied directly to the water. Fish kills related to herbicide applications in the project area have not occurred in the past going back to the mid-1990s and are not expected in the future due to the relatively limited volume of plant biomass in relation to the volume of water present in the river.

Occasional fish kills in the San Diego River at FSDRIP have been documented in the past, usually following late summer rainstorms. Water sampling and lab testing following an event during the early 1990s showed low levels of dissolved oxygen were determined to be the apparent cause of mortality. No chemical toxins were detected in the water or dead fished tested. Dissolved oxygen levels below 5.0 ppm unrelated to pesticide applications have often been documented in FSDRIP during the summer months when the river flow is minimal through the large open water detention basins. Dissolved oxygen levels as low as 0.51 ppm have been recorded at FSDRIP during the past decade.

11. Examination of Possible Alternatives. Dischargers should examine the alternatives to algaecides and aquatic herbicide use to reduce the need for applying algaecides and herbicides. Such methods include:

a. Evaluating the following management options, in which the impact to water quality, impact to non-target organisms including plants, algaecide and aquatic herbicide resistance, feasibility, and cost effectiveness should be considered:

i. No action;

"No control" is not an option at FSDRIP due to the mandated permit requirement to maintain 8.7 acres of open water habitat and 9.7 acres of freshwater marsh for wildlife, as mentioned previously.

ii. Prevention;

Prevention is not an option at FSDRIP due to the presence of aquatic weeds upstream of the project area. Aquatic weed propagules flow into the project area on a continuing basis from upstream sources. FSDRIP is a maintenance assessment district (MAD), and may not perform any work outside of the district area.

iii. Mechanical or physical methods;

Physical removal includes things such as cutting or pulling the aquatic weeds by hand, using water draw-downs, physical barriers, dredging and other highly invasive methods. None of these methods are considered viable due to high cost, impracticality of implementation at FSDRIP, and/or unacceptable environmental impacts. In addition, creeping waterprimrose propagates from small plant pieces, so small fragments that escape being removed further introduction of this species throughout the project area. Besides high cost, mechanical removal requires hauling the removed biomass to a landfill facility, which creates additional air pollution, including greenhouse gasses, traffic impacts, and places additional burdens on the waste disposal stream.

Mechanical harvesters increase water turbidity and are expensive. Small pieces of viable aquatic weeds may be left behind and any creeping waterprimrose that remains grows back rapidly. In addition, three separate access points are required to launch the harvesting equipment at FSDRIP due to the road crossings. The box culverts under the road crossings are too small to use as access points to move the harvesters through them under the road. The project was not designed to accommodate the launching of equipment into and the removal of material from the river, as aquatic weed invasion was not anticipated when the project was designed and permitted. Temporary launch and removal ramps would have to be established over the riprap along the street crossings at potentially high cost. Accommodating mechanical removal would require closing lanes

and setting up traffic control on Mission Center Road and Camino del Este, placing an additional burden on the community.

iv. Cultural methods;

There are no known cultural methods to control creeping waterprimrose that would be feasible on the San Diego River, so this method is currently not an option.

v. Biological control agents; and

The introduction of grass carp or white amur might control creeping wateprimrose, but is not legal, so it is not an option. There is no other biological control method or agent currently available to control creeping waterprimrose, so this method is not an option.

vi. Algaecides and aquatic herbicides;

Aquatic herbicides have proven to be effective at controlling aquatic weeds without adverse effects on non-target organisms when properly used. Using aquatic herbicides to control the aquatic weeds at FSDRIP has been determined to be the most environmentally friendly control method available. Water quality impacts have been demonstrated to be minimal or non-existent when used according to label directions. It is also the most efficacious and most cost effective method available, though the costly and duplicative requirements mandated to comply with the court ordered NPDES permit process makes the cost effectiveness much less dramatic than it was previously.

If there are no alternatives to algaecides and aquatic herbicides, Dischargers shall use the minimum amount of algaecides and aquatic herbicides that is necessary to have an effective control program and is consistent with the algaecide and aquatic herbicide product label requirements.

The amount of herbicide required to control creeping waterprimrose and other aquatic weeds is determined by following label directions. Federal and State law mandate that the label directions must be followed. The exact amount of herbicide required is dependent on the amount of biomass to be controlled when the herbicide treatment actually takes place. Multiple small batches of herbicide with be required to treat the entire project area and only the amount of herbicide necessary will be used. As required by law, pesticide use at the project will be reported by the Contractor to the County Agricultural Commissioner. The information will also be reported to the Regional Board with the annual report.

b. Using the least intrusive method of algaecide and aquatic herbicide application; and

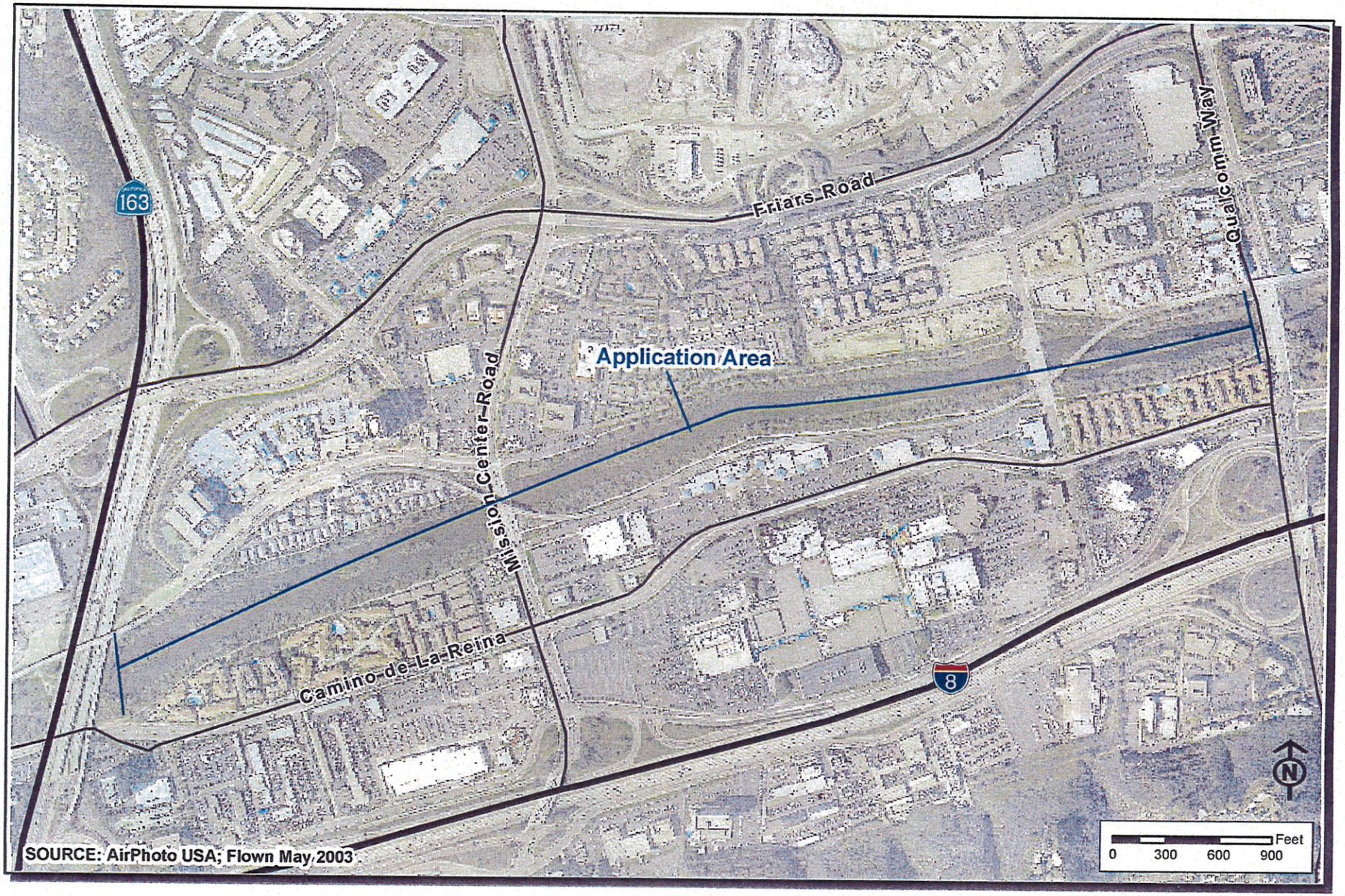
The Contractor applies herbicide to the floating aquatic weeds using hand-held spray equipment, from either the shoreline or using a small boat specially equipped with a spray rig for aquatic herbicide applications. Herbicide is only applied to aquatic weeds,

minimizing the quantity of herbicide that comes in contact with the river water. Herbicide applications are only made when the possibility of spray drift is minimized. Herbicide applications are typically made in the early morning hours and suspended for the day when the wind picks up, which typically occurs mid to late morning.

c. Applying a decision matrix concept to the choice of the most appropriate formulation.

Through experience it has been determined that creeping waterprimrose should be controlled once some of the patches start to exceed 10 feet across. Widespread patches wider than this become increasing difficult to treat because they are too wide to reach. They also require a far greater effort once the patches become larger, with the biomass increasing exponentially during the warm summer months. In addition, when the creeping waterprimrose patches are treated when they are smaller, less herbicide is required and there is less likelihood of anoxic conditions developing in the river. This is because the volume of aquatic weed biomass that is decomposing all at the same time is less.

When there are only scattered patches smaller than 10 feet across, this does not meet the treatment threshold, so herbicide treatment would not occur.



First San Diego River Improvement Project

Vicinity Map

FIGURE 1