RECEIVED
JUN 23 2011
DIVISION OF WATER QUALITY

ATTACHMENT G – NOTICE OF INTENT

WATER QUALITY ORDER NO. 2011-0002-DWQ
GENERAL PERMIT NO. CAG 990004

STATEWIDE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR BIOLOGICAL AND RESIDUAL PESTICIDE DISCHARGES TO WATERS OF THE UNITED STATES FROM VECTOR CONTROL APPLICATIONS

I. NOTICE OF INTENT STATUS (see Instructions)

Mark only one item ☒ A. New Applicator ☐ B. Change of Information: WDID# _____

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

II. DISCHARGER INFORMATION

A. Name: Alameda County Mosquito Abatement District			
B. Mailing Address: 23187 Connecticut street			
C. City: Hayward	D. County: Alameda	E. State: CA	F. Zip Code: 94545
G. Contact Person: John Rusmisel	H. Email address: acmad@mosquitoes.org	I. Title: District Manager	J. Phone: (510) 783-7744

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. Biological and residual pesticides discharge to (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: Varies, but includes Alameda County & 14 cities within County
Name of the conveyance system: All constructed water conveyance facilities in Alameda County

3. Directly to river, lake, creek, stream, bay, ocean, etc.
☒ Name of water body: All water ways in Alameda County

* A map showing the affected areas for items 1 to 3 above may be included.

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

A map showing the locations of A1-A3 in each Regional Water Board shall be included.

V. PESTICIDE APPLICATION INFORMATION

A. Target Organisms: X Vector Larvae X Adult Vector

B. Pesticides Used: List name, active ingredients and, if known, degradation by-products
See PAP & Annual Statement of Intent to apply pesticides.

C. Period of Application: Start Date January 1 End Date December 31

D. Types of Adjuvants Added by the Discharger:

VI. PESTICIDES APPLICATION PLAN

A. Has a Pesticides Application Plan been prepared?*
☒ Yes ☐ No

If not, when will it be prepared? _____

* A copy of the PAP shall be included with the NOI.

B. Is the applicator familiar with its contents?

☒ Yes ☐ No

VII. NOTIFICATION

Have potentially affected governmental agencies been notified?

☒ Yes ☐ No

* If yes, a copy of the notifications shall be attached to the NOI.

VIII. FEE

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

☐ Yes ☒ NO ☐ NA fees submitted with original NOI

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: John R. Rusmisel

B. Signature: John R. Rusmisel **Date:** June 20, 2011

C. Title: District Manager

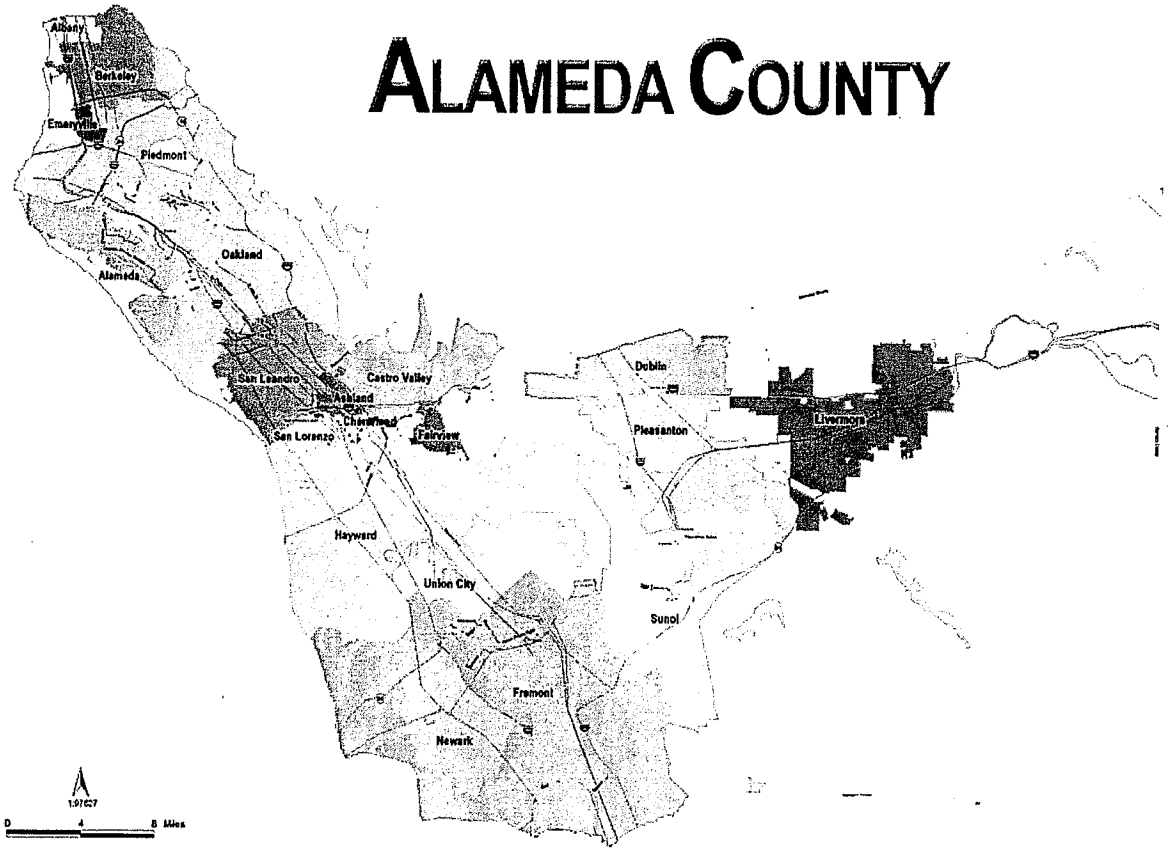
X. FOR STATE WATER BOARD USE ONLY

WDID:	**Date NOI Received:**	**Date NOI Processed:**
Case Handler's Initial:	**Fee Amount Received:** **$**	**Check #:**

Alameda County Mosquito Abatement District – Pesticide Application Plan (PAP)
June 2011

1. **Description of the target area and adjacent areas, if different from the water body of the target area;**

All aquatic sources in Alameda County are potential targets for pesticide applications it there are mosquito larvae present. Adulticides are rarely used by the District but would be used in any area of the county that had high numbers of adult mosquitoes especially if the mosquitoes were known vectors of West Nile Virus or other mosquito-borne disease. The Tri-Valley area of Alameda County that includes the cities of Dublin, Livermore and Pleasanton and nearby unincorporated areas is the most likely area to see truck mounted ULV treatments in the event of an outbreak of WNV.



2. **Discussion of the factors influencing the decision to select pesticide applications for mosquito control;**

Please see the Best Management Practices for Mosquito Control in California

3. **Pesticide products or types expected to be used and if known, the method in which they are applied, and if applicable, the adjuvants and surfactants used;**

Please see Attachments E and F within the NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. for Vector Control Applications. Products may be applied by hand, truck, backpack, hand can, helicopter, or airplane according to label directions.

4. **Description ALL the application areas* and the target areas in the system that are being planned to applied or may be applied. Provide a map showing these areas;**

   Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is the District's preferred solution, and whenever possible the District works with property owners to effect long-term solutions to reduce or eliminate the need for continued applications as described in Best Management Practices for Mosquito Control in California. See map above of Alameda County. The typical sources treated by this District include:

Agricultural	**Natural**	**Domestic**	**Commercial**
Stock Ponds	Creeks	Fish ponds	Catch basin
Duck Ponds	Creek potholes	Septic tanks	Storm drain
Agricultural drains	Marsh, tidal	Wells	Gravel pit
Watering troughs	Marsh, reclaimed	Swimming pools	Ditch
	Marsh, fresh	Spa	Sewer pond
	Lakes	Bird baths	Utility vaults
	Ponds	Flooded basement	Cemetery urns
	Tree holes	Containers	Sumps
	Rain pools	Overwatering	Sewer lines
	Seepage		Canal
			Used tires
			Broken pipes

5. **Other control methods used (alternatives) and their limitations;**

   With any mosquito or other vector source, the District's first goal is to look for ways to eliminate the source, or, if that is not possible, for ways to reduce the vector potential. The most commonly used methods and their limitations are included in the Best Management Practices for Mosquito Control in California.
   Specific methods used by the District include stocking mosquito fish (*Gambusia affinis*), educating residents that mosquitoes develop in standing water and encouraging them to remove sources of standing water on their property, and working with property owners to find long-term water management strategies that meet their needs while minimizing the need for public health pesticide applications.

6. **How much product is needed and how this amount was determined;**
The need to apply product is determined by surveillance. Actual use varies annually depending on the mosquito activity. The pesticide amounts presented below were taken from the Alameda County Mosquito Abatement District's 2010 PUR as an estimate of pesticide use in 2011. Other public health pesticides in addition to those listed here may be used as part of the District's best management practices.

Treatments applied in Alameda County 2010

Material	Amount	Area treated	Applic Rate	No. of Applic.
Agnique MMF	20 oz	3089.0 sq ft	284.7 fl oz/acre	22
Altosid Briquets	652 oz	2.2 acre	299.0 oz/acre	146
Altosid Liquid conc.	825 oz	824.6 acre	1.0 fl oz/acre	151
Altosid Pellets	3803 oz	113.3 acre	33.6 oz/acre	87
Altosid WSP	22 oz	2.0 acre	11.1 oz/acre	6
Altosid XR briquets	4358 oz	5.8 acre	571.4 oz/acre	429
Altosid XR-G	432 oz	11.0 acre	39.3 oz/acre	1
BVA 2 Oil	47 gal	15.7 acre	3.0 gal/acre	14
Golden Bear Oil	1898 gal	530.4 acre	3.6 gal/acre	751
Natular XRT	16 lb	0.2 acre	92.4 lb/acre	9
Scourge 4%	11 oz	13.5 acre	0.8 fl oz/acre	2
Vectobac 12AS	122 gal	1237.3 acre	0.1 gal/acre	362
Vectobac G	5500 lb	609.8 acre	9.0 lb/acre	597
Vectolex CG	2994 lb	283.3 acre	10.6 lb/acre	706
Vectolex WDG	251 lb	631.2 acre	0.4 lb/acre	347
Vectolex WSP	81 lb	133.1 acre	0.6 lb/acre	467
VectoMax CG	271 lb	22.6 acre	12.0 lb/acre	41

7. **Representative monitoring locations* and the justification for selecting these monitoring locations**
Please see the MVCAC NPDES Coalition Monitoring Plan

8. **Evaluation of available BMPs to determine if there are feasible alternatives to the selected pesticide application project that could reduce potential water quality impacts; and**
Please see the Best Management Practices for Mosquito Control in California

9. **Description of the BMPs to be implemented. The BMPs shall include at a minimum:**

The District's BMPs are described in the Best Management Practices for Mosquito Control in California and in the California Mosquito-borne Virus Surveillance and Response Plan. Specific elements have been highlighted below under items a-f.

   a. **measures to prevent pesticide spill;**
   All pesticide applicators receive annual spill prevention and response training. District employees ensure daily that application equipment is in proper working order. Spill mitigation devices are placed in all vehicles and pesticide storage areas.

b. **measures to ensure that only a minimum and consistent amount is used**
Application equipment is calibrated at least annually as required by the Department of Pesticide Regulations (DPR) and the terms of a cooperative agreement with the California Department of Public Health (CDPH).

c. **a plan to educate Coalition's or Discharger's staff and pesticide applicator on any potential adverse effects to waters of the U.S. from the pesticide application;**
This will be included in our pesticide applicators annual pesticide application and safety training, continuing education programs, and/or regional NPDES Permit training programs.

d. **descriptions of specific BMPs for each application mode, e.g. aerial, truck, hand, etc.;**
The Alameda County Mosquito Abatement District calibrates truck-mounted and handheld larviciding equipment each year to meet application specifications. Supervisors review application records daily to ensure appropriate amounts of material are being used. Ultra-low volume (ULV) application equipment is calibrated for output and droplet size to meet label requirements. Aerial larviciding equipment is calibrated by the Contractor. Aerial adulticide equipment is calibrated regularly and droplet size will be monitored by the District to ensure droplets meet label requirements. Airplanes used in urban ULV applications and the primary airplane used for rural ULV application is equipped with advanced guidance and drift management equipment to ensure the best available technology is being used to place product in the intended area. If a secondary airplane is used in rural ULV applications it will be equipped with an advanced guidance system.

e. **descriptions of specific BMPs for each pesticide product used; and**
Please see the Best Management Practices for Mosquito Control in California for general pesticide application BMPs, and the current approved pesticide labels for application BMPs for specific products.

f. **descriptions of specific BMPs for each type of environmental setting (agricultural, urban, and wetland).**
Please see the Best Management Practices for Mosquito Control in California.

10. **Identification of the problem. Prior to first pesticide application covered under this General Permit that will result in a discharge of biological and residual pesticides to waters of the US, and at least once each calendar year thereafter prior to the first pesticide application for that calendar year, the Discharger must do the following for each vector management area:**
    a. **If applicable, establish densities for larval and adult vector populations to serve as action threshold(s) for implementing pest management strategies;**

The Alameda County Mosquito Abatement District staff only apply pesticides to sources of mosquitoes that represent imminent threats to public health or quality of life. The presence of any mosquito may necessitate treatment, however higher thresholds may be applied depending on the District's resources, disease activity, or local needs. Treatment thresholds are based on a combination of one or more of the following criteria:

- Mosquito species present
- Mosquito stage of development
- Pest, nuisance, or disease potential
- Disease activity
- Mosquito abundance
- Flight range
- Proximity to populated areas
- Size of source
- Presence/absence of natural enemies or predators
- Presence of sensitive/endangered species or habitats.

b. Identify target vector species to develop species-specific pest management strategies based on developmental and behavioral considerations for each species;
Please see the Best Management Practices for Mosquito Control in California and the California Mosquito-borne Virus Surveillance and Response Plan.

c. Identify known breeding areas for source reduction, larval control program, and habitat management; and
Any site that holds water for more than 96 hours (4 days) can produce mosquitoes. Source reduction is the District's preferred solution, and whenever possible the District works with property owners to implement long-term solutions to reduce or eliminate the need for continued applications as described in Best Management Practices for Mosquito Control in California.

d. Analyze existing surveillance data to identify new or unidentified sources of vector problems as well as areas that have recurring vector problems.
This is included in the Best Management Practices for Mosquito Control in California and the California Mosquito-borne Virus Surveillance and Response Plan that the Districts uses. The District continually collects adult and larval mosquito surveillance data, dead bird reports, and sentinel chicken test results and uses these data to guide mosquito control activities.

11. Examination of Alternatives. Dischargers shall continue to examine alternatives to pesticide use in order to reduce the need for applying larvicides that contain temephos and for spraying adulticides. Such methods include:

a. **Evaluating the following management options, in which the impact to water quality, impact to non-target organisms, vector resistance, feasibility, and cost effectiveness should be considered:**
   - **No action**
   - **Prevention**
   - **Mechanical or physical methods**
   - **Cultural methods**
   - **Biological control agents**
   - **Pesticides**

   If there are no alternatives to pesticides, dischargers shall use the least amount of pesticide necessary to effectively control the target pest.

   The Alameda County Mosquito Abatement District participates in a regional source reduction permit from the US Army Corps of Engineers for the purpose of maintaining existing water circulation ditches and channels to control mosquitoes in the tidal marshes along the SF Bay. See copy of Permit and annual report attached to this document.

   The Alameda County Mosquito Abatement District uses the principles and practices of integrated vector management (IVM) as described on pages 26 and 27 of Best Management Practices for Mosquito Control in California. As stated in item #10 above, locations where vectors may exist are assessed, and the potential for using alternatives to pesticides is determined on a case-by-case basis. Commonly considered alternatives include: 1) Eliminate artificial sources of standing water; 2) Ensure temporary sources of surface water drain within four days (96 hours) to prevent adult mosquitoes from developing; 3) Control plant growth in ponds, ditches, and shallow wetlands; 4) Design facilities and water conveyance and/or holding structures to minimize the potential for producing mosquitoes; and 5) Use appropriate biological control methods that are available. Additional alternatives to using pesticides for managing mosquitoes are listed on pages 4-19 of the Best Management Practices for Mosquito Control in California.

   Implementing preferred alternatives depends a variety of factors including availability of agency resources, cooperation with stakeholders, coordination with other regulatory agencies, and the efficacy of the alternative. If a pesticide-free alternative does not sufficiently reduce the risk to public health, pesticides are considered, beginning with the least amount necessary to effectively control the target vector.

b. **Applying pesticides only when vectors are present at a level that will constitute a nuisance.**

   The Alameda County Mosquito Abatement District follows an existing integrated vector management (IVM) program which includes practices described in the

California Mosquito-borne Virus Surveillance and Response Plan and Best Management Practices for Mosquito Control in California.

A "nuisance" is specifically defined in California Health and Safety Code (HSC) §2002(j). This definition allows vector control agencies to address situations where even a low level of vectors may pose a substantial threat to public health. In practice, the definition of a "nuisance" is generally only part of a decision to apply pesticides to areas covered under this permit. As summarized in the California Mosquito-borne Virus Surveillance and Response Plan, the overall risk to the public when vectors and/or vector-borne disease are present is used to select an available and appropriate material, rate, and application method to address that risk in the context of our IVM program.

12. Correct Use of Pesticides

Coalition's or Discharger's use of pesticides must ensure that all reasonable precautions are taken to minimize the impacts caused by pesticide applications. Reasonable precautions include using the right spraying techniques and equipment, taking account of weather conditions and the need to protect the environment.

This is an existing practice of the Alameda County Mosquito Abatement District and is required to comply with the Department of Pesticide Regulation's (DPR) requirements and the terms of our California Department of Public Health (CDPH) Cooperative Agreement. All pesticide applicators receive annual safety and spill training in addition to their regular continuing education.

13. If applicable, specify a website where public notices, required in Section VIII.B, may be found.

www.mosquitoes.org

References:

Best Management Practices for Mosquito Control in California. 2010. Available by download from the California Department of Public Health—Vector-Borne Disease Section at http://www.westnile.ca.gov/resources.php under the heading Mosquito Control and Repellent Information. Copies may be also requested by calling the California Department of Public Health—Vector-Borne Disease Section at (916) 552-9730 or the Alameda County Mosquito Abatement District at (510) 783-7744.

California Mosquito-borne Virus Surveillance and Response Plan. 2010. [Note: this document is updated annually by CDPH]. . Available by download from the California Department of Public Health—Vector-Borne Disease Section at http://www.westnile.ca.gov/resources.php under the heading Response Plans and Guidelines. Copies may be also requested by calling the California Department of Public Health—Vector-Borne Disease Section at (916) 552-9730 or Alameda County Mosquito Abatement District at (510) 783-7744.

MVCAC NPDES Coalition Monitoring Plan. 2011. [In development at the time of this draft]

Department of the Army Regional Permit No. 4 for Mosquito Abatement Activities, file no. 400304S.

Proposed Source Reduction work for 2010-2011for Regional Permit No.4.

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

JUL 31 2007

Regulatory Branch

SUBJECT: File Number 21586S

Stan Husted, M.P.H.
Vector-Borne Disease Section
California Department of Health Services
850 Marina Bay Parkway
Richmond, CA 94804

Dear Mr. Husted:

Enclosed is your signed copy of Department of the Army Regional Permit 4 for the maintenance of existing water circulation ditches and channels for the purpose of mosquito abatement in tidal marshes.

You are responsible for ensuring that the contractor and workers executing the activity authorized herein are knowledgeable with the terms and conditions of this authorization.

Should you have any questions please call Bob Smith of our Regulatory Branch at 415-503-6792. Please address all correspondence to the Regulatory Branch and refer to the file number at the head of this letter.

Sincerely,

for Craig W. Kiley
Lieutenant Colonel, U.S. Army
Commanding

Enclosures

Copy Furnished:

CA RWQCB, Oakland, CA
CA BCDC, San Francisco, CA

US Army Corps
of Engineers

DEPARTMENT OF THE ARMY REGIONAL PERMIT No. 4
FOR
MOSQUITO ABATEMENT
ACTIVITIES

Sponsor: **California Department of Health Services**

File No.: **400304S**

Issuing Office: San Francisco District

NOTE. The term "you" and its derivatives, as used in this permit, means the permittee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

Authorized work:

1. Maintenance (but not construction) of currently serviceable water circulation ditches. Maintenance does not include any modification that changes the character, scope, or size of the original ditch.

2. Sidecasting of fill incidental to the removal of debris, weeds, and emergent vegetation in natural channels where normal water circulation is impeded such that mosquito breeding can occur.

3. Filling of existing, nonfunctional water circulation ditches to the extent necessary to achieve the required water circulation dynamics and restore ditched wetlands.

Permit Conditions:

General Conditions:

1. This authorization ends on **February1, 2013**.

2. Endangered Species. No activity is authorized under this regional permit which is likely to adversely affect a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or which is likely to destroy or adversely modify the critical habitat of such species. Permittees shall notify the district engineer if any listed species or critical habitat might be affected or is in the vicinity of the project and shall not begin work on the activity until notified by the district engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized. Information on the location of threatened and endangered species and their critical habitat can be obtained from the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

3. Equipment. Staging areas shall be on upland sites if available. Heavy equipment working in wetlands must be placed on mats or other measures must be taken to minimize soil disturbance (e.g., use of low ground pressure vehicles).

4. Suitable material. No discharge of dredged or fill material into the waters of the United States may consist of unsuitable material (e.g., trash) and material discharged must be free of toxic pollutants in toxic amounts. (see section 307 of the Clean Water Act)

5. Discharges of dredged or fill material into the waters of the United States must be minimized or avoided to the maximum extent possible at the project site.

6. Work authorized under this regional permit shall be conducted, whenever possible, during the period of 1 August through 31 January.

7. No activity authorized under this permit may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including those species which normally migrate through the area. In waterbodies which support anadromous fish, work shall be conducted during the period 1 July through 30 September.

8. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized

by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

9. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

10. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. No work shall be performed in tidal marshes of San Francisco Bay, San Pablo Bay, and western Suisun Bay (west of Grizzly Bay) between 1 February and 1 September, the breeding season of the California clapper rail. Specific areas of tidal marsh which have been determined in writing by the US FWS to provide no suitable habitat for the California clapper rail may be conditionally excluded from this prohibition.

2. No spoils sidecast adjacent to circulation ditches shall exceed 8 inches in relief above the marsh plain after dewatering. Sidecast spoil lines exceeding 4 inches in height above the marsh plain shall extend no more than 6 feet from the nearest ditch margin. Any spoils in excess of these dimensions shall be either hydraulically redispersed on site, or removed to designated upland sites, out of Corps jurisdiction. Sidecast spoil lines shall be breached at appropriate intervals to prevent local impediments to water circulation.

3. A work plan for each year's proposed maintenance activities shall be submitted to the Corps, US FWS, and CDFG no later than 1 July of each year. The Corps will provide notification within 30 days if any of the proposed work is determined to have more than minimal adverse impacts, after consideration of any proposed mitigation, and is therefore not authorized by this permit. The work plan shall include a delineation of all proposed ditching overlain on topographic maps at a minimum 1" = 1000' scale, with accompanying vicinity maps. The plan shall also indicate the dominant vegetation of the site, based on subjective estimates; the length and width of the ditches to be maintained, cleared or filled, and; the estimated date the work will be carried out. A report of the actual work done in the previous year shall be included with the work plan.

4. If the review of the proposed work plan by the Corps, US FWS or CDFG determines the proposed maintenance is likely to destroy or damage substantial amounts of shrubby or sub-shrubby vegetation (e.g., coyote brush, gumplant) on old sidecast spoils, the permittee will be notified to provide a quantitative estimate of the extent and quality of the vegetation, and a revegetation plan for the impacted species prepared by a biologist/botanist with expertise in marsh vegetation. The Corps approved revegetation plan shall be implemented prior to April 1 of the year following the impacts.

5. In marshes which contain populations of invasive nonnative vegetation such as *Lepidium latifolium* or introduced species of *spartina*, sidecast spoils shall be surveyed for the frequency of establishment of these species during the first growing season following the deposition of the spoils. The results of the surveys shall be reported to the Corps, US FWS and CDFG. If it is determined the sidecasting of spoils have resulted in a substantial increase in the distribution or abundance of the nonnative vegetation which is detrimental to the marsh, the permittee shall implement appropriate abatement measures after consultation with the Corps, US FWS and CDFG.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

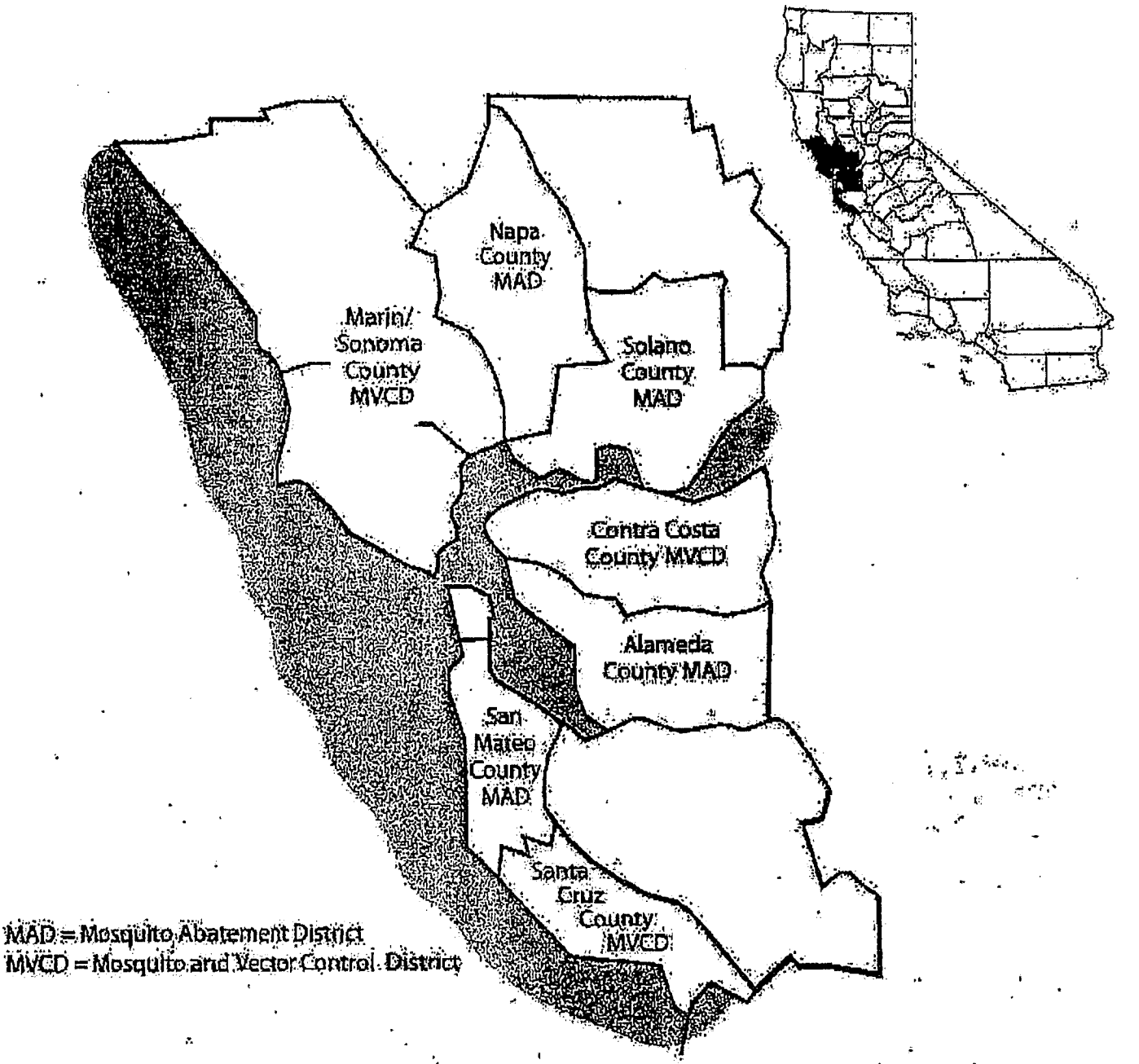
This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

DJ Dunlap
(District Engineer)

31 July 07
(Date

for Craig W. Kiley
Lieutenant Colonel, U.S. Army
Commanding

Participating San Francisco Bay Area Mosquito and Vector Control Districts



MAD = Mosquito Abatement District
MVCD = Mosquito and Vector Control District

Purpose:
Habitat enhancement plans for long-term reduction of mosquito populations

Coordinating Agency:
California Dept of Health Services
Vector-Borne Disease Section
850 Marina Bay Parkway
Richmond, CA
1. 510. 412. 6253
Fax 1. 510. 412-6263

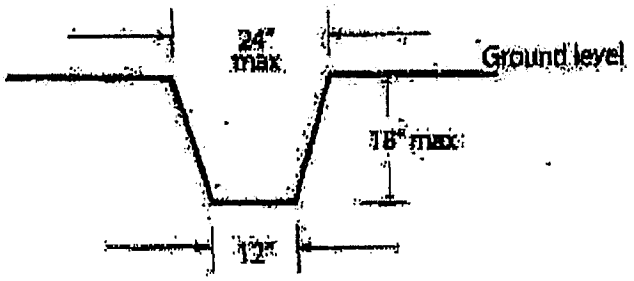
Agencies participating in General Permit # 7

Prepared by Stan Husted

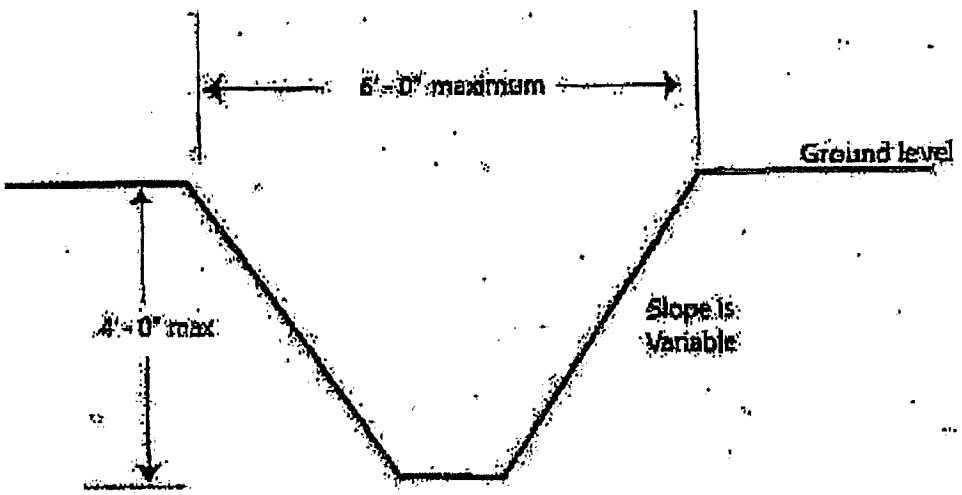
December 27, 2006

Typical Water Circulation Ditches

Small Lateral Water Circulation Ditch Configuration



Medium to Large Water Circulation Ditch Configuration



No scale

Purpose
Habitat enhancement plans for long-term reduction of mosquito populations

Coordinating Agency:
California Dept of Health Services
Vector-Borne Disease Section
850 Marina Bay Parkway
Richmond, CA
T. 510. 412. 6253
Fax T. 510. 412-6263

Typical Water Circulation Ditches

Prepared by Stan Husted
Sheet 2 of 3
December 27, 2006

Alameda County Mosquito Abatement District

Proposed Source Reduction Work for the 2010-2011 Season

US Army Corps of Engineers
General Permit Number 248520S

Prepared by:

Erika Castillo
Environmental Specialist
Alameda County Mosquito Abatement District
23187 Connecticut St
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Alameda County Mosquito Abatement District

John R. Rusmisel
District Manager
acmail@mosquitoes.org

Ms. Kerry A. Padgett
Supervising Public Health Biologist
California Department of Public Health
Division of Communicable Disease Control
Vector Borne Disease Section
850 Marina Bay Parkway
Richmond, CA 94804

June 9, 2010

Dear Ms. Padgett,

Attached are the proposed projects for source reduction for the 2010-2011 period by the Alameda County Mosquito Abatement District. These 12 projects are for the maintenance of existing ditches or access to mosquito sources. Our agency feels that these projects are necessary to reduce mosquito production. Also find attached our annual report of source reduction activities for 2009-2010.

The sources covered by these projects and our permit are inspected by field personnel. Vegetative growth or obstructions determine if and when maintenance is required. It is the District's goal to minimize unneeded activity in wetlands. Our staff will be ready to begin work, for the fifth year of the permit, on September 1, 2010 and will finish by Jan 31, 2011. Consultation will be made with property owners and wildlife personnel to determine the least disruptive period to complete this necessary maintenance.

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.

Thank you for your efforts in obtaining the Regional Permit.

Yours truly,

John R. Rusmisel

John Rusmisel
District Manager

23187 Connecticut Street, Hayward, CA 94545 ♦ (510) 783-7744 Tel ♦ (510) 783-3903 FAX

2009-2010 Source Reduction Activity Totals

Project Name	Lineal feet of ditch		% completed
Trojan Marsh	allotted	12,900	
(Project # 1)	cleaned	2,633	20%
Oro Loma Marsh	allotted	2,000	
(Project # 2)	cleaned	0	0%
Hayward Landing	allotted	1,500	
(Project # 3)	cleaned	1,065	71%
Marsicano Properties	allotted	2,000	
(Project # 4)	cleaned	675	34%
Alameda Creek Stables	allotted	2,600	
(Project # 5)	cleaned	0	0%
Patterson Hill Marsh	allotted	4,000	
(Project # 6)	cleaned	0	0%
Ecology Marsh	allotted	8,200	
(Project # 7)	cleaned	185	2%
Alameda Creek	allotted	500	
(Project # 8)	cleaned	0	0%
Hetch-Hetchy Marsh	allotted	2,500	
(Project # 9)	cleaned	0	0%
Mowry Slough	allotted	16,000	
(Project # 10)	cleaned	1,074	7%
Albrae Slough	allotted	10,000	
(Project # 11)	cleaned	170	2%
Mouse Pasture	allotted	3,775	
(Project # 12)	cleaned	1,250	33%
TOTALS	**allotted**	**65,975**	
	cleaned	**7,070**	**11%**

As the table above states 7,070 LF of ditches were cleaned, out of a possible 65,975 LF. Overall completion was approximately 11%.

We observed negligible changes in the vegetation in the marshes due to our ditching. We are quite aware of the two invasive species -- *Lepidium* and *Spartina* -- and carefully observe any floristic changes in the marshes. However, these plants were seldom found in the ditches we cleaned.

Current salt marsh source reduction techniques

Environmental Considerations: Prior to the 1970s when the majority of mosquito control ditching, filling, and impoundment construction were completed, mosquito control was usually the primary consideration when manipulating salt marshes. Little concern was given to environmental issues. Today, minimizing adverse salt marsh impacts must be considered when designing a source reduction project and has equal weight in the process of achieving regulatory approval. Minor hand ditching and maintenance of existing ditches by the District is subject to permitting and reporting processes through the Army Corps of Engineers, in coordination with the land owner (usually a local, state or federal agency) and other federal, local and regional agencies.

Ditching: Ditching can be used in both salt or freshwater marsh locations to control mosquitoes by:

1) enhancing drainage thus eliminating mosquito-producing sites, or,
2) allowing access of larvivorous fish to mosquito breeding locations (this can be enhanced through the creation of permanent water bodies which act as predatory fish reservoirs).

Hand Ditching Applications: This is the technique used most often by the District. It is used to maintain existing small ditches covered by an Army Corp of Engineer's permit. The District may apply for 30,000 feet or more of ditch maintenance on a permit. Actual maintenance depends upon the condition of the ditches, vegetation growth, mosquito production history of the area and localized blockages that occur from debris in ditches (old boats, lumber, stumps, mattresses, or other slimy items). In a typical year the District may maintain 2-5,000 feet of ditches. When maintenance is done the change in capacity of a cleaned ditch is only negligible or insignificant. Additionally, the surface area is restored, the spoil is deposited as authorized by the permit, and the work does not impact any mature trees, threatened or endangered plant species, or sensitive habitat areas. Mitigation: To avoid adverse effects on the habitat, hand maintenance of ditches is done only when needed. The work is done when the tide is out and the water in the ditches is stationary or slow moving to prevent spread of the localized turbidity. Spoils and removed silt are spread as requested in the permit to avoid changes in the character of the marsh and to keep undesirable plant species from becoming established. The time of entry for maintenance is planned to avoid nesting seasons or critical times when wildlife would be disturbed from nesting. The entry is coordinated with land owners.

Scavel Ditching: Scavel ditching is a technique of pulling a scavel ditcher behind the District DMC 1200 (this vehicle goes by many names: Thiokol, Spryte, DeLorean, DMC 1200, Snowcat, etc). This technique creates vertical sided ditches about one foot deep and spreads the spoils to both sides of the ditch. Spoils are compacted by the vehicle tracks. This technique has been used by the District for many years in marsh areas.

Benefits of a Scavel Ditching Plan: Scavel ditches have been easy and inexpensive for the District to create. The technique is adaptable to differing soil types and equipment is not damaged by hidden logs or concrete.
Environmental Risks of Scavel Ditching: Scavel ditching keeps the spoils rather close to the ditch and the compacted spoils may change the drainage characteristics of the marsh. Because the spoils are deposited to the side of the ditch and compacted there will be more time required for vegetation to rejuvenate. The tracks on the DMC 1200 have metal cleats that cut 3 inches into the soil and cut marsh vegetation.

Scavel Ditching Applications: This technique is used in restoration projects, in areas where ditches need to be connected and to create ditches into low areas of a marsh. It is also used to re-open heavily sedimented ditches.

Access for Source Reduction Work

Access to work area for ditching is generally on foot from levee roads (80%± of the time). When distances to reach the work area become greater than about 1000 feet, access may be made using an Argo to transport (20%± of the time) personnel and tools. Below is a description of the District's Argo use:

Argo: Argos are eight wheeled, plastic body all-terrain vehicles manufactured by Ontario Drive and Gear Limited, Canada. These are driven with and without tracks depending upon local conditions. Ground pressure is 2.1 psi. These vehicles can carry two people and a 50 gallon spray rig. Argos will float and can be equipped with an outboard motor for deep water use. These vehicles are used for monitoring and treatment. Below is a discussion of the District use of Argos in source reduction work, adapted from the District's CEQA documents.

All Terrain Vehicles (Argo): The District relies upon the use of an Argo to facilitate access into areas that are not otherwise reasonably accessible by foot or general use vehicles. Some situations, where flooding and wetlands preclude access by 4-wheel drive or reasonable walking distance in waders/boots (in excess of 1000± feet), require the use of an Argo. An Argo allows timely access to large areas (over 5 acres) or areas where vehicle access cannot be used and greater distances need to be covered to reach work area. During the wet season, Argos's are used more extensively to enable personnel to reach sources more quickly. Overall, Argos are used as transport of last resort. Argos are used where:

1) existing passages are available,
2) vegetation does not impede mobility,
3) open water situations present the best course in which to proceed
4) size and distance makes the use of these vehicles necessary for effective and efficient use of time and
5) unacceptable environmental damage may occur if a general use vehicle is used

The potential impacts from Argo use and the District's way of mitigating these impacts are discussed below:

Dust: Dust is generally not a problem as most Argo use is during the wet season.

Rutting: Argo travel is used because of the very low ground pressure from the vehicle on areas too soft for general use vehicle traffic. Even with the low ground pressure ruts can be created. Mitigation: Open mud and very soft areas are avoided during Argo use. Travel is done slowly and carefully on sensitive habitat areas (pickleweed marshes). No Argo travel is done where endangered or threatened plants occur.

Vegetation removal: Vegetation may be removed by the scraping of the tires or tracks during operations or when making turns. Mitigation: Fast or sharp turning is avoided or turns are made on areas outside of the marsh such as levee roads. Personnel may utilize an Argo as a transport for personnel and source reduction tools. Argo travel is done slowly and carefully in marshes. No vehicle travel is done where endangered or threatened plants occur.

Vegetation crushing: Whenever a vehicle drives over vegetation, pressure from the weight of the vehicle will crush some vegetation. The amount of any damage depends on the type of vegetation and its condition. Most effects of crushing disappear as the vegetation returns to its normal position or, at worst, last until the next growth season. A study done on ATV travel in salt marsh habitats by the University of California (Hannaford and Resh) did show impacts on marsh vegetation. The study was done during the active growing season when vegetation was most susceptible to impacts. Most of the travel done by the District is done during the dormant season before active growth occurs so impacts would be expected to be minimal. One of the impacts from ATV use is the visibility of track marks for a short period. The visibility is from wetting the vegetation as the vehicle drives over, the light coating of mud on the vegetation from the wetting, and the temporary impression left in the vegetation. This visible impact has caused occasional complaints to wildlife personnel about possible unauthorized vehicle travel in the marsh. Mitigation: No vehicle travel is done where endangered or threatened plants occur. ATV travel is kept to the minimum necessary and done slowly and carefully in marsh habitats. Areas where vegetation is tender and subject to lasting damage are avoided. Points of entry into sources are varied if possible to avoid multiple travel over the same area. ATV travel directions are adjusted to avoid causing visible disruptions. Access utilizing Argos for source reduction work is generally done when marsh vegetation is dormant and therefore not damaging to new succulent growth.

Fire: Fire danger is usually not a problem in the season Argo travel is necessary.

Wildlife: The act of traveling in many areas can disturb wildlife or cause injury or death. Most disturbances from Argo travel are of no lasting impact to wildlife. Animals and birds move to avoid a perceived threat. Injury, death or damage to nests may occur from direct contact with an Argo. Mitigation: Argo operations are normally done at low speeds allowing birds and animals time to adjust to the vehicle and move out of the way. Potential nesting and burrowing (burrowing owls) areas are avoided or carefully surveyed for nests. Travel in Snowy Plover nesting areas is not a problem for Argo source reduction operations because few mosquito producing habitats are found near the preferred nesting areas, and source reduction work operations do not generally occur during nesting season.

Other Environmental Considerations:

Several potential impacts could occur due to ditch cleaning:
Vegetation Changes: One of these would be a change in vegetation or the invasion of undesirable species. The areas worked by the District involve only several *Spartina* areas. Work done in these areas is the removal of any large obstructions such as stumps, tires, timbers, abandoned boats, appliances, etc. The potential for invasion by *Spartina alterniflora* is not changed by District work. Very little ditch cleaning by District personnel is done in areas high enough in the marsh profile to allow pepperwort (*Lepidium* sp) to become established. Soil and sediment removed from the ditches is spread thinly over the surface to minimize any increase in elevation.
Turbidity: Another consideration is water turbidity created during the ditch cleaning work. Observation over a number of years indicates that the turbidity caused by ditch cleaning work is very localized. Work is generally done during low tide and incoming tide moves the localized turbidity into the marsh where settling can occur. The distance from the Bay that most of the work is done allows the suspended material to settle out well before reaching the Bay.

Environmental Monitoring of District Source Reduction Program

District personnel monitor the work done for source reduction, and maintain records of work performed (See attached document - Source Reduction Work Report Form). The District monitors for:

1. Effectiveness in controlling mosquito populations.
2. Changes in drainage caused by District cleaning work.
3. Changes in vegetation in work areas.

Source Reduction Work Report

Alameda County Mosquito Abatement District

Source Name:	District Source Number:	Date:

Source Location:

(Attach Army Corps Permit Map or other map of project)
Record areas where work was done and any photographs taken before or after work was completed.

Description of Work Done:

Persons Working on Project:

Equipment and Tools Used on Project:

- ☐ Shovel
- ☐ Pitchfork
- ☐ Rake
- ☐ Hoe
- ☐ McLeod Fire Tool
- ☐ Machete
- ☐ Gas Powered Weed Cutter
- ☐ Argo

Estimate Distance Driven

_____ feet

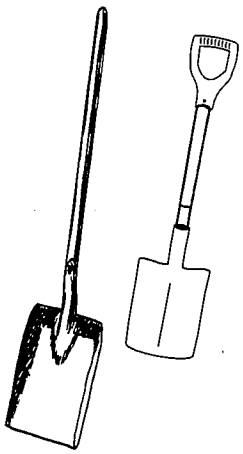
General Observations and Comments

Observed Changes:

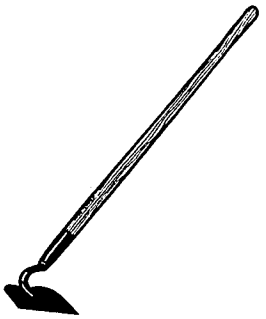
Any Observed Variations in Marsh Vegetation:
Take photographs and/or bring in sample for identification

Any Observed Changes in Drainage from Previous Work:
(Describe)

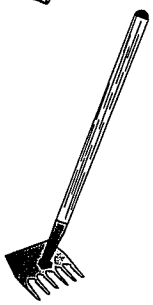
Source reduction hand tools used for ditch maintenance



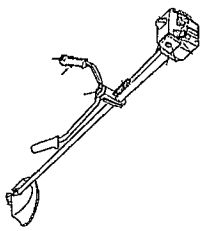
Various types of flat shovels with sharpened edges are used to trim vegetation along ditches and to remove vegetation debris from ditch bottoms.



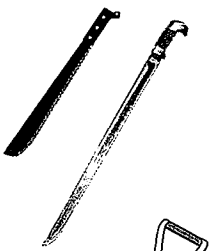
Hoes with sharpened edges are used for light vegetation trimming.



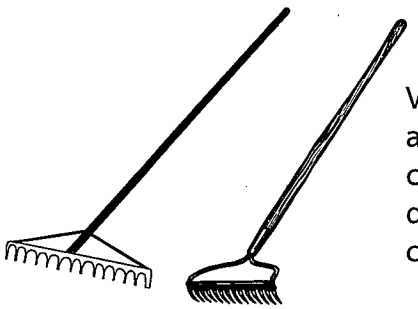
The McLeod fire tool is used to trim vegetation along the ditch edges and to remove cut vegetation from the ditch.



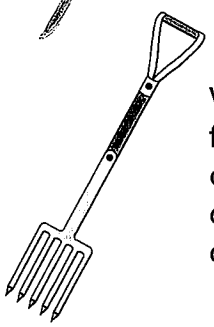
Gasoline powered weed cutter, usually with a steel blade is used to trim vegetation from edges and bottoms of larger ditches.



Machetes and machete-like tools are used to trim vegetation along the edges of ditches.



Various types of rakes are used to remove cut vegetation from the ditches and spread the cut material.



Various types of pitch forks are used to remove cut vegetation from the ditches and spread the cut material.

Purpose:

Habitat Enhancement Plans for Long Term Reduction of Mosquito Populations

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

US Army Corps of Engineers
Regional Permit No. 248520S

Project start date: 01 Sep 2010

Prepared by Erika Castillo

Mosquito prevention and maintenance work

Work Categories and Land Use Information

A. Maintenance of existing small circulation ditches (up to 18 X 24 inches maximum) in tidal, non-tidal, or diked marshes. Side cast (dredge) materials will be flattened in place. Number of lineal feet will be indicated.

B. Maintenance of existing medium to large circulation ditches (18 X 24 inches up to and including 6 X 4 foot maximum) in tidal, non-tidal, or diked marshes. Side cast (dredge) materials will be alter-natively mounded to provide upland refugia for marsh biota. Number of lineal feet will be indicated.

C. Placement of NEW circulation ditches or realignment of existing circulation ditches in tidal, non-tidal or diked marshes. Size as delineated in A and B. Depending on size of ditch, side cast (dredge) materials will be flattened in-place or alternately mounded. Number of lineal feet will be indicated.

D. Repair of levees due to damage or subsidence.

E. Repair or maintenance of existing water control structures, (such as water pumps, floodgates, weirs, head gates, corrugated pipe culverts, etc.). Number and type of structure will be indicated.

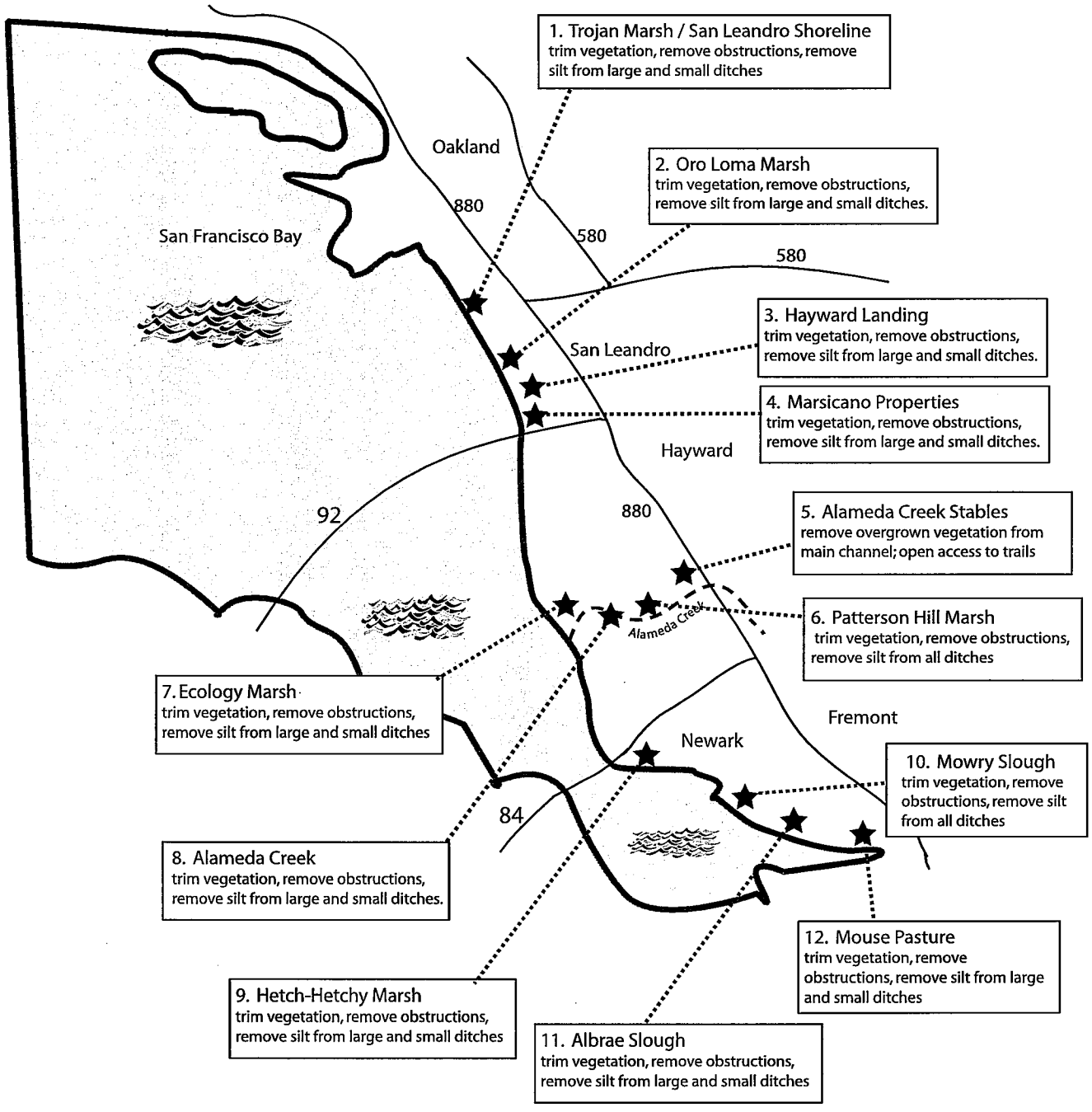
F. Weed and emergent vegetation abatement in channels where normal water flow or circulation are impeded such that mosquito breeding can occur. Vegetation will be removed.

G. Filling of portions of existing ditches with on-site materials or commercial materials in order to achieve necessary natural water circulation dynamics and enhance marsh restoration.

H. Present land and water use.

- H(l) diked marsh
- H(2) tidal marsh
- H(3) non-tidal marsh
- H(4) water channel
- H(5) dredge material disposal site
- H(6) aquatic impoundments
- H(7) agricultural ditches
- H(8) experimental effluent to establish or enhance wetlands

Area map and overview of proposed projects for 2010-2011



PERMIT NUMBER: 248520S
PROJECT YEAR: 20

PROJECT SITE DESCRIPTION

Project No. 1-
Trojan Marsh

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Property Owner:
Heron Bay Home Owner's Association/
Citation Builders and City of San Leandro

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Location:
West end of Lewelling Blvd.
San Leandro, CA

ACMAD Source Number: 3038

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		7100		1-Sep-2010		
B		5800		1-Sep-2010		
C						
D						
E						
F						
G						
H	Present land and water use		H2 Tidal marsh			

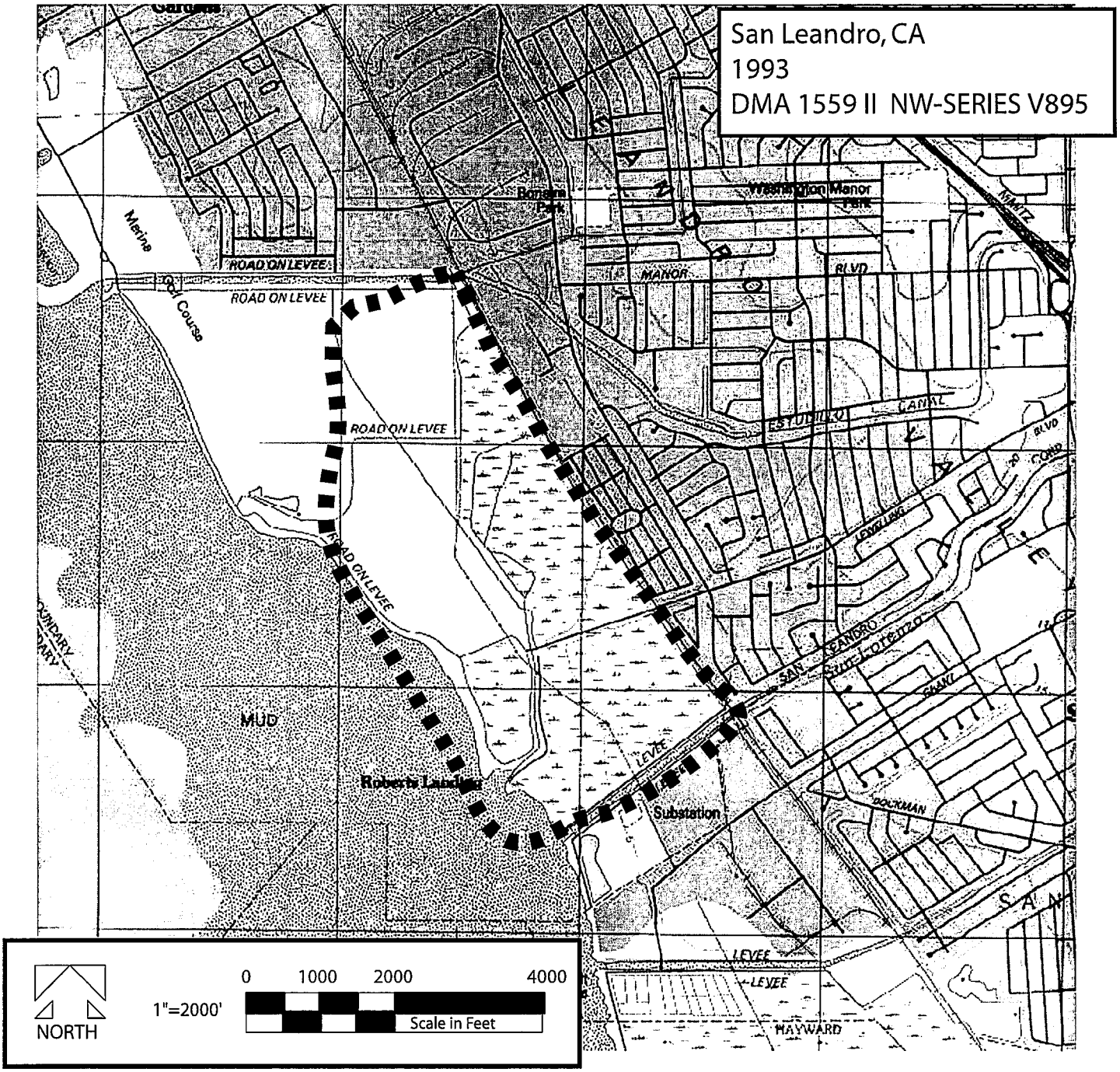
Project Description:

This project is part of the San Leandro Shoreline Marsh restoration. In 1997 the District assisted in this project by using our DMC 1200 with a scavel plow to create and enhance the ditch drainage system. District personnel assisted by hand digging and cleaning ditches. The ditches created for this project are becoming overgrown with vegetation and the District would like to clear the edges of the ditches, remove obstructions and perform minor silt removal. All removed silt will be spread away from the ditch edges. Work will be done with an Argo to transport tools and personnel to the work site.

Aedes squamiger, Culiseta inornata and *Culex tarsalis* mosquitoes are produced in this source.

The dominant vegetation is pickleweed *(Salicornia virginica)* with some salt grass *(Distichlis* sp.) and California sea-blite (*Suaeda depressa*).

Project 1 - Trojan Marsh



Purpose:
To clear vegetation, obstructions and minor silt accumulations from ditches to minimize mosquito breeding and increase natural tidal flushing.

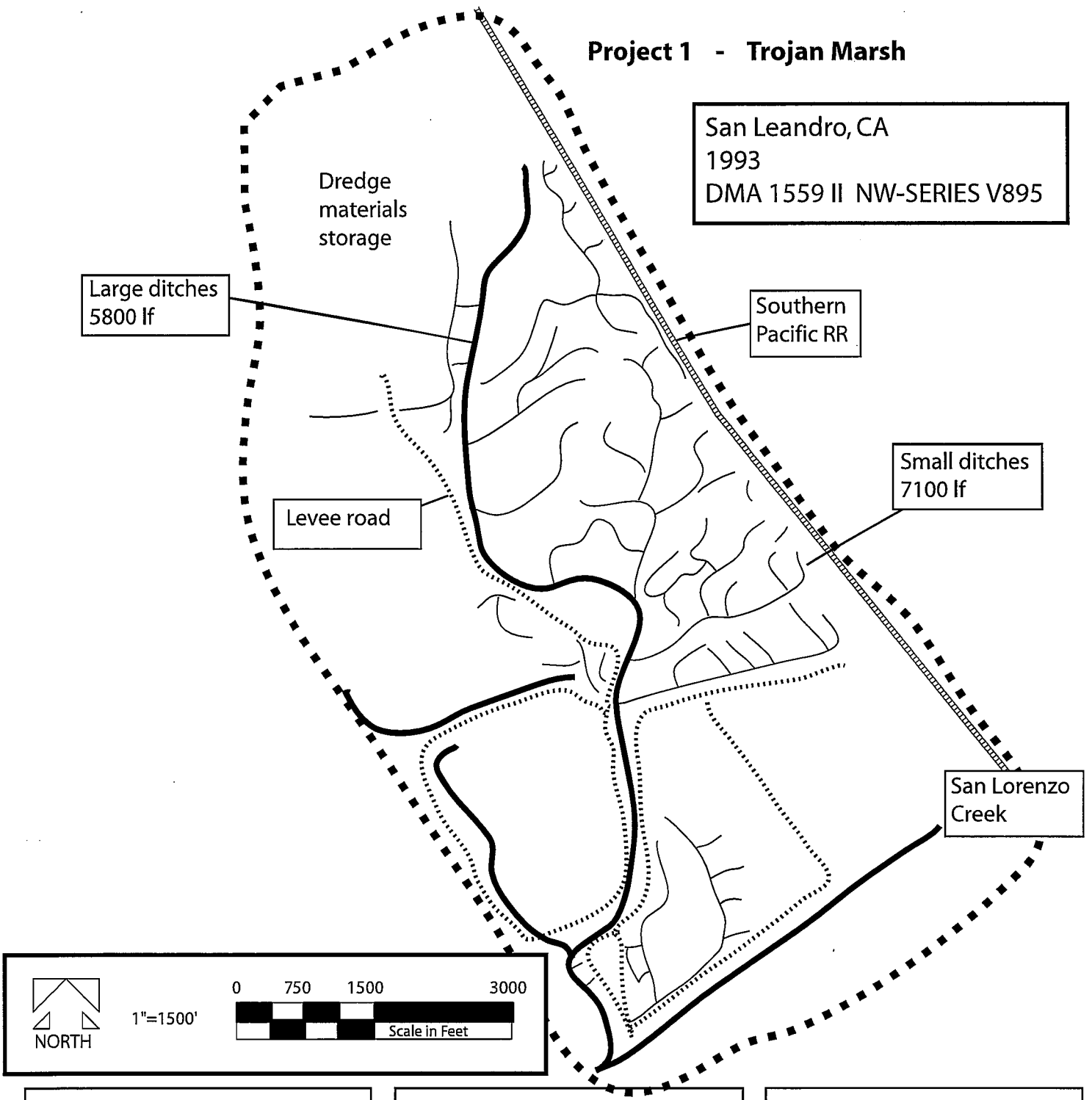
Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 1
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
West end of Lewelling Blvd
San Leandro, CA
Sheet 1 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 2000'** **Prepared by Erika Castillo**

Project 1 - Trojan Marsh



Purpose:
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Phone: (510) 783-7744
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email: enspec@mosquitoes.org

Project Number 1
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
West end of Lewelling Blvd
San Leandro, CA
Sheet 2 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 1500'** **Prepared by Erika Castillo**

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010

PROJECT SITE DESCRIPTION

Project No. 2
Oro Loma Marsh

Property Owners:
East Bay Regional Parks District, US Fish and Wildlife Service, State Wildlife Conservation Board, Oro Loma Sanitary District
Project Location:
Areas W of Bandoni Ave and Via Sarita;
San Lorenzo, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Number: 3031

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		2000		1-Sep-2010		
B						
C						
D						
E						
F						
G						
H	Present land and water use		H2 Tidal marsh			

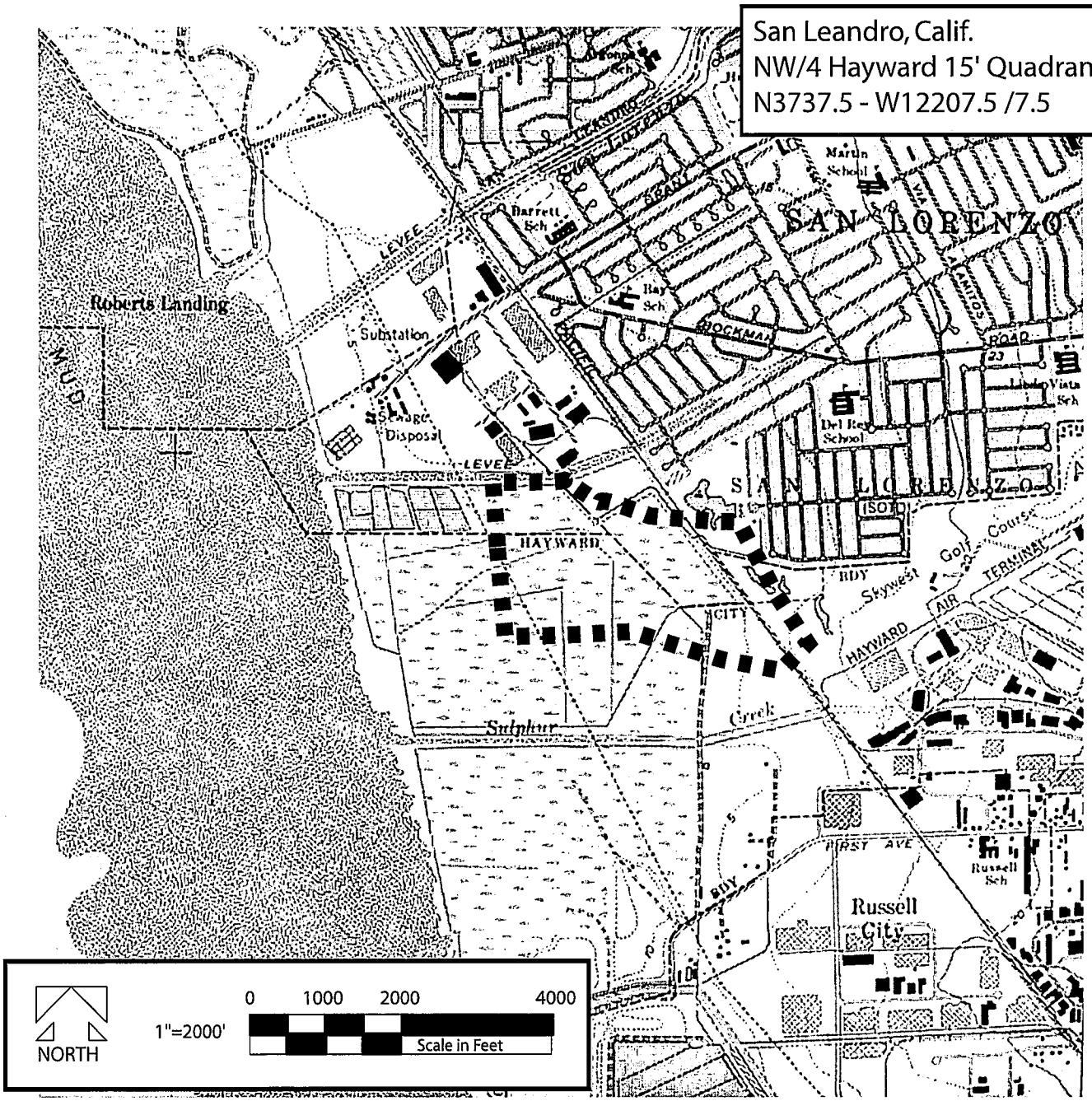
Project Description:

This new project has 2 separate components: 1- involves cleaning out an existing ditch along the W side of the Union Pacific Railroad tracks due west of Via Sarita, San Lorenzo; and 2- removing vegetation and sediment from existing ditches that connect to 3 ponds. All removed silt will be spread away from the ditch edges.

Aedes dorsalis, Aedes squamiger, Culiseta inornata and *Culex tarsalis* mosquitoes are produced in this source.

The dominant vegetation is pickleweed *(Salicornia virginica)* with some salt grass *(Distichlis* sp.) and California sea-blite (*Suaeda depressa*).

Project 2 Oro Loma Marsh



Purpose:
To clear vegetation, obstructions and minor silt accumulations from ditches to minimize mosquito breeding.

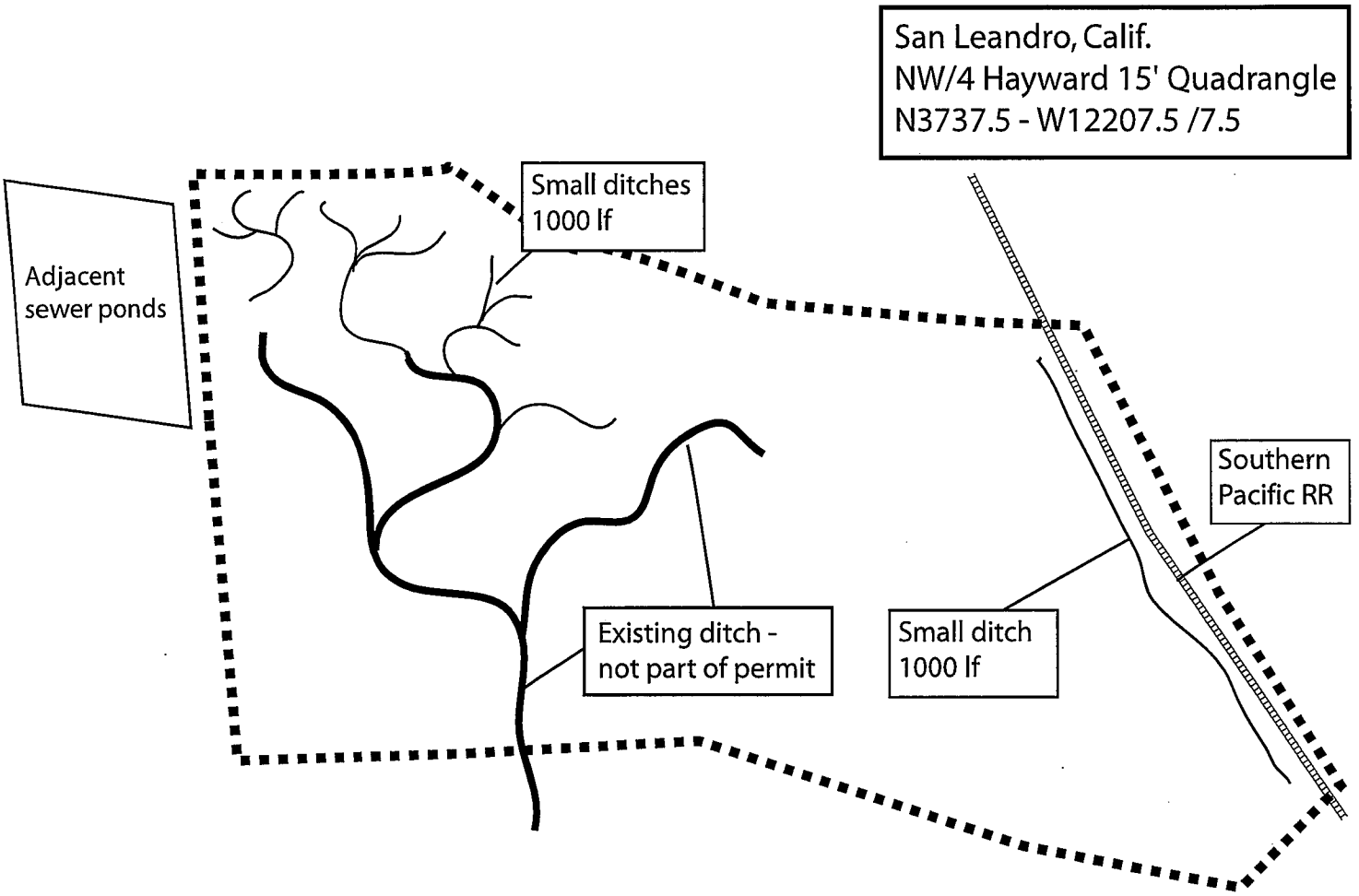
Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

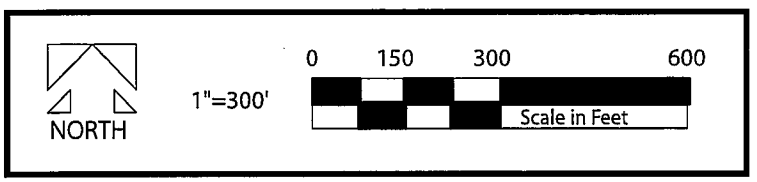
Project Number 2
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
Areas W of Bandoni Ave and Via Sarita, San Lorenzo;
Sheet 1 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 2000'** **Prepared by Erika Castillo**

Project 2 Oro Loma Marsh





Purpose:
To clear vegetation, obstructions and minor silt accumulations from ditches to minimize mosquito breeding.

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Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 2
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
Areas W of Bandoni Ave and Via Sarita, San Lorenzo;
Sheet 2 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 300'** **Prepared by Erika Castillo**

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010

PROJECT SITE DESCRIPTION

Project No. 3
Hayward Landing

Property Owner:
East Bay Regional Park District
Project Location:
~ 0.5 mile WNW of the end of West Winton Ave,
Hayward, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Number: 3029 Russell Salt Marsh

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		1500		1-Sep-2010		
B						
C						
D						
E						
F						
G						
H	Present land and water use		H2 Tidal marsh			

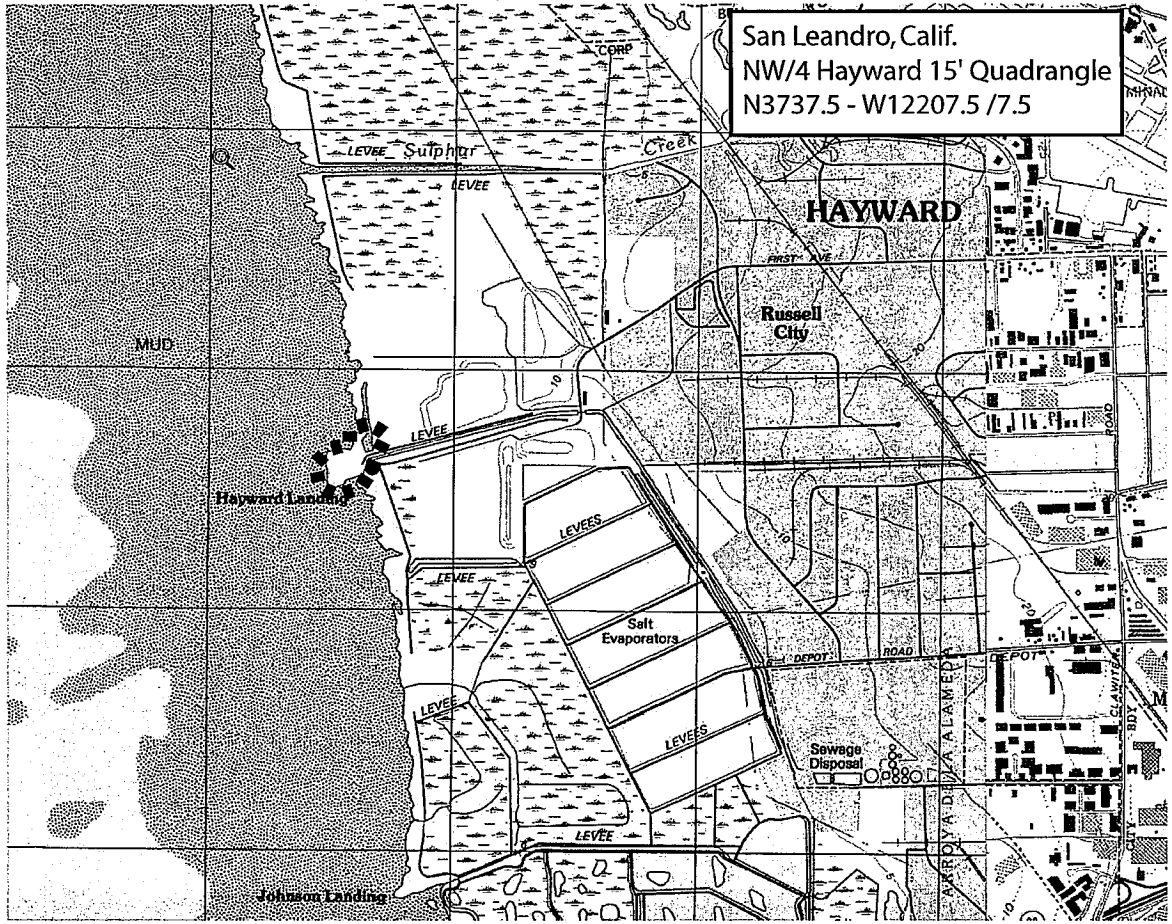
Project Description:

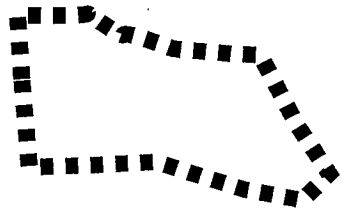
The ditches here are becoming overgrown with vegetation and the District would like to clear the edges of the ditches, remove obstructions and perform minor silt removal. All removed silt will be spread away from the ditch edges.

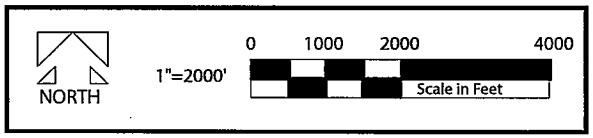
Aedes squamiger, Aedes dorsalis, Culiseta inornata and *Culex tarsalis* mosquitoes are produced in this source.

The dominant vegetation is pickleweed *(Salicornia virginica)* with some salt grass *(Distichlis* sp.).

Project 3 Hayward Landing







Purpose:
To clear vegetation, obstructions and minor silt accumulations from ditches to minimize mosquito breeding.

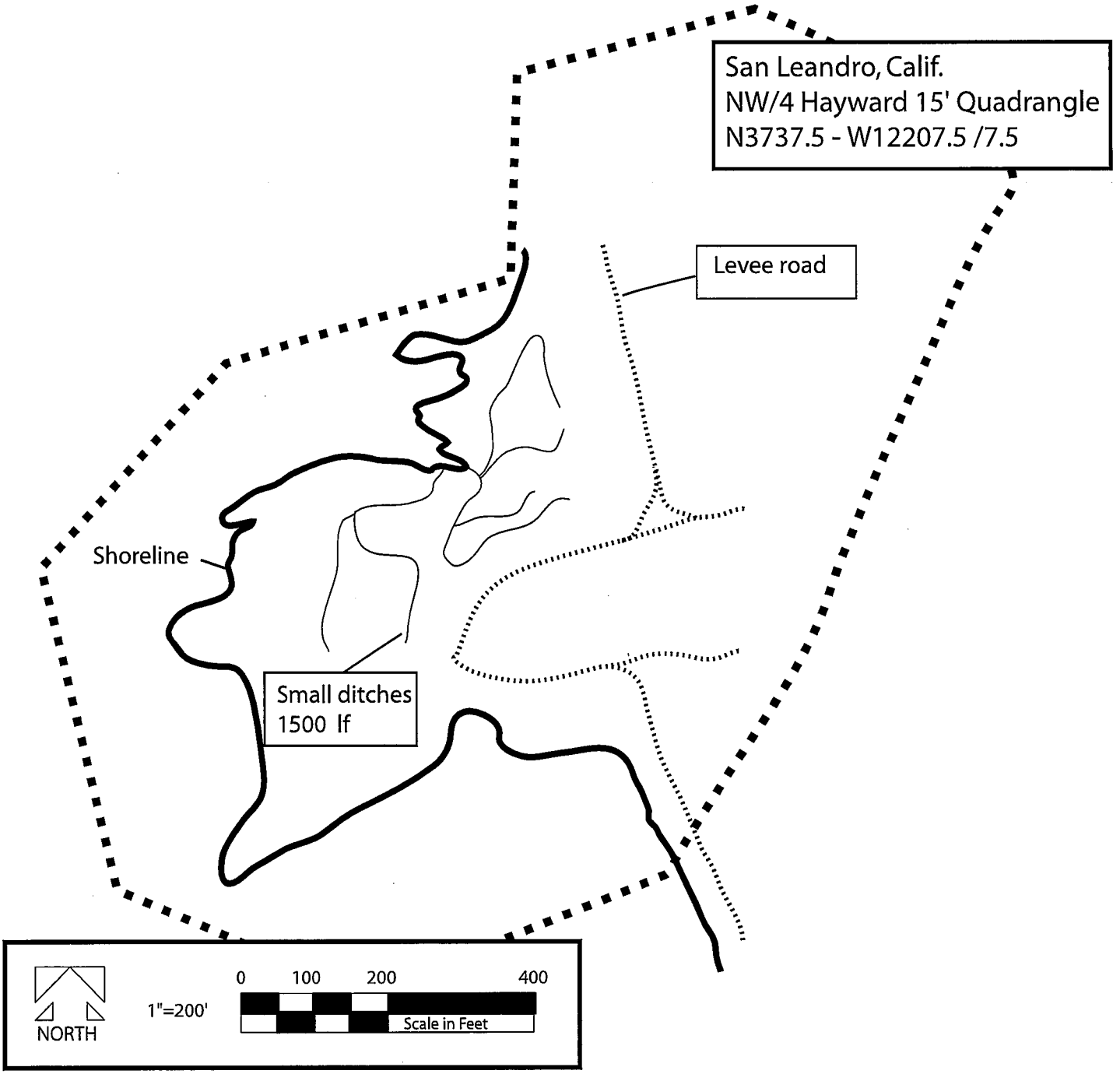
Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 3
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
~ 0.5 mile WNW of the end of West Winton Ave, Hayward, CA
Sheet 1 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 2000'** **Prepared by Erika Castillo**

Project 3 Hayward Landing



Purpose:
To clear vegetation, obstructions and minor silt accumulations from ditches to minimize mosquito breeding.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 3
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
~ 0.5 mile WNW of the end of West Winton Ave, Hayward, CA
Sheet 2 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 200'** **Prepared by Erika Castillo**

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010

PROJECT SITE DESCRIPTION

Project No. 4
Marsicano Properties

Property Owner:
Hayward Area Recreation District
(& East Bay Regional Park District?)
Project Location:
Just N of the end of Breakwater Ave and Highway 92
Hayward, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Numbers: 3001, 3002, 3005

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		500		1-Sep-2010		
B		1500		1-Sep-2010		
C						
D						
E						
F						
G						
H	Present land and water use		H2 Tidal marsh			

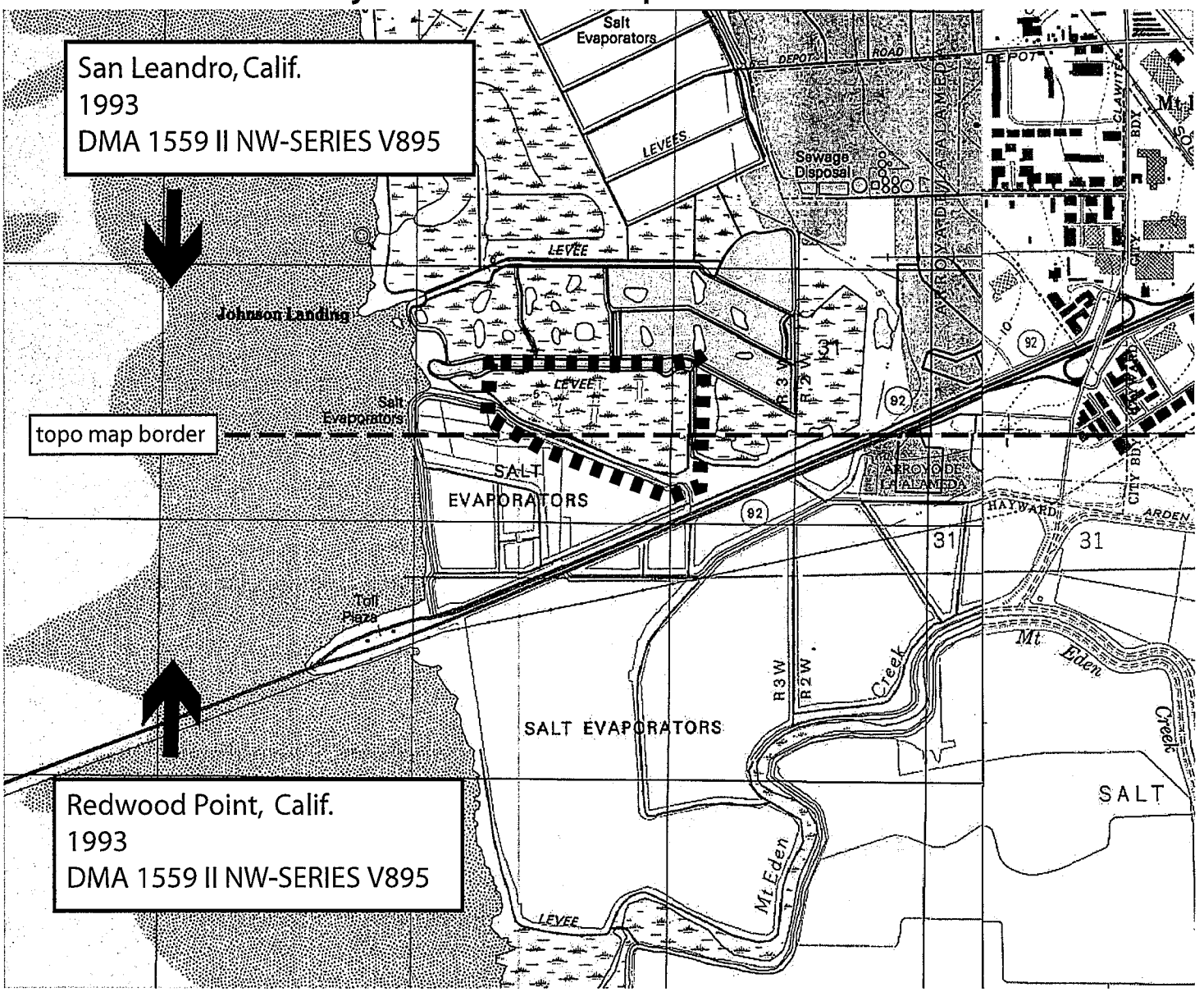
Project Description:

HARD has just finished a marsh restoration here and some old lateral ditches need to have sediment removed. Other ditches here are becoming overgrown with vegetation and the District would like to clear the edges of the ditches, remove obstructions and perform minor silt removal. All removed silt will be spread away from the ditch edges. This area has been maintained by ACMAD employees in the past.

Aedes squamiger, Aedes dorsalis, Culiseta inornata and *Culex tarsalis* mosquitoes are produced in this source.

The dominant vegetation is pickleweed *(Salicornia virginica)* with some salt grass *(Distichlis* sp.).

Project 4 Marsicano Properties



NORTH

1"=2000'

0 1000 2000 4000

Scale in Feet

Purpose:
To clear vegetation, obstructions and minor silt accumulations from ditches to minimize mosquito breeding.

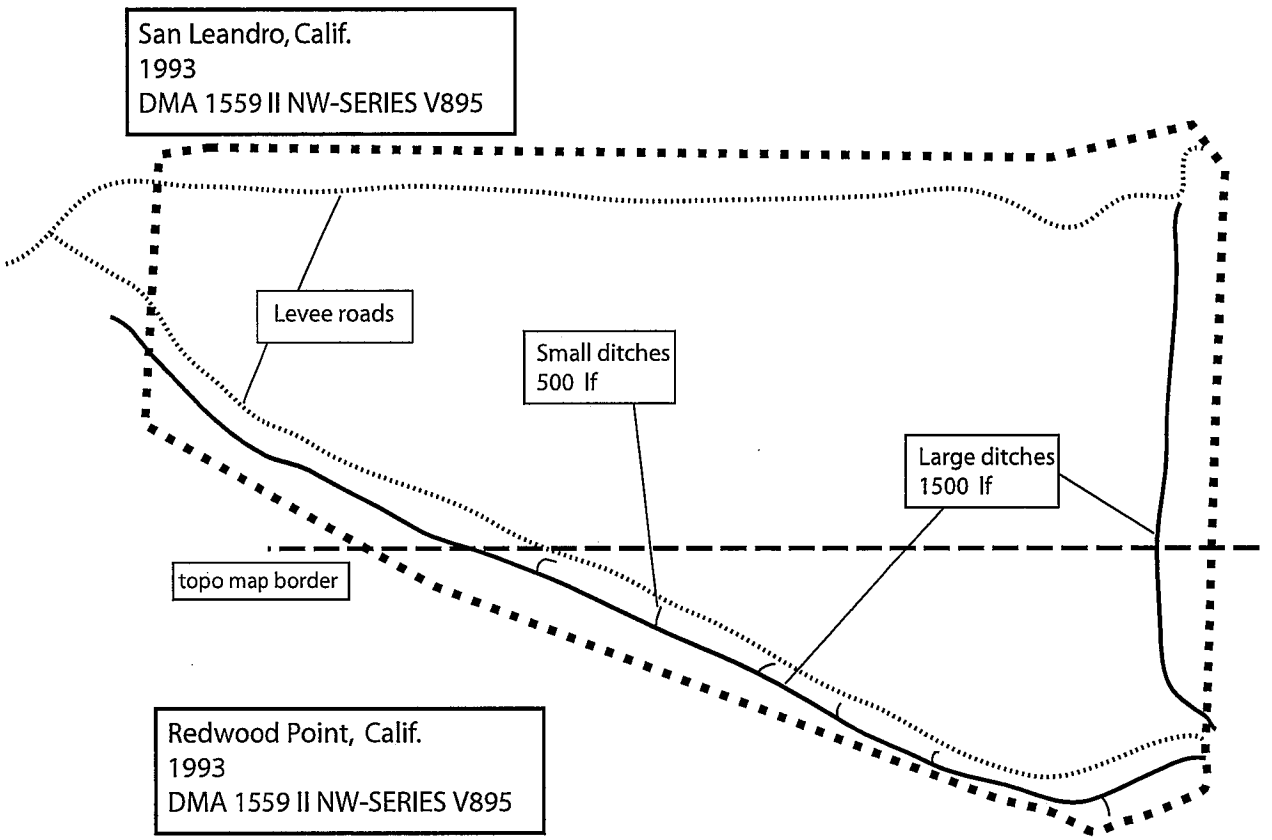
Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 4
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
Just N of the end of Breakwater Ave and Highway 92
Hayward, CA
Sheet 1 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 2000'** **Prepared by Erika Castillo**

Project 4 Marsicano Properties



NORTH

1"=400'

0 200 400 800

Scale in Feet

Purpose:
To clear vegetation, obstructions and minor silt accumulations from ditches to minimize mosquito breeding.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 4
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
Just N of the end of Breakwater Ave and Highway 92
Hayward, CA
Sheet 2 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 400'** **Prepared by Erika Castillo**

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010

PROJECT SITE DESCRIPTION

Project No. 5
Alameda Creek Stables

Property Owner:
Alameda County Public Works Agency

Project Location:
Just W of intersection of Union City Blvd and Coyote Hills Slough;
Union City, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Number: 6132

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A						
B		2600		1-Sep-2010		
C						
D						
E						
F						
G						
H	Present land and water use		H3 Non-tidal marsh			

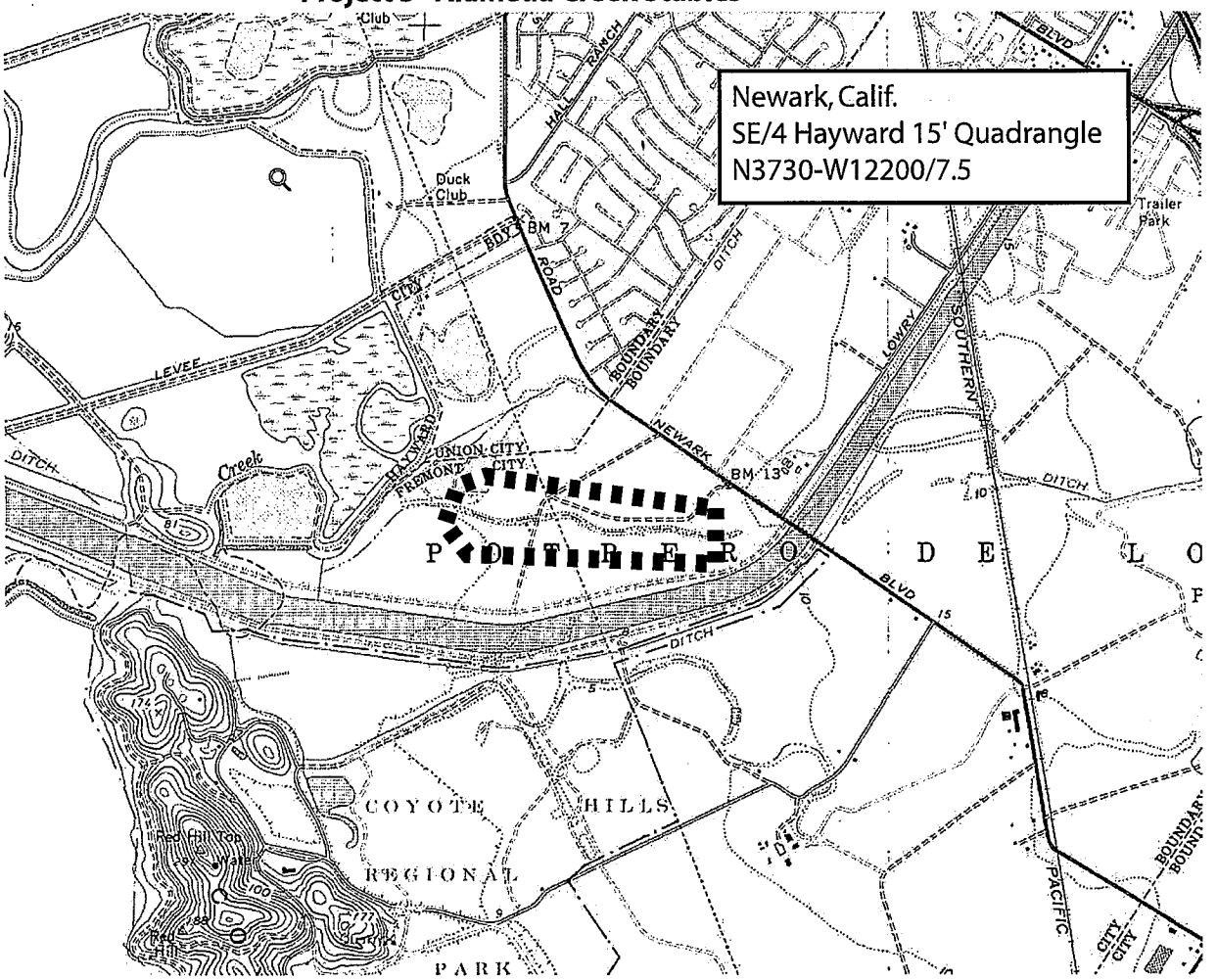
Project Description:

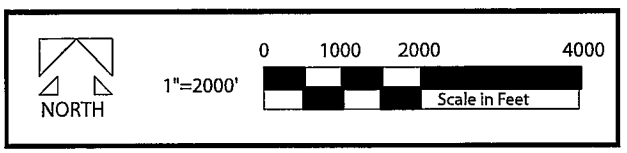
We need to remove overgrown vegetation from the main channel, and to clear trails for access. This area has been maintained by ACMAD employees and the East Bay Conservation Corps in the past.

Aedes washinoi, Culiseta inornata and *Culex tarsalis* mosquitoes are produced in this source.

The dominant vegetation in the main channel are tules (*Typha* sp.). Blackberries, poison oak and willow are found in the accompanying riparian corridor.

Project 5 Alameda Creek Stables





Purpose:
We need to remove overgrown vegetation from the main channel, and to clear trails for access.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

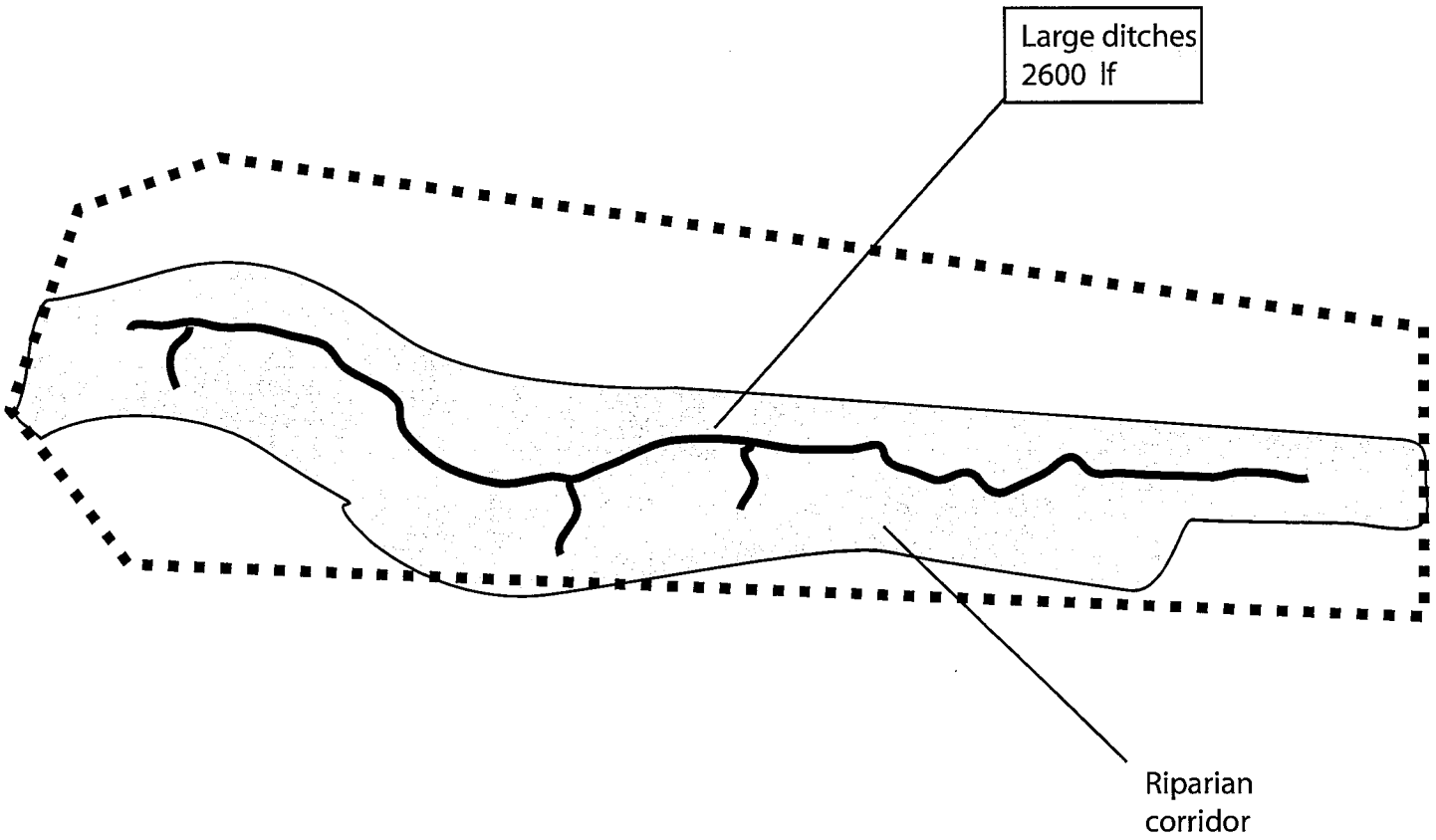
Project Number 5
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
Just E of intersection of Union City Blvd and Coyote Hills Slough; Union City, CA
Sheet 1 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 2000'** **Prepared by Erika Castillo**

Project 5 Alameda Creek Stables

Newark, Calif.
SE/4 Hayward 15' Quadrangle
N3730-W12200/7.5



Purpose:
We need to remove overgrown vegetation from the main channel, and to clear trails for access.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 5
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
Just E of intersection of Union City Blvd and Coyote Hills Slough; Union City, CA
Sheet 2 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 400'** **Prepared by Erika Castillo**

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010

PROJECT SITE DESCRIPTION

Project No. 6
Patterson Hill Marsh
Property Owners:
East Bay Regional Park District
Project Location:
~1 mile W of intersection of Union City Blvd and Coyote Hills Slough;
Union City, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Number: 6063

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		3200		1-Sep-2010		
B		800		1-Sep-2010		
C						
D						
E						
F						
G						
H	Present land and water use		H2 Tidal marsh			

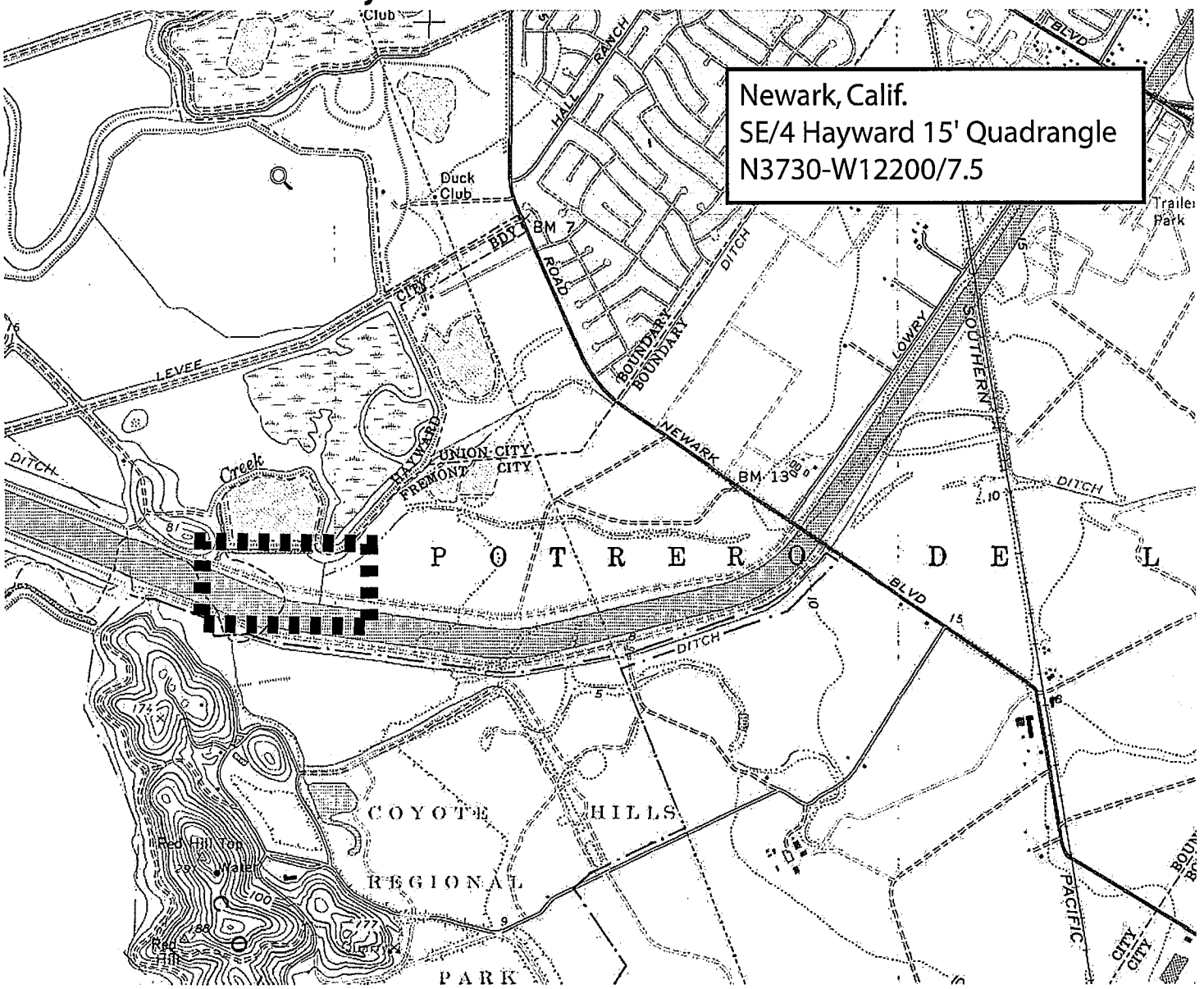
Project Description:

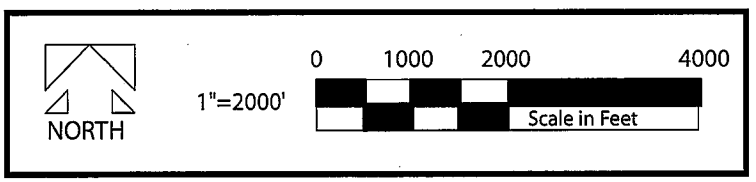
The ditches here are becoming overgrown with vegetation and the District would like to clear the edges of the ditches, remove obstructions and perform minor silt removal. All removed silt will be spread away from the ditch edges.

The dominant vegetation in the lower areas is pickleweed *(Salicornia virginica)* with the remainder being salt grass *(Distichlis spicata)*.

This site produces *Aedes dorsalis* and *Aedes squamiger, Culiseta inornata* and *Culex tarsalis* mosquitoes.

Project 6 Patterson Hill Marsh





Purpose:
To improve water circulation to reduce mosquito breeding. Vegetation will be trimmed and obstructions removed from ditches.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 6
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
Just E of intersection of Union City Blvd and Coyote Hills Slough; Union City, CA
Sheet 1 of 2

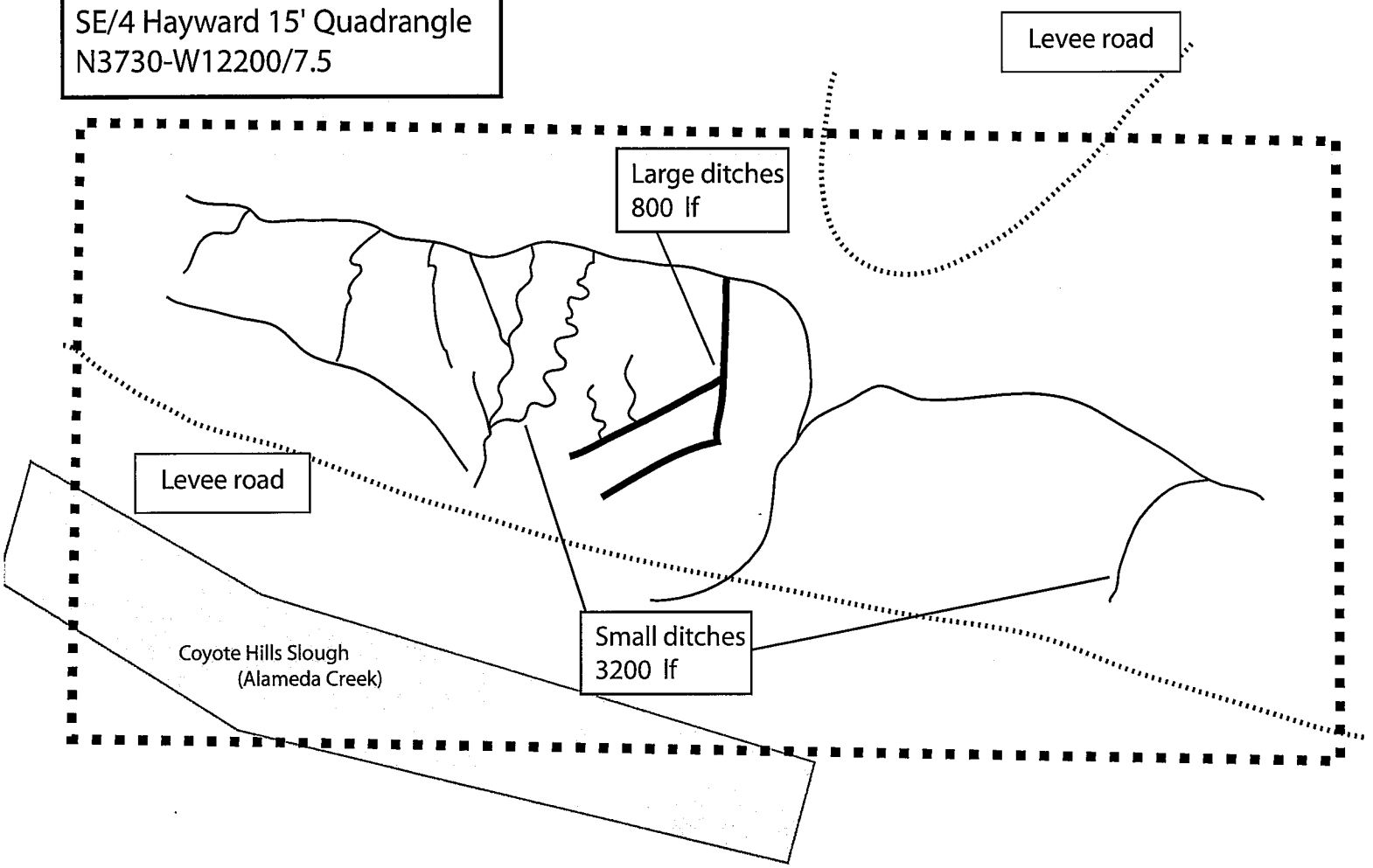
Project start date: 01 Sep 2010

SCALE: 1" = 2000'

Prepared by Erika Castillo

Project 6 Patterson Hill Marsh

Newark, Calif.
SE/4 Hayward 15' Quadrangle
N3730-W12200/7.5



NORTH

1"=300'

0 150 300 600

Scale in Feet

Purpose:
To clear vegetation, obstructions and minor silt accumulations from ditches to minimize mosquito breeding.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 6
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
~ 1 mile W of intersection of Union City Blvd and Coyote Hills Slough; Union City, CA
Sheet 2 of 2

Project start date: 01 Sep 2010

SCALE: 1" = 300'

Prepared by Erika Castillo

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010
PROJECT SITE DESCRIPTION

Project No. 7
Ecology Marsh

Property Owner:
Alameda County Flood Control District

Project Location:
N of Alameda Creek at SF Bay;
Hayward, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Number: 6112

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		8200		1-Sep-2010		
B						
C						
D						
E						
F						
G						
H	Present land and water use		H2 Tidal marsh			

Project Description:

The 501 acre Ecology Marsh (our name for this marsh) was created by the Army Corps of Engineers as part of the Alameda Creek Flood Control Project. Dredge spoils were pumped onto this site to raise the level of the marsh. Since the completion of this project there have been mosquito problems in the easterly parts of this marsh. The Alameda County Mosquito Abatement District (ACMAD) used our DMC 1200 Thiokel with speed scavel ditching equipment in 1987 to install circulation ditches to alleviate these problems and again in 1995 to clear out these ditches. The ditches need regular trimming and clearing.

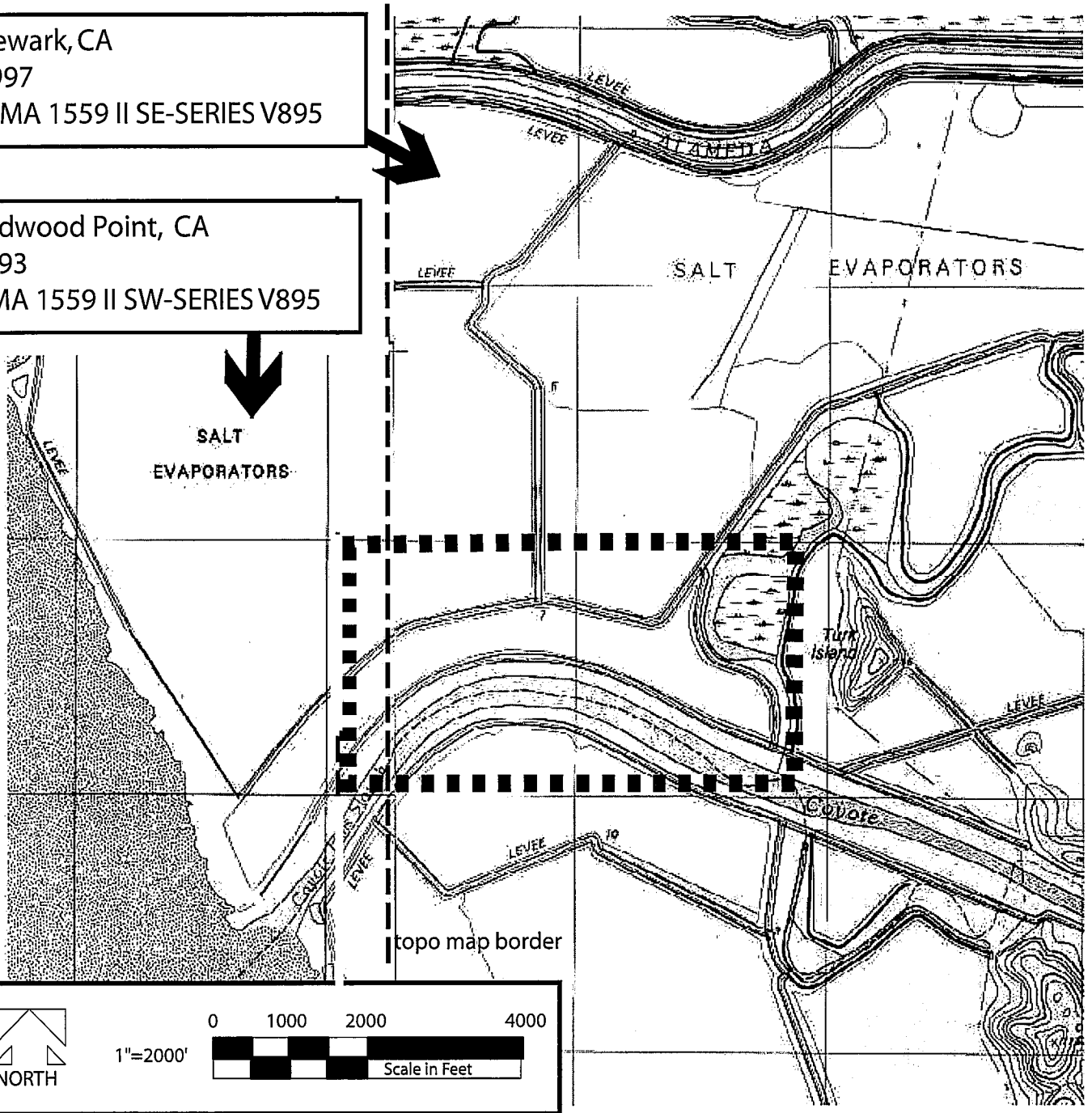
The vegetation in this area is primarily pickleweed *(Salicornia virginica). Atriplex* spp., *Grindelia stricta, Frankenia grandifolia,* and *Spartina foliosa* can be found in this marsh but not in close proximity to the ditches. There are two non-native plant species of interest in this marsh: *Spartina alterniflora* and *Salicornia europaea,* which are found at the western end of this marsh.

This site produces *Aedes squamiger, Aedes dorsalis* and *Culiseta inornata* mosquitoes.

Project 7 - Ecology Marsh

Newark, CA
1997
NIMA 1559 II SE-SERIES V895

Redwood Point, CA
1993
DMA 1559 II SW-SERIES V895



Purpose:
To improve water circulation to reduce mosquito breeding. Vegetation will be trimmed and obstructions removed from ditches.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 7
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
N of Alameda Creek at SF Bay;
Hayward, CA
Sheet 1 of 2

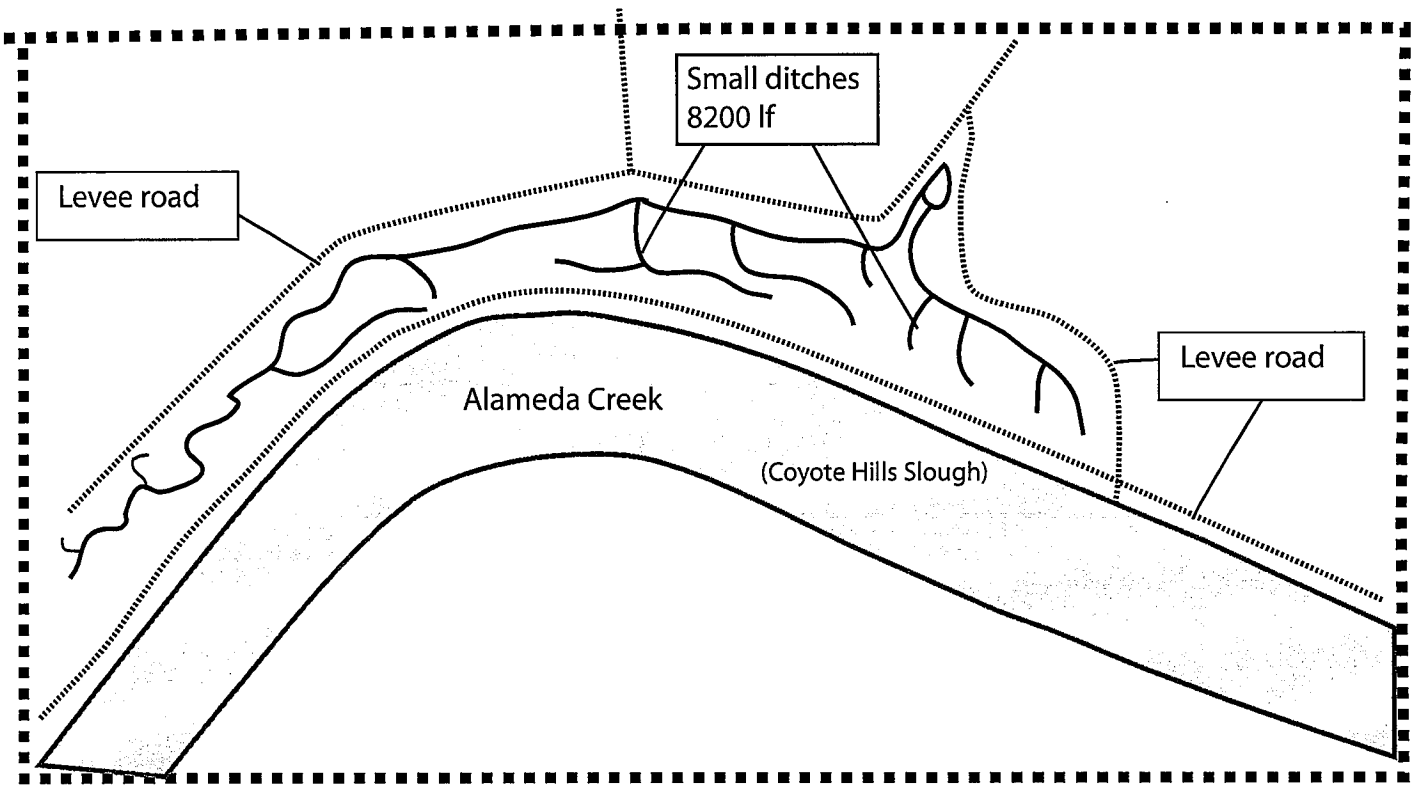
Project start date: 01 Sep 2010

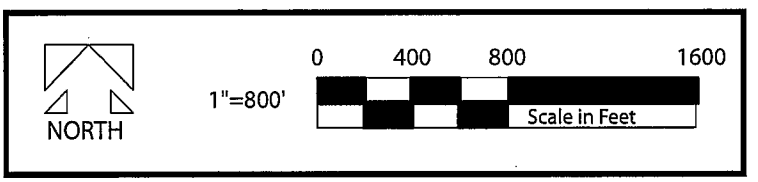
SCALE: 1" = 2000'

Prepared by Erika Castillo

Project 7 - Ecology Marsh

Newark, CA
1997
NIMA 1559 II SE-SERIES V895





Purpose:
To improve water circulation to reduce mosquito breeding. Vegetation will be trimmed and obstructions removed from ditches.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 7
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
N of Alameda Creek at SF Bay;
Hayward, CA
Sheet 2 of 2

Project start date: 01 Sep 2010

SCALE: 1" = 800'

Prepared by Erika Castillo

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010

PROJECT SITE DESCRIPTION

Project No. 8
Alameda Creek

Property Owner:
Alameda County Flood Control District

Project Location:
~ 1 mile W of intersection of Union City Blvd and Coyote Hills Slough;
Union City, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Number: 6118

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		500		3-Sep-2010		
B						
C						
D						
E						
F						
G						
H	Present land and water use		H2 Tidal marsh			

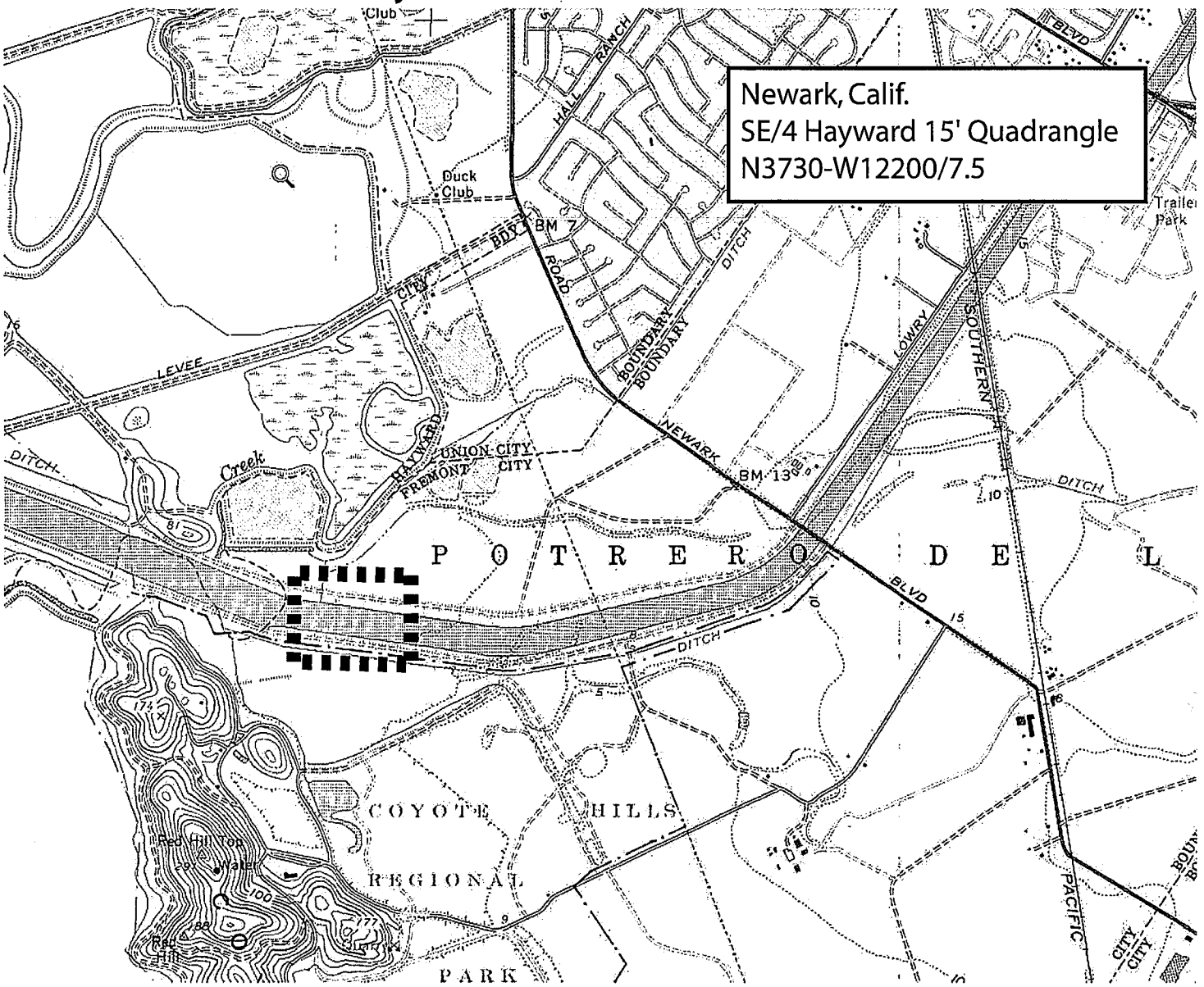
Project Description:

The ditches here are becoming overgrown with vegetation and the District would like to clear the edges of the ditches, remove obstructions and perform minor silt removal. All removed silt will be spread away from the ditch edges.

Aedes squamiger, Aedes dorsalis, and *Culex tarsalis* mosquitoes are produced in this source.

The dominant vegetation is pickleweed *(Salicornia virginica)* with some salt grass *(Distichlis* sp.).

Project 8 Alameda Creek



Purpose:
To improve water circulation to reduce mosquito breeding. Vegetation will be trimmed and obstructions removed from ditches.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 8
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
~ 1 mile W of intersection of Union City Blvd and Coyote Hills Slough; Union City, CA
Sheet 1 of 2

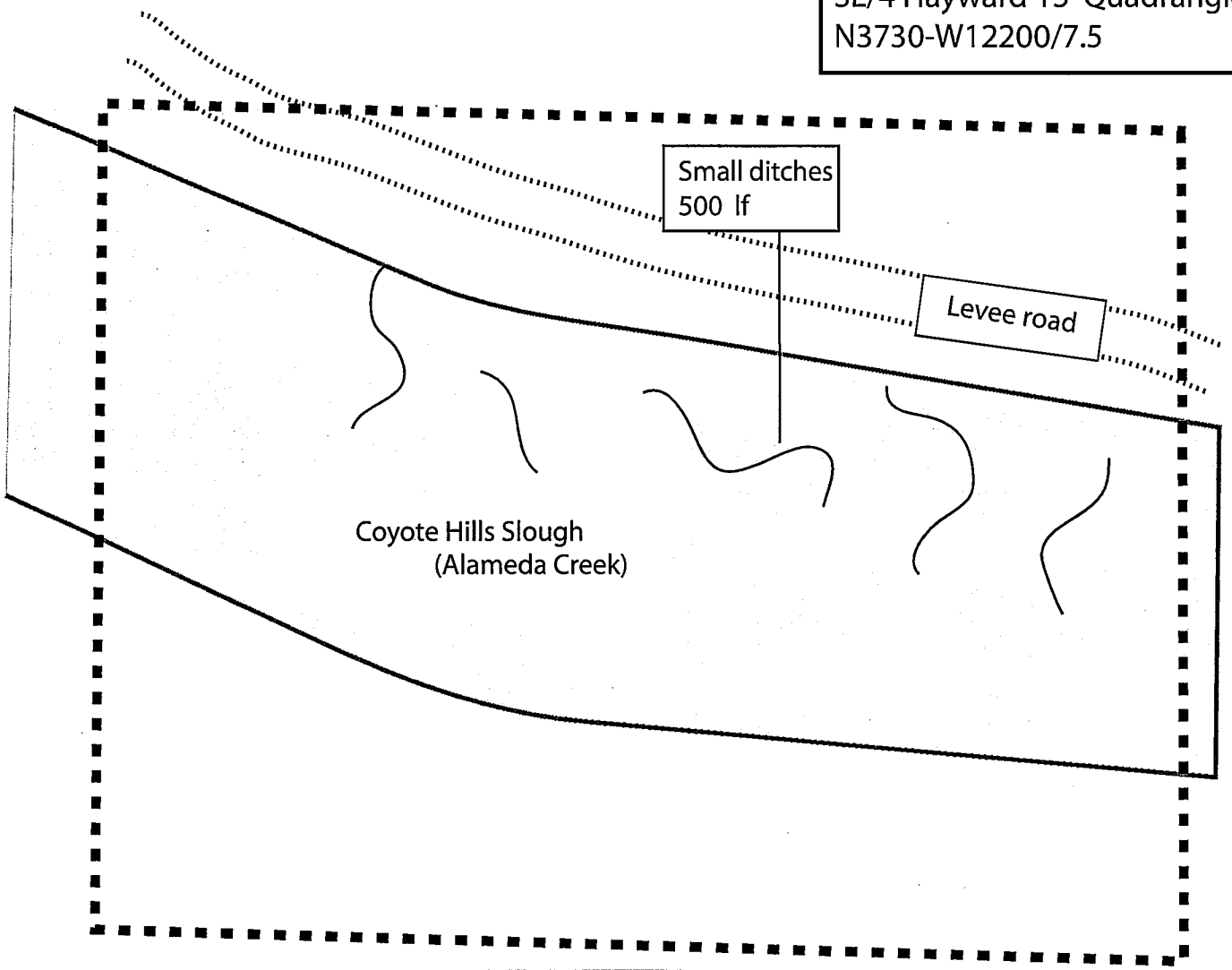
Project start date: 01 Sep 2010

SCALE: 1" = 2000'

Prepared by Erika Castillo

Project 8 Alameda Creek

Newark, Calif.
SE/4 Hayward 15' Quadrangle
N3730-W12200/7.5



NORTH

1"=100'

0 50 100 200

Scale in Feet

Purpose:
To clear vegetation, obstructions and minor silt accumulations from ditches to minimize mosquito breeding.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 8
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
~ 1 mile W of intersection of Union City Blvd and Coyote Hills Slough; Union City, CA
Sheet 2 of 2

Project start date: 01 Sep 2010

SCALE: 1" = 100'

Prepared by Erika Castillo

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010

PROJECT SITE DESCRIPTION

Project No. 9
Hetch-Hetchy Marsh
Property Owner:
US Fish and Wildlife Service

Project Location:
W of Hickory St, along N side of Hetch-Hetchy pipeline;
Newark, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Number: 6072

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		1400		1-Sep-2010		
B		750		1-Sep-2010		
C						
D						
E						
F						
G						
H	Present land and water use		H2 Tidal marsh			

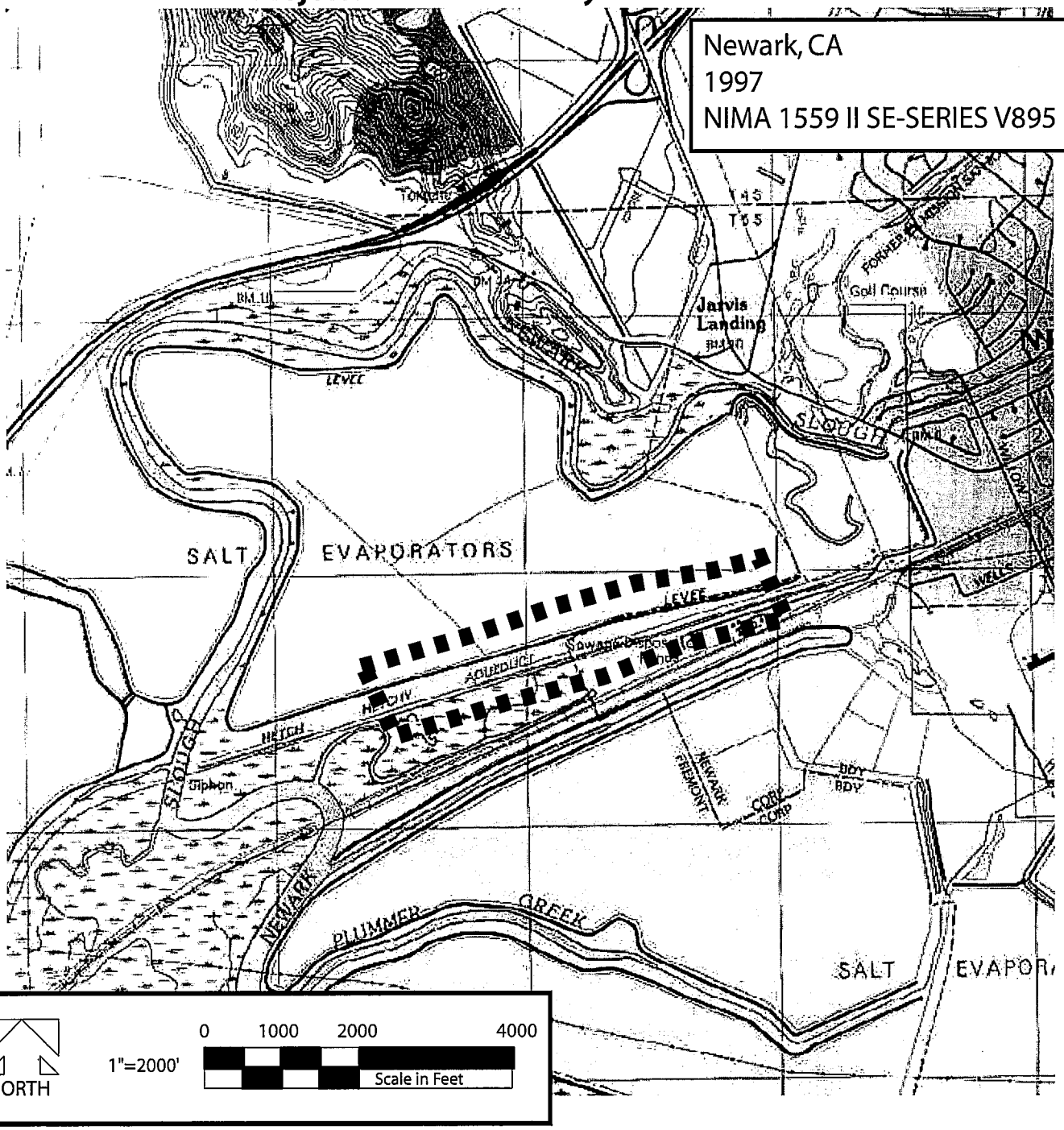
Project Description:

The ditch that runs along the Hetch-Hetchy Aqueduct access road on the S side of this tidal marsh is blocked with wood and other debris. We would like to clean out this material, using hand tools, to increase water circulation and fish access. By clearing out these ditches we would lessen the amount of pesticides applied to this marsh.

The dominant vegetation here (90%) is pickleweed *(Salicornia virginica)* with the remainder being salt grass *(Distichlis spicata).*

This site produces *Aedes dorsalis, Aedes squamiger* and *Culiseta inornata* mosquitoes.

Project 9 - Hetch-Hetchy Marsh



Purpose:
To improve water circulation to reduce mosquito breeding. Vegetation will be trimmed and obstructions removed from ditches.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

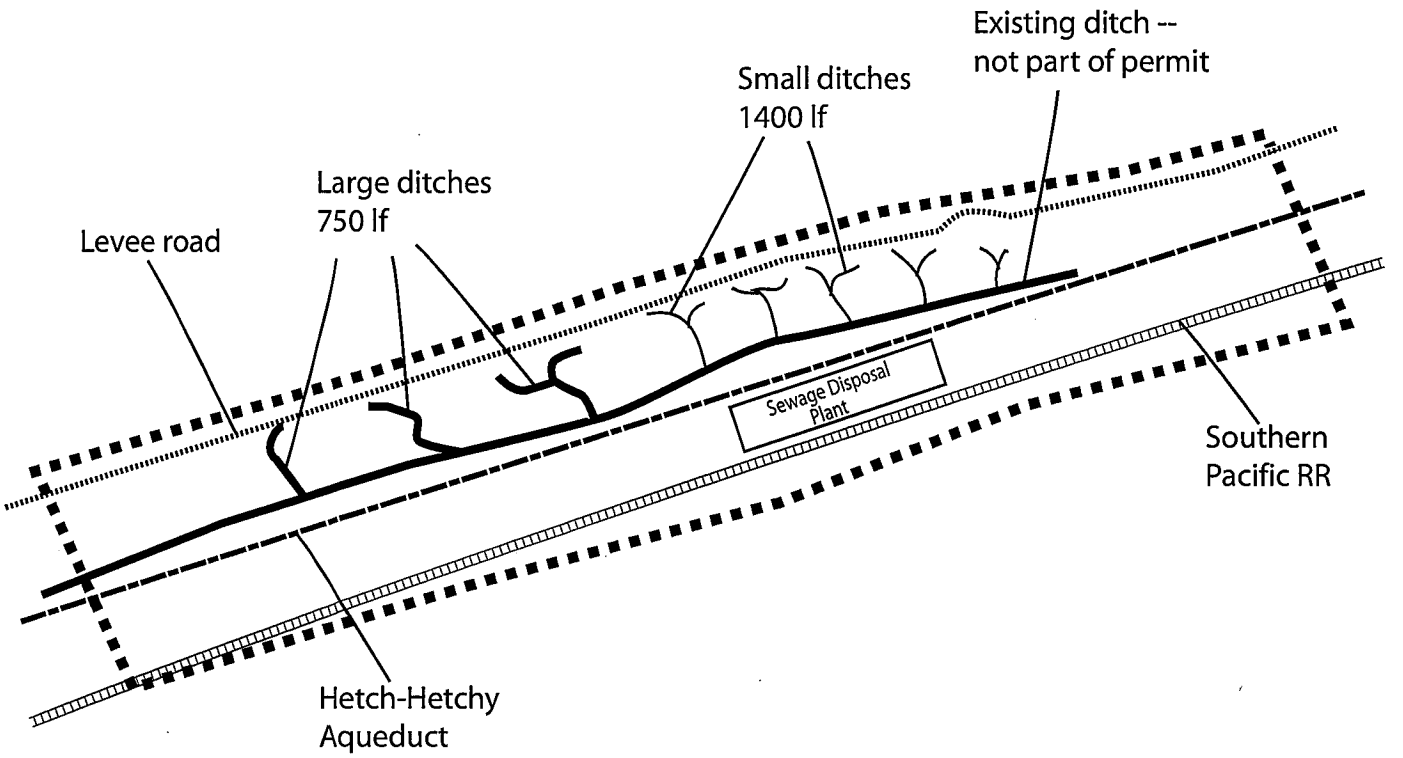
Project Number 9
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
W of Hickory St, along N side of Hetch-Hetchy pipeline;
Newark, CA
Sheet 1 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 2000'** **Prepared by Erika Castillo**

Project 9 - Hetch-Hetchy Marsh

Newark, CA
1997
NIMA 1559 II SE-SERIES V895



NORTH

1"=800'

0 400 800 1600

Scale in Feet

Purpose:
To improve water circulation to reduce mosquito breeding. Vegetation will be trimmed and obstructions removed from ditches.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 9
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
W of Hickory St, along N side of Hetch-Hetchy pipeline;
Newark, CA
Sheet 2 of 2

Project start date: 01 Sep 2010

SCALE: 1" = 800'

Prepared by Erika Castillo

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010

PROJECT SITE DESCRIPTION

Project No. 10
Mowry Slough
Property Owners:
Alameda County Flood Control and
Michael Siri, Palo Alto, CA

Project Location:
Approx 0.5 mile S of southern end of
Mowry Ave; Newark, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Number: 8020

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		8,000		1-Sep-2010		
B						
C						
D						
E						
F						
G						
H	Present land and water use		H2 Tidal marsh			

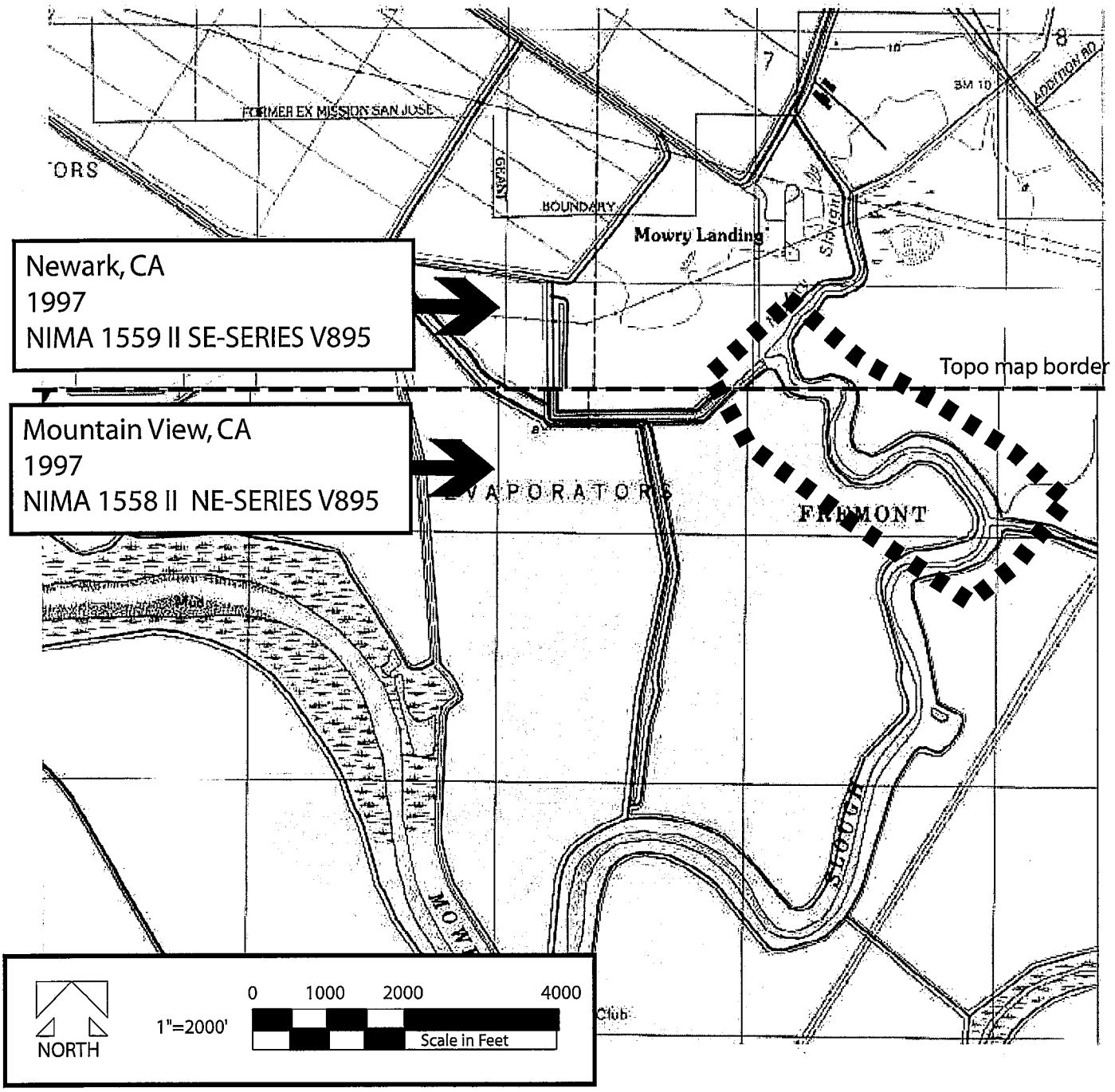
Project Description:

This project, begun in 2001, will require intensive work to clean out ditches that have heavy sediment deposits. The main channel flows well, but many laterals are clogged with sediment inhibiting the high tide waters from draining back into the slough. This ponding of tide water has resulted in much higher production of mosquitoes during the summer months. We will perform all the work on the ditches with handtools.

The dominant vegetation in the lower areas is pickleweed *(Salicornia virginica)* with the remainder being salt grass *(Distichlis spicata)*. Higher vegetation includes *Atriplex* spp., *Grindelia stricta* and *Frankenia grandifolia.*

This site produces *Aedes dorsalis and Aedes squamiger, Culiseta inornata* and *Culex tarsalis* mosquitoes.

Project 10 - Mowry Slough



Purpose:
To improve water circulation to reduce mosquito breeding. Ditches will be cleaned out by hand, vegetation will be trimmed and obstructions removed.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 10
US Army Corps of Engineers
Regional Permit No. 248520S

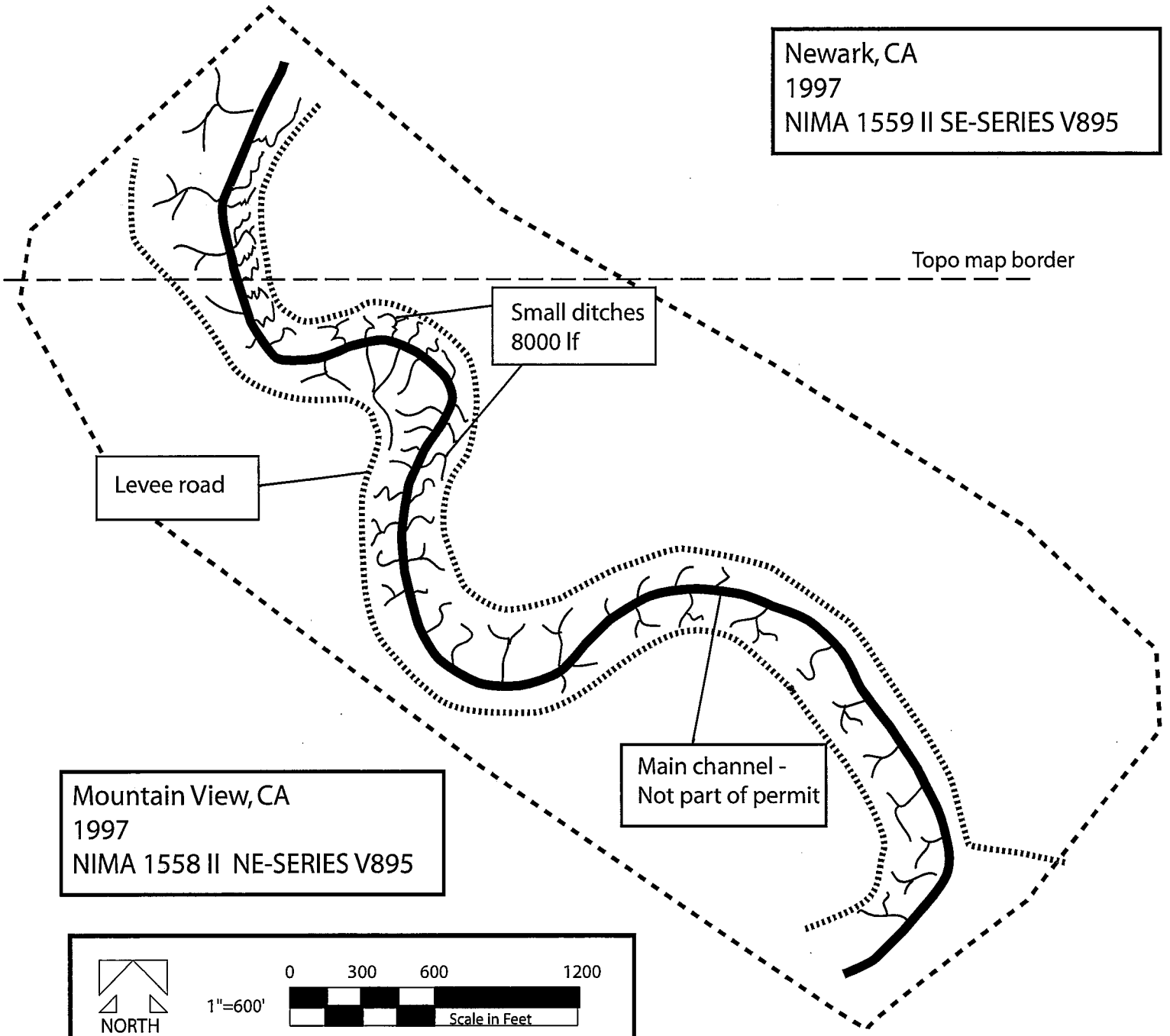
Site Location:
Approx 0.5 mile S of southern end of Mowry Ave;
Newark, CA
Sheet 1 of 2

Project start date: 01 Sep 2010

SCALE: 1" = 2000'

Prepared by Erika Castillo

Project 10 - Mowry Slough



Purpose:
To improve water circulation to reduce mosquito breeding. Ditches will be cleaned out by hand, vegetation will be trimmed and obstructions removed.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 10
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
Approx 0.5 mile S of southern end of Mowry Ave;
Newark, CA
Sheet 2 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 600'** **Prepared by Erika Castillo**

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010

PROJECT SITE DESCRIPTION

Project No. 11
Albrae Marsh
Property Owner:
US Fish and Wildlife Service

Project Location:
Approx 4000' SSW of the end of
Automall Pkwy;
Fremont, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Number: 8115, 8042

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		12000		1-Sep-2010		
B		4000		1-Sep-2010		
C						
D						
E						
F						
G						
H	Present land and water use		H2 Tidal Marsh			

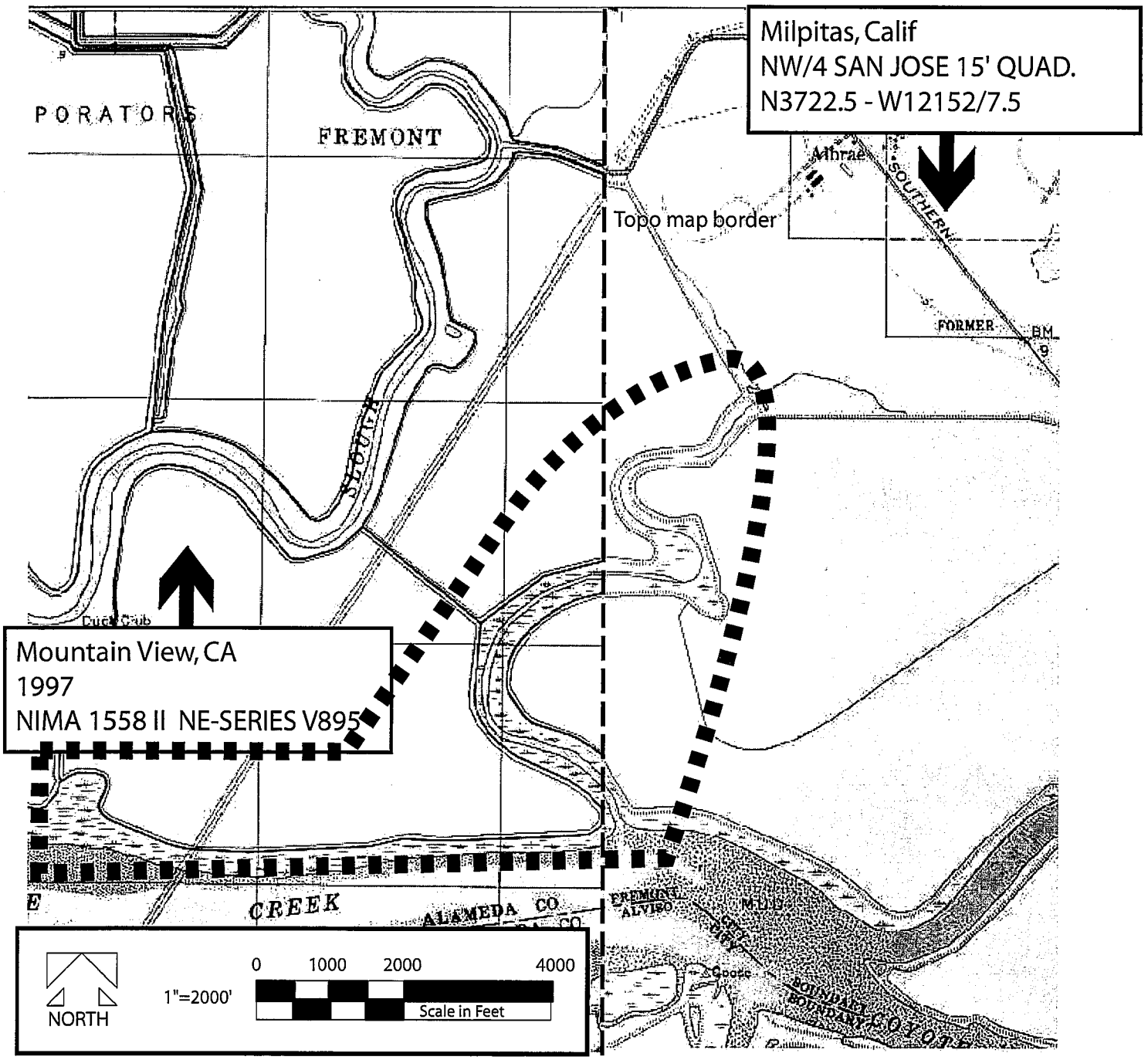
Project Description:

This dead end slough needs to have the circulation ditches opened up every year to prevent numerous mosquito species from developing. These ditches allow better water flow, which improves the health of the pickleweed and also provides fish access to mosquito producing areas. Our District personnel inspect and treat for mosquitoes on every high tide series. Maintenance of these ditches is to trim vegetation, remove obstructions, and remove sediment that has accumulated at these obstructions. This work would be done with hand tools.

The dominant vegetation (95%) is pickleweed *(Salicornia virginica)* with gumplant (*Grindelia stricta) and Frankenia grandifolia* prevalent on the higher areas. Alkali bulrush occurs in the main channel towards the bay where the water flow is greater.

This site produces *Aedes dorsalis* and *Aedes squamiger, Culiseta inornata* and *Culex tarsilis* mosquitoes.

Project 11 - Albrae Marsh



Purpose:
To improve water circulation to reduce mosquito breeding. Vegetation will be trimmed and obstructions removed from ditches.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

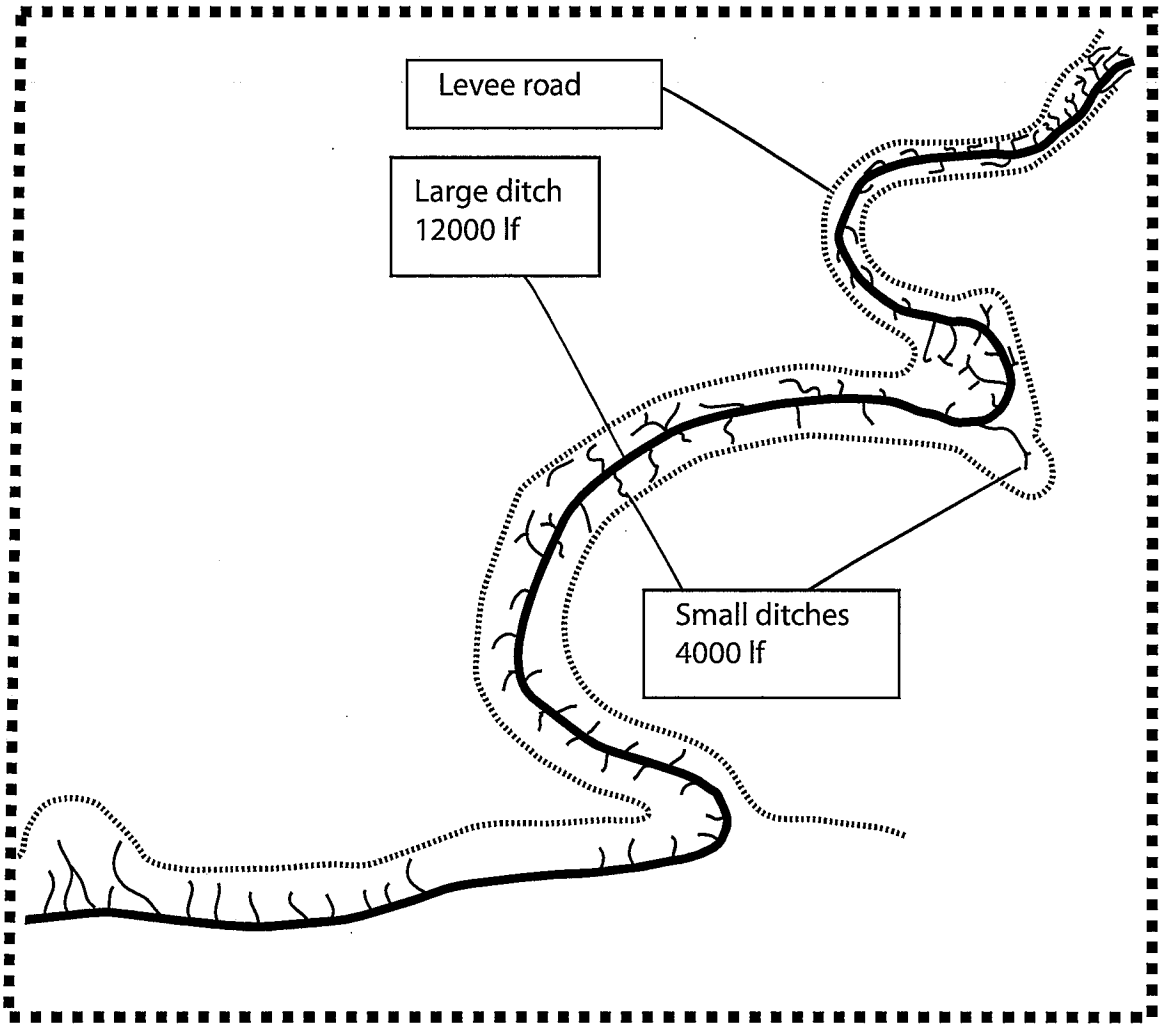
Project Number 11
US Army Corps of Engineers
Regional Permit No. 248520S

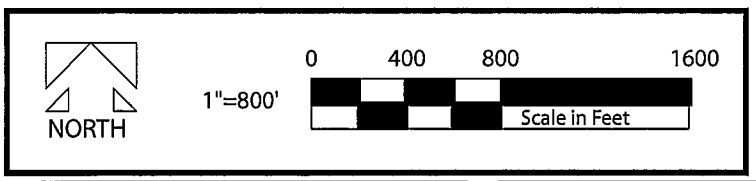
Site Location:
Approx 4000' SSW of the end of Automall Pkwy;
Fremont, CA
Sheet 1 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 2000'** **Prepared by Erika Castillo**

Project 11 - Albrae Marsh

Milpitas, Calif
NW/4 SAN JOSE 15' QUAD.
N3722.5 - W12152/7.5





Purpose:
To improve water circulation to reduce mosquito breeding. Vegetation will be trimmed and obstructions removed from ditches.

Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 11
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
Approx 4000' SSW of the end of Automall Pkwy;
Fremont, CA
Sheet 2 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 800'** **Prepared by Erika Castillo**

PERMIT NUMBER: 248520S
PROJECT YEAR: 2010

PROJECT SITE DESCRIPTION

Project No. 12
Mouse Pasture, Warm Springs
Property Owner:
US Fish and Wildlife Service

Project Location:
0.25 mile W of the southern end
of Fremont Blvd;
Fremont, CA

Agency:
Alameda County Mosquito Abatement District (ACMAD)

Contact Person:
Erika Castillo
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

ACMAD Source Number: 8009.1

Work category	Linear feet new	Linear feet maintenance	Number of structures	Beginning date	Completion date	Percent complete
A		3000		1-Sep-2010		
B		775		1-Sep-2010		
C						
D						
E						
F						
G						
H	Present land and water use		H1 Diked marsh			

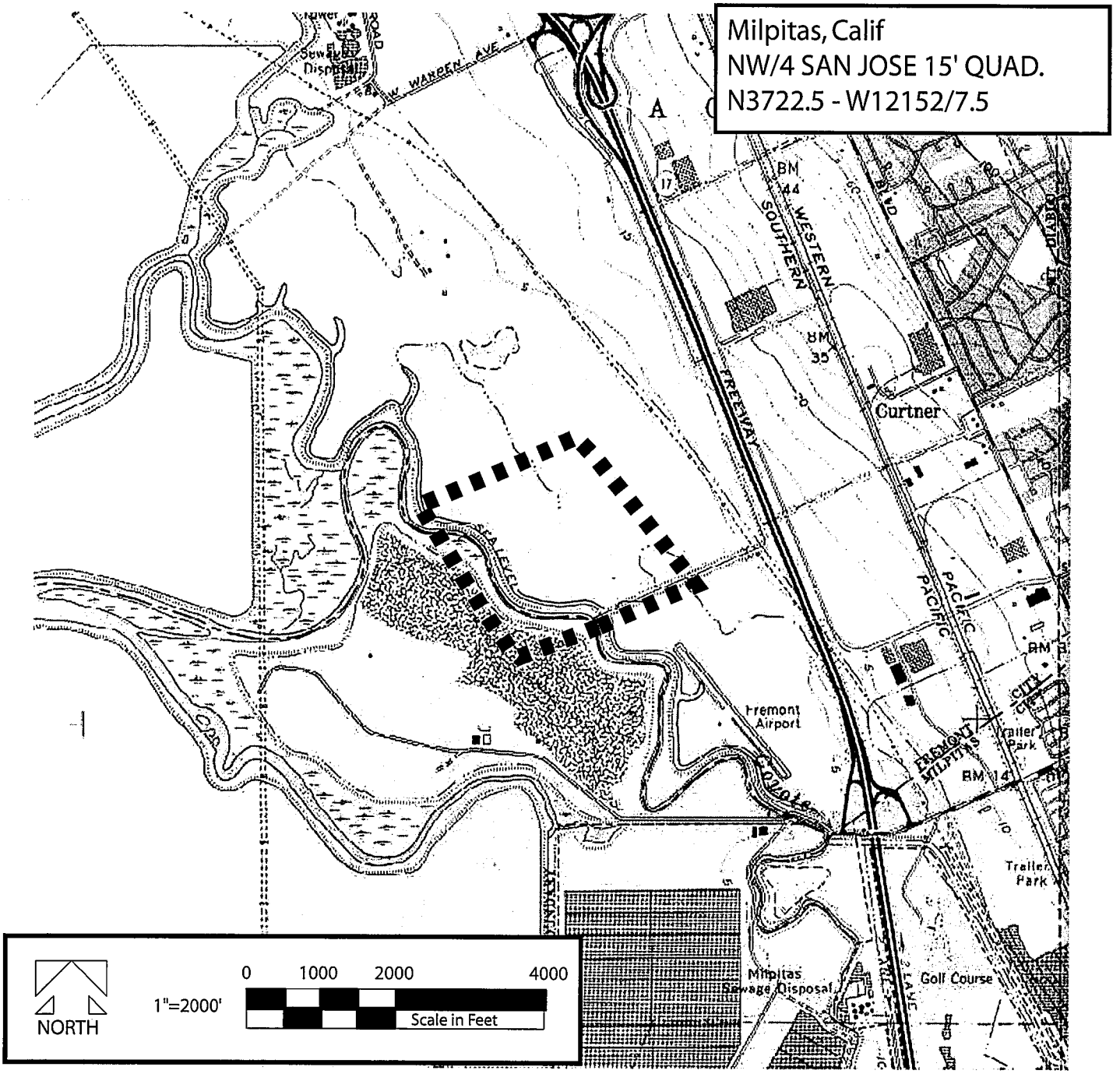
Project Description:

The 25 acre Warm Springs Mouse Pasture is set aside for the salt marsh harvest mouse (*Reithrodontomys raviventris raviventris*). The USFWS installed an 18" culvert and tide gate in May, 1994 and ACMAD created 3000 lf of new ditches in a cooperative project to improve the health of the pickleweed (and thereby, the mouse) and reduce mosquito populations. We would like to clear the ditches of accumulated debris and vegetation to keep the ditches open and free-flowing, as designed. We estimate 30-50% of the ditches need to be cleaned with very little sediment removal anticipated. All work will be done with hand tools.

The dominant vegetation is pickleweed *(Salicornia virginica)*.

This site produces *Aedes dorsalis and Aedes squamiger, Culiseta inornata* and *Culex tarsilis* mosquitoes.

Project 12 - Mouse Pasture



Purpose:
Vegetation will be trimmed and obstructions removed.

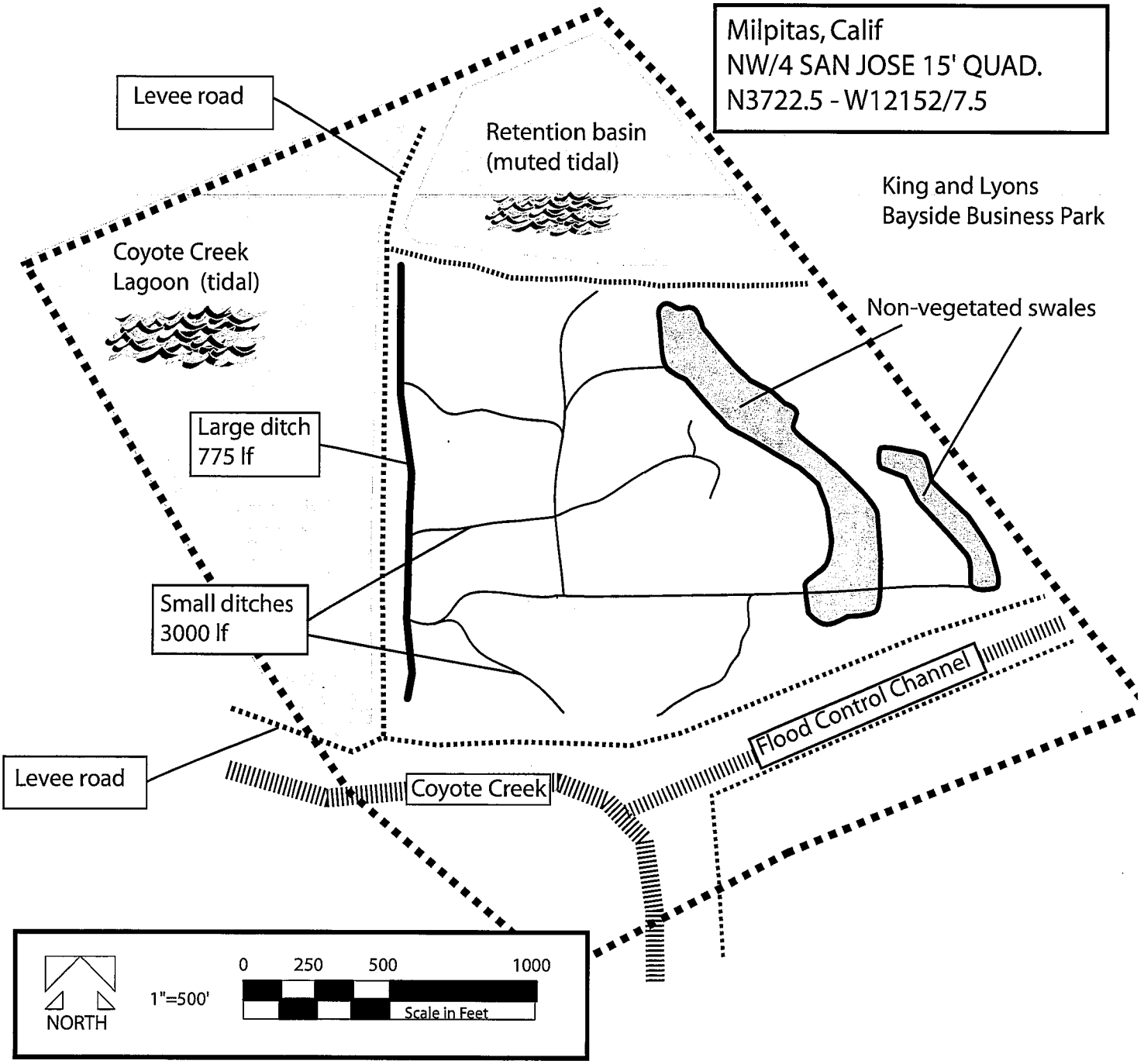
Contact Information:
Alameda County Mosquito Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 12
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
0.25 mile W of the southern end of Fremont Blvd;
Fremont, CA
Sheet 1 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 2000'** **Prepared by Erika Castillo**

Project 12 - Mouse Pasture



Purpose:
Vegetation will be trimmed and obstructions removed from large and small ditches.

Contact Information:
Alameda County Mosquito
Abatement District
23187 Connecticut St
Hayward, CA 94545
Phone: (510) 783-7744
Fax: (510) 783-3903
email: enspec@mosquitoes.org

Project Number 12
US Army Corps of Engineers
Regional Permit No. 248520S

Site Location:
0.25 mile W of the southern end of Fremont Blvd;
Fremont, CA
Sheet 2 of 2

Project start date: 01 Sep 2010 **SCALE: 1" = 500'** **Prepared by Erika Castillo**

RECEIPT

DATE 06/29/11 NO. 243004

RECEIVED FROM Matthew - DWQ

ADDRESS

$ 272.00

FOR John & Jeanelle Rusmisel CK# 10459

ACCOUNT		
AMT. OF ACCOUNT		
AMT. PAID		
BALANCE DUE		

○ CASH

✓ CHECK

○ MONEY ORDER

BY