Butte County Mosquito and Vector Control District

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Phone: 530-533-6038 • Fax: 530-534-9916
www.BCMVCD.com

Matthew C. Ball
Manager

Phil Isorena, Chief
NPDES Wastewater Unit
State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95965-9250

Dear Phil Isorena,

Enclosed is Butte County Mosquito and Vector Control District's (District) addendum to the Pesticide Application Plan (PAP) for the NPDES Vector Control Permit Application for the District. Enclosed is the District's service area and hydrology maps. Should you have any question or further inquiries, please don't contact me.

Respectfully,

Matthew C. Ball
District Manager

1. **Historical applications to/over/near waters of the U.S. (high water mark of various creeks and streams, adulticide applications over named water body, etc.)**
   In prior years, the District has applied larvicides directly to or adulticides in the vicinity of the following water bodies and their unnamed tributaries:

Angel Slough
Ashley Lateral
Baker Lateral
Bangor Canal
Bangor Ditch
Bean Creek
Beking Lateral
Berry Creek
Berry Creek Ditch
Big Chico Creek
Biggs Extension
Bradford Lateral
Burns Lateral
Butler Canal
Butte Creek
Cabin Hollow
CalPark Lake
Campbell Creek
Cannon Reservoir
Canyon Creek
Cave Creek
Center Ditch
Channel Slough
Cherokee Canal
Cirby Creek
Clear Creek
Coal Canyon
Comanche Creek
Concow Creek
Concow Reservoir
Coon Hollow
Cory Canyon
Cottonwood Creek
Crocker Lateral
Crouch Ditch
Crouch Ravine
Dark Canyon
Del 100 Main Drain
Dicus Slough
Dry Creek
Dubock Slough
Durham Mutual Ditch
Durham Slough
East Branch Chico Creek
E. Fork Canyon Creek
Fallager Creek
Feather River
Fine Gold Gulch
Fleming Lateral
Foreman Creek
French Ravine
Gold Run Canal
Gold Run
Green Lateral
Grizzly Creek
Grub Flat Reservoir
Hamilton Slough
Hamlin Canyon
Hammon Slough
Harbean Slough
Hawk Ravine
Hayes Canyon
High Gravity Lateral
High Lift Lateral
Honcut Creek
Honey Run
Indian Fishery
Irish Ravine
Keefer Slough
Kunkle Reservoir
Kusel Slough
Lake Desabla
Lake Madrone
Lake Oroville
Lake Wyandotte
Lateral A
Lateral A-5
Lateral E
Lateral E-7
Lateral H
Lateral H-3
Lindo Channel
Little Butte Creek
Little Chico Creek
Little Cottonwood Creek
Little Dry Creek
Littlefield Reservoir
Live Oak Slough
Live Oak Creek
Long Ravine
Low Gravity Lateral
Low Lift Lateral/Fruitvale
Lower Miocene Canal
Magalia Reservoir
Main Channel Lateral
Main Ditch A
Main Ditch B
Main Drainage Canal
Martin Creek
McCabe Creek
McKee Lateral
McQueen Lateral
Middle Butte Creek
Miners Ranch Canal
Miners Ranch Reservoir
Miners Ranch Tunnel
Minnie Creek
Morgan Reservoir
Mud Creek
Murphy Slough
Nance Canyon
Natcher Creek
Nelson Ravine
North Ditch
North Honcut Creek
Nugen Canyon
Odell Canal
One Mile Pond
Oregon Gulch
Oroville Wyandotte Canal
Owens Ravine
Palermo Canal
Paradise Lake
Perkins Lake
Pine Creek
Potter Ravine
Powel Creek
Prarie Creek
Rocky Honcut Creek
Ruddy Creek
Sacramento River
Sanborn Slough
Schwind Lateral
Singer Creek
Snake River
South Ditch
South Fork Berry Creek
South Honcut Creek
Spring Hollow
Spring Ravine
Spring Valley Reservoir
Stine Lateral
Sutter Butte Canal
Swain Ravine
Sycamore Creek
Sycamore Reservoir
The Lagoon
Thermalito Afterbay
Thermalito Diversion Pool
Thermalito Forebay
Thermalito Power Canal
Tom Jones Reservoir
Traynor Lateral
Union Creek
Upper Miocene Creek
Watt Lateral
West Branch Feather River
West Branch Potter Ravine
West Fork North Honcut Cree
Western Canal
Whites Drain
Wild Yankee Creek
Wilson Creek
Wilson Reservoir
Woodman Ravine
Wyandotte Creek

2. Specific BMPs that the agency uses and give examples of where they have been implemented in the past instead of directly referencing the State BMP manual.

The Butte County Mosquito and Vector Control District (District) is aware that adjusting land management practices and installing proper Best Management Practices (BMPs) can reduce mosquito populations thereby reducing mosquito control costs, reducing the amount of pesticide used in mosquito control applications, helping to protect the public's health, and contributing to the District's integrated vector management (IVM) approach to mosquito and vector control.

IVM is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. The District's IVM program uses current, comprehensive information on the life cycles of pests and their interaction with the environment. This information is used to manage pest nuisance and public health threats by the most economical means, and with the least possible hazard to people, property, and the environment. The District's IVM includes vector surveillance, source reduction and/or elimination, best management practices, public education, biological control, chemical control and monitoring.

The District has used many BMPs throughout its 63 year existence and are a critical component of Districts IVM program. BMPs for mosquito harboring sites (breeding sources) come in all shapes and sizes. Mosquito breeding sources may be as small as bucket or as large as several hundred acres of agricultural used land or managed wetlands.

Examples of BMPs used to manage small mosquito breeding sources is to physically control or eliminate the source (e.g. turning over water buckets, washing out bird baths, unclogging boat drains, turning over flower pots, unclogging rain gutters, using pumps to pump water out of unused/abandoned items such as broken fountains and/or discarded chest freezers, etc.). Another form of physical control the District has used and/or implemented a program utilizing water absorbing polymers in cemetery vases and utilizing this same product or sand for tree hole filling. For sources that are permanent or cannot be physically controlled, the District will access if biological control measures will work such as planting mosquitofish (*Gambusia affinis*).

For larger mosquito breeding sources, the District works cooperatively with property owners and/or land managers to effect short and long term management strategies. Examples of BMPs used to manage medium to large mosquito breeding areas the District has used; changed irrigation practices of agricultural lands and managed wetlands, water conveyance system improvements, water conveyance system design, managed wetland design and maintenance, agricultural design and maintenance, repairs of water leaks, maintenance of unmaintained swimming pools, maintenance of storm water systems/structures, storm water design, aerators, etc..

Additionally, the District works cooperatively and meets at least annually with the California Department of Fish and Game and the United States Fish and Wildlife Services to review BMPs that may be need implementation on State and/or Federal lands. The District works with all county and city local governments to assess the best ways to reduce mosquito breeding habitat.

For a more detailed and extensive list of BMPs the District may use and/or suggest to property owners/land managers, please see the District's Best Management Practices to Reduce Mosquitoes manual attached to the PAP or visit the District's website at www.BCMVCD.com.

Continued...

3. Limitations of each agency in utilizing BMPs in their district. (funding, feasibility, equipment, negotiations with landowners, etc.)

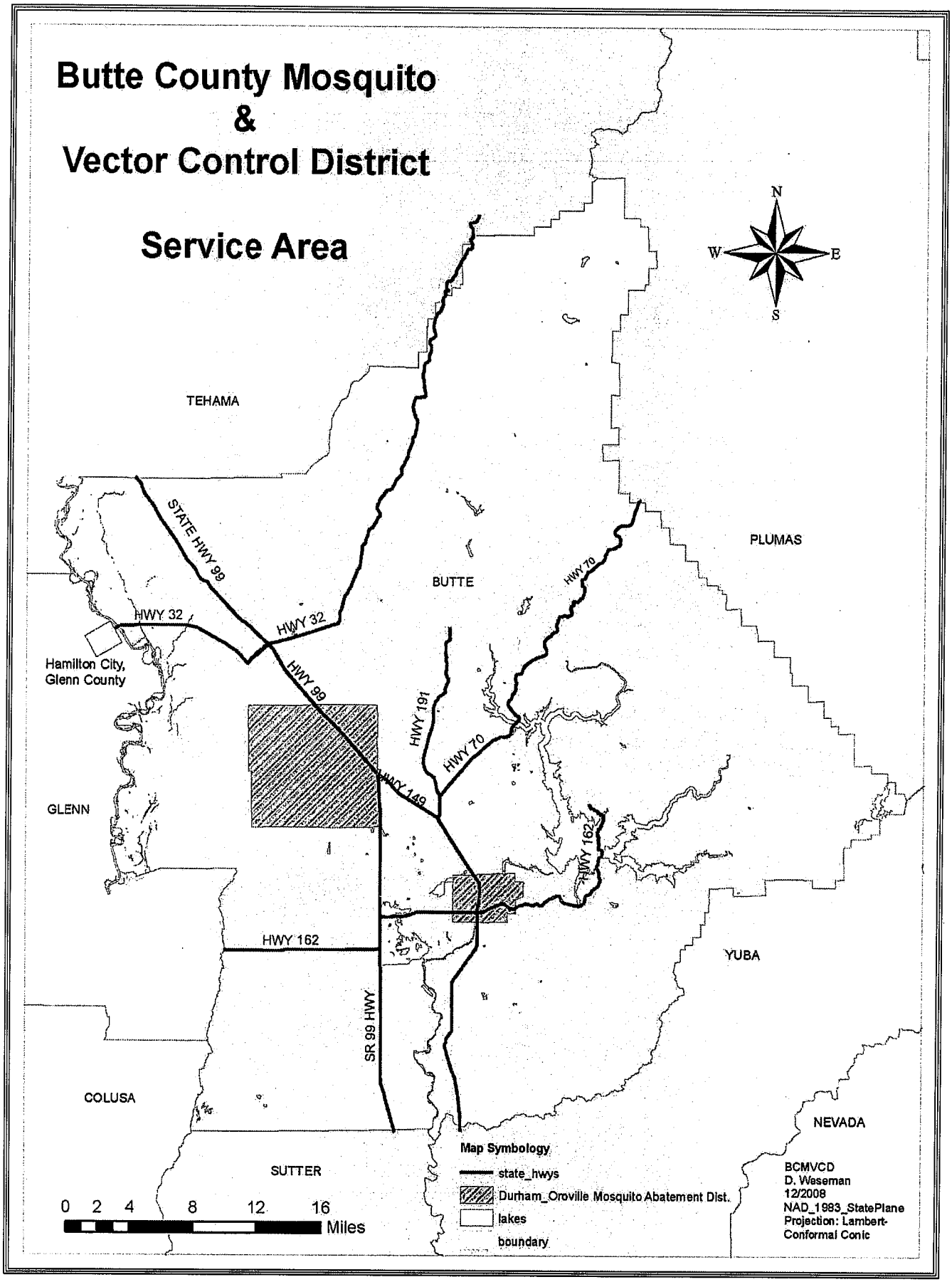
BMPs are not always followed or implemented due to several factors or limitations. Usually the factors and/or limitations are the costs and/or regulations.

Financial constraints on other cooperative public agencies is a significant limitation. Proper maintenance of storm water systems (e.g. pumping/vacuuming clogged storm drains/drain inlets, removal of emergent vegetation from retention/detention ponds, proper maintenance and design of waste water treatment facilities, etc.) is consistently overlooked or underfunded.

The cost of equipment, employee time, treatment materials is a significant limitation. Mitigating large mosquito sources requires a significant investment in equipment and trained personnel for moving soil and vegetation, which is beyond the means of most property owners and this District. Most landowners are relatively cooperative, but they lack the resources for long-term source reduction (e.g., installation of new water conveyances, emergent vegetation control, and re-grading irrigated agricultural land to reduce mosquito habitat). The District is sometimes unable to access known or suspected mosquito sources due to impenetrable vegetation (which the District lacks the resources to remove) or uncooperative residents/ property owners (which interfere with the timely inspection/treatment of larval sources). Compliance with permits, monitoring requirements, and paperwork is requiring more employee time, which reduces the number of man-hours available for our employees to inspect mosquito sources and implement non-pesticide alternatives.

Legal restrictions and/or regulations to manipulate land, vegetation, or redesign is a significant limitation. Regulations and State and Federal laws prohibiting the necessary land improvements due to the presence of threatened or endangered species is a large limitation that does not allow for proper BMPs to be implemented. Additionally, cooperative working agreements between State, Federal, and private managed wetlands/rice land is a limitation (e.g. providing incentive programs to increase migratory waterfowl habitat).

Lastly, biological control such as mosquitofish may not be suitable in all mosquito breeding sources due to poor water quality, mosquito larvae densities, emergent vegetation, temporary source (dries up), source may have sensitive species, and/or sources may drain into natural waterways.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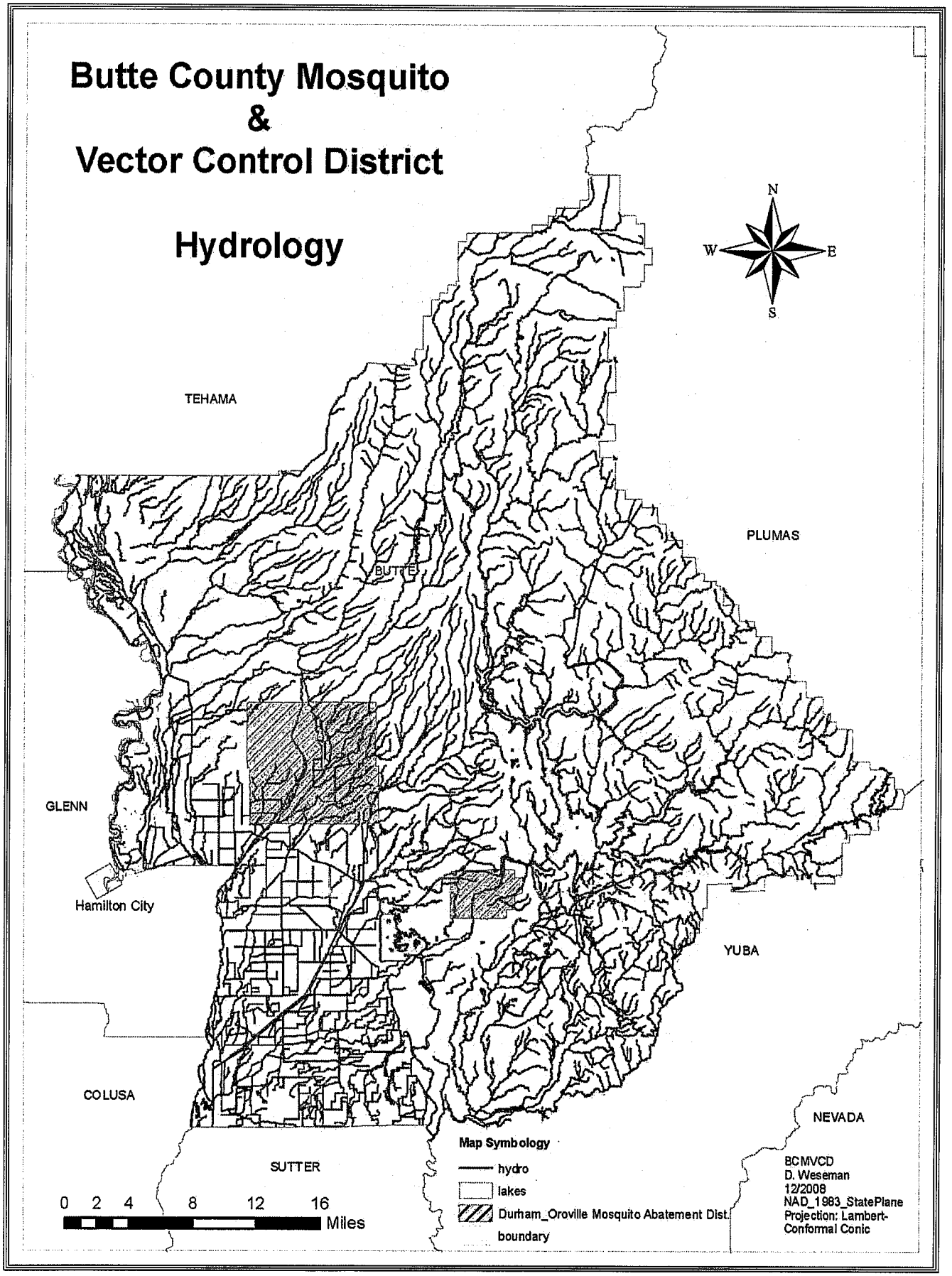
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