

## AGENDA

### 1026<sup>th</sup> MEETING OF THE BOARD OF TRUSTEES OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

OCTOBER 14, 2015

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TIME: 5:00 P.M.  
PLACE: Office of the District, 23187 Connecticut Street, Hayward  
TRUSTEES: George Young, President, City of Fremont  
Richard Guarienti, Vice-President, City of Dublin  
Kathy Narum, Secretary, City of Pleasanton  
Elisa Marquez, City of Hayward  
Scott Paulsen, County-at-Large  
Robert Dickinson, City of Piedmont  
James N. Doggett, City of Livermore  
Scott Donahue, City of Emeryville  
Ursula Reed, City of San Leandro  
Ronald Quinn, City of Union City  
William M. Spinola, City of Newark  
Jan O. Washburn, City of Oakland  
City of Alameda, vacant  
City of Berkeley, vacant

1. Call to order.
2. Roll call.
3. President Young invites any member of the public to speak at this time on any issue relevant to the District. (Each individual is limited to five minutes).
4. Approval of the minutes of the 1024<sup>th</sup> meeting held August 12, 2015 (Board action required).
5. Approval of the minutes of the 1025<sup>th</sup> meeting held October 14, 2015 (Board action required).
6. Resolution 1026-1 honoring Sharon Mead for her service as Systems Specialist (Board action required)
7. Moving 1027<sup>th</sup> meeting from November 11<sup>th</sup> to the 18<sup>th</sup> because of a District Holiday, Veteran's Day; discussion of future board meeting dates (Possible Board Action)
8. Report from the Finance Committee regarding OPEB Trust allocation and policy changes. (Board action required)
  - a. ACMAD OPEB Investment Change Summary
  - b. ACMAD OPEB Investment Policy Statement - proposed
  - c. ACMAD OPEB Investment Policy Statement - changes shown

9. Report from the Policy Committee and review the draft of a new Sick Leave Policy for seasonal workers, complying with AB 1822 (Informational only)
10. Closed session pursuant to Government Code 54954.9. Anticipated Litigation (Information Only)
11. Financial Reports:
  - a. Review of warrants dated September 15, 2015 numbering 011316 through 013416 amounting to \$127,561.97 and warrants dated September 30, 2015 numbering 013516 through 016416 amounting to \$136,150.69 (Information only).
  - b. Review of Budget as of September 30, 2015. (Information only).
  - c. Review of Budget Summary received as of September 30, 2015. (Information only).
12. Presentation of the Monthly Staff Report for September 2015 by Entomologist Dr. Eric-Haas Stapleton. (Information only).
13. Presentation of the Manager's Report for September 2015. (Information only).
  - a. EIR comments received
  - b. Trash capture devices
  - c. Trustees: ethics training overdue & attendance
  - d. Staff updates
  - e. Adult mosquito treatment in Hayward & San Lorenzo
14. Board President asks for reports on conferences and seminars attended by Trustees.
15. Board President asks for announcements from members of the Board.
16. Board President asks trustees for items to be added to the agenda for the next Board meeting.
17. Adjournment.

CITIZENS ATTENDING THE MEETING MAY SPEAK ON ANY AGENDA ITEM AT THEIR REQUEST!

**Please Note: A copy of this agenda is also available at the District website, [www.mosquitoes.org](http://www.mosquitoes.org) or via email by request. Alternative formats of this agenda can be made available for persons with disabilities. Please contact the district office at (510) 783-7744, via FAX (510) 783-3903 or email at [acmad@mosquitoes.org](mailto:acmad@mosquitoes.org) to request an alternative format.**

**Agenda Item 4.**

**MINUTES**

1024<sup>th</sup> MEETING OF THE BOARD OF TRUSTEES  
OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

AUGUST 12, 2015

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TIME: 5:00 P.M.  
PLACE: Office of the District, 23187 Connecticut Street, Hayward  
TRUSTEES: George Young, President, City of Fremont  
Richard Guarienti, Vice-President, City of Dublin  
Kathy Narum, Secretary, City of Pleasanton  
Elisa Marquez, City of Hayward  
Scott Paulsen, County-at-Large  
Robert Dickinson, City of Piedmont  
James N. Doggett, City of Livermore  
Scott Donahue, City of Emeryville  
Ursula Reed, City of San Leandro  
Ronald Quinn, City of Union City  
William M. Spinola, City of Newark  
Jan O. Washburn, City of Oakland  
City of Berkeley, vacant  
City of Alameda, vacant

President Young called the regularly scheduled Board meeting to order at 5:00 pm.

Trustees Young, Guarienti, Narum, Marquez, Paulsen, Donahue, Quinn, Spinola and Washburn were present; Trustee Dickinson arrived at 5:04; Trustees Doggett and Reed were absent

President Young welcomed new District Manager, Ryan Clausnitzer and returning Trustee and outgoing Interim Manager Jan O. Washburn

President Young invited members of the public to speak on any issue relevant to the District. At the beginning of the meeting there were two members of the public present: Carlos Oblites and Ellen Clark from PFM Asset Management LLC.

The Board approved the minutes of the 1023<sup>rd</sup> meeting held July 8th, 2015 (Marquez/Guarienti – unanimous).

Resolution 1024-1 passed honoring Jan O. Washburn for his service as Interim Manager.

The Board decided not to change the date of the 1025<sup>th</sup> meeting of the Board of Trustees from the 9<sup>th</sup> to the 16<sup>th</sup>. The date remains the 9<sup>th</sup>.

Carlos Oblites and Ellen Clark from PFM Asset Management LLC gave a presentation on the District's OPEB Trust finances. After obtaining an actuarial study, PFM and the Finance Committee will meet to discuss the current investment strategy.

The Trustees were given their AB 1234 ethics training due dates and resources will be provided on where to obtain the training. Trustee Washburn also mentioned the AB 1825 sexual harassment training that is due.

The Board reviewed warrants dated July 15, 2015 numbering 000116 through 001616 amounting to \$203,522.41 and warrants dated July 31, 2015 numbering 001716 through 005316 amounting to \$252,884.40.

The Board reviewed Expenditures and Revenues received as of July 31, 2015.

The Manager presented the Monthly Operational Report for July 2015 and mentioned that the format of this report will change in the coming months.

The District Manager presented the Manager's Report for July 2015. No additional *Aedes aegypti* have been found in Alameda County as of August 12, and surveillance and abatement efforts are continuing. Trustee Paulsen requested information regarding the State's mandated response plan and how that affects the district's resources. Trustee Washburn provided further details on what the state response entails and our obligation to it. The district also focused operations in the Fremont area because of confirmed West Nile virus birds and mosquitoes. Trustees Narum and Marquez asked about the District's response policy to dead bird calls and that relationship to the State's dead bird hotline. Trustee Washburn and District Manager Clausnitzer explained the relationship while ensuring proper procedures will be improved upon if found deficient. The ACMAD EIR's comment period began at a public hearing August 5<sup>th</sup>, 2015 with no public attending. The comment period closes September 4<sup>th</sup>, 2015. Trustee Donahue requested further explanation on this process; this was provided by Trustees Guarienti, Paulsen, Washburn and the District Manager. The District Manger reported that one employee was let go while interviews are upcoming for two vacant mosquito technician positions. The audit partner will change while the audit firm will remain the same. Remaining insurance forms were given to trustees. Trustee Washburn was added to the Ad Hoc Long Range Committee while Trustee Marquez was added to the policy committee

Board President Young asked for reports on conferences and seminars attended by Trustees.

Trustee Donahue praised district employee Sette on his efficiency and professionalism in his response to a service request. Trustee Marquez requested a condensed PR release suited for social media.

Board President Young asked trustees for items to be added to the agenda for the September Board meeting. Trustees Narum and Marquez requested a report, through PERS, on the future health of the pension and health care specifically on the Affordable Care Act and the Cadillac Tax. The District Manager will prepare this report prior to the end of the calendar year, as requested by those Trustees.

The meeting adjourned at 6:30 pm.

**Respectfully submitted,**

Approved as written and/or corrected

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Kathy Narum, Secretary  
BOARD OF TRUSTEES

at the 1026<sup>th</sup> meeting of the Board of  
Trustees held October 14th, 2015

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George Young, President  
BOARD OF TRUSTEES

**Agenda Item 5.**

**MINUTES**

1025<sup>th</sup> MEETING OF THE BOARD OF TRUSTEES  
OF THE ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT

SEPTEMBER 9, 2015

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TIME: 5:00 P.M.  
PLACE: Office of the District, 23187 Connecticut Street, Hayward  
TRUSTEES: George Young, President, City of Fremont  
Richard Guarienti, Vice-President, City of Dublin  
Kathy Narum, Secretary, City of Pleasanton  
Elisa Marquez, City of Hayward  
Scott Paulsen, County-at-Large  
Robert Dickinson, City of Piedmont  
James N. Doggett, City of Livermore  
Scott Donahue, City of Emeryville  
Ursula Reed, City of San Leandro  
Ronald Quinn, City of Union City  
William M. Spinola, City of Newark  
Jan O. Washburn, City of Oakland  
City of Berkeley, vacant  
City of Alameda, vacant

President Young called the regularly scheduled Board meeting to order at 5:06 P.M.

Trustees Young, Guarienti, Narum, Marquez, Donahue, Quinn, and were present; Trustees Paulsen, Doggett, Washburn, Dickinson, Spinola and Reed were absent.

With only six of 14 Trustees present, there was no quorum, thus no board actions were taken during this meeting.

President Young invited members of the public to speak on any issue relevant to the District. At the beginning of the meeting there were two members of the public present: staff members Joseph Huston and Sharon Mead

Approval of the minutes of the 1024<sup>th</sup> meeting held August 12th, 2015 will be postponed until the 1026<sup>th</sup> meeting because of a lack of quorum.

Resolution 1025-1 was read, but not passed, because of a lack of a quorum, honoring Sharon Mead for her service as Systems Specialist. This action will be postponed until the 1026<sup>th</sup> meeting.

The Board reviewed warrants dated August 15, 2015 numbering 005416 through 008316 amounting to \$150,854.32 and warrants dated August 31, 2015 numbering 008416 through 011216 amounting to \$128,897.67. Trustees Narum and Marquez asked about the District's Facebook account where the manager and staff responded that they will be added as contact. Trustee Marquez asked about the only 1% of public education funds and if every

city in Alameda County is represented by an event. The manager responded that he must ask staff and will get back with that specific information.

The Board reviewed Expenditures and Revenues received as of August 31, 2015.

The Manager asked staff member, Field Operations Supervisor Joseph Huston, to present the Monthly Operational Report for August 2015.

The District Manager presented the Manager's Report for August 2015. Trustee Guarienti asked how many comments were received for the EIR, the manager responded that four were received.

Board President Young asked for reports on conferences and seminars attended by Trustees. Trustee Guarienti asked the District Manager about the Alameda County Special District Association Meeting which he attended and reminded Trustees the value of this meeting.

Board President Young asked trustees for items to be added to the agenda for the September Board meeting. Trustees Narum requested again a report, through PERS, on the future health of the pension and health care specifically on the Affordable Care Act and the Cadillac Tax. The District Manager asked for specific information the Trustee would like in able to prepare this report prior to the end of the calendar year, or after an upcoming PERS conference. The District Manager asked the Policy Committee to attend a meeting prior to the 1026<sup>th</sup> meeting. Trustee Guarienti thanked staff for attending the meeting and presenting a report. Trustees and the District Manager discussed solutions on ensuring a quorum is always present at future board meetings.

The meeting adjourned at 6:00 pm.

**Respectfully submitted,**

Approved as written and/or corrected  
at the 1026<sup>th</sup> meeting of the Board of  
Trustees held October 14th, 2015

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George Young, President  
BOARD OF TRUSTEES

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Kathy Narum, Secretary  
BOARD OF TRUSTEES

**Agenda item 6.**

RESOLUTION NO. 1026-1

ALAMEDA COUNTY MOSQUITO  
ABATEMENT DISTRICT

**COMMENDATION TO: Sharon Mead**

WHEREAS: You, Sharon Mead, served the District as research assistant from August 1985 until 1986, as a Mosquito Control Technician from 1986 until 1993, and as a System Specialist from 1993 until your retirement in October 2015, and

WHEREAS: You directed the District's IT infrastructure, trained staff in computer operations, generated reports requested by regulatory agencies, and modernized and managed the fish operations

WHEREAS: You were diligent in maintaining a smooth-running work place for District employees, and were effective in all aspects of your position as System Specialist, and

WHEREAS: You have served the District and citizens of Alameda County for more than 30 years, therefore be it

RESOLVED: We, the undersigned Manager and President of the Board of Trustees, do hereby extend our sincere appreciation for your dedication and service to this District.

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George Young  
President, ACMAD Board of Trustees

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Ryan Clausnitzer  
Manager, ACMAD



September 29, 2015

## Memorandum

**To:** Alameda County Mosquito Abatement District Board of Directors

**From:** Ellen Clark, Senior Managing Consultant  
*PFM Asset Management LLC*

**Re:** Proposed Changes to the Other Post-Employment Benefit (OPEB) Trust Investment Policy Statement

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At the recommendation of the Alameda County Mosquito Abatement District (“ACMAD”) Board of Directors (the “Board”), the ACMAD established the Other Post-Employment Benefit Trust (the “Trust”) in 2011. At that time, the Board approved and adopted the Investment Policy Statement for the ACMAD Other Post-Employment Benefit Trust (the “Policy Statement”). PFM Asset Management LLC (“PFMAM”), as the investment advisor to the Trust, periodically reviews and makes recommendations for revisions and updates to the Policy Statement. Please find attached the updated Policy Statement with the recommended changes incorporated and a description of the major changes below.

### I. Investment Authority

We updated all references to the “Plan Committee” to refer instead to the Board of Directors. The functions of an investment advisor have been described in greater detail.

### II. Investment Guidelines

PFMAM recommends adding language to describe three types of assets **Growth, Income,** and **Real Return** assets, the asset classes, the risk and return characteristics and examples of the types of investments that fall into each category. These types of assets will be used later in the policy to define asset allocation targets. We have excluded all references to hedge funds or private equity funds in this section. We also recommend replacing the time horizon description of 20 years to a “long-term investment horizon of five years or longer.”

### III. Asset Allocation

PFMAM recommends the following changes to the asset allocation table on page 6:

1. Re-organizing the asset allocation table under four headings, **Growth, Income, Real Return,** and **Liquidity Assets.** Asset classes that primarily achieve capital appreciation such as domestic and international equity would be represented in **Growth Assets.** Asset classes that primarily provide income would be represented in **Income Assets.** Asset classes that primarily provide real return after inflation such



as real estate, TIPs and commodities would be represented in the **Real Return Assets** and cash and equivalents would be in the **Liquidity Assets**.

2. One target allocation and range for domestic equity, including the allocation currently allocated to REITs and inflation hedge.
  - a. PFMAM proposes a single target for domestic equity of 36%, which would include all capitalization ranges and REITs. Previously, the policy had a separate target for domestic equity (31%), international equity (19%), REITs (2.5%) and Inflation Hedge (2.5%). The recommendation is to add the allocation for REITs and inflation hedge to domestic equity. REITs are publicly traded stocks investing in real estate investment trusts. While REITs do represent an investment in real estate, REITs are part of the publically traded domestic equity market. Inflation hedge investments may be equity or fixed income investments and are included in the portfolio for a specific purpose—to hedge inflation and provide a real return. We recommend adding the 2.5% allocation to inflation hedge to domestic equity. In the future, specific inflation hedge investments will be allocated to the **Real Return Asset** category. While this change is not meant to alter the way we have or will manage the portfolio, it aligns the portfolio to the new asset categories of **Growth, Income, Real Return, and Liquidity Assets**.
  - b. The recommended new range for domestic equity is 16%-56%.
3. Increasing the allowable range for international stocks to 0% to 39% from 9%-29%.
  - a. This brings the range in line with the current recommendation from the PFMAM Multi-Asset Class Investment Committee. International equities continue to represent a greater percentage of the global equity markets. We request a broader range.
4. Adding a new category, called **Other**, to include all non-traditional, alternative asset classes such as non-publicly traded private real estate. The **Other** asset category would be added to both the **Growth and Income Asset** categories. The target for these types of investments would be 0% with a range of 0%-10% of the **Growth, Income, and Real Return Asset** categories. A maximum of 20% of the total portfolio may be allocated to the **Other** category.
5. Adjusting the range for fixed income to 25%-70% from 30%-70%.
6. Changing the actuarial discount rate from 5% to 6%.

#### IV. Selection of Investment Managers

PFMAM recommends make the following adjustments to the investment manager section.

1. Removing the requirement that managers must be a bank, insurance company, or registered investment advisor.
2. Instituting a 3 year experience requirement on the investment professionals of selected funds.
3. Allowing an exemption for managers of common funds to not be required to receive and understand the ACMAD's Policy Statement.



## V. Guidelines for Portfolio Holdings

PFMAM has made adjustments to the description of the permitted investments of the Trust.

1. **Equities:** This section has been modified as described below.
  - a. The first paragraph has been re-written to describe current indices used to evaluate the portfolio the Russell 3000 Index and the MSCI ACWI ex U.S. In addition, the exposure to shares of one company has been increased to not exceed 5% from 2% of shares outstanding; and the definition and limitation for sector exposure has changed to read “not more than 40% of equity valued at market may be held in any one sector, as defined by the Global Industry Classification Standard (GICS).
  - b. The paragraph describing non-U.S. equities has been rewritten to define diversification as “a diverse global mix comprised of the equity of companies from multiple countries, regions and sectors.” PFMAM is recommending removing the limit of 35% in emerging markets, as a percentage of non-U.S. equity exposure. PFMAM would like the ability to adjust the portfolio to allocate between developed and emerging markets. Emerging markets currently represent about 21% of the MSCI ACWI ex US Index. PFMAM will maintain broad diversification of the non-U.S. portfolio.
2. **Fixed Income:** This section has been updated to refer to a rating agency as a Nationally Recognized Statistical Rating Organization (“NRSRO”).
3. **Other:** This is a new section describing permissible investments in non-traditional asset classes such as commodities and REITs.
  - a. PFMAM requests the ability to invest, on a limited basis, in non-traditional asset classes, when deemed appropriate, to enhance the risk-return profile of the Trust. Investments in the **Other** asset category could be used as either part of the **Growth** or part of the **Income** category. The total allocation to the **Other** asset category is limited to 20% in aggregate for the portfolio. In addition, prior approval will be sought from the Board to invest in any investment other than publicly traded mutual funds.

**INVESTMENT POLICY STATEMENT**

**FOR**

**ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT**

**OTHER POST-EMPLOYMENT BENEFITS TRUST**

*Revised October XX, 2015*

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The Alameda County Mosquito Abatement District (the “District”) has established the Alameda County Mosquito Abatement District Other Post-Employment Benefits Trust (the “Trust”). The Trust is intended to provide for funding of non-pension post-employment benefits (“OPEB”) for those employees who meet the age and service requirements outlined in the District’s plan documents. The Trustees of the Trust hereby adopt this Investment Policy Statement (“Policy Statement”) for the following purposes.

### **Purpose**

The main investment objective of the Trust is to achieve long-term growth of Trust assets by maximizing long-term rate of return on investments and minimizing risk of loss to fulfill the District’s current and long-term OPEB obligations.

The purpose of this Policy Statement is to achieve the following:

1. Document investment objectives, performance expectations and investment guidelines for Trust assets.
2. Establish an appropriate investment strategy for managing all Trust assets, including an investment time horizon, risk tolerance ranges and asset allocation to provide sufficient diversification and overall return over the long-term time horizon of the Trust.
3. Establish investment guidelines to control overall risk and liquidity.
4. Establish periodic performance reporting requirements to monitor investment results and confirm that the investment policy is being followed.
5. Comply with fiduciary, prudence, due diligence and legal requirements for Trust assets.

### **Investment Authority**

The District has a Board of Directors (the “Board”) that oversees the policies and procedures related to the operation and administration of the Trust. The Board will have authority to implement the investment policy and guidelines in the best interest of the Trust to best satisfy the purposes of the Trust. In implementing this Policy Statement, the Board believes it may delegate certain functions to:

1. An investment advisor (“Advisor”) to assist the Board in the investment process and to maintain compliance with this Policy Statement. The Advisor may assist the Board in establishing investment policy objectives and guidelines and may also select investments with discretion to purchase, sell, or hold specific securities that will be used to meet the Fund’s investment objectives. The Advisor will: 1) adjust asset allocation for the Fund subject to the guidelines and limitations set forth in this Policy Statement; 2) select investment managers (“Managers”) and strategies consistent with its role as a fiduciary; 3) monitor and review

Managers and measure and evaluate their performance against their peers based upon the performance of the total funds under their direct management; and 4) execute other tasks as deemed appropriate in its role as Advisor for Fund assets. The investment vehicles allowed may include mutual funds, commingled trusts, separate accounts, limited partnerships and other investment vehicles deemed to be appropriate by the Advisor. The Advisor shall never take possession of securities, cash or other assets of the Fund, all of which shall be held by the custodian. The Advisor must be registered with the Securities and Exchange Commission.

2. A custodian selected by the Trustees to maintain possession of physical securities and records of street name securities owned by the Trust, collect dividend and interest payments, redeem maturing securities, and effect receipt and delivery following purchases and sales. The custodian may also perform regular accounting of all assets owned, purchased, or sold, as well as movement of assets into and out of the Trust.
3. A trustee appointed by the Trustees, such as a bank trust department, if the Trust does not have its own Trustees, to assume fiduciary responsibility for the administration of Trust assets; provided, however, that if the Board shall have appointed an investment advisor, then any trustee appointed under this paragraph shall have no authority with respect to selection of investments.
4. Specialists such as attorneys, auditors, actuaries and, retirement plan consultants to assist the Board in meeting its responsibilities and obligations to administer Trust assets prudently.

### **Statement of Investment Objectives**

The investment objectives of the Trust are as follows:

1. To invest assets of the Trust in a manner consistent with the following fiduciary standards: (a) all transactions undertaken must be for the sole interest of Trust beneficiaries, and (b) assets are to be diversified in order to minimize the impact of large losses from individual investments.
2. To provide for funding and anticipated withdrawals on a continuing basis for payment of benefits and reasonable expenses of operation of the Trust.
3. To conserve and enhance the value of Trust assets in real terms over the long-term through asset appreciation and income generation, while maintaining a reasonable investment risk profile.
4. To minimize principal fluctuations, subject to performance expectations over the long-term Time Horizon (as defined below).
5. To achieve a long-term level of return commensurate with contemporary economic conditions and equal to or exceeding the investment objective set forth in this Policy Statement under the section labeled "Performance Expectations".

## **Investment Guidelines**

Within this section of the Policy Statement, several terms will be used to articulate various investment concepts. The descriptions are meant to be general and may share investments otherwise considered to be in the same asset class. They are:

"Growth Assets" - a collection of investments and/or asset classes whose primary risk and return characteristics are focused on capital appreciation. Investments within the Growth Assets category can include income and risk mitigating characteristics, so long as the predominant investment risk and return characteristic is capital appreciation. Examples of such investments or asset classes are: domestic and international equities or equity funds, and certain real estate investments.

"Income Assets" - a collection of investments and/or asset classes whose primary risk and return characteristics are focused on income generation. Investments within the Income Assets category can include capital appreciation and risk mitigating characteristics, so long as the primary investment risk and return characteristic is income generation. Examples of such investments or asset classes are: fixed income securities, guaranteed investment contracts, and certain real estate investments.

"Real Return Assets" - a collection of investments and/or asset classes whose primary risk and return characteristics are focused on real returns after inflation. Investments within the Real Return category can include inflation protected securities, commodities, and certain real estate investments.

### **Time Horizon**

The Trust's investment objectives are based on a long-term investment horizon ("Time Horizon") of five years or longer. Interim fluctuations should be viewed with appropriate perspective. The Board has adopted a long-term investment horizon such that the risks and duration of investment losses are carefully weighed against the long-term potential for appreciation of assets.

### **Liquidity and Diversification**

In general, the Trust may hold some cash, cash equivalent, and/or money market funds for near-term Trust benefits and expenses (the "Trust Distributions"). Remaining assets will be invested in longer-term investments and shall be diversified with the intent to minimize the risk of long-term investment losses. Consequently, the total portfolio will be constructed and maintained to provide diversification with regard to the concentration of holdings in individual issues, issuers, countries, governments or industries.



## Asset Allocation

The Board believes that to achieve the greatest likelihood of meeting the Trust’s investment objectives and the best balance between risk and return for optimal diversification, assets will be invested in accordance with the targets for each asset class as follows to achieve an average total annual rate of return that is equal to or greater than the Trust’s actuarial discount rate or target rate of return over the long-term, as described in the section titled “Performance Expectations”.

<u>Asset Classes</u>	<u>Asset Weightings</u>	
	<u>Range</u>	<u>Target</u>
<b>Growth Assets</b>		
Domestic Equity	16% - 56%	36%
International Equity	0% - 39%	19%
Other	0% - 10%	0%
<b>Income Assets</b>		
Fixed Income	25% - 70%	45%
Other	0% - 10%	0%
<b>Real Return Assets</b>	0% - 10%	0%
<b>Cash Equivalents</b>	0% - 20%	0%

The Advisor and each Manager will be evaluated against their peers on the performance of the total funds under their direct management.

## Rebalancing Philosophy

The asset allocation range established by this Policy Statement represents a long-term perspective. As such, rapid unanticipated market shifts or changes in economic conditions may cause the asset mix to fall outside Policy Statement ranges. When allocations breach the specified ranges, the Advisor will rebalance the assets within the specified ranges. The Advisor may also rebalance based on market conditions.

## Risk Tolerance

Subject to investment objectives and performance expectations, the Trust will be managed in a style that seeks to minimize principal fluctuations over the established Time Horizon.

## Performance Expectations

Over the long-term, five years or longer, the performance objective for the Trust will be to achieve an average total annual rate of return that is equal to or greater than the Trust's actuarial discount rate, which is expected to be 6%. Additionally, it is expected that the annual rate of return on Trust assets will be commensurate with the then prevailing investment environment. Measurement of this return expectation will be judged by reviewing returns in the context of industry standard benchmarks, peer universe comparisons for individual Trust investments and blended benchmark comparisons for the Trust in its entirety.

## Selection of Investment Managers

The Advisor shall prudently select appropriate Managers to invest the assets of the Trust. Managers must meet the following criteria:

- The Manager must provide historical quarterly performance data compliant with Global Investment Performance Standards (GIPS<sup>®</sup>), Securities & Exchange Commission (“SEC”), Financial Industry Regulatory Agency (“FINRA”) or industry recognized standards, as appropriate.
- The Manager must provide detailed information on the history of the firm, key personnel, support personnel, key clients, and fee schedule (including most-favored-nation clauses). This information can be a copy of a recent Request for Proposal (“RFP”) completed by the Manager or regulatory disclosure.
- The Manager must clearly articulate the investment strategy that will be followed and document that the strategy has been successfully adhered to over time.
- The investment professionals making the investment decisions must have a minimum of three (3) years of experience managing similar strategies either at their current firm or at previous firms.
- Where other than common funds such as mutual funds or commingled trusts are utilized, the Manager must confirm receipt, understanding and adherence to this Policy Statement and any investment specific policies by signing a consent form provided to the Manager prior to investment of Trust assets.

## Guidelines for Portfolio Holdings

### Direct Investments by Advisor

Every effort shall be made, to the extent practical, prudent and appropriate, to select investments that have investment objectives and policies that are consistent with this Policy Statement (as outlined in the following sub-sections of the “Guidelines for Portfolio Holdings”). However, given the nature of the investments, it is recognized that there may be deviations between this Policy Statement and the objectives of these investments. No funds with a net asset value of each share of less than \$10 shall be purchased or held. All fixed-income funds are excluded from this requirement.

## Limitations on Managers' Portfolios

### EQUITIES

No more than the greater of 5% or weighting in the relevant index (Russell 3000 Index for U.S. issues and MSCI ACWI ex-U.S. for non-U.S. issues) of the total equity portfolio valued at market may be invested in the common equity of any one corporation; ownership of the shares of one company shall not exceed 5% of those outstanding; and not more than 40% of equity valued at market may be held in any one sector, as defined by the Global Industry Classification Standard (GICS).

*Domestic Equities:* Other than the above constraints, there are no quantitative guidelines as to issues, industry or individual security diversification. However, prudent diversification standards should be developed and maintained by the Manager.

*International Equities:* The overall non-U.S. equity allocation should include a diverse global mix that is comprised of the equity of companies from multiple countries, regions and sectors.

### FIXED INCOME

Fixed income securities of any one issuer shall not exceed 5% of the total bond portfolio at time of purchase. The 5% limitation does not apply to issues of the U.S. Treasury or other Federal Agencies. The overall rating of the fixed income assets as calculated by the Advisor shall be at least "A", or investment grade, based on the rating of one Nationally Recognized Statistical Rating Organization ("NRSRO").

The Trust will avoid mutual funds whose primary focus is adding value through the use of high yield bonds. This does not exclude investment grade fixed-income funds which may contain a small component of high yield securities.

Fixed income investments will not contain more than an aggregate of 10% in derivative instruments such as options, futures contracts, or swap agreements. It is understood that mortgage-backed and asset-backed securities are not considered derivative instruments.

### OTHER ASSETS (ALTERNATIVES)

Alternatives may consist of real estate and commodities, when deemed appropriate. The total allocation to this category may not exceed 10% of the overall portfolio. Prior to adding an allocation to any of the following asset classes, with the exception of publicly-traded mutual fund vehicles, the Advisor shall receive approval from the Board.

*Real Estate:* Consists solely of publicly traded Real Estate Investment Trust ("REIT") securities. Investments of this type are designed to provide a stable level of income combined with potential for

price appreciation, particularly in periods of unexpected inflation. For purposes of asset allocation targets and limitations, publicly traded REITs will be categorized as “Other” under the Growth Assets category.

Inflation Hedge: Shall consist of pooled vehicles holding among other assets: Treasury Inflation Protected Securities (“TIPS”), commodities or commodity contracts, index-linked derivative contracts, certain real estate or real property funds and the equity of companies in businesses thought to hedge inflation. Inflation hedge assets will be reported in the Real Return Assets category.

## CASH EQUIVALENTS

Cash equivalents shall be held in funds complying with Rule 2(a)-7 of the Investment Company Act of 1940.

### Portfolio Risk Hedging

Portfolio investments designed to hedge various risks including volatility risk, interest rate risk, etc. are allowed to the extent that the investments are not used for the sole purpose of leveraging Trust assets. One example of a hedge vehicle is an exchange traded fund (“ETF”) which takes short positions.

### Prohibited Investments

Except for purchase within authorized investments, securities having the following characteristics are not authorized and shall not be purchased or held: letter stock and other unregistered securities, direct commodities or commodity contracts, or private placements (with the exception of Rule 144A securities), or venture capital funds, private equity, or hedge funds and stocks with a value of less than \$10.00. Further, derivatives, options, or futures for the sole purpose of direct portfolio leveraging are prohibited. Direct ownership of real estate, natural resource properties such as oil, gas or timber and the purchase of collectibles is also prohibited. All investments shall have a ready market and be listed on a major exchange.

### Safekeeping

All assets of the Trust shall be held by a custodian approved by the Board for safekeeping of Trust assets. The custodian shall produce statements on a monthly basis, listing the name and value of all assets held, and the dates and nature of all transactions in accordance with the terms in the Trust Agreement. Investments of the Trust not held as liquidity or Investment Assets shall, at all times, be invested in interest-bearing accounts. Investments and portfolio securities may not be loaned.

## **Control Procedures**

### **Review of Investment Objectives**

The Advisor shall review annually and report to the Board the appropriateness of this Policy Statement for achieving the Trust's stated objectives. It is not expected that this Policy Statement will change frequently. In particular, short-term changes in the financial markets should not require an adjustment in this Policy Statement.

### **Review of Investment Performance**

The Advisor shall report on a quarterly basis to the Board to review the investment performance of the Trust. In addition, the Advisor will be responsible for keeping the Board advised of any material change in investment strategy, Managers, and other pertinent information potentially affecting performance of the Trust.

The Advisor shall compare the investment results on a quarterly basis to appropriate peer universe benchmarks, as well as market indices in both equity and fixed income markets. Examples of benchmarks and indexes that will be used include the Russell 3000 Index for broad U.S. equity strategies; S&P 500 Index for large cap U.S. equities, Russell 2000 Index for small cap U.S. equities, MSCI ACWI ex-U.S. Index for broad based non-U.S. equity strategies; MSCI Europe, Australasia, and Far East (EAFE) Index for developed markets international equities, Barclays Capital Aggregate Bond Index for fixed income securities, and the U.S. 91 Day T-bill for cash equivalents. The Russell 3000 Index will be used to benchmark the U.S. equities portfolio; the MSCI ACWI ex-U.S. Index will be used to benchmark the non-U.S. equities portfolio; the Barclays U.S. Aggregate Bond Index will be used to benchmark the fixed income portfolio. The categories "Other" will be benchmarked against appropriate indices depending on the specific characteristics of the strategies and funds used.

### **Voting of Proxies**

The Board recognizes that proxies are a significant and valuable tool in corporate governance. The voting rights of individual stocks held in separate accounts or collective, common, or pooled funds will be exercised by the investment managers in accordance with their own proxy voting policies. The voting rights of funds will be exercised by the Advisor.

**Adoption of Investment Policy Statement**

Any changes and exceptions to this Policy Statement will be made in writing and adopted by the Board. Once adopted, changes and exceptions will be delivered to each Manager, as appropriate, by the Advisor.

**Approved by the Alameda County Mosquito Abatement District Board of Directors:**

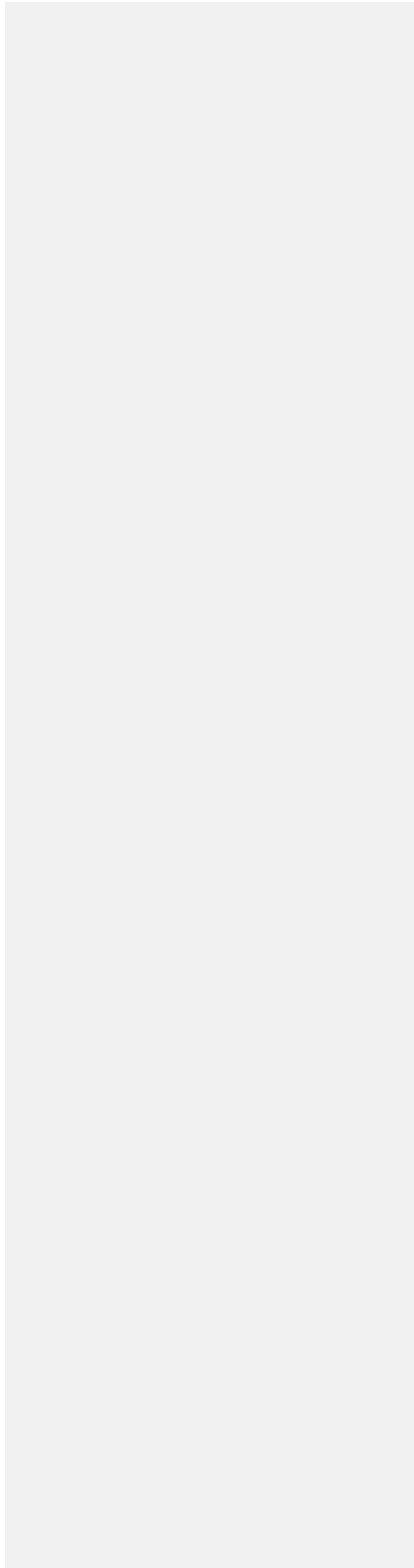
Resolved by:

\_\_\_\_\_  
Chair

\_\_\_\_\_  
Date

**INVESTMENT POLICY STATEMENT**  
**FOR**  
**ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT**  
**OTHER POST-EMPLOYMENT BENEFITS TRUST**

*Revised XXXX XX, 2015*



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The Alameda County Mosquito Abatement District (the “District”) has established the Alameda County Mosquito Abatement District Other Post-Employment Benefits Trust (the “Trust”). The Trust is intended to provide for funding of non-pension post-employment benefits (“OPEB”) for those employees who meet the age and service requirements outlined in the District’s plan documents. The Trustees of the Trust hereby adopt this Investment Policy Statement (“Policy Statement”) for the following purposes.

### **Purpose**

The main investment objective of the Trust is to achieve long-term growth of Trust assets by maximizing long-term rate of return on investments and minimizing risk of loss to fulfill the District’s current and long-term OPEB obligations.

The purpose of this Policy Statement is to achieve the following:

1. Document investment objectives, performance expectations and investment guidelines for Trust assets.
2. Establish an appropriate investment strategy for managing all Trust assets, including an investment time horizon, risk tolerance ranges and asset allocation to provide sufficient diversification and overall return over the long-term time horizon of the Trust.
3. Establish investment guidelines to control overall risk and liquidity.
4. Establish periodic performance reporting requirements to monitor investment results and confirm that the investment policy is being followed.
5. Comply with fiduciary, prudence, due diligence and legal requirements for Trust assets.

### **Investment Authority**

The District has appointed a Plan Committee (the “Committee”) to oversee certain policies and procedures related to the operation and administration of the Trust. The Committee will have authority to implement the investment policy and guidelines in the best interest of the Trust to best satisfy the purposes of the Trust. In implementing this Policy Statement, the Committee believes it may delegate certain functions to:

1. An investment advisor (“Advisor”) to assist the ~~Board-Committee~~ in the investment process and to maintain compliance with this Policy Statement. The Advisor may assist the ~~Board Committee~~ in establishing investment policy, objectives, and guidelines ~~and, selecting investment managers (“Managers”) or mutual funds and other common investment vehicles as specifically approved by the Board from time to time (“Investments”); reviewing Managers and Investments over time; measuring and evaluating performance; and other tasks as deemed appropriate. The Advisor~~ may also select ~~investments~~ investments with discretion to purchase,

sell, or hold specific securities that will be used to meet the Fund's investment objectives. The Advisor will: 1) adjust asset allocation for the Fund subject to the guidelines and limitations set forth in this Policy Statement; 2) select investment managers ("Managers") and strategies consistent with its role as a fiduciary; 3) monitor and review Managers and measure and evaluate their performance against their peers based upon the performance of the total funds under their direct management; and 4) execute other tasks as deemed appropriate in its role as Advisor for Fund assets. The investment vehicles allowed may include mutual funds, commingled trusts, separate accounts, limited partnerships and other investment vehicles deemed to be appropriate by the Advisor. The Advisor shall never take possession of securities, cash or other assets of the FundTrust's investment objectives. Neither the Advisor nor any Manager shall ever take possession of any securities, cash or other assets of the Trust, all of which shall be held by the custodian. The Advisor must be registered with the Securities and Exchange Commission.

2. A custodian selected by the Trustees to maintain possession of physical securities and records of street name securities owned by the Trust, collect dividend and interest payments, redeem maturing securities, and effect receipt and delivery following purchases and sales. The custodian may also perform regular accounting of all assets owned, purchased, or sold, as well as movement of assets into and out of the Trust.
3. A trustee appointed by the Trustees, such as a bank trust department, if the Trust does not have its own Trustees, to assume fiduciary responsibility for the administration of Trust assets; provided, however, that if the Committee shall have appointed an investment advisor, then any trustee appointed under this paragraph shall have no authority with respect to selection of investments.
4. Specialists such as attorneys, auditors, actuaries and, retirement plan consultants to assist the Committee in meeting its responsibilities and obligations to administer Trust assets prudently.

### **Statement of Investment Objectives**

The investment objectives of the Trust are as follows:

1. To invest assets of the Trust in a manner consistent with the following fiduciary standards:  
(a) all transactions undertaken must be for the sole interest of Trust beneficiaries, and (b) assets are to be diversified in order to minimize the impact of large losses from individual investments.
2. To provide for funding and anticipated withdrawals on a continuing basis for payment of benefits and reasonable expenses of operation of the Trust.
3. To conserve and enhance the value of Trust assets in real terms over the long-term through asset appreciation and income generation, while maintaining a reasonable investment risk profile.
4. To minimize principal fluctuations, subject to performance expectations over the long-term Time Horizon (as defined below).

5. To achieve a long-term level of return commensurate with contemporary economic conditions and equal to or exceeding the investment objective set forth in this Policy Statement under the section labeled "Performance Expectations".

### **Investment Guidelines**

Within this section of the Policy Statement, several terms will be used to articulate various investment concepts. The descriptions are meant to be general and may share investments otherwise considered to be in the same asset class. They are:

"Growth Assets" - a collection of investments and/or asset classes whose primary risk and return characteristics are focused on capital appreciation. Investments within the Growth Assets category can include income and risk mitigating characteristics, so long as the predominant investment risk and return characteristic is capital appreciation. Examples of such investments or asset classes are: domestic and international equities or equity funds, private or leveraged equity, certain real estate investments, and hedge funds focused on equity risk mitigation or equity-like returns.

"Income Assets" - a collection of investments and/or asset classes whose primary risk and return characteristics are focused on income generation. Investments within the Income Assets category can include capital appreciation and risk mitigating characteristics, so long as the primary investment risk and return characteristic is income generation. Examples of such investments or asset classes are: fixed income securities, guaranteed investment contracts, certain real estate investments, and hedge funds focused on interest rate risk mitigation or income investment-like returns.

"Real Return Assets" - a collection of investments and/or asset classes whose primary risk and return characteristics are focused on real returns after inflation. Investments within the Real Return category can include inflation protected securities, commodities, certain real estate investments and hedge funds.

### **Time Horizon**

The Trust's investment objectives are based on a ~~20-year~~long-term investment horizon ("Time Horizon") of five years or longer. Interim fluctuations should be viewed with appropriate perspective. The Committee has adopted a long-term investment horizon such that the risks and duration of investment losses are carefully weighed against the long-term potential for appreciation of assets.

### **Liquidity and Diversification**

In general, the Trust may hold ~~up to six months of~~some cash, cash equivalent, and/or money market funds (~~collectively, "Liquidity Assets"~~) for near-term Trust benefits and expenses (the "Trust Distributions"). Remaining assets will be invested in longer-term investments and shall be diversified with the intent to minimize the risk of long-term investment losses. Consequently, the total portfolio

will be constructed and maintained to provide diversification with regard to the concentration of holdings in individual issues, issuers, countries, governments or industries.

#### Asset Allocation

The Committee believes that to achieve the greatest likelihood of meeting the Trust's investment objectives and the best balance between risk and return for optimal diversification, assets will be invested in accordance with the targets for each asset class as follows to achieve an average total annual rate of return that is equal to or greater than the Trust's actuarial discount rate or target rate of return over the long-term, as described in the section titled "Performance Expectations".

<u>Asset Classes</u>	<u>Asset Weightings</u>	
	<u>Range</u>	<u>Target</u>
<b>Growth Assets</b>		
Domestic Equity	<del>16</del> 1% - <del>56</del> 31%	<del>36</del> 1%
International Equity	<del>9</del> 0% - <del>23</del> 9%	19%
<del>REITs</del> Other	0% - <del>40</del> 20%	<del>2.5</del> 00%
<b><del>Inflation Hedge</del>Income Assets</b>		
Fixed Income	<del>25</del> 30% - 70%	45%
Other	<del>0</del> % - 20%	<del>0</del> %
<b><u>Real Return Assets</u></b>	<u>0% - 20%</u>	<u>0%</u>
<b><u>Cash Equivalents</u></b>	0% - 20%	<u>0%</u>

The Advisor and each Manager will be evaluated against their peers on the performance of the total funds under their direct management.

#### Rebalancing Philosophy

The asset allocation range established by this Policy Statement represents a long-term perspective. As such, rapid unanticipated market shifts or changes in economic conditions may cause the asset mix to fall outside Policy Statement ranges. When allocations breach the specified ranges, the Advisor will rebalance the assets within the specified ranges. The Advisor may also rebalance based on market conditions.

#### Risk Tolerance

Subject to investment objectives and performance expectations, the Trust will be managed in a style that seeks to minimize principal fluctuations over the established Time Horizon.

### Performance Expectations

Over the long-term, ~~a rolling five year period~~years or longer, the performance objective for the Trust will be to achieve an average total annual rate of return that is equal to or greater than the Trust's actuarial discount rate, which is expected to be 5%. Additionally, it is expected that the annual rate of return on Trust assets will be commensurate with the then prevailing investment environment. Measurement of this return expectation will be judged by reviewing returns in the context of industry standard benchmarks, peer universe comparisons for individual Trust investments and blended benchmark comparisons for the Trust in its entirety.

### Selection of Investment Managers

The Advisor shall prudently select appropriate Managers to invest the assets of the Trust. Managers must meet the following criteria:

- ~~– The Manager must be a bank, insurance company, or investment adviser as defined by the Investment Advisers Act of 1940.~~
- The Manager must provide historical quarterly performance data compliant with Global Investment Performance Standards (GIPS®), Securities & Exchange Commission (“SEC”), Financial Industry Regulatory Agency (“FINRA”) or industry recognized standards, as appropriate.
- The Manager must provide detailed information on the history of the firm, key personnel, support personnel, key clients, and fee schedule (including most-favored-nation clauses). This information can be a copy of a recent Request for Proposal (“RFP”) completed by the Manager or regulatory disclosure.
- The Manager must clearly articulate the investment strategy that will be followed and document that the strategy has been successfully adhered to over time.
- ~~– The investment professionals making the investment decisions must have a minimum of three (3) years of experience managing similar strategies either at their current firm or at previous firms.~~
- ~~– Where other than common funds such as mutual funds or commingled trusts are utilized, the Manager must confirm receipt, understanding and adherence to this Policy Statement and any investment specific policies by signing a consent form provided to the Manager prior to investment of Trust assets.~~

### Guidelines for Portfolio Holdings

#### Direct Investments by Advisor

Every effort shall be made, to the extent practical, prudent and appropriate, to select investments that have investment objectives and policies that are consistent with this Policy Statement (as outlined in the following sub-sections of the “Guidelines for Portfolio Holdings”). However, given the nature of the investments, it is recognized that there may be deviations between this Policy Statement and the

objectives of these investments. No funds with a net asset value of each share of less than \$10 shall be purchased or held. All fixed-income funds are excluded from this requirement.

#### Limitations on Managers' Portfolios

#### EQUITIES

No more than ~~5%~~ of the ~~Manager's~~ greater of 5% or weighting in the relevant index (Russell 3000 Index for U.S. issues and MSCI ACWI ex-U.S. for non-U.S. issues) of the total equity portfolio valued at market may be invested in the common equity of any one corporation; ownership of the shares of one company shall not exceed 25% of those outstanding; and not more than ~~25~~40% of equity valued at market may be held in any one sector, as defined by the Global Industry Classification Standard (GICS).

*Domestic Equities:* Other than the above constraints, there are no quantitative guidelines as to issues, industry or individual security diversification. However, prudent diversification standards should be developed and maintained by the Manager.

*International Equities:* The overall non-U.S. equity allocation should include a diverse global mix that is comprised of the equity of companies from multiple ~~regions and sectors.~~ The emerging markets exposure, as defined by Morgan Stanley Capital International Inc. ("MSCI"), should be limited to 35% of the non-U.S. portion of the portfolio. ~~countries, regions and sectors.~~

#### REIT

~~Real estate assets will be held only in diversified Investments, primarily holding Real Estate Investment Trusts and servicing companies.~~

#### INFLATION HEDGE ASSETS

~~Inflation hedging assets will include only Investments holding among other assets: Treasury Inflation Protected Securities ("TIPS"), commodities or commodity derivative contracts, index-linked derivative contracts, the equity of companies in generally-accepted businesses believed to hedge inflation.~~

#### FIXED INCOME

~~Fixed income investments shall be high quality with a preponderance of the investments in (1) U.S. Treasury, federal agencies and U.S. Government guaranteed obligations, (2) investment grade corporate issues including convertibles, and (3) sovereign debt of foreign countries.~~

Fixed income securities of any one issuer shall not exceed 5% of the total bond portfolio at time of purchase. The 5% limitation does not apply to issues of the U.S. Treasury or other Federal Agencies. The overall rating of the fixed income assets as calculated by the Advisor shall be at least "A", or



investment grade, based on the rating of one ~~of the three rating agencies (Fitch, Moody's or Standard & Poor's)~~ Nationally Recognized Statistical Rating Organization ("NRSRO").

The Trust will avoid mutual funds whose primary focus is adding value through the use of high yield bonds. This does not exclude investment grade fixed-income funds which may contain a small component of high yield securities.

Fixed income investments will not contain more than an aggregate of 10% in derivative instruments such as options, futures contracts, or swap agreements. It is understood that mortgage-backed and asset-backed securities are not considered derivative instruments.

#### OTHER ASSETS (ALTERNATIVES)

Alternatives may consist of real estate and commodities, when deemed appropriate. The total allocation to this category may not exceed 15% of the overall portfolio. Prior to adding an allocation to any of the following asset classes, with the exception of publicly-traded mutual fund vehicles, the Advisor shall receive approval from the Investment Committee.

Real Estate: Consists of publicly traded Real Estate Investment Trust ("REIT") securities and/or non-publicly traded private real estate and shall be diversified across a broad array of property types and geographic locations. Investments of this type are designed to provide a stable level of income combined with potential for price appreciation, particularly in periods of unexpected inflation. For private real estate, the illiquid, long-term nature should be considered alternative investments. For purposes of asset allocation targets and limitations, publicly traded REITs will be categorized as "Other" under the Growth Assets category. Depending on the investment characteristics of a private real estate fund, the fund will be categorized as "Other" under either the Income Assets category, for example, a core real estate fund, or under the Growth Assets category, for example, an opportunistic real estate fund where capital gains are expected to make up a significant portion of the total return.

Inflation Hedge: Shall consist of pooled vehicles holding among other assets: Treasury Inflation Protected Securities ("TIPS"), commodities or commodity contracts, index-linked derivative contracts, certain real estate or real property funds and the equity of companies in businesses thought to hedge inflation. Inflation hedge assets will be reported in the Real Return Assets category.

#### CASH EQUIVALENTS

Cash equivalents shall be held in funds complying with Rule 2(a)-7 of the Investment Company Act of 1940.

#### Portfolio Risk Hedging

Portfolio investments designed to hedge various risks including volatility risk, interest rate risk, etc. are allowed to the extent that the investments are not used for the sole purpose of leveraging Trust assets. One example of a hedge vehicle is an exchange traded fund (“ETF”) which takes short positions.

#### Prohibited Investments

Except for purchase within authorized investments, securities having the following characteristics are not authorized and shall not be purchased or held: letter stock and other unregistered securities, direct commodities or commodity contracts, or private placements (with the exception of Rule 144A securities), or venture capital funds, private equity, or hedge funds and stocks with a value of less than \$10.00. Further, derivatives, options, or futures for the sole purpose of direct portfolio leveraging are prohibited. Direct ownership of real estate, natural resource properties such as oil, gas or timber and the purchase of collectibles is also prohibited. All investments shall have a ready market and be listed on a major exchange.

#### Safekeeping

All assets of the Trust shall be held by a custodian approved by the Committee for safekeeping of Trust assets. The custodian shall produce statements on a monthly basis, listing the name and value of all assets held, and the dates and nature of all transactions in accordance with the terms in the Trust Agreement. Investments of the Trust not held as liquidity or Investment Assets shall, at all times, be invested in interest-bearing accounts. Investments and portfolio securities may not be loaned.

#### Control Procedures

##### Review of Investment Objectives

The Advisor shall review annually and report to the Committee the appropriateness of this Policy Statement for achieving the Trust’s stated objectives. It is not expected that this Policy Statement will change frequently. In particular, short-term changes in the financial markets should not require an adjustment in this Policy Statement.

##### Review of Investment Performance

The Advisor shall report on a quarterly basis to the Committee to review the investment performance of the Trust. In addition, the Advisor will be responsible for keeping the Committee advised of any material change in investment strategy, Managers, and other pertinent information potentially affecting performance of the Trust.

The Advisor shall compare the investment results on a quarterly basis to appropriate peer universe benchmarks, as well as market indices in both equity and fixed income markets. Examples of benchmarks and indexes that will be used include the Russell 3000 Index for broad U.S. equity

strategies; S&P 500 Index for large cap U.S. equities, Russell 2000 Index for small cap U.S. equities, MSCI ACWI ex-U.S. Index for broad based non-U.S. equity strategies; MSCI Europe, Australasia, and Far East (EAFE) Index for developed markets international equities, Barclays Capital Aggregate Bond Index for fixed income securities, and the U.S. 91 Day T-bill for cash equivalents. The Russell 3000 Index will be used to benchmark the U.S. equities portfolio; the MSCI ACWI ex-U.S. Index will be used to benchmark the non-U.S. equities portfolio; the Barclays U.S. Aggregate Bond Index will be used to benchmark the fixed income portfolio. The categories “Other” will be benchmarked against appropriate indices depending on the specific characteristics of the strategies and funds used.

#### Voting of Proxies

The Committee recognizes that proxies are a significant and valuable tool in corporate governance. The voting rights of individual stocks held in separate accounts or collective, common, or pooled funds will be exercised by the investment managers in accordance with their own proxy voting policies. The voting rights of funds will be exercised by the Advisor.

**Adoption of Investment Policy Statement**

Any changes and exceptions to this Policy Statement will be made in writing and adopted by the Committee. Once adopted, changes and exceptions will be delivered to each Manager, as appropriate, by the Advisor.

**Approved by the Alameda County Mosquito Abatement District Board Plan Committee:**

Resolved by:

\_\_\_\_\_  
Chair

\_\_\_\_\_  
Date

~~Added January 25, 2011~~

~~Until further notice, the Alameda County Mosquito Abatement District OPEB Trust will adhere to the following additional guidelines:~~

~~No funds with a net asset value of each share of less than \$10 shall be purchased or held. All fixed-income funds are excluded from this requirement.~~

~~The trust will continue to avoid mutual funds whose primary focus is adding value through the use of high yield bonds. This does not exclude investment grade fixed income funds which may contain a small component of high yield securities.~~

~~PFM will sell the PIMCO COMMODITY REAL RETURN STRATEGY FUND investment currently held in the portfolio as soon as it is convenient. The trust will continue to entertain investments purchased as a hedge to inflation so long as the net asset value of the investment fund's shares are above \$10.~~

**Comment [EC1]:** These restrictions have been incorporated into the corpus of the policy.

**ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT  
LIST OF WARRANTS DATED SEPTEMBER 15, 2015.**

WAR NO	PAYEE		ACCT NO	AMT OF CHARGE	AMT OF WARRANT
011316	Biological Specialist	Total salary less deduction for payroll	1011	2,537.12	
011316	Mosq Control Tech	September 1 to September 15, 2015.	1011	2,004.50	
011316	Vector Biologist	"	1011	2,701.70	
011316	Vector Biologist	"	1011	2,776.03	
011316	Mosq Control Tech	"	1011	2,267.60	
011316	Environment Specialist	"	1011	2,546.83	
011316	District Manager	"	1011	3,071.90	
011316	Field Sesonal	"	1011	1,030.10	
011316	IT Specialist	"	1011	2,464.88	
011316	Entomologist	"	1011	3,044.70	
011316	Field Seasonal	"	1011	1,030.10	
011316	Field Supervisor	"	1011	3,046.84	
011316	Finance Manager	"	1011	2,446.87	
011316	IT Seasonal	"	1011	973.11	
011316	Vector Biologist	"	1011	3,271.67	
011316	IT Specialist	"	1011	2,581.68	
011316	Lab Seasonal	"	1011	947.79	
011316	Asst Mosq Control Tech	"	1011	1,904.21	
011316	Mechanic Specialist	"	1011	2,884.06	
011316	Lab Seasonal	"	1011	862.71	
011316	IRS	Federal tax withheld (payroll)	1011	8,770.55	
		Medicare Tax Withheld (payroll)	1011	958.37	
		District Contribution to Medicare (payroll)	1311	958.39	
011316	State of California	State Tax withheld (payroll)	1011	2,753.52	57,835.23
011416	Public Employees' Retirement System	Employee Contributions	1011	15.00	
		Employee Paid Member Contributions, 7% & 6.5%	1011	3,935.50	
		Employer Contribution 9.353% & 6.73%	1211	4,906.04	8,856.54
011516	Aetna Life & Annuity	Employee Contributions	1011		150.00
011616	CALPERS 457 Plan	Employee Contributions - PERS 457	1011		2,430.00
011716	Delta Dental Plan	Monthly Premium	1411		4,643.17
011816	Vision Service Plan	Health premium	1411		1,081.60
011816A	Airgas	Dry ice	3131.1		929.06
011916	Bayside	Janitorial services,September 2015	3051		300.00
012016	Corporate Park Landscaping	Landscape maintenance	3211		170.00
012116	Clarke Mosq	Natular XRT	3391.1		4,959.60
012216	Cardno	MVCAC Programmatic EIR	3411		112.10
012316	KBA Docusys	Canon copier rental	3111		448.96
012416	Lepera & Associates	Legal expenses	3411		1,340.00
012516	AC LAFCO	LAFCO cost	3331		687.00
012616	MVCAC	Corporate membership dues	3331		8,000.00
012716	Mead, Sharon	Reimbursement, fish maintenance supplies	3391.4		47.29
012816	Mello, Melvin	Dental reimbursement	1411		1,200.00
012916	Namakan	Mosq fish	3391.4		450.00
013016	PFM Asset	Investment advisory services	3411		1,739.00
013116	PC Professional	Data base development	3411		2,700.00
013216	SCI	Project administration	3411		16,341.22
013316	Waste Management	Garbage, August service	3271		191.69

WAR			ACCT	AMT OF	AMT OF
NO	PAYEE		NO	CHARGE	WARRANT
013416	Rocky Mountain	Target - Wet Ones	3031	21.89	
		Becks - boots	3031	197.09	
		Tap Plastic - office supplies	3111	15.84	
		Canon - copier rental	3111	341.00	
		UPS - mail	3111	27.93	
		Tom Ehlert - drive	3121	100.34	
		Universal - printer	3121	470.96	
		INQ - subscription	3121	19.95	
		Conduviv - software license	3121	59.95	
		Dell - computer	3121	634.00	
		Central - adapter	3121	53.71	
		Amazon - WIFI	3121	242.74	
		Amazon - switch	3121	90.23	
		Dell - computer	3121	656.00	
		US Plastic - pals	3131.1	71.67	
		Amazon - membership	3131.1	108.90	
		Home Depot - pipes	3131.1	32.62	
		Home Depot - cords	3131.1	89.66	
		Home Depot - brackets	3131.1	70.15	
		Home Depot - alkaline	3131.1	43.87	
		Amazon - battery	3131.1	140.72	
		Wal Mart - supplies	3131.1	28.35	
		Rite Aid - alcohol	3131.2	4.17	
		Home Depot - supplies	3131.2	16.76	
		Adapco - RAM WNV kits	3131.2	2,117.51	
		Lifetech - virus test	3131.2	415.20	
		Qiagen - Dneasy	3131.3	225.48	
		Samplerep - plastic viral	3131.3	196.00	
		Amazon - zip lock bag	3131.3	15.79	
		Amazon - tubes	3131.3	61.01	
		Qiagen - Rneasy	3131.3	666.73	
		Amazon - lab supplies	3131.5	192.02	
		Home Depot - supplies	3131.5	14.01	
		Gasket - clips	3211	24.51	
		State - protectant	3231	157.41	
		IBS - battery	3231	54.77	
		Perfection - parts	3231	268.90	
		Ford Store - parts	3231	43.28	
		TelePacific - comm exp	3291.1	598.44	
		DHN - Godaddy web hosting	3291.3	172.58	
		Oakland - parking	3351.1	1.00	
		Calpers - Calpers training	3351.3	399.00	
		CSDA - CSDA conference	3351.3	575.00	
		EB - LAFCO conference	3351.3	37.92	
		Southwest - flight for training	3351.3	69.00	
		Southwest - flight for conference	3351.3	223.00	
		Safeway - supplies	3351.4	73.96	
		Lucky - fish maintenance	3391.4	16.37	
		Superway - fish supplies	3391.4	27.49	
		Home Depot - stop stone	3391.4	15.68	
		Shade - parts	3391.4	749.91	
		Pesticide - CEU, MC	3391.53	80.00	
		USPS - mail	3392	5.53	
		Kelly - cover	3392	23.06	
		CTC - e mail marketing	3392	20.00	
		Dell - computer, EC	3392	818.50	
		SL Recreation - public hearing	3411	180.00	
		Torreano - public hearing	3411	237.95	
		Dell - computer	3411	634.00	
		Sub-total			12,949.51
		<b>Total</b>			<b>127,561.97</b>

ALAMEDA COUNTY MOSQUITO ABATEMENT DISTRICT  
LIST OF WARRANTS DATED SEPTEMBER 30, 2015.

WAR NO	PAYEE	FOR	ACCT NO	AMT OF CHARGE	AMT OF WARRANT
013516	Biological Specialist	Total salary less deductions for payroll period	1011	2,651.43	
013516	Mosq Control Tech	"	1011	2,004.50	
013516	Vector Biologist	"	1011	2,816.01	
013516	Vector Biologist	"	1011	2,776.03	
013516	Mosq Control Tech	"	1011	2,267.59	
013516	Environmental Specialist	"	1011	2,661.14	
013516	District Manager	"	1011	3,743.69	
013516	Asst Mosq Control Tech	"	1011	2,241.48	
013516	Field Seasonal	"	1011	1,242.72	
013516	IT Specialist	"	1011	2,808.76	
013516	Entomologist	"	1011	3,088.92	
013516	Field Seasonal	"	1011	1,242.72	
013516	Field Supervisor	"	1011	3,046.84	
013516	Finance Manager	Total salary less deductions for payroll period	1011	2,518.31	
013516	IT Seasonal	"	1011	1,074.43	
013516	Vector Biologist	"	1011	3,271.66	
013516	IT Specialist	"	1011	2,642.30	
013516	Lab Seasonal	"	1011	1,343.91	
013516	Asst Mosq Control Tech	"	1011	1,904.21	
013516	Mechanic Specialist	"	1011	2,998.36	48,345.01
013516	IRS	Federal Tax Withheld	1011	8,058.98	
		Medicare Tax Withheld	1011	904.86	
		District Contribution to Medicare	1311	904.84	
013516	State of California	State Tax Withheld	1011	2,513.83	12,382.51
013616	Public Employees' Retirement System	Employees contributions	1011	16.00	
		Employee paid member contributions, 7%, 6.5%	1011	4,140.27	
		District contribution 9.353%, 6.73%	1211	5,118.05	9,274.32
013716	Aetna Life & Annuity	Employee contributions	1011		150.00
013816	Calpers 457 Plan	Employees contributions - PERS 457	1011		2,430.00
013916	Calpers	Health insurance	1411		21,185.81
014016	Jefferson Pilot Financial	Life insurance premium	1411		105.30
014116	T Scott Donahue	Trustee in lieu expenses - 1025th meeting	3351.5		100.00
	James Doggett	Trustee in lieu expenses - 1025th meeting	3351.5		-
	Robert Dickinson	Trustee in lieu expenses - 1025th meeting	3351.5		-
014216	Richard Guarienti	Trustee in lieu expenses - 1025th meeting	3351.5		100.00
014316	Elisa Marquez	Trustee in lieu expenses - 1025th meeting	3351.5		100.00
014416	Katherine Narum	Trustee in lieu expenses - 1025th meeting	3351.5		100.00
	Scott Paulsen	Trustee in lieu expenses - 1025th meeting	3351.5		-
014516	Ronald Quinn	Trustee in lieu expenses - 1025th meeting	3351.5		100.00
	Ursula Reed	Trustee in lieu expenses - 1025th meeting	3351.5		-
	William Spinola	Trustee in lieu expenses - 1025th meeting	3351.5		-
014616	George Young	Trustee in lieu expenses - 1025th meeting	3351.5		100.00
	Jan Washburn	Trustee in lieu expenses - 1025th meeting	3351.5		-
014716	AT&T	Yellow pages listing	3392		62.82
014816	Adapco	Vectobac, altosid XR	3391.1		9,207.02
014916	Automatic Fire	Fire extinguishers maintenance	3211	635.00	
			3231	728.12	1,363.12
015016	Cintas	Personal supplies	3031	117.05	
		Laundry service	3071	1,090.14	1,207.19
015116	Carquest	Parts	3231		18.19
015216	Clarke	Natular XRT	3391.1		5,951.52
015316	Grainger	Miscellaneous tools	3171		57.80
015416	Municipal Resource	Human resources services	3411		4,940.88
015516	NBC	Gloves	3391.6		237.38

WAR NO	PAYEE	FOR	ACCT NO	AMT OF CHARGE	AMT OF WARRANT
015616	PG & E	Utilities	3271		1,535.52
015716	Pitney Bowes	Postage	3111		208.99
015816	Sonitrol	Monitoring charges	3551		717.49
015916	Sacramento Koi	Fish tank	5311		10,468.50
016016	Saint Rose	Pre-employment tests	3411		100.00
016116	Techniclean	Towel, tissue	3051		113.22
016216	Verizon	Communication expenses	3291.4		662.74
016316	Wright Express	Fuel expenses, statement ended 09-15-15	3351.1		3,719.27
016416	Young, Jason	Replacement payroll check 1236	101105		1,106.09
<b>Total Warrants</b>					<b>136,150.69</b>



Agenda Item 11b

**Alameda County Mosquito Abatement  
As of SEPTEMBER 30, 2015. (3 of 12 mth, 25.00%)**

	EXPENDED IN SEPTEMBER	EXPENDED TO DATE	BUDGETED	BALANCE	% EXPENDED
<b>SALARY &amp; BENEFITS</b>					
1011 Salary and Wages	129,966.29	392,991.28	1,573,549.00	1,180,557.72	25%
1411 Contribution to Medicare	1,863.23	5,415.43	26,781.00	21,365.57	20%
1311 Contribution to Retirement	10,024.09	110,778.74	202,026.00	91,247.26	55%
1211 Contribution to Health Care	28,215.88	108,088.63	443,302.57	335,213.94	24%
<b>TOTAL SALARY &amp; BENEFITS</b>	<b>170,069.49</b>	<b>617,274.08</b>	<b>2,245,658.57</b>	<b>1,628,384.49</b>	<b>27%</b>
<b>SERVICE AND SUPPLIES</b>					
3031 Clothing and Personal Supplies	336.03	1,120.93	8,500.00	7,379.07	13%
3051 Household Expenses	413.22	1,182.06	5,500.00	4,317.94	21%
3071 Laundry Service and Supplies	1,090.14	1,931.18	9,000.00	7,068.82	21%
3111 Office Expenses	1,042.72	2,801.09	20,000.00	17,198.91	14%
3121 Computer & Software	2,327.88	4,342.88	12,000.00	7,657.12	36%
3131 Laboratory					
3131.1 Mosquito Surveillance	1,515.00	4,116.37	15,000.00	10,883.63	27%
3131.2 Disease Surveillance	2,553.64	2,835.47	7,155.00	4,319.53	40%
3131.3 Mosq pool testing	1,165.01	3,753.16	36,000.00	32,246.84	10%
3131.4 Hood certification	0.00	0.00	200.00	200.00	0%
3131.5 Misc lab eqpt & supplies	206.03	521.87	6,285.00	5,763.13	8%
3131.6 Reimbursement for light traps	0.00	0.00	200.00	200.00	0%
Laboratory Total	5,439.68	11,226.87	64,840.00	53,613.13	17%
3171 Small Tools and Instruments	57.80	57.80	2,500.00	2,442.20	2%
3211 Maintenance - Structures & Improvement	829.51	1,679.86	20,000.00	18,320.14	8%
3231 Maintenance Equipment	1,270.67	2,251.18	45,000.00	42,748.82	5%
3271 Utilities	1,727.21	5,764.73	22,000.00	16,235.27	26%
3291 Communication					
3291.1 Telephone service & internet	598.44	3,335.75	13,500.00	10,164.25	25%
3291.2 Public Notices	0.00	0.00	500.00	500.00	0%
3291.3 Website & email hosting	172.58	172.58	270.00	97.42	64%
3291.4 Cell phone services	662.74	3,281.68	10,000.00	6,718.32	33%
Communications Total	1,433.76	6,790.01	24,270.00	17,479.99	28%
3331 Memberships, Dues, Subscriptions	8,687.00	8,737.00	20,700.00	11,963.00	42%
3351 Transportation & Travel					
3351.1 Fuel & GPS	3,720.27	12,076.90	44,000.00	31,923.10	27%
3351.2 Misc Travel	0.00	0.00	0.00	0.00	0%
3351.3 Meetings & conferences	1,303.92	1,652.36	45,000.00	43,347.64	4%
3351.4 Board meeting expenses	73.96	220.72	800.00	579.28	28%
3351.5 Trustee in lieu	600.00	2,500.00	16,800.00	14,300.00	15%
Transportation & Travel Total	5,698.15	16,449.98	106,600.00	90,150.02	15%
3391 District Special Expenses					
3391.1 Pesticides	20,118.14	34,680.65	175,000.00	140,319.35	20%
3391.2 Field supplies	0.00	36.22	500.00	463.78	7%
3391.3 Sentinal Chickens	0.00	0.00	0.00	0.00	0%
3391.4 Fish & Fish Maint	1,306.74	1,708.46	4,000.00	2,291.54	43%
3391.51 Aerial Pool Survey	0.00	0.00	17,000.00	17,000.00	0%
3391.52 Permits	0.00	1,104.00	3,000.00	1,896.00	37%
3391.53 Continuing Education fees	80.00	200.00	4,000.00	3,800.00	5%
3391.54 Board Plaques & nameplates	0.00	0.00	500.00	500.00	0%
3391.55 Seasonals (post ads, pre-empl phy)	0.00	0.00	1,000.00	1,000.00	0%
3391.6 Spray equipment & Safety	237.38	931.89	17,000.00	16,068.11	5%
District Special Expenses Total	21,742.26	38,661.22	222,000.00	183,338.78	17%
3392 Community Education	929.91	1,352.26	33,000.00	31,647.74	4%
3411 Professional and Specialized Services	28,325.15	53,704.87	224,887.00	171,182.13	24%
3471 Insurance - Collision, Liability etc	0.00	42,532.00	42,350.00	-182.00	100%
3491 Workers Compensation Insurance	0.00	63,736.00	60,745.00	-2,991.00	105%
3531 Insurance Fund - SIRS	0.00	0.00	0.00	0.00	0%
3551 Rents, Leases - Equipment	717.49	2,249.47	9,350.00	7,100.53	24%
<b>TOTAL SERVICES &amp; SUPPLIES</b>	<b>82,068.58</b>	<b>266,571.39</b>	<b>953,242.00</b>	<b>686,670.61</b>	<b>28%</b>

<b>CAPITAL</b>						
5111 Structures and Improvements		0.00	0.00	190,000.00	190,000.00	0%
5311 Equipment		10,468.50	10,468.50	58,000.00	47,531.50	18%
	<b>TOTAL CAPITAL</b>	<b>10,468.50</b>	<b>10,468.50</b>	<b>248,000.00</b>	<b>237,531.50</b>	4%
Reserve fo Contingencies		<b>0.00</b>	<b>0.00</b>	<b>50,000.00</b>	<b>50,000.00</b>	
OPEB Trust Reimbursement		<b>0.00</b>	<b>0.00</b>	<b>145,000.00</b>	<b>145,000.00</b>	
	<i>Annual Operating Expenditures</i>	<i>262,606.57</i>	<i>894,313.97</i>	<b>3,641,900.57</b>	<b>2,747,586.60</b>	
<b>OTHER</b>						
Dry Period Cash (60%)		<b>0.00</b>	0.00	<b>2,714,106.00</b>	<b>2,714,106.00</b>	0%
Reserve for Capital Replacement		<b>0.00</b>	0.00	<b>1,116,840.00</b>	<b>1,116,840.00</b>	0%
	<b>Total Other</b>	<b>0.00</b>	<b>0.00</b>	<b>3,830,946.00</b>	<b>3,830,946.00</b>	0%
<b>Total Expenditure</b>		<b>262,606.57</b>	<b>894,313.97</b>	<b>7,472,846.57</b>	<b>6,578,532.60</b>	

Does not include 14/15 expenses paid in 15/16

**Agenda Item 11c  
III.**

**STATEMENT OF EXPENDITURES - SEPTEMBER 30, 2015.**

	<b>Budget Year 15-16</b>			
	<b>EXPENDITURES</b>	<b>TO-DATE</b>	<b>BUDGETED</b>	<b>BALANCE</b>
Salary & Wages	170,069.49	617,274.08	2,245,658.57	1,628,384.49
Service and Supplies	82,068.58	266,571.39	953,242.00	686,670.61
Capital Expenditures	10,468.50	10,468.50	248,000.00	237,531.50
Reserve for Contingency	0.00	0.00	50,000.00	50,000.00
OPEB Trust Reimbursement	0.00	0.00	145,000.00	145,000.00
<b>TOTAL</b>	<b>262,606.57</b>	<b>894,313.97</b>	<b>3,641,900.57</b>	<b>2,747,586.60</b>

IV. CASH BALANCE - September 30, 2015 : \$ XXXXXXXX (Does not include interest revenue for September)

Sincerely,

Ryan Clausnitzer  
District Manager

## Agenda Item 12.

# *Alameda County Mosquito Abatement District*

**BOARD OF TRUSTEES**  
George Young, President  
Richard Guarienti, Vice-President  
Kathy Narum, Secretary  
Robert Dickinson  
James N. Doggett  
Elisa Marquez  
Scott Paulsen  
Ursula Reed  
Ronald E. Quinn  
William M. Spinola  
Scott Donahue  
Jan O. Washburn

Ryan Clausnitzer  
District Manager  
[ryan@mosquitoes.org](mailto:ryan@mosquitoes.org)

## MONTHLY STAFF REPORT – September 2015

### 1. OPERATIONS

Dear Trustees:

#### **A. Narrative**

For the first time in over a year, all District zones are fully staffed. The two new hires are Sarah Erspamer in Zone 1 (Berkeley, Oakland, Alameda) and Ben Rusmisl in Zones 3 and 4 (Oakland, San Leandro, Castro Valley, Hayward, and San Lorenzo). Jeremy Sette is now in Zones 5 and 7 (Hayward, Union City, and Fremont) and Miguel Cardenas has moved into Zone 6 (Hayward, Union City, Newark, and Fremont). The field staff, and supervisor, are all working together to train new staff on district policies, procedures, safety, and mosquito sources in each respective new zones.

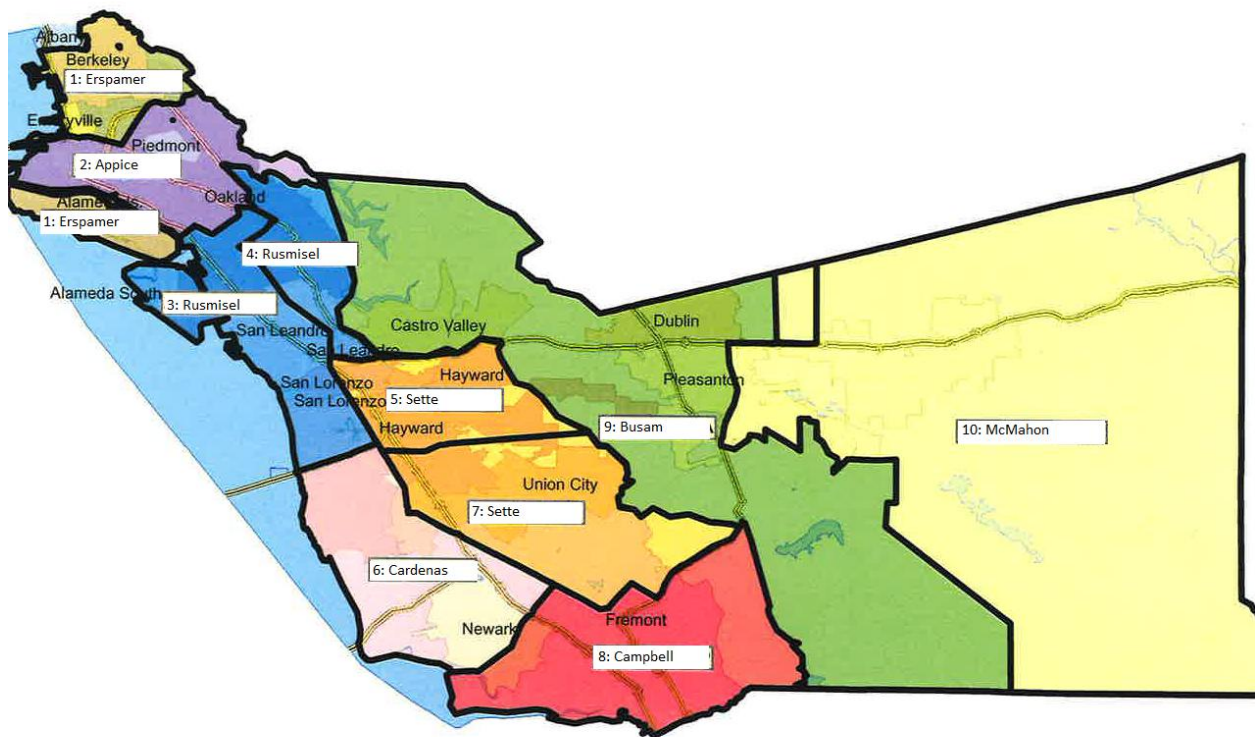
Consistent with this season and years' prior, the main focus of field operation inspections and treatments were on two of the districts' prime West Nile virus (WNV) vectors; *Culex pipiens* (House Mosquito) and *Culex tarsalis* (Encephalitis Mosquito). Field staff, seasonal hires, and their supervisor are continuing to inspect and treat for both of these species in a variety of sources including: catch basins, storm drains, sewer plants, canals, ditches, fresh-water marshes, ponds, and swimming pools. *Cx. pipiens* were responsible for a majority of "Mosquito Biting" service requests, followed by *Culiseta incidens* (Fish Pond Mosquito). The district also received a service request each attributed to *Aedes dorsalis* (Salt Marsh Mosquito) and *Anopheles punctipennis* (Woodland Malaria Mosquito).

The District collected and tested two WNV positive crows during the month of September in Fremont and San Lorenzo. The response to WNV positive birds continues to be an immediate focus on the area around the bird collection location. This includes inspection and treatment of any sources for *Cx. pipiens* and/or *Cx. tarsalis*. This response has included several treatments utilizing the District's aerosolizer truck. Our lab data indicates that this device is having a significant impact on controlling *Cx. pipiens* in the storm drain systems.

Several high tide events at the end of September have inundated higher areas of numerous tidal marsh sources in Alameda County. The field staff will be monitoring these sources closely for *Ae. dorsalis* in the first week of October.

Joseph Huston  
Field Operations Supervisor

### 2015 ACMAD Zone Boundaries



## B. Operational Data

### Service Requests

Mosquito service requests = 78

Ten-year average = 110

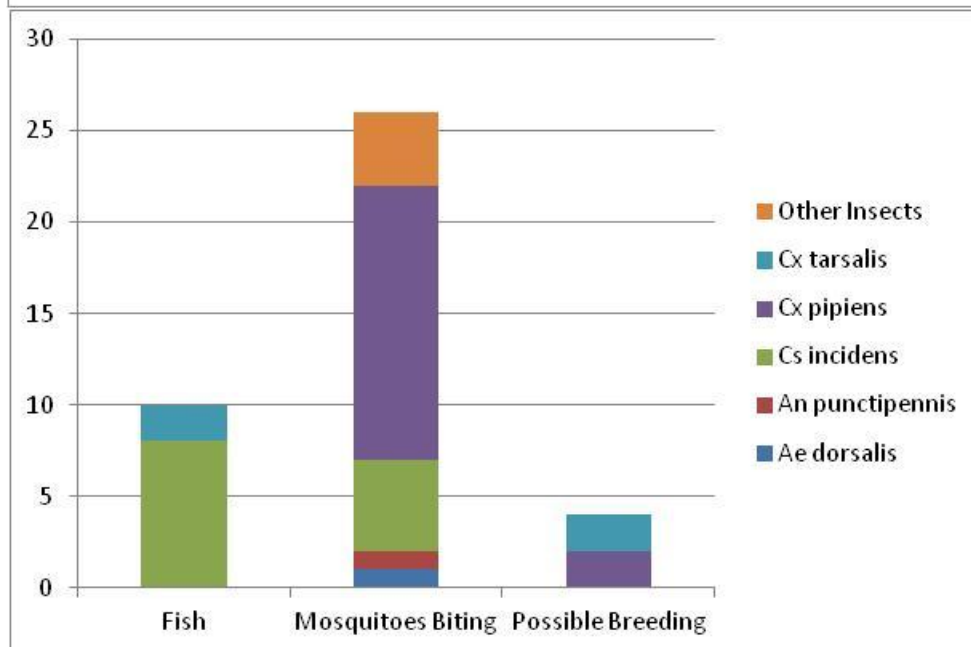
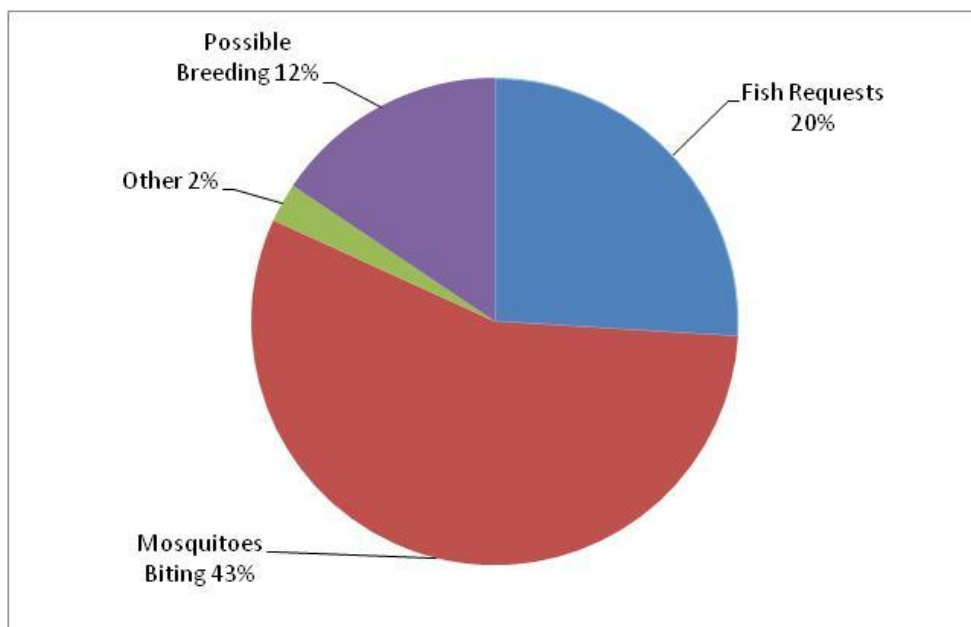
Five-year average = 91

Last year = 97

Range (10 yr) = 9 - 548

### Other

Number of all injuries during 2015 = 1



## Activity Report

Administration	898.5	Vacation hrs used	323
Larval Surveillance & Control	909.45	Sick hours used	93.75
Disease monitoring	247.55	Workers Comp	0
Laboratory	275	ETO used	27.5
Equipment & Facility Maintenance	141.5	<b>Total Leave</b>	<b>444.75</b>
Public Education	40.5	<b>Total Work</b>	<b>2664.75</b>
Interagency Communication	17		
Fish Rearing and Maintenance	34	<b>Total Hours</b>	<b>3109.5</b>
Safety	60.75		
Misc	4.75		
Regular Hours	2628.75		
Overtime hours	36		
<b>Total Work</b>	<b>2664.75</b>		

## 2. LAB

Dear Trustees:

Narrative

**Overview.** Lab activities at ACMAD have increased over the past few months to include in-house testing of mosquitoes for West Nile virus (WNV), and to conduct research that will benefit the District. Ultimately, the research results are slated to be published in peer-reviewed scientific journals. These lab activities are in addition to regular monitoring of mosquito abundance in the District using 98 CO<sub>2</sub> traps and 13 New Jersey Light Traps, WNV testing of dead birds and surveillance for *Aedes aegypti* near ACMAD headquarters.

**WNV Testing.** We are testing for WNV in mosquitoes using reverse transcription - quantitative polymerase chain reaction (RT-QPCR); this is the same protocol used for WNV testing by the Center for Vectorborne Diseases (CVEC) at the UC Davis School of Medicine. The ACMAD Lab passed a WNV detection proficiency panel that was administered by CVEC on August 13, and we are now reporting the results of our WNV testing of mosquitoes to the California Vectorborne Disease Surveillance Gateway. Passing the proficiency panel has allowed us to increase the number of mosquitoes tested for WNV, relative to prior years, and at reduced cost. For example, now when a WNV-positive bird is identified, we set approximately 30 CO<sub>2</sub> traps within a 1 mile radius of where the bird was collected; subsequently mosquitoes within a quarter mile sample area are pooled and tested for WNV. This has allowed us to identify with higher precision the areas that Operations should focus upon for mosquito control. Additionally, species of mosquitoes that are known to transmit WNV are routinely tested for the virus when they are collected the CO<sub>2</sub> mosquito traps that are distributed throughout the District (Figure 1 shows all current CO<sub>2</sub> trap locations in the county). Finally, we are performing WNV tests on mosquitoes that were collected by the Alameda County Vector Control Services District in Albany, CA.

**Surveillance.** There are currently two regions in the District with relatively high numbers of birds and mosquitoes that contain WNV: (1) Fremont in the area around the intersection of the 880 freeway and Thorton Avenue, and (2) in Hayward around the Sky West Golf Course (Figures 2A and 2B are maps indicating the location of WNV-positive birds and mosquitoes in those regions). A total of 79 dead birds collected this year in the District have been tested for WNV, and 15 (19%) were infected with the virus (Figure 3A). A total of 239 pools containing 2,422 mosquitoes from the CO<sub>2</sub> traps were tested for WNV and 10 pools (4.2%) were positive

for WNV (Figure 3B). Importantly, as many as 237 mosquitoes (9.8%) may have been positive for WNV. For this year, inclusive of September, the lab has collected in traps and identified 31,280 mosquitoes to species. No species that are atypical for the District or time of year have been observed, with the exception of *Ae. aegypti* at the District headquarters.

Our surveillance for *Ae. aegypti* around the District headquarters includes 64 traps, and none to date have collected this species. My recommendation is to continue *Ae. aegypti* surveillance at this level around the District headquarters for at least the next year during the spring – fall seasons. Beginning next year, I suggest we expand our *Ae. aegypti* surveillance to again cover the entire District.

**Research.** Because the change in lab personnel and activities (i.e. WNV testing) occurred at the onset of the “WNV season” for Alameda County, the lab has been focused primarily on WNV testing and surveillance. Consequently, research to date has been relatively simple and aimed at serving the needs of Operations. For example, the lab assessed the use of dry ice slabs or pellets in the CO<sub>2</sub> traps. The rationale for this study was to improve safety as technicians were hammering dry ice slabs into pieces that could fit into the traps (a distinct hazard to the eyes) and technicians were under the impression that broken dry ice slabs allowed the CO<sub>2</sub> traps to function for relatively longer periods of time. The results of the study showed that there was no significant difference in the quantity of dry ice that could be placed in the traps or that remained in the traps after 18 hours in the environment (Figure 4). Consequently, technicians now use dry ice pellets whenever possible for the CO<sub>2</sub> traps. We are conducting a short-term study in Fremont and Pleasanton, examining the efficacy of aerosolized BVA 2 oil for limiting local abundance of adult mosquitoes in catch basins and storm drains. Preliminary results suggest that aerosolized BVA 2 oil reduced adult mosquito populations by 91 – 98 % (Figure 5), suggesting this procedure may be a highly effective strategy for localized control of adult mosquitoes that reside in these environments. A long-term study (180 days) is underway to assess the performance of two extended release larvicide treatments that are routinely used by Operations (i.e. Altosid XR and Natular XRT). The results of this study will be reported to Operations and the Board once it is concluded. Future research includes assessing the prevalence of pesticide resistance genes (e.g. *KDR*) in mosquitoes collected throughout the District and the impact of resistance genes on the actual resistance of adult mosquitoes to chemical pesticides that may be used by Operations for adulticide treatments.

Eric Haas-Stapleton, PhD  
Entomologist

## Figures

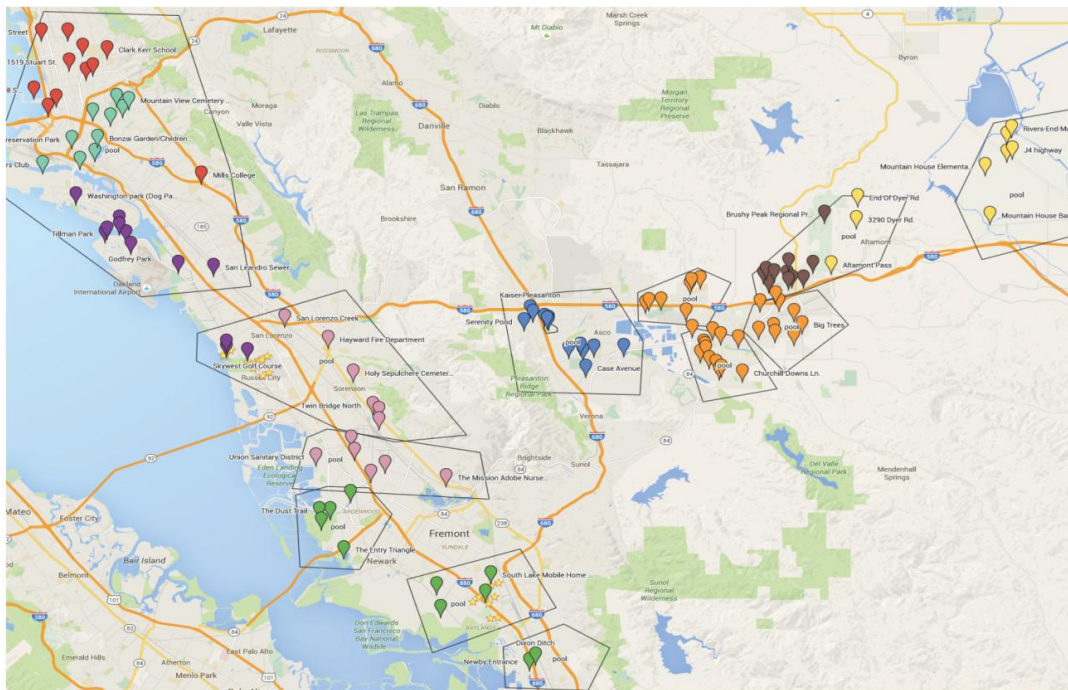


Figure 1. Locations of CO<sub>2</sub> traps in the District with polygons defining the pooling scheme.



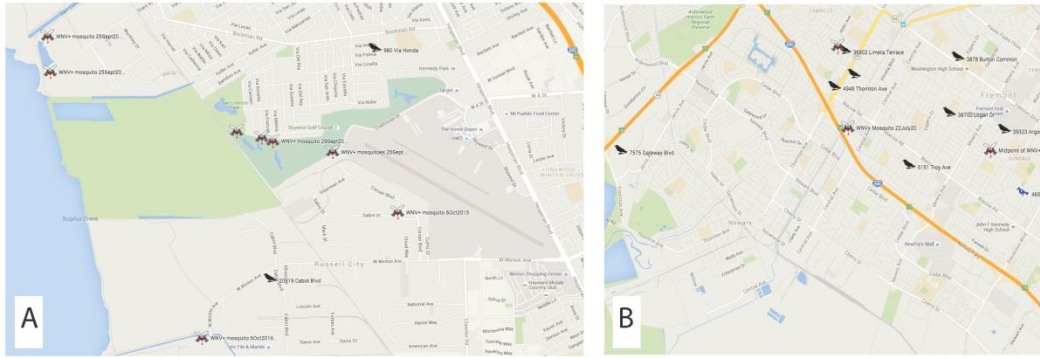


Figure 2. Locations birds and mosquitoes that were positive for WNV in Hayward (A) and Fremont (B).

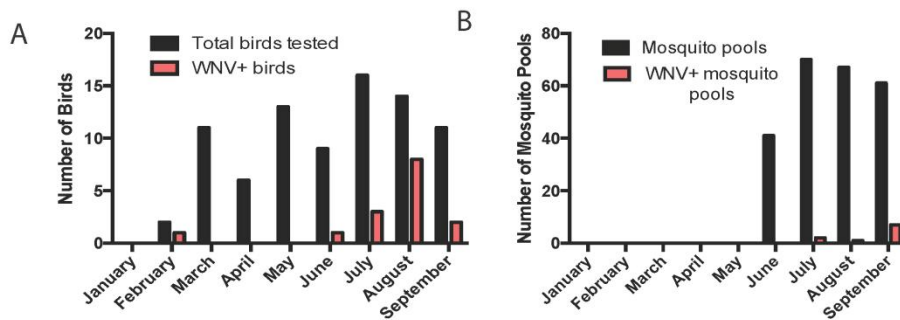


Figure 3. Number of birds (A) and mosquito pools (B) tested and positive for WNV.

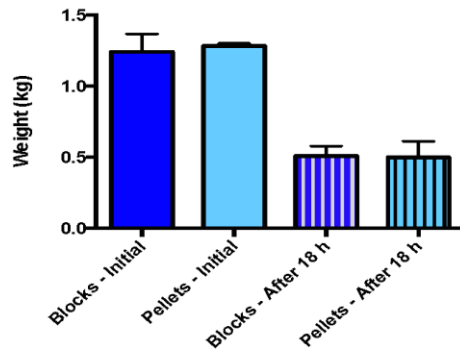


Figure 4. Comparison of dry ice blocks and pellets in CO<sub>2</sub> traps.

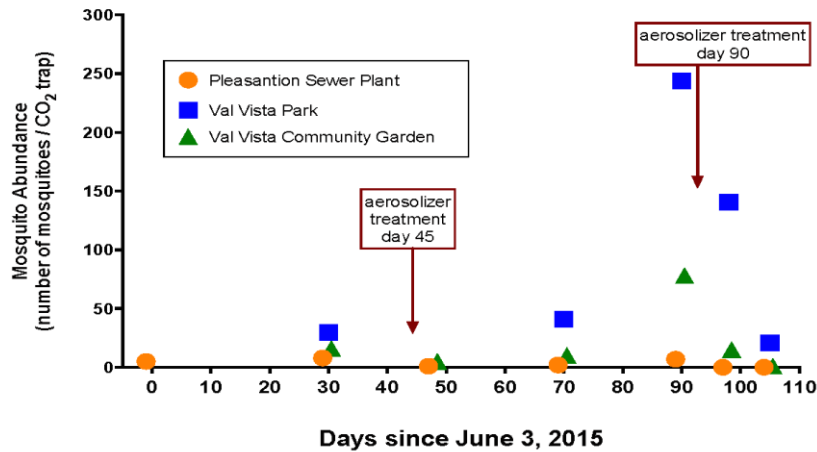


Figure 5. Effect of aerosolizing catch basins and storm drains on mosquito abundance near the Pleasanton Sewer Plant (Val Vista Park). The site was treated with BVA 2 aerosol on day 45 and again on day 90.



# Trash Capture Devices and Mosquito Control

Control of mosquitoes in stormwater management structures, such as catch basins is critical for protecting public health. The Alameda County Mosquito Abatement District (ACMAD) relies on the ability to treat inlets and drains with both liquid and solid products. Many proposed trash capture device designs will hamper, or block our ability to deliver needed treatments to catch basin and storm drain systems. The Municipal Regional Stormwater Permit (Order No. R2-2009-0074) recognizes the importance of mosquito control and calls for close collaboration and cooperative efforts among permittees and local mosquito/vector control agencies to minimize potential nuisances and public health impacts.



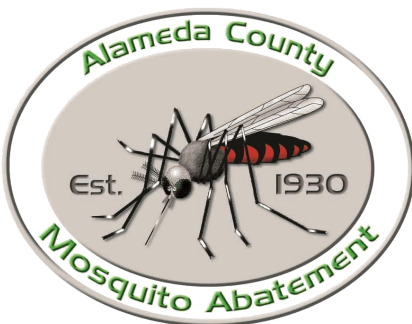
ACMAD Technician treating a catch basin in Livermore



Mosquito larvae must have standing water to breed



The northern house mosquito, *Culex pipiens*, commonly breeds in stormdrains



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County  
Residents  
Since  
1930



**ALAMEDA COUNTY MOSQUITO  
ABATEMENT DISTRICT**

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Phone: (510)783-7744

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E-mail: [acmad@mosquitoes.org](mailto:acmad@mosquitoes.org)



USW-2 **Clean Screen III**  
Automatic Retractable (inlet) Screen; ARS



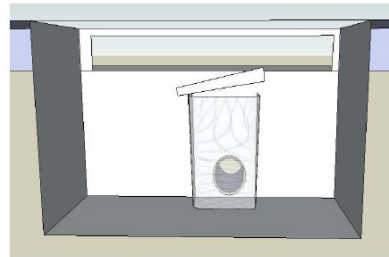
BC-3 **Modular Connector Pipe Screen**  
Catchbasin connector pipe screen (CPS), removable



### Trash Capture Devices Approved by San Francisco Bay Regional Water Quality Control Board Staff

Curb Inlet / Catch Basin Insert	ACMAD Assessment
ECI-1	Most Preferred
BC-3	Most Preferred
AS-1/2 ST3	Most Preferred
USW-2	Most Preferred
G2-3 FS-10	Most Preferred
GFI-1	More Information Needed
G2-1R	More Information Needed
G2-2	More Information Needed
BC-2	More Information Needed
ECI-2	More Information Needed
WCS-2	More Information Needed
USW-3	More Information Needed
USW-4	More Information Needed
USW-5	More Information Needed
BC-1	More Information Needed
KS-4	More Information Needed
GFI-2	More Information Needed
WCS1	Unacceptable*
USW-1	Unacceptable*
REM-1	Unacceptable*
KS-1	Unacceptable*
KS-2	Unacceptable*
KS-3	Unacceptable*
G2-1	Unacceptable*
BC-4	Unacceptable*
AS-1/2 ST3-G	Unacceptable*

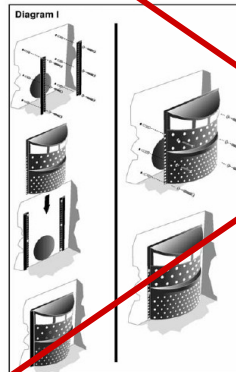
ECI-1 **Debris Dam**  
Connector pipe screen



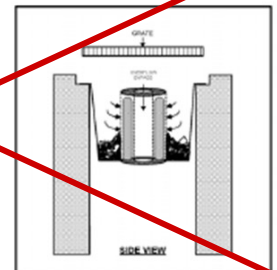
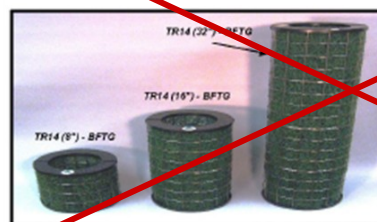
Preferred devices:

- allow for liquid or solid mosquito control treatments directly OR
- have an easily removable access point

~~BC-4 **Trash Guard**  
Plastic (HDPE) catchbasin connector pipe screen.  
3 standard sizes~~



~~REM-1 **Triton Bioflex Drop Inlet Trash Guard**  
Catchbasin filter insert~~



**\*Unacceptable devices will require each responsible party, be it private or public sector, to provide someone trained in their removal readily available during normal business hours to facilitate mosquito control treatments by ACMAD.**