

**MINUTES OF THE  
SALT LAKE CITY MOSQUITO ABATEMENT DISTRICT  
20 July 2017  
BOARD MEETING**

1. Presiding: La Vone Liddle, Chair 2017
- Time: 12:30 PM
- Place: 2020 North Redwood Rd., Salt Lake City, UT 84116
- Trustees Present: La Vone Liddle, Chair 2017  
Carlton Christensen, Vice Chair  
Karen Okabe  
Maureen M. Wilson
- Trustees Excused: Dr. Dagmar Vitek
- Others Present: Ary Faraji, Ph.D., District Manager  
Gregory White, Ph.D., Assistant Manager  
Jason Hardman, Field Supervisor

Assistant Manager White confirmed that the voice recorder was turned on; there were no conflicts of interest declared.

**2. Approval of the 15 June 2017 Minutes of the Public Hearing (Budget Amendments and Certified Tax Rate):**

The Board Members were provided an opportunity to review the pending Minutes of the June 2017 Public Hearing prior to this meeting. There were no changes or edits provided by the Board. Trustee Okabe made a motion to approve the 15 June 2017 Public Hearing Minutes; the motion was seconded by Trustee Christensen and carried unanimously.

**3. Approval of the 15 June 2017 Monthly Board Meeting Minutes:**

As there were no modifications to the 15 June 2017 Monthly Board Meeting Minutes, Trustee Wilson made a motion to approve the minutes as written. The motion was seconded by Christensen and passed with a unanimous vote.

**4. Presentation of the June 2017 Financial Statements and Approval of Bills for Payment:**

The financials had been distributed to the Board prior to the Board Meeting. As requested, balance sheets, the bank statement and its reconciliation, and the credit card statements having a balance greater than \$1,000 were passed around for the Board to review. Manager Faraji briefly discussed the account balances, revenue, and expenses of the District. He indicated that the certified tax rate is close to being finalized; the District has also had to expend more funds on larvicides because the early season has been wetter than normal.

Trustee Okabe made a motion to approve June's bills for payment and the June 2017 Financial Statements. The motion passed unanimously after being seconded by Trustee Christensen.

**5. Discussion and Approval of a Resolution to Achieve Technical Compliance with the Internal Revenue Service for SLCMAD's Participation in the Contributory Retirement Plan:**



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2017

**Ary Faraji, PhD**  
 Manager

**SALT LAKE CITY MOSQUITO ABATEMENT DISTRICT  
 RESOLUTION 7a-20-2017**

**Gregory S. White, PhD**  
 Assistant Manager

**Resolution Declaring SLCMAD's Participation in the Contributory Retirement Plan**

**Aleta H. Fairbanks, MPRA, CPA**  
 Chief Financial Officer

**WHEREAS**, the Board of Trustees of the Salt Lake City Mosquito Abatement District (the "District") has determined that it is appropriate and prudent to participate in a Contributory Retirement Plan for full-time employees; and

**WHEREAS**, all requirements preparatory to the Contributory Retirement Plan have been satisfied; and

**Board of Trustees**

**WHEREAS**, the District has been historically funding a Contributory Retirement Plan.

**La Vone Liddle**  
 Chair

**Carlton Christensen**  
 Vice Chair

**NOW, THEREFORE**, be it resolved by the Board of Trustees of the Salt Lake City Mosquito Abatement District as follows:

**Karen Okabe**  
 Trustee

1. That the District officially adopts this resolution to achieve technical compliance with the Internal Revenue Service.
2. That, except as amended and modified by this Resolution, there are no changes to the District's Contributory Retirement Plan.
3. That this Resolution shall take effect immediately upon its passage.

**Dagmar Vitek, MD, MPH**  
 Trustee

**Maureen Wilson**  
 Trustee

Passed by the Board of Trustees of the Salt Lake City Mosquito Abatement District this 20<sup>th</sup> day of July 2017.



*La Vone Liddle*  
 La Vone Liddle, Chair/Trustee

*Carlton Christensen*  
 Carlton Christensen, Vice Chair/Trustee

*Karen Okabe*  
 Karen Okabe, Trustee

**ABSENT**  
 Dr. Dagmar Vitek, Trustee

*Maureen Wilson*  
 Maureen Wilson, Trustee

During our June 2017 Board Meeting, auditor Kennedy Allen recommended that the Board pass a resolution formalizing the fact that the District is picking up the option to contribute to employees' 401(k) accounts. After asking the Board Members if everyone had read the resolution, Trustee Liddle called for discussion on the resolution. Soon thereafter, Trustee Christensen made a motion to approve the Resolution to Achieve Technical Compliance with the Internal Revenue Service for SLCMAD's Participation in the Contributory Retirement Plan. Trustee Wilson seconded the motion, and it carried with a unanimous vote.

**6. Discussion and Approval of a Joint Resolution of the SLCMAD and the Magna Mosquito Abatement District Declaring an Intent to Adjust Common Boundaries:**

Manager Faraji passed around the paperwork that needed to be signed for the Joint Resolution of the SLCMAD and the Magna Mosquito Abatement District to go into effect. Once the Resolution has board approval, the next step is to publish a notice about a public hearing in a local newspaper (twice), post the hearing on the Public Notice Website, and then hold a Public Hearing at 6:00 PM on 21 September 2017. Magna MAD approved the Resolution at their 5 July 2017 board meeting.

Trustee Wilson made a motion to approve the Joint Resolution of the SLCMAD with the Magna Mosquito Abatement District. The motion passed unanimously after being seconded by Trustee Christensen.

**7. Personnel Policies Update and Approval (Including Photo Release Policy):**

Several staff and board members have been working on the Personnel Policies and Procedures, and Manager Faraji provided a copy of the revised document to our attorney, Rachel Anderson, for review. She responded with her comments late yesterday. Because there has not been time to fully appraise her comments, it was recommended that the Personnel Policies and Procedures be tabled until next month. However, the separate straight-forward Photo Release Policy was considered by the Board Members.

Trustee Christensen made a motion to approve the following Photo Release Policy; it was seconded by Trustee Okabe, and it carried unanimously.

In conjunction with my employment, I agree and consent that my employer, Salt Lake City Mosquito Abatement District (the "District") may photograph, videotape, and/or audio-record my image and voice, using film, digital, or other technological means to capture and produce still or moving images or audio recordings ("Images"), in order to publicize the work of the District and its employees.

I consent to the following (pick an option):

**1. Blanket Permission:**

I grant the following rights to the District, its agents and assigns: permission to use and re-use, publish and re-publish, and modify or alter the Images taken by the District and its agents during the course of my

employment. The Images may be used for editorial, commercial, trade, advertising, and any other purpose in any medium now existing or subsequently developed, worldwide in perpetuity.

2. Selective Permission:  Company intranet accessible by employees only
- Company internet/website (profile picture and/or occasional field images)
  - Company internet/YouTube/Twitter/other social media channels accessible via the internet to anyone, whether currently in existence or developed in the future
  - Printed/electronically distributed employee newsletter
  - Printed/electronically distributed client/customer newsletter
  - Printed annual report
  - [Include any other uses] \_\_\_\_\_

I hereby give my employer consent to use my Images in the following ways (check all that apply):  
I further understand that no special or additional compensation will be provided to me for use of my Image and that I may not be informed in advance of the specific use of my Image.  
I release and discharge the District and its agents from any and all claims arising out of the District's use of the Images when used as indicated above, including any claims for libel, invasion of privacy, or other tortious acts.

\_\_\_\_\_  
Employee / Trustee Name (Please Print)

\_\_\_\_\_  
Employee / Trustee Signature

\_\_\_\_\_  
Date

**8. Approval to Proceed with Sewer Line Fixes:**

A sewage smell has been noticed periodically in the administration building for years, so two different plumbing companies scoped the line and found out that the sewer lines under the concrete in the parking area are misaligned. The best time to tear up the concrete to repair the sewer lines will be once this mosquito season wanes down and the majority of the seasonal employees are gone. Manager Faraji requested official approval so he could proceed with the necessary repairs once parking isn't at a premium. Two bids were received: one for approximately \$15,000 (this company indicated the problem occurred under the building) and the other bid from Stott Plumbing for \$6,015.00 Trustee Christensen has dealt with Stott Plumbing several times, and the company has an excellent reputation. Trustee Wilson made a motion giving Manager Faraji approval to move ahead with hiring Stott Plumbing to complete the repairs. The motion was seconded by Trustee Okabe, and it passed unanimously.

**9. Discussion and Approval to Hire Rural Field Supervisor:**

The currently approved Table of Organization indicates the responsibilities of the Operations Supervisor, which include overseeing pesticide inventories, facility problems, the Mechanic, IT-GIS Specialist, The Education Specialist, and the Urban and Rural Field Supervisors. Jason Hardman has been hired to fill this position. However, because the District currently only has an Urban Field Supervisor, he has often been required to step in and perform the day-to-day duties of a vector control technician whenever one of his seasonal or full-time vector control technicians is absent from work. As a result, Manager Faraji and Assistant Manager White have then been making sure the District functions properly by taking on Operations Supervisor Hardman's obligations. Manager Faraji and Operations Supervisor Hardman anticipate it will take about two years for a new employee to obtain sufficient experience to completely understand and anticipate the challenges created in the rural areas: how does the water flow, which habitats will flood first, where/when should each property be accessed, where will the mosquitoes be located, who are the club owners, who are the water masters, etc. This position will require a dedicated, dependable person who enjoys working in rural areas. Manager Faraji referred to the Salary Step Table and indicated he would like to hire someone in Lane C, earning about \$49,010 annually, and requested permission to advertise the Rural Field Supervisor job opening. After a lengthy discussion concerning transparency and syncing all of the positions, Trustee Christensen made a motion to approve posting the Rural Field Supervisor position with a beginning salary between \$48,000 and \$50,000 per year. Trustee Wilson seconded the motion, which passed with a unanimous vote.

**10. Discussion and Approval to Purchase Ultra-Low Temperature Freezer:**

Both Manager Faraji and Assistant Manager White utilized ultra-low temperature freezers when they were employed by other districts. The low temperature (-80 degrees centigrade) improves the quality of specimens through increasing the preservation of genetic materials, pathogens, and viruses, and it keeps mosquitoes more viable for later identification/sorting. Management has also been talking with geneticists at the University of Utah about performing next-generation sequencing on our field samples. The District has started a large area-wide blood-meal analysis study for the State of Utah. Vials have been provided to the different districts so that, when they process their traps and see a blooded mosquito, they will put it aside for us to analyze what host provided the blood meal. This is important because humans who contract the West Nile virus reside in residential areas, where *Cx. pipiens* are the predominant mosquito. However, *Cx. pipiens* are considered to be bird biters. Our study will provide data which may prove that *Cx. pipiens* are opportunistic biters, thus changing the emphasis on control operations.

Assistant Manager White has been researching ultra-low temperature freezers, and he provided some price quotes. Now that he has a ball-park price, he requested permission to purchase a freezer once he determines which one will serve the needs of the District the best. Trustee Christensen made a motion to approve staff purchasing an ultra-low freezer in the price range of \$7,100.00 to \$10,400.00, based on further research and determination of which one best meets the needs of the District. After being seconded by Trustee Okabe, it carried unanimously.

**11. Utah State Legislature Checklist of Best Practices for Board Members of Special Purpose Entities:**

Senator Niederhauser and Representative Hughes are both Co-Chairs of the Legislative Audit Subcommittee. They mailed a "Checklist of Best Practices for Board Members of Special Purpose Entities" to the District, and Manager Faraji wanted to make sure that the Trustees were aware of their recommendations. (The list is on the following page.) Manager Faraji reviewed this list, and we are accomplishing basically 98% of these items. He did, however, cover a few items that stood out to him:

#8: No individual staffing policy exists. However, the District does have Bylaws and job specifications that stipulate the financial duties for Manager Faraji (Treasurer) and CFO Fairbanks (District Clerk). This is only a recommendation, for a staffing policy is not required by State statute.

#9: The Board of Trustees is involved in directing the audit function because members of the Board participate in the selection of auditors, the auditor provides an audit report to the Board, and the Trustees determine the final approval on the audit.

#13: An internal control heavily tested by the auditor is a separation of duties where finance functions are concerned. The Treasurer and District Clerk strictly comply with the separation of duties, and they are also a check and balance to each other.

#26: No actual whistleblower policy currently exists, but it is not required by Utah State Code. The District has a formal grievance procedure which follows a chain-of-command that ends with the Board of Trustees. During orientation, each employee is instructed on this policy and encouraged to approach the Board, if warranted.

#27 Trustees declare conflicts of interest at the beginning of each board meeting, but the District does not have a specific policy in place. The Board instructed Manager Faraji to reach out to our Attorney, Rachel Anderson, to help establish a policy.

# Checklist of Best Practices for Board Members Of Special Purpose Entities

<b>Roles of Board and Staff</b>	
See report pages 23 to 27.	
1. The board takes ultimate responsibility for governance of the entity by (a) appointing an executive staff, (b) providing broad policy guidance, (c) authorizing the use of resources, (d) setting goals and expectations, and (e) monitoring results.	<input type="checkbox"/>
2. The board members recognize their role is to be more than just a ceremonial body. They have a responsibility to lead and hold staff accountable for results.	<input type="checkbox"/>
3. The board chair reviews and approves the agenda before each meeting, inviting other board members to propose additional agenda items, if desired.	<input type="checkbox"/>
4. The executive director (a) helps the board draft a set of internal control policies and (b) guides staff as they carry out the board's policies.	<input type="checkbox"/>
5. To protect against fraud, staff duties are segregated such that no one person has control over all parts of a financial transaction.	<input type="checkbox"/>
6. The board appoints a board chair, a treasurer and a clerk.	<input type="checkbox"/>
7. For organizations with an insufficient number of staff to achieve a proper separation of duties, board members serve as treasurer, and clerk.	<input type="checkbox"/>
8. The board approves a staffing policy that defines the responsibilities of all those who handle different aspects of the entity's finances.	<input type="checkbox"/>
9. The board is solely responsible for hiring and directing the audit function.	<input type="checkbox"/>

<b>Internal Controls</b>	
See report pages 28 to 33.	
10. The board approves policies that govern the organization and addresses each best practice described in the best practice audit. This would include policies such as a personnel policy, a procurement policy, and records retention policy. A procurement policy is of particular importance with the recent instances of fraud, waste, and abuse that have occurred.	<input type="checkbox"/>
11. The board regularly reviews a report of entity disbursements. The report includes the date, vendor and amount of each expense since the last board meeting.	<input type="checkbox"/>
12. To control credit purchases, purchase cards (or "p-cards") are issued to a limited number of staff. Limits are placed on the dollar amount, type and number of charges made to each card.	<input type="checkbox"/>
13. An independent person with no book keeping responsibilities is assigned to reconcile the bank statement each month with that month's receipts and expenses.	<input type="checkbox"/>
14. The board requires its formal approval of any expenditure above a certain dollar amount.	<input type="checkbox"/>

15. The board requires that two people sign all local entity checks. Before signing, both signers will review and approve the attached requisition sheet.	<input type="checkbox"/>
16. The board verifies that the entity has complied with applicable state laws including: certification and filing of annual budget (Utah Code 17B-1-614), notice of public meetings (Utah Code 52-4), notice of board member contact information (Utah Code 17B-1-303), participation in Utah public finance website (Utah Code 63A-3-405.4), and financial statement reporting requirements (Utah Code 51-2a-202).	<input type="checkbox"/>

### Recruiting Qualified Personnel

Report pages 33 to 37.

17. Staff avoid recruiting individuals to serve as board members.	<input type="checkbox"/>
18. Local entities publicize the opportunity to apply for any elected board seats that will soon be coming available and any vacant staff positions.	<input type="checkbox"/>
19. Local entities follow an open and objective recruiting process when filling staff positions and hiring outside contractors. Hiring relatives or business associates of the board and management is avoided.	<input type="checkbox"/>
20. Board and staff regularly receive the required training in open and public meetings, board governance and other matters applicable to the entity's mission. Training can be obtained online at <a href="https://auditor.utah.gov/training/local-district/">https://auditor.utah.gov/training/local-district/</a> , through in-house seminars, and at conferences such as those offered by the Utah Association of Special Districts.	<input type="checkbox"/>
21. When in-house expertise is not available to perform special tasks, the entity hires or appoints qualified outside experts.	<input type="checkbox"/>

### Tone at the Top

Report pages 38 to 40.

22. The board adopts a code of ethics that clearly states the organization's values and standards of behavior.	<input type="checkbox"/>
23. The board and management seek opportunities to reinforce the organization's ethical standards during staff meetings, training, and newsletters.	<input type="checkbox"/>
24. The board holds everyone accountable, including management, to high standards of performance.	<input type="checkbox"/>
25. The board and executive director avoid using a compensation system and other incentives that encourage employees to take unnecessary risks.	<input type="checkbox"/>
26. The board provides an ethics hotline and adopts a whistleblower policy.	<input type="checkbox"/>
27. The board adopts a conflict of interest policy (based on Utah Code 10-3-13) describing how members should respond when their personal interests have the potential to conflict with their public duty.	<input type="checkbox"/>



## **12. Architect, Earthwork Contractor, Hamilton Partners, and Bond Update:**

Several meetings have been held with our Architect, Scott Olcott; the plans have been updated, and things are progressing nicely. The contract with Design West has been signed, and they will begin invoicing us for the work they have completed. The cost to develop the front eight acres is estimated to run approximately \$9,500,000.00, which will provide us with everything required to provide essential services.

Approval and permits are required before Harper Construction can place heavy equipment on our job site. A meeting is scheduled today with Salt Lake City Development Review Team, which should help move the process along. We still have not received a contract for us to review and sign; they should have something to us before the next Board Meeting.

A representative of Hamilton Partners, the company that is developing the site across the street from our facility, indicated that we would receive a contract once their attorney returns from vacation. The District's share of providing utilities should run about \$145,000. Manager Faraji reminded George Arnold, the main developer with the Hamilton group, that our attorney will need to review the contract prior to being approved by our Trustees, and he promised that he will have something to us prior to the next Board Meeting.

This month, the Bond Trustee requested a copy of the District's insurance on the new property. Manager Faraji contacted Randy Larsen, our Bond Counsel, and he indicated that no additional insurance is required until construction begins. He did mention, however, that we should have some insurance in case someone gets hurt on the land, itself. Manager Faraji called Utah Local Governments Trust, and he found out that the District's General Liability Insurance covers everything that we own, so no new policy is required.

The land owners to the north of our new property (Perry Construction) are interested in swapping some of their property with ours. We have already spent a lot of time and money on our current property, and we have made an agreement with Hamilton Partners on an amount to bring utilities to our site. It is doubtful we will be interested in exchanging properties with them. However, Manager Faraji informed our realtors that we would be open to review a formal offer by them before a final decision is made.

## **13. Update on Salary Survey:**

After multiple modifications and defining job specifications, the Compensation Resources custom survey is now "live". Several entities have declined the opportunity to complete the survey; Manager Faraji has requested a copy of those who are not participating in the survey in hopes of being able to encourage them to contribute their data.

**14. Report on Attended and Reminder / Approval of Upcoming Training/Meetings:**

- **DSLASA, 8 June 2017, Davis, UT**

Manager Faraji and Trustee Liddle, along with former Trustee Erskine, attended the DSLASA meeting. This is the first year that DSLASA is invoicing us for our adulticide applications; we hope to do the same with the larvicide applications next year.

- **Beach MCD, 23-30 June 2017, Panama City, FL**

The District sent Urban Field Supervisor Sorensen, who happens to be a helicopter pilot, to Beach Mosquito Control District to check out their aerial program. Beach MCD runs the Bell Jet Rangers, which is different from the other helicopters we have looked at. He flew with them a few days and took a look at their hangar and operations. Nothing further was reported.

- **Williston MCD, 26-28 June 2017, Williston, ND**

Williston MCD is one of the few districts that has a built-in dormitory and has also set up a contract with the US Air Force Entomology. They do a lot of the Air Force's adulticide and larvicide operations at virtually no cost to the district. The district pays for the pesticides, and the Air Force pays for the employees, training, and the fuel for the aircrafts. Manager Faraji and Assistant Manager White visited the district's facilities, and it is a bigger program than they had expected. They were especially impressed with the wash bays, the materials used, and other features of the garage facilities. Even though they came home with a lot of good ideas, the most valuable item was the large document Williston MCD had prepared in order to coordinate mosquito abatement activities with the US Air Force. This will facilitate our efforts when we attempt to put something together.

- **Louisiana MCDs, 6-9 August 2017, New Orleans, LA**

Manager Faraji and Assistant Manager White had planned on visiting the districts in Louisiana together, but Assistant Manager White has had a change of plans: he will become a new dad on August 9<sup>th</sup>. Urban Field Supervisor Sorensen has been invited to accompany Manager Faraji because he is a helicopter pilot. One of the facilities houses an airport, and his input will be valuable.

- **AMCA IBM, 28-30 August, Kansas City, MO**

The AMCA Interim Board Meeting will be the 28-30 of August 2017. Manager Faraji is a member of the Board, and he will be attending this meeting.

- **UMAA, 29-31 October 2017, Park City, UT**

The UMAA Meetings will be the 29-31 of August 2017; the permanent staff and the Trustees are invited to attend these meetings. The rooms are booking fast, so room

reservations should be made quickly. The Board Members indicated if and when they will need room accommodations. Reservations can always be cancelled, if it becomes necessary. Former Trustee Todd Erskine, who represents the District on the DSLASA Board, will also be attending the UMAA meetings so that he can continue to remain compliant with his Board Member Training requirements.

#### **15. Manager's Report:**

The Manager's Report was basically routine, and the Trustees received a copy prior to the Board Meeting. Rather than spend time reviewing the data, Manager Faraji focused on the article that was included in the Manager's Report. Verily, Alphabet's life sciences arm, has built a robot that can raise a million mosquitoes a week and has used it to produce infertile male insects that have been treated with *Wolbachia*, a type of naturally-occurring bacteria that infects many types of insects.

Mosquito control is constantly evolving, and it will most likely be drastically changed in the coming years. We have had meetings with the local FAA regarding drones and have communicated with folks in Washington DC, and they are on board with what we are trying to accomplish. New drones are being built that are capable of carrying up to 22 pounds of pesticide. These drones will be able to treat areas that are too treacherous to treat by ATV or by airplane.

Our District is also doing research with frogs: we have fastened pesticide tablets to their backs and are monitoring their behavior. The hope is that the frogs can be used to help fight malaria in Africa by hopping into water treated with pesticide and then deliver the pesticide to other ponds.

#### **16. Vector Surveillance Report:**

Assistant Manager White distributed a six-page Vector Surveillance Report, which began with a map (see below) and a few graphs depicting the following trap results:

Rural – CO<sub>2</sub> Traps, comparing 2016, 2017, and mean totals from 2012-2016

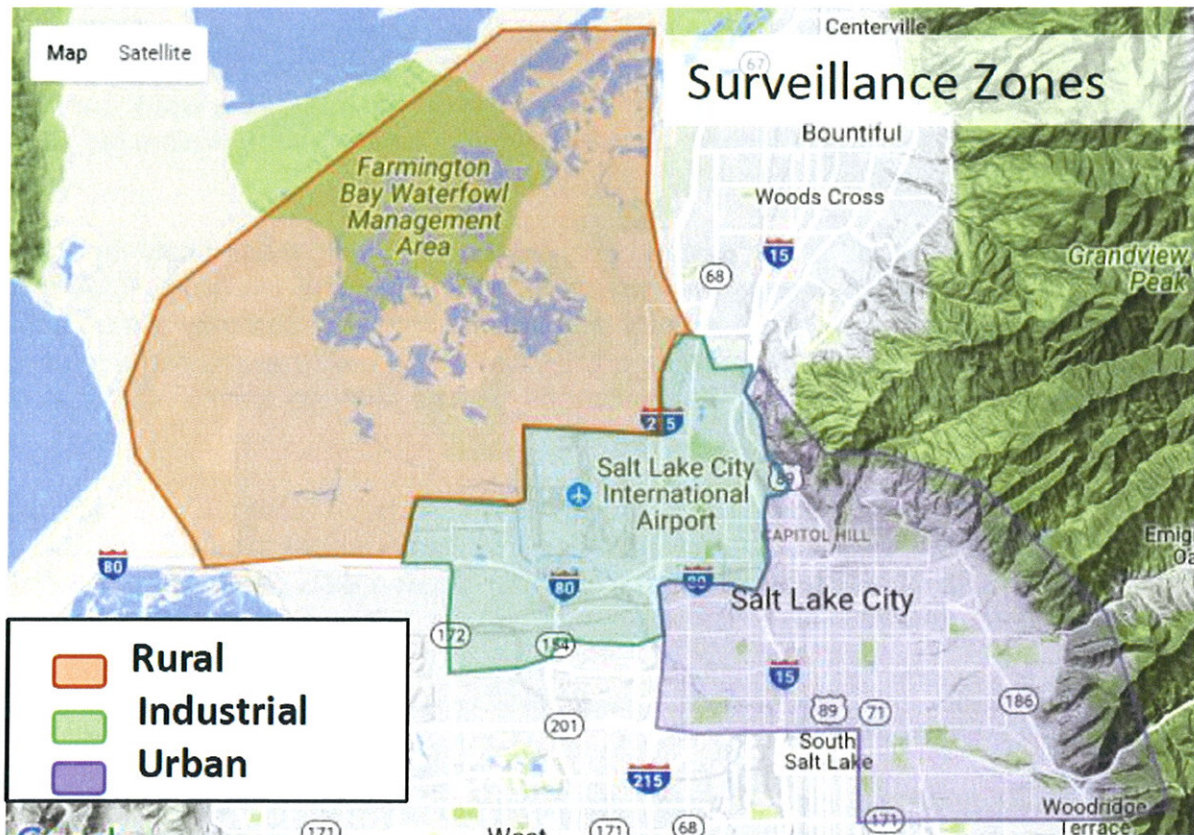
Industrial (A & B) – CO<sub>2</sub> Traps, comparing 2016, 2017 and 2012-2016 mean totals

Urban – Gravid Traps, comparing 2016, 2017, and mean totals from 2014-2016

In the Urban and Industrial areas of the District, the numbers of mosquitoes collected in the traps are below the 5-year average and also below 2016's numbers. In the Rural Zone of the District, the mosquito numbers are close to the 5-year averages and slightly higher than in 2016. These maps were created with the U-Surv website, which the District is experimentally using this year. This website is a mimic of the one that California mosquito and vector control districts are currently using to communicate mosquito/virus activity through the state.

The District is currently carrying out a number of trials to increase operational activities, decrease costs, improve surveillance, and to understand more about the local vector ecology. One area of focus has been designing and constructing traps that use compressed CO<sub>2</sub> rather than dry ice. To compare the two CO<sub>2</sub> sources, traps with the

different attractants were set at surveillance sites 100 yards apart and allowed to run overnight. Traps were rotated so there was no positional bias in trap location. Multiple locations were used this season, with two main sites being utilized. The trap results show that the dry ice traps catch about three times more mosquitoes than the compressed CO<sub>2</sub>. This appears to be due to the proximity of the traps, for the overall trap numbers are similar to previous years. More trials will be conducted with the different CO<sub>2</sub> sources used on different nights or greater distances.



Three new trap designs made with our 3D printer, along with the classic Clarke Model trap that the District has been using for years, were tested to see if the inhouse traps could be as effective as the commercially-available trap. (3D printed traps cost much less than purchased traps, and the traps were modified to fit in new carriers and to allow them to work more efficiently with compressed CO<sub>2</sub>.) All traps were compared while utilizing compressed CO<sub>2</sub>. The classic Clarke Model and the SLCMAD simple traps function the best and caught similar numbers of mosquitoes.

SLCMAD was one of four sites selected to test the efficacy of a new catch basin larvicide, NyLar, which uses the active ingredient pyriproxyfen. This active ingredient is a potent insect growth regulator similar to methoprene. One of the potential advantages of pyriproxyfen is that it may last longer in the field, thereby necessitating fewer treatments. This trial, using 70 catch basins, has just begun; positive results from this study will help make this product become available to other mosquito control districts in the future.

The District was given two collapsible mosquito traps to evaluate. These passive traps work without fans, so no batteries are required. Originally designed in Australia, these traps have been evaluated in other locations to discern effectiveness with different mosquito species in varying environmental conditions. So far, the passive traps have performed well in our District. More side-by-side comparisons with fan-powered traps need to be made, but initial results show a similar amount of species diversity collected and adequate numbers for surveillance purposes.

The Biogents company has developed a trap counter device that attaches to their BGS traps for container-inhabiting mosquitoes. This device uses a number of sensors to detect movement through the opening of the counter, and it automatically counts the number of mosquitoes that pass through it by distinguishing between objects too small or too large to be mosquitoes. Biogents provided SLCMAD with a trap to see if we could convert it to a CO<sub>2</sub>-style trap. We accomplished this task by designing parts with our 3D printer. However, when we conducted trials, we encountered two problems: 1) there was a lack of communication with the counting device, and 2) the BG counter counted much higher numbers of mosquitoes than what was actually collected in the trap. After a discussion with Biogents, it appears we need a new antenna on our device, and we need to increase the airflow. More trials will be conducted to see if the device works better with the adjustments.

The Biogents company also asked the SLCMAD to conduct trials with two different trap types and different lures, originally designed to collect the invasive container-inhabiting mosquitoes, *Ae. aegypti* and *Ae. albopictus*, to see how the traps performed collecting the Western Treehole Mosquito, *Ae. sierrensis*. Mosquito Magnet Traps, traps the District used in the past to catch large numbers of these mosquitoes, were used as a control. Early results show that the BGS trap, in combination with CO<sub>2</sub> and BG lure, is the most effective trap.

Dr. Randy Gaugler at Rutgers University is testing a theory that frogs may be used as a novel means of disseminating larvicides to bodies of water in certain habitats. The hope is that this method may be more fully developed and eventually be used to help areas where major vector-borne diseases like malaria are endemic. This is an entirely new concept that requires more supporting research. Manager Faraji has built a test site to conduct preliminary research testing the validity of the method. The test site is a large frog run with ten small water containers. Frogs, with pesticide tablets attached to their backs, were released at one end of the enclosed site; bioassays will be conducted weekly on the water in the frog run to see how long it takes the frogs to disseminate the pesticide to the farther end of the site and to see the duration of the pesticide.

On 14 July 2017, Dr. Mark Yandell visited the District and learned about the work we do and the research we are interested in pursuing in the future. He is a leading genetic researcher at the U of U, and he has an interest in mosquito genetics. As Manager Faraji briefly described earlier in this meeting, we plan on doing a small trial project looking at genetic material in mosquitoes found in Utah to see what type of microbial diversity is found.

**17. Probable Agenda Items for 17 August 2017 Board Meeting, 12:30 PM:**

- Manager's Report
- Architect / Construction / Annexation Update
- Personnel Policies Update, Including Sick Leave Buy-Back Policy

**18. Adjournment:**

Trustee Christensen made a motion to adjourn the meeting at 2:29 P.M. A boxed meal will be available at 12:00 P.M. for the Board Members prior to the August Board Meeting.

  
Ary Faraji, Manager

17 AUG 2017  
Date

  
La Vone Liddle, Chair

08/17/2017  
Date