



COUNCIL STAFF REPORT

CITY COUNCIL of SALT LAKE CITY

TO: City Council Members

FROM: Austin Kimmel
Public Policy Analyst

DATE: October 15, 2024

RE: MOSQUITO ABATEMENT DISTRICT PROPERTY TAX REPORT
Proposed Tax Increase in 2025

Item Schedule:

Briefing: October 15, 2024

Public Hearing: October 15, 2024

Potential Action: n/a

ISSUE AT-A-GLANCE

Salt Lake City Mosquito Abatement District (SLCMAD) is reporting on its plan to increase property taxes for Salt Lake City residents, intended to take effect in 2025. SLCMAD states that the tax increase is necessary due to inflationary increases on supplies and mosquito abatement services, to fund the construction of new infrastructure and facilities (Phase II), the acquisition of a helicopter for in-house aerial treatment applications, and day-to-day operational expenses.

The increase would generate \$1,370,667 in additional revenue for the District and is needed because the annual “new growth” revenue has not kept pace with inflation. Although the percentage increase to the certified tax rate is high, 19.7%, the impact to an average valued-residential property is \$0.83 cents per month or \$9.95 per year. For businesses, the impact for each \$1 million in value is \$2.42 per month or \$29.00 per year.

	Current	Proposed			
	2024	2025	Difference		
Certified Tax Rate:	0.000147	0.000176	0.000029	19.7%	
Total Tax Revenue	7,029,062	8,399,729	1,370,667	19.5%	
Increase to Property Owners - ANNUAL					
Residential Property - Average Value of \$623,900	\$ 50.44	\$ 60.39	\$ 9.95	19.7%	Note: monthly increase is \$0.83
Commercial Property - Average Value of \$1m	\$ 147.00	\$ 176.00	\$ 29.00	19.7%	Note: monthly increase is \$2.42

CITY COUNCIL OF SALT LAKE CITY

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The 2025 proposed budget that the District submitted is anticipating a relatively flat budget through the coming fiscal year (calendar year 2025), because any property tax revenue from the increase would affect their 2026 fiscal year.

A few options for smaller increases to the certified tax rate were considered, but after additional review, the Board supported the current proposal a larger increase. The proposed budget would also and recognize interest income benefits from investing the money as well.

The Salt Lake City Council serves as the appointing Legislative body, which appoints members to the SLCMAD Board. According to State Code, information is shared with the Council as the elected officials, but the Council's roles is not to make final policy or budget decisions for the District. Those decisions, along with its operations, are made by SLCMAD Board of Trustees and staff.

Goal of the briefing: to fulfill requirements set forth by state law, which mandate that the Salt Lake City Mosquito Abatement District inform the City Council of its intention to pursue a tax increase. State Code also requires that the Council take an opportunity for public comment before proceeding with a public hearing and vote by the District Board of Trustees.

POLICY QUESTIONS

1. Although the District has the authority to propose and execute property taxes, the Council may raise some questions about timing. Several other tax increases are on the horizon from other taxing entities (County, School, sales tax, etc.), and the Council has considered the impact of all these on property owners.
2. The Council may ask about changes the District is making to operations, how the helicopter and other purchases may affect their budget, including any efficiencies or cost-savings that could be realized.
3. The Council may ask for an update on construction plans, Phase II.
4. The Council could ask the District to expand on how it intends to notify Salt Lake City residents of its proposed tax rate increase and opportunities for input.

ADDITIONAL AND BACKGROUND INFORMATION

The proposed 2025 tax increase would provide SLCMAD with additional revenue to increase the efficiency and effectiveness of mosquito control efforts in Salt Lake City while keeping up with inflation. SLCMAD states that it has experienced cost challenges due to inflation and double-digit increases in the consumer price index (CPI) at a rate of 19.4%. While the city has experienced new growth, SLCMAD states that new growth has only captured a 6.63% increase in revenues over the last three years.

In addition to the challenges faced by rising costs, SLCMAD plans to boost its capabilities by expanding its facilities and developing a new in-house aerial operation program. The expanded facilities would allow the District to increase its surveillance and control programs, provide laboratory and field research capabilities, and house its future aerial operations.

SLCMAD currently relies on contracted aerial services based out of Ogden Airport, which uses fixed-wing aircraft for mosquito control operations. However, the District plans to transition to an in-house aerial program by purchasing a helicopter and increasing unmanned aerial systems. SLCMAD expects this will provide the District with greater control over treatment applications compared to that of fixed-wing aircraft, leading to more targeted and effective mosquito control efforts which will reduce adult mosquito control applications.

The Salt Lake City Mosquito Abatement District (SLCMAD) is a Special Service District with its own mission, bylaws, taxing status, and governing authority. Its board members are appointed by the City Council, and as a non-elected Board, the Salt Lake City Council serves as its legislative body. The SLCMAD Board of Trustees is responsible for overseeing the District's budget, mission, and daily mosquito abatement activities related to public health and nuisance hazards. It may also take all necessary and proper steps to exterminate of mosquitoes, flies, crickets, grasshoppers, and other insects and to abate as nuisances all stagnant pools of water or other breeding places.

Salt Lake City Mosquito Abatement District Tax Increase Formulas

Determining Tax Increase Amounts	
2024 Salt Lake County Assessor Average Home Value in SLC	\$623,900.00
Utah Residential Exemption (45%) Discount	0.45
Discount Amount (Home Value x 0.45)	\$280,755.00
Taxable Value	\$343,145.00
2024 Certified Tax Rate (Adopted 20 June 2024)	0.000147
Annual Residential Tax to SLCMAD (Taxable Value x CTR)	\$50.44
Monthly Residential Tax to SLCMAD (Annual Tax / 12)	\$4.20
2024 PROPOSED Tax Increase Percentage (19.5%)	0.195
2024 Additional Annual Residential Tax (Annual Residential Tax * 0.195)	\$9.84
Total New Annual Residential Tax (Annual Residential Tax + Additional Annual Tax)	\$60.28
Total New Monthly Residential Tax to SLCMAD (New Annual Tax / 12)	\$5.02

Determining New Certified Tax Rates (Monthly)	
2024 Taxable Value	\$343,145.00
2024 Current Annual Tax	\$50.44
Current CTR (Annual Tax / Taxable Value)	0.000147
2024 PROPOSED Annual Residential Tax	\$60.28
New PROPOSED CTR (Annual Tax / Taxable Value)	0.000176
Determining New Revenue Amounts (Annual Budget)	
2024 Certified Tax Rate (Adopted 20 June 2024)	0.000147
2024 Final Budget Revenue (Adopted 20 June 2024)	\$7,029,062.00
2024 PROPOSED Tax Increase Percentage (19.5%)	0.195
2024 PROPOSED Additional Revenues (Final Budget Revenue * Proposed Tax Increase %)	\$1,370,667.09
2025 NEW PROPOSED Budget Revenues (2024 Final Budget Revenue + Proposed Additional)	\$8,399,729.09



Salt Lake City Mosquito Abatement District



2024 Amended Budget & 2025 Proposed Budget
(20 June 2024)

GENERAL FUND BUDGET

	2024 Adopted (Dec 2023)	2024 Amended (Jun 2024)	2025 Proposed (Jun 2024)
Revenues			
3810 Previous Year Fund Balance	816,644	0	1,407,857
3110 Property Tax	6,819,257	6,819,257	7,029,062
3115 Fee in Lieu	260,000	260,000	260,000
3610 Interest Earnings	360,000	367,000	367,000
3640 Sale of Fixed Assets	5,000	25,000	5,000
3650 Prison Abatement Services	300,000	300,000	300,000
3690 Miscellaneous Revenue	1,000	1,000	1,000
3691 RDA SLC	150,000	253,000	253,000
3693 RDA Adjustment (Book Entry Only)	561,000	2,000,000	2,000,000
3695 Grants	380,000	109,000	100,000
3696 Grant: CDC/CSU/RaHP VEC	0	280,000	197,500
3811 Transfer from CPF	0	0	0
Total Anticipated Revenues	9,652,901	10,414,257	11,920,419
Disbursements			
Administration	3,340,000	4,841,800	4,917,729
Shop & Equip. Maintenance	916,000	913,600	685,500
Spraying	1,201,000	1,251,000	1,401,000
Contribution to Fund Balance	895,901	1,407,857	1,616,190
Transfer to Capital Projects Fund	3,300,000	2,000,000	3,300,000
Total	9,652,901	10,414,257	11,920,419

Salt Lake City Mosquito Abatement District General Fund

2024 / 2025 Budgets (20 June 2024)

GENERAL FUND BUDGET DISBURSEMENT BREAKDOWN			
	2024 Budgeted (December 2023)	2024 Amended (June 2024)	2025 Proposed (June 2024)
Administration			
41110 Salaries & Wages	1,722,000	1,752,000	1,814,079
41130 FICA Taxes	132,000	135,000	139,000
41131 Retirement & 401(k)	307,400	307,400	310,000
41132 Medical Insurance	260,000	255,000	265,000
41133 Disability Insurance	8,600	8,400	8,650
41135 Workers Compensation Insurance	30,000	15,000	16,000
41136 Unemployment Insurance	1,000	1,000	1,000
41210 Memberships/Permits/Subscriptions	18,000	18,000	18,000
41220 Public Notices	1,000	10,000	1,000
41230 Travel & Conventions	70,000	70,000	70,000
41240 Office Supplies/Equipment/Printing/Postage	8,000	8,000	8,000
41250 Office Equipment Maintenance & Repair	4,000	4,000	5,000
41252 Computer/GPS/IT -- Software/Hardware	40,000	41,000	45,000
41254 Drones	25,000	25,000	25,000
41280 Telephone / Internet	17,000	17,000	17,000
41282 Mobile Telephones	20,000	20,000	20,000
41311 Financial Audit	10,000	10,000	10,000
41312 Legal Services / Professional Services	14,000	14,000	14,000
41330 Education	18,000	18,000	18,000
41335 Aerial Operations	0	40,000	40,000
41510 Liability Insurance	26,000	26,000	26,000
41511 Property/Fire/Inland Marine -- Insurance	36,000	36,000	36,000
41530 Interest Expense	1,000	1,000	1,000
41600 Credit Card Bank Rebates	-8,000	-8,000	-8,000
41610 Miscellaneous Expense	4,000	4,000	4,000
41611 Board Meetings	4,000	4,000	4,000
41745 RDA Adjustment Expense (Book Entry Only)	561,000	2,000,000	2,000,000
41750 DSLASA	10,000	10,000	10,000
Total Administration	3,340,000	4,841,800	4,917,729
Shop and Equipment Maintenance			
42250 Equipment Maintenance & Repairs	25,000	25,000	25,000
42251 Gasoline, Fuels and Oils	30,000	30,000	30,000
42252 Shop Supplies	17,000	17,000	17,000
42253 Uniforms	15,000	15,000	15,000
42254 Safety & Welfare Expense	12,000	10,000	10,000
42255 Equipment Lease	1,000	1,000	1,000
42260 Building Maintenance and Repairs	35,000	35,000	35,000
42270 Electrical Power	45,000	42,000	42,000
42271 Natural Gas Heating	40,000	43,000	43,000
42272 Garbage Removal	3,000	3,000	3,000
42273 Water & Sewer	7,000	7,000	7,000
42510 Vehicle Insurance (Liability)	5,000	5,000	5,000
42610 Miscellaneous Shop & Equipment Expense	1,000	0	0
42620 Security Alarm Monitoring	3,000	3,000	3,000
42740 Equipment & Vehicles	192,000	175,000	45,000
42741 Scientific Research Publication	6,000	10,000	10,000
42750 CDC/CSU/RaHP VEC Grant	0	280,000	197,500
42751 Grants & Research	382,000	115,600	100,000
42752 Laboratory & Surveillance	45,000	45,000	45,000
42753 Molecular Laboratory	47,000	47,000	47,000
42755 Fish Rearing & Maintenance	4,000	4,000	4,000
42760 Beehive Expense	1,000	1,000	1,000
Total Shop and Equipment Maintenance	916,000	913,600	685,500
Spraying			
43410 Spraying Materials	950,000	1,000,000	1,100,000
43621 Contracted Airplane Spraying	250,000	250,000	300,000
43740 Small Spraying Equipment	1,000	1,000	1,000
Total Spraying	1,201,000	1,251,000	1,401,000
Contribution to Fund Balance	895,901	1,407,857	1,616,190
Transfer to Capital Projects Fund	3,300,000	2,000,000	3,300,000
TOTAL DISBURSEMENTS	9,652,901	10,414,257	11,920,419

Salt Lake City Mosquito Abatement District Capitol Projects Fund

2024 / 2025 Budgets
(20 June 2024)

CAPITAL PROJECTS FUND			
	2024 CPF Budgeted (Dec. 2023)	2024 CPF Amended (Jun. 2024)	2025 CPF Proposed (Jun. 2024)
Revenues			
Use of Previous Year Fund Balance	11,118,324	11,277,836	10,031,686
45-3610 Interest	300,000	475,000	500,000
45-3810 Transfer from General Fund	3,300,000	2,000,000	3,300,000
Total Revenue	14,718,324	13,752,836	13,831,686
Disbursements			
4540745 New Facility Construction	2,500,000	2,500,000	500,000
4540746 New Facility Equipment	10,000	10,000	10,000
4540820 Transfer to LBA - Bond Expenses	1,211,150	1,211,150	1,212,125
4540815 Transfer to General Fund	0	0	0
Total Disbursements	3,721,150	3,721,150	1,722,125
Committed Reserves			
Extra-Ordinary Control	300,000	300,000	300,000
Vacation/Sick Leave/Retirement	235,000	270,000	280,000
Long-Term Facility Maintenance	75,000	75,000	75,000
Emergency Equip/Vehicle Replacement	100,000	100,000	100,000
Facility Building Additions	30,000	30,000	30,000
Contingencies	35,000	0	0
Total Dedicated Reserves	775,000	775,000	785,000
Remaining Fund Balance	10,222,174	9,256,686	11,324,561
Total Disbursements/Reserves/Fund	14,718,324	13,752,836	13,831,686

Salt Lake City Mosquito Abatement District
Local Building Authority
2024 / 2025 Budgets
(20 June 2024)

LOCAL BUILDING AUTHORITY			
	2024 Budgeted (Dec. 2023)	2024 Amended (Jun. 2024)	2025 Proposed (Jun. 2024)
Revenues			
Transfer from Capital Projects Fund			
Transferred to pay Bond & Expenses	1,211,150	1,211,150	1,212,125
Interest Income	2,000	5,000	5,000
Use of Previous Fund Balance	2,035	2,309	7,309
Total Revenue	1,215,185	1,218,459	1,224,434
Disbursements			
Bond Payments:			
3-7200 2017 Bond Interest Payments	364,000	364,000	351,600
3-7220 2017 Bond Principal Payments	305,000	305,000	315,000
3-7260 2020 Bond Interest Payments	162,150	162,150	150,525
3-7270 2020 Bond Principal Payment	380,000	380,000	395,000
Total Disbursements	1,211,150	1,211,150	1,212,125
Contribution to Fund Balance	4,035	7,309	12,309
Total Disbursements/Reserves/Fund	1,215,185	1,218,459	1,224,434

SLCMAD Updates and Tax Increase Overview

SLC Council
15 October 2024





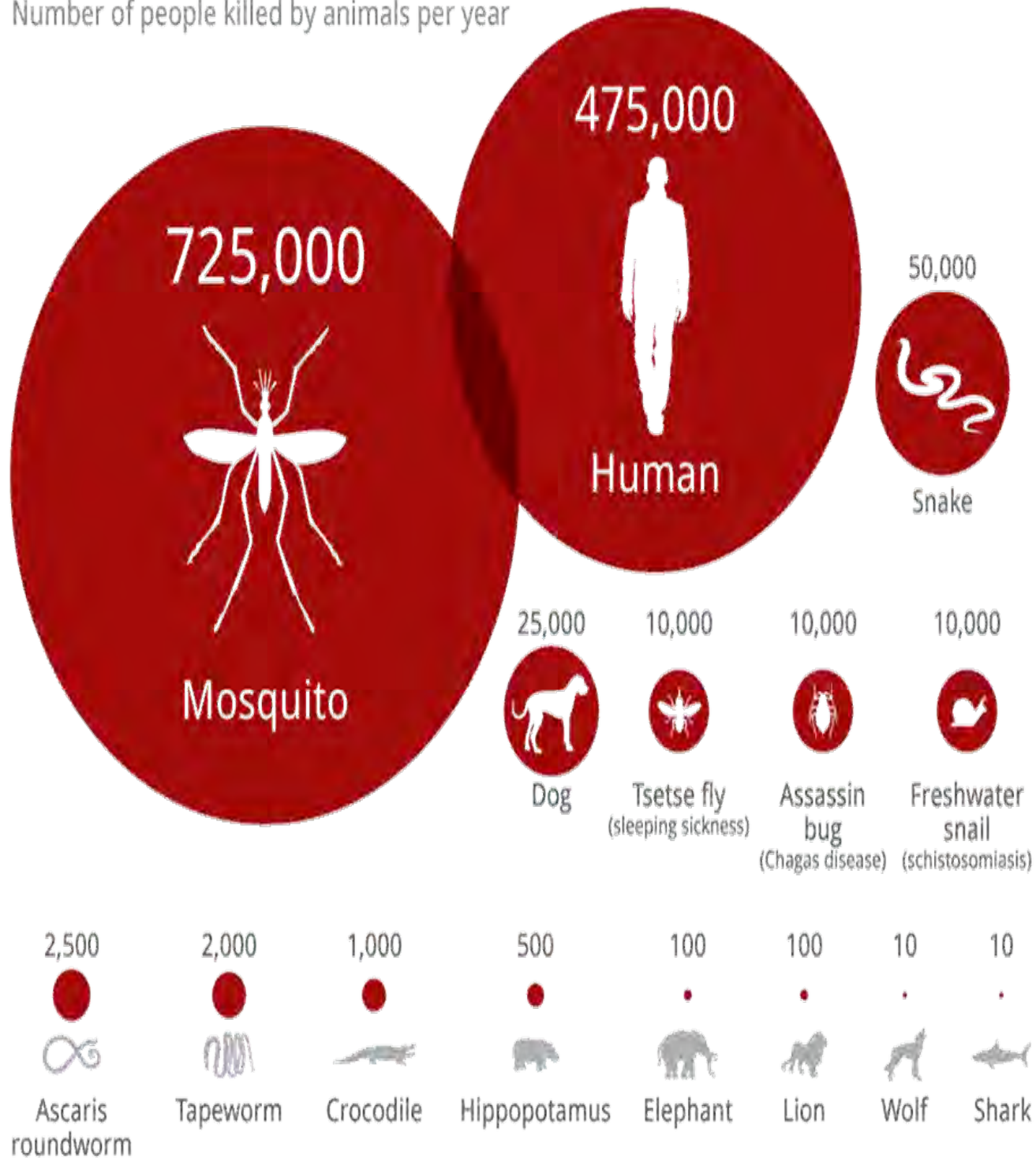
*Toxorhynchites rutilus
septentrionalis*

A close-up photograph of two mosquitoes on human skin. The larger mosquito, *Toxorhynchites rutilus septentrionalis*, is positioned in the upper half of the frame, facing left. It has a metallic blue-black sheen with prominent golden-yellow longitudinal stripes on its thorax and abdomen. Its legs are long and dark. The smaller mosquito, *Aedes albopictus*, is in the lower-left corner, also facing left. It is dark with distinct white markings on its legs and wings. The background is a close-up of human skin, showing fine lines and texture.

Aedes albopictus

The World's Deadliest Animals

Number of people killed by animals per year



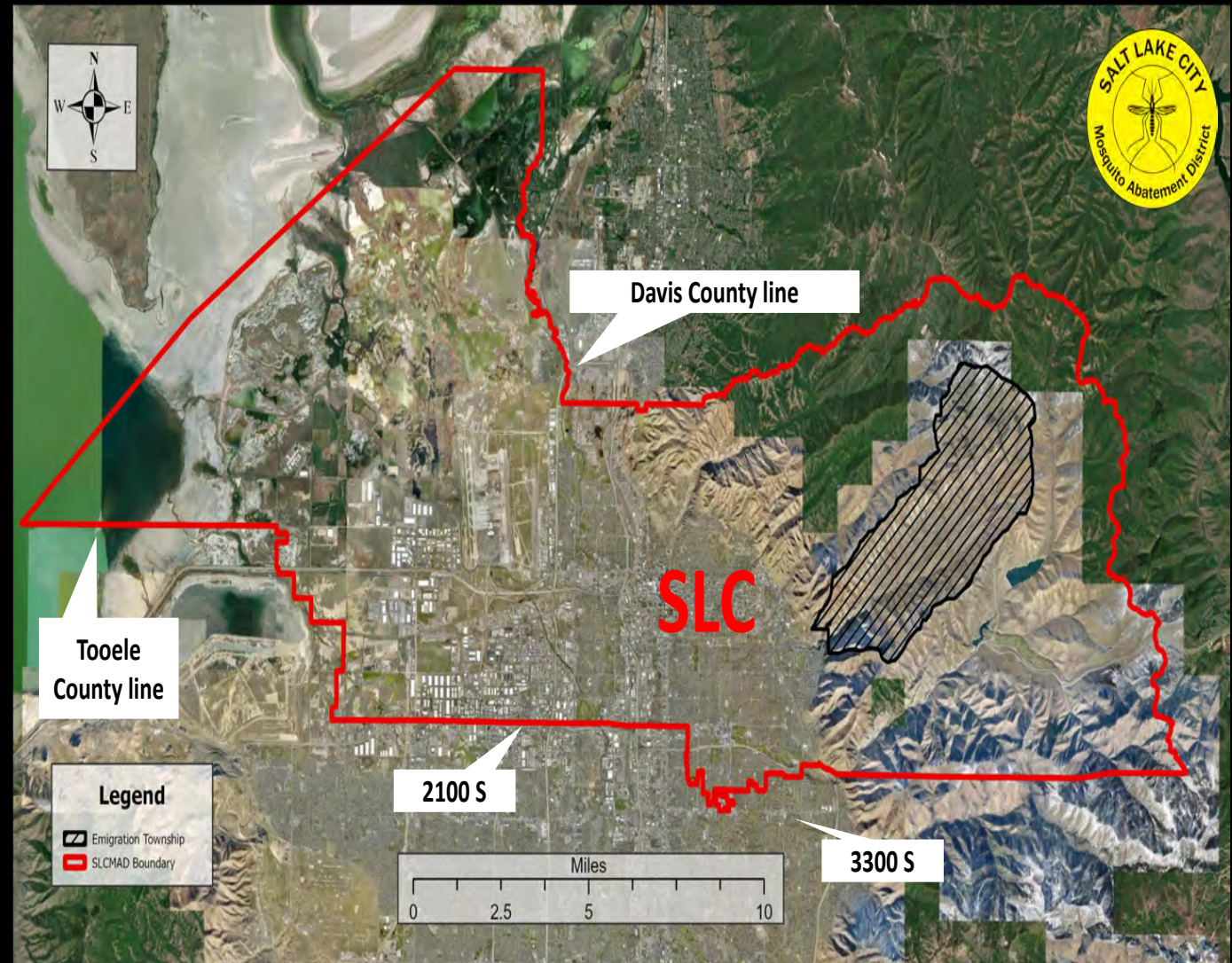
SLCMAD

1923

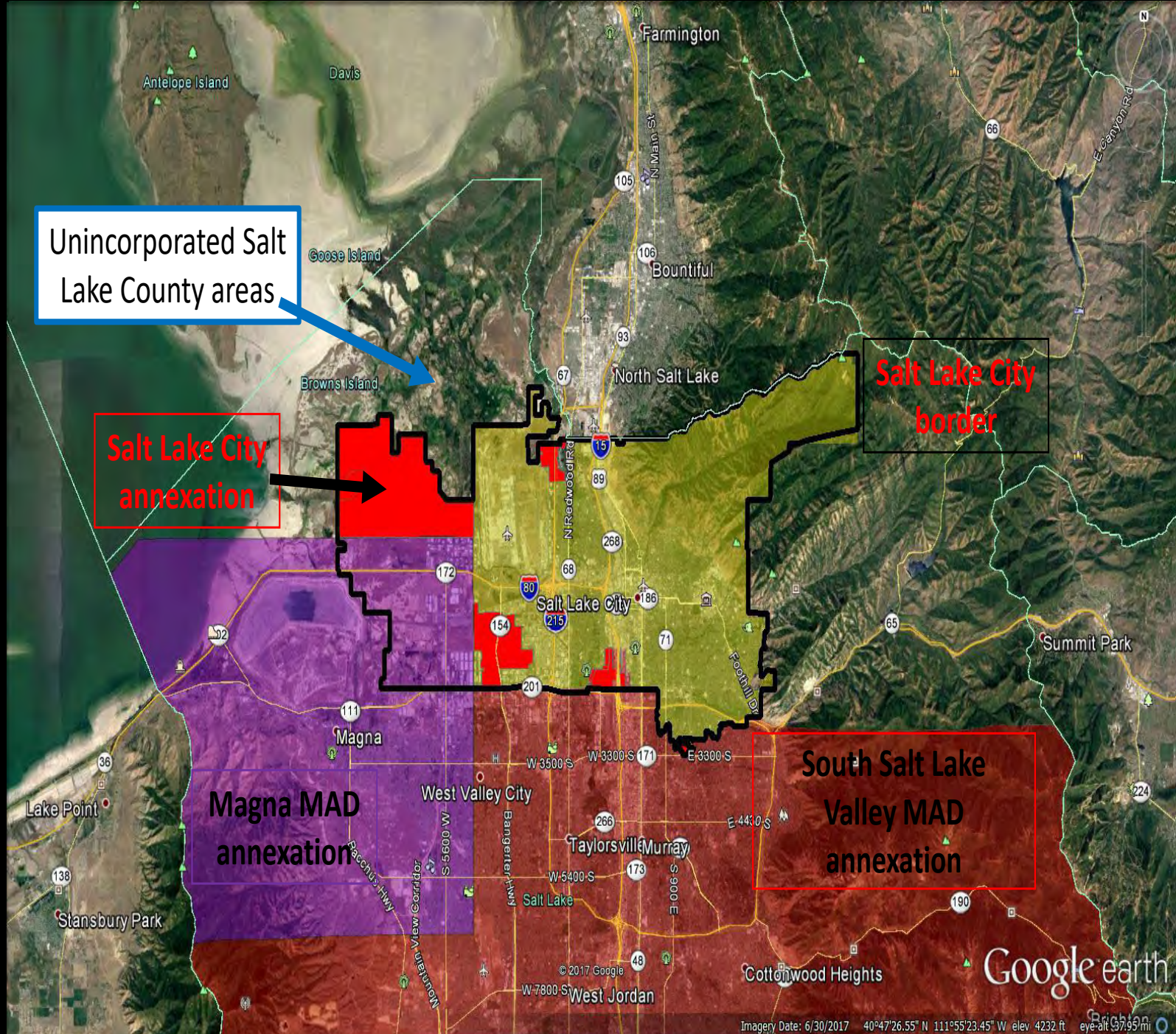
Independent Tax
Special District

~180 miles²
(Service Area)

~240 miles²
(Greater Boundary)



Annexation Updates





13 full time staff (5 PhD's)
~50 seasonals (interns/techs)



SLCMAD Board of Trustees



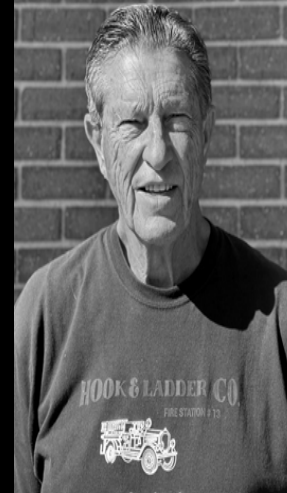
Dr. Shireen Mooers
Board Chair (D6)
Retired Pediatrician



Amanda Barth
Board Vice Chair (D7)
Utah Rare Insect Coord.



Luz Escamilla
District 1
Utah State Senator



Van Turner
District 2
Businessman/Past Council



Neil Vickers, PhD
District 6
UoU Bio Professor

Past Notable Board of Trustees



Ray Uno
Judge



Dr. Dagmar Vitek
Medical Director SLCHD



Karen Okabe
Deputy Mayor SLCO

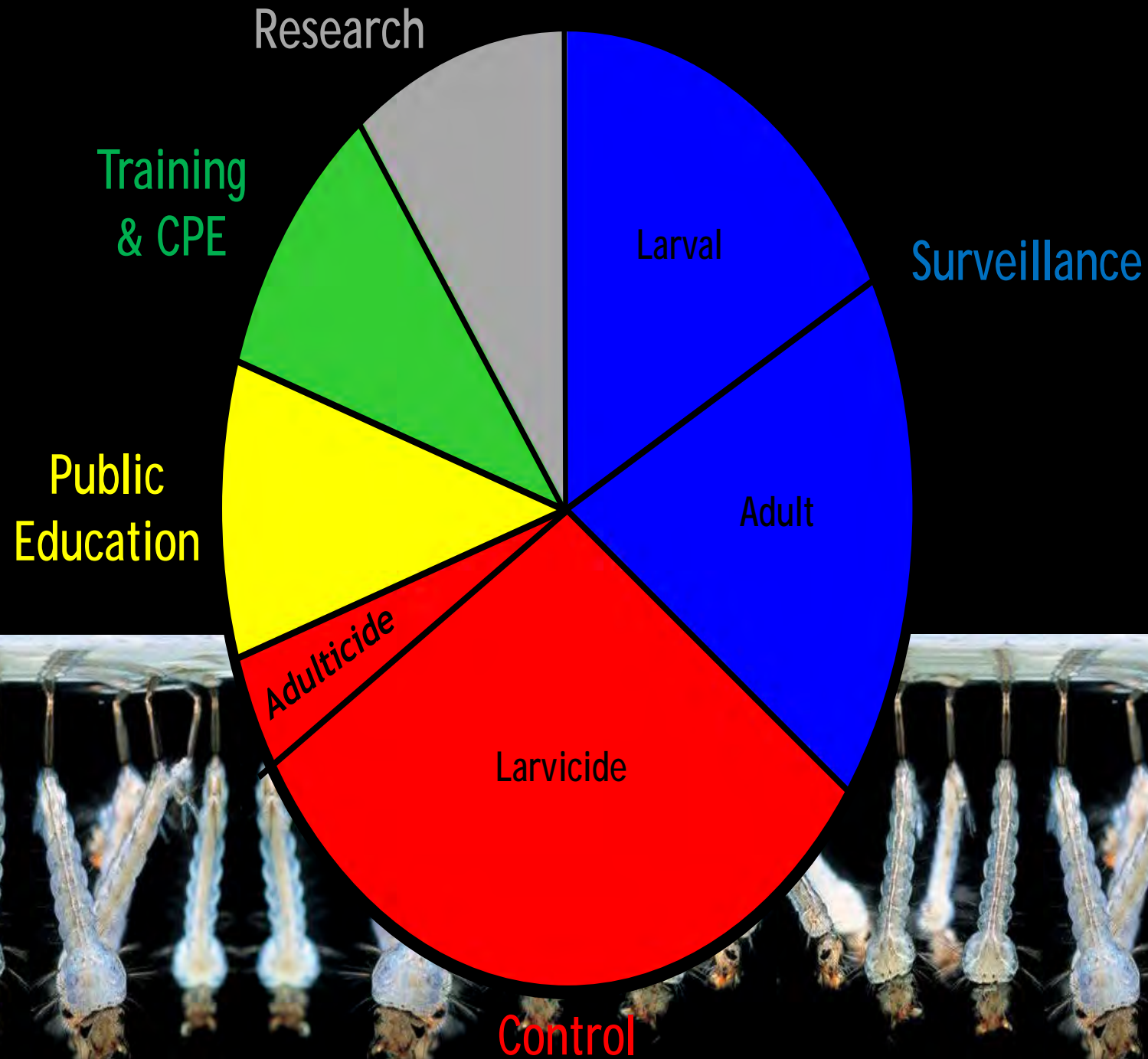


Carlton Christensen
UTA, RDA, Past Council



LaVone Liddle
Judge

Integrated Mosquito Management



Surveillance

PLOS NEGLECTED TROPICAL DISEASES

OPEN ACCESS

Citation: Bibbs CS, Reissen N, Dewsnup MA, Sorensen RB, Faraji A, White GS (2024) Do it yourself: 3D-printed miniature CDC trap for adult mosquito (Diptera: Culicidae) surveillance. *PLoS Negl Trop Dis* 18(1): e0011899. <https://doi.org/10.1371/journal.pntd.0011899>

RESEARCH ARTICLE

Do it yourself: 3D-printed miniature CDC trap for adult mosquito (Diptera: Culicidae) surveillance

Christopher S. Bibbs^{1*}, Nadja Reissen, M. Andrew Dewsnup, R. Bradley Sorensen, Ary Faraji, Gregory S. White

Journal of the American Mosquito Control Association, 39(4):231–235, 2023
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DO IT YOURSELF: A MODERNIZED GRAVID TRAP DESIGN FOR MOSQUITO SURVEILLANCE

M. ANDREW DEWSNUP, THOMAS D. WIDMER, ELLA J. BRANHAM, ARY FARAJI,
GREGORY S. WHITE AND CHRISTOPHER S. BIBBS¹

scientific reports

OPEN Infrared light sensors permit rapid recording of wingbeat frequency and bioacoustic species identification of mosquitoes

Dongmin Kim¹, Terry J. DeBriere², Satish Cherukumalli², Gregory S. White³ & Nathan D. Burkett-Cadena^{1,2,3}

Trap Comparison for Surveillance of the Western Tree Hole Mosquito (Diptera: Culicidae)

Luis Fernando Chaves,^{1*} Nadja Reissen,² Gregory S. White,² Scott Gordon,³ and Ary Faraji^{2,4}

¹Instituto Costarricense de Investigación y Enseñanza en Nutrición y Salud (INCIENSA), Tres Ríos, Cartago, Apartado 4-2250, Costa Rica, ²Salt Lake City Mosquito Abatement District, 2215 North 2200 West, Salt Lake City, UT 84116, ³Biopoints AG, Weissenburgstr. 27, 93065 Regensburg, Germany, and ⁴Corresponding author e-mail: ary@slmad.org

Subject Editor: Phyllis Womtroub

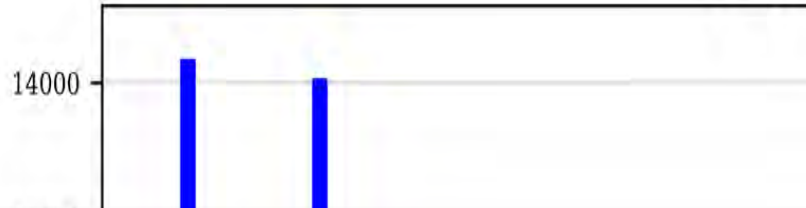
Received 5 November 2019; Editorial decision 29 December 2019

Journal of Insect Science, (2020) 20(1): 3, 1–7
doi: 10.1093/jisea/iey131
Research



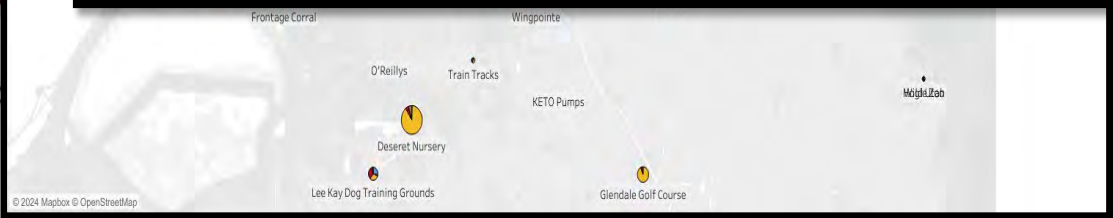
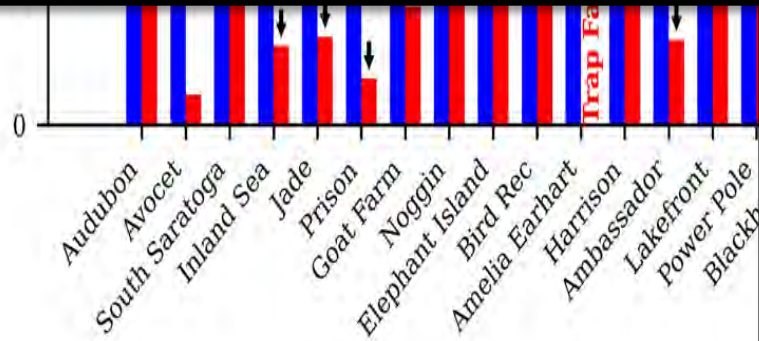
Surveillance

CO2



22 July 2024
(Monday night)

Num Count
1
5,000
10,000
14,323



Control - Urban

Tree Hole Program



Catch Basin Program



Biological Control Program



Control - Rural

UtahStateUniversity

Orientation

Student Orientation & Transition Services

Home Logan ▾ Statewide First Semester Guides Exploratory Eastern Blanding Online Out of State Inte

Aviation Management - Unmanned Aerial Systems

By College of Agriculture and Applied Sciences Academic Advisors - Fall 2023

To learn more about this degree, including career options, admissions requirements, and involvement opportunities, visit the Degree Information website below. This First Year Semester Guide has suggested courses as recommended by this degree's academic advisor. You may have already completed courses or test scores that have met the requirements for some of these suggested courses. So, be sure to compare which courses are recommended against the requirements you have already met. To see how your previously taken courses or test scores count in (TCU), visit usu.edu/orientation/testscores.

Degree Information

Recommended First Semester Courses

These courses are suggested by this degree's advisor and are split into two sections. It is for **15-16 credits**. This section is separated into two types of Recommended Courses.

- 1. Degree Recommended Courses** are ones required for your major. Do everything you can to get into these classes. If a class is full, add yourself to a waitlist. If the class doesn't have a waitlist option, look for openings. Make sure you register for a math class each semester until you are finished.
- 2. General Education & Other Recommended Courses** are to help you satisfy general education requirements needed to graduate. You should take one or more of these courses each semester until the

Degree Recommended Courses

CREDITS COURSE

COURSE OPTIONS



ENTOMOLOGICAL
SOCIETY OF AMERICA
SHARING INSECT SCIENCE GLOBALLY

OXFORD

Journal of Economic Entomology, 114(5), 2021, 1896–1909
doi: 10.1093/jee/toab107
Advance Access Publication Date: 12 June 2021
Research

Biological and Microbial Control


Toys or Tools? Utilization of Unmanned Aerial Systems in
Mosquito and Vector Control Programs

Ary Faraji,^{1,9} Eric Haas-Stapleton,^{2,9} Brad Sorensen,¹ Marty Scholl,³ Gary Goodman,³
Joel Buettner,⁴ Scott Schon,⁴ Nicholas Lefkow,⁵ Colin Lewis,⁵ Bradley Fritz,⁶
Clint Hoffman,⁷ and Greg Williams^{8,9}

Hopper O

End

Grants


 **COLORADO STATE UNIVERSITY** | NEWS FROM THE COLLEGE OF VETERINARY MEDICINE AND BIOMEDICAL SCIENCES

SOURCE
Thursday, October 10

Q

NewsCSU MagazinesImpact MagazineCVMBS WebsiteCalendarSuggest a Story


CSU, partners land \$8.75M for center on vector-borne diseases like West Nile virus

 **COLORADO STATE UNIVERSITY** | ROCKIES AND HIGH PLAINS VECTOR-BORNE DISEASES CENTER

ABOUT RAHP VEC TRAININGPROJECTSRESOURCESCONTACT

Investigators

Directors



Brian Foy, Ph.D.


RaHP VEC Co-Director/Co-Principal Investigator
Professor, Colorado State University

— About Dr. Foy

Brian brings extensive experience in field entomology and testing novel strategies for vector control of domestic arboviral vectors. As the program co-director, Dr. Foy is involved in all aspects of RaHP VEC.

Foy Lab Website

+ Current Activities




Arj Faraji, Ph.D., BCE

Executive Director, Salt Lake City Mosquito Abatement District (SLCMAD)

— About Dr. Faraji

Arj has over 20 years of experience in vector management, including surveillance, various forms of adult and larval control, and conducting vector training workshops. He applies this programmatic knowledge and perspective across RaHP VEC activities.

+ Current Activities



Greg White, Ph.D.

Assistant Director, Salt Lake City Mosquito Abatement District (SLCMAD)

— About Dr. White

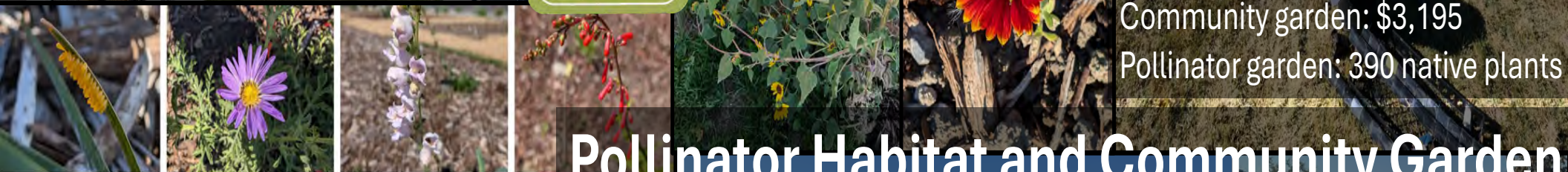
Greg has worked in the field of vector control for over 15 years. He has experience in mosquito and arbovirus surveillance, insecticide resistance management, evaluating insecticide applications, filth fly and biting midge management, and performing vector control in multiple states.

+ Current Activities

CDC Funded

2023-2028

\$1,013,794



Community garden: \$3,195
Pollinator garden: 390 native plants

Pollinator Habitat and Community Garden





USCF Grant Project:

- Mosquito Education and Outreach program
- Least Chub fish rearing program



North Central
IPM
Center



This project was funded in part by the USDA National Institute of Food and Agriculture, through the Western Integrated Pest Management Center.

Western
IPM
Center



UTAH DEPARTMENT
UDC
OF CORRECTIONS



WILDLIFE RESOURCES



2023 Western IPM Center: \$26,515
2024 Western IPM Center: \$35,823
2024 EOJC Legislative Session: \$51,000
2024 Regional IPM Centers: \$18,000

Mosquito Attract and Kill Device (MAKD)

\$38,400

USDA This project was funded in part by the USDA National Institute of Food and Agriculture, through the Western Integrated Pest Management Center.

Western IPM Center



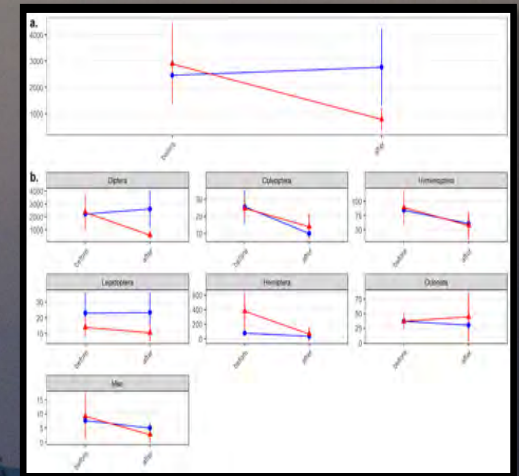
Research Projects



Research Projects

Non-target impact studies

Modeling/drift/deposition



Where do the droplets go? Evaluating risk of aerial ultra-low volume insecticide treatments for adult mosquito management using dispersion modeling

Daniel L. Mendoza^{1*}, Christopher S. Bibbs², M. Andrew Dewsnap², Ilia Rochlin², Gregory S. White², Jane A. S. Bonds³, Robert K. D. Peterson, Ary Faraji²



pollutants



Review

Are Adult Mosquito Control Products (Adulticides) Harmful? A Review of the Potential Human Health Impacts from Exposure to Naled and Dichlorvos (DDVP)

Daniel L. Mendoza ^{1,*}, Robert K. D. Peterson ², Jane A. S. Bonds ³, Gregory S. White ⁴ and Ary Faraji ⁴

Received: 2 June 2021
Revised: 23 July 2021
Accepted: 28 July 2021
DOI: 10.3390/rs120710896

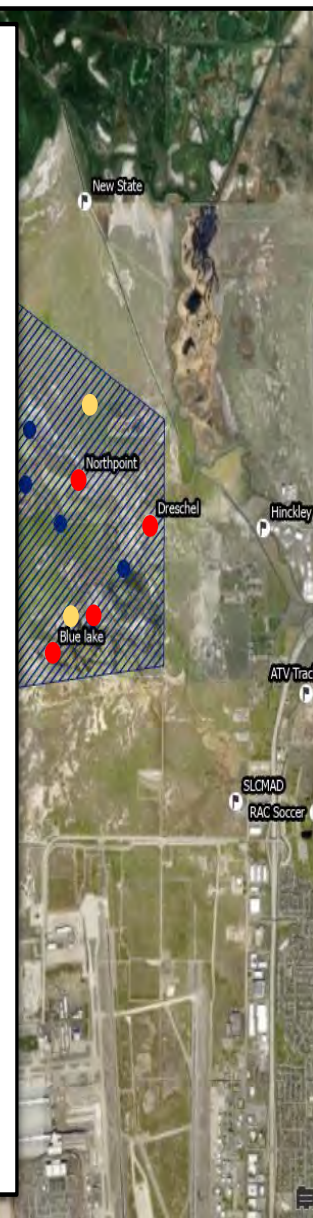
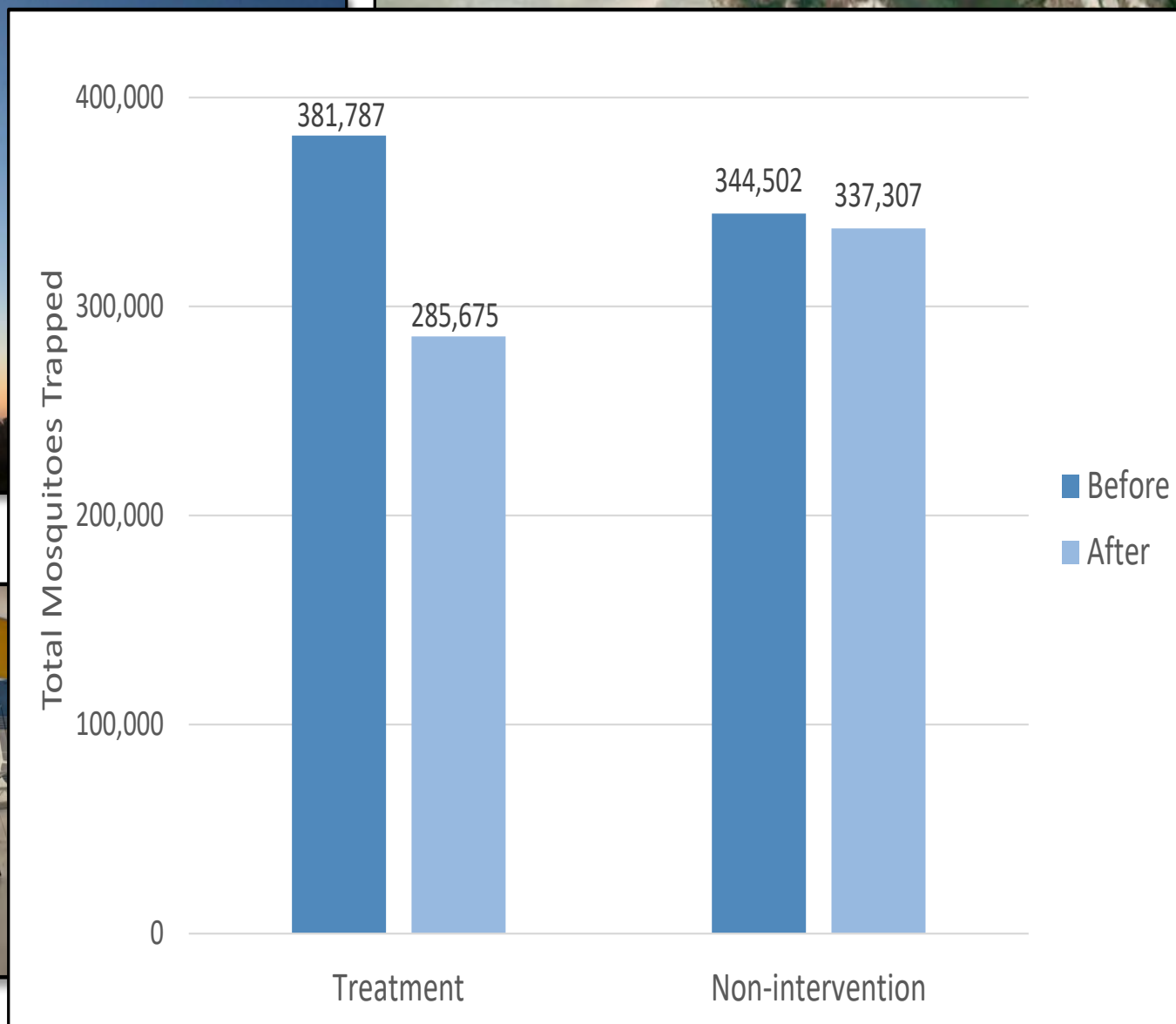
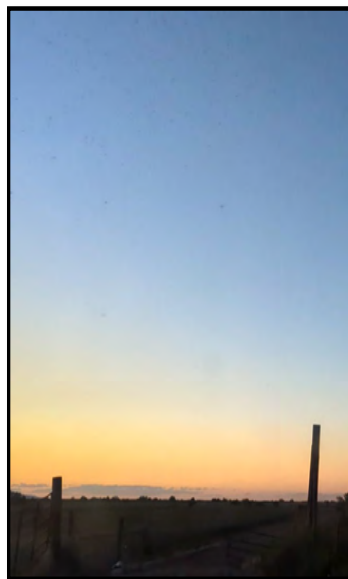
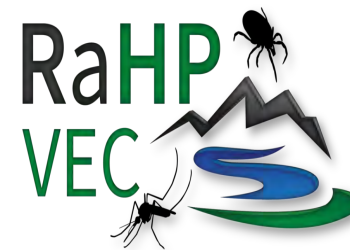
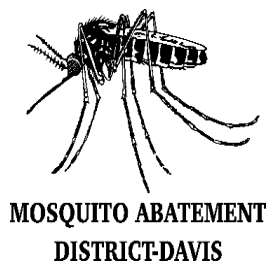
ARTICLE
Disease Ecology

ECOSPHERE
AN OPEN ACCESS JOURNAL

Effects of aerial adulticiding for mosquito management on nontarget insects: A Bayesian and community ecology approach

Ilia Rochlin¹ | Greg White² | Nadja Reissen² | Tarun Martheshwaran^{2,3} | Ary Faraji²

Evaluation of Aerial Adulticide Applications





Community Engaged Learning at the U

Community Engaged Learning is "a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development. Reflection and reciprocity are key concepts of [community-engaged] learning."

A course with the [CEL designation](#) may be small, such as an intensive undergraduate seminar or a lab that conducts field work in Africa. CEL courses also can be large, with additional classroom-partner support provided by [CEL-TAs](#). Students benefit, because they are able to test and apply the theories and concepts they learn in the classroom. Faculty benefit, because they discover new avenues for research and publication, engage in reciprocal learning with students, and develop meaningful relationships with community organizations. Faculty also can help their students achieve the U's [General Education Program Learning Outcomes](#), including [civic engagement](#) and [foundations and skills for lifelong learning](#).

In addition, community-engaged learning is an integral component of the [New U Student Experience](#), an initiative proposed by the Office of Undergraduate Studies at the University of Utah to ensure that all U students have a transformative undergraduate experience. During the four-year experience, students are encouraged "to gain vital experience outside the classroom" and participate in high-impact experiences such as those offered by the Bennion Center.

Faculty may [apply for CEL designation](#) for courses that combine instruction with community engagement in ways that encourage civic responsibility and critical reflection, foster community-based scholarship, emphasize civic engagement, and promote collaboration with community partners on projects that meet the course's academic goals and advance the community partner's mission.

Learn more about how U students benefit from community-engaged learning



SCIENCE RESEARCH INITIATIVE

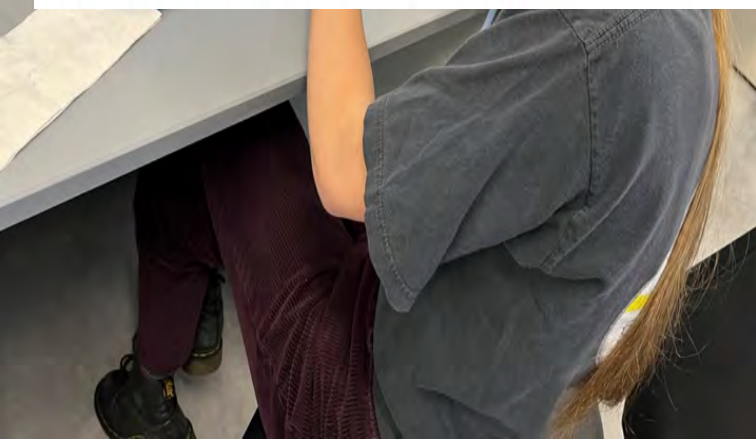
Want to learn how to conduct research and create connections with faculty and other College of Science students?

The Science Research Initiative (SRI) program offers College of Science students the opportunity to participate in discovery-based scientific research starting your first day on campus, with no prior research experience required. You will gain research skills that will help you in science classes, learn with College of Science peers, and connect with faculty across the University. The SRI will jumpstart your path of academic success, and give you needed skills to prepare for an internship or a career - whether that's in a research lab, an office, or one of the many other opportunities open to our graduates. Find out more below, or email us for more information.

Apply here!



SCIENCE
RESEARCH
INITIATIVE



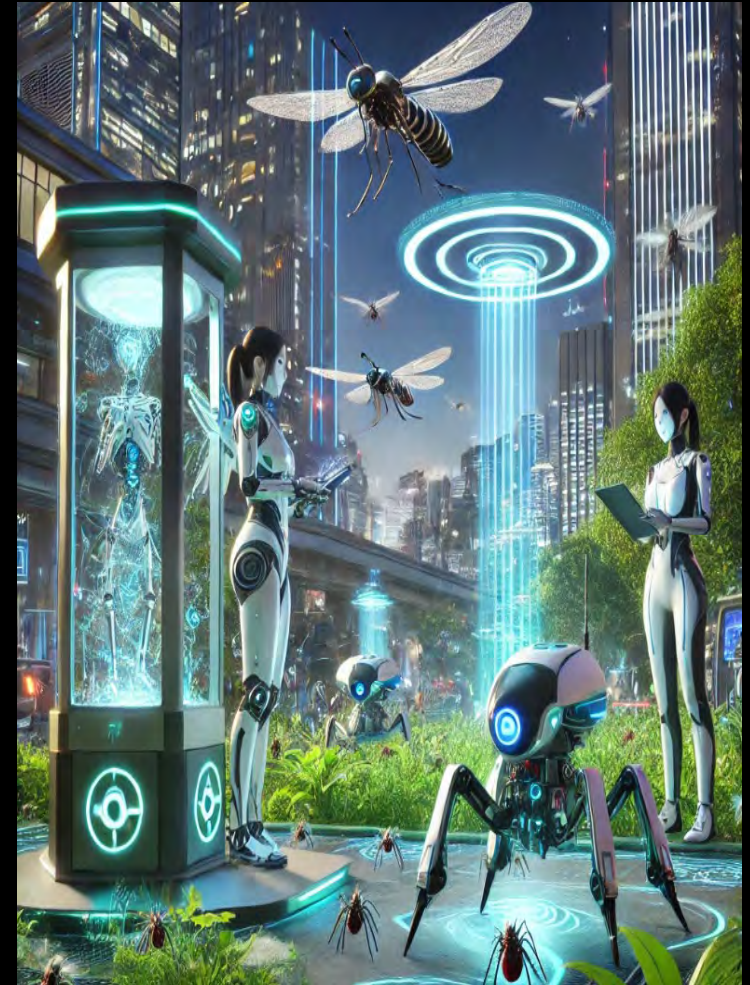
Tax Increase Purpose

Consumer Price Index and Inflation

Shorter tax increase cycles & smaller %

Enhancement of aerial operations

Phase II construction



Tax Revenue, New Growth, CPI

Year	Tax Revenue	New Growth	% New Growth	% Wasatch Front CPI	Difference
2021	\$3,736,002	\$51,874	1.41	6.0	-4.59
2022	\$6,621,359	\$83,355	2.23	9.6	-7.37
2023	\$6,819,257	\$197,898	2.99	3.8	-0.81
2024	\$7,029,062	\$209,805	3.08	3.8	-0.72
		Total	9.71	23.2	-13.49

Aerial Operations Enhancement

Fixed wing operation in Ogden

Antiquated aircraft

Multiple transfer points

Helicopter increases accuracy, efficiency, and efficacy



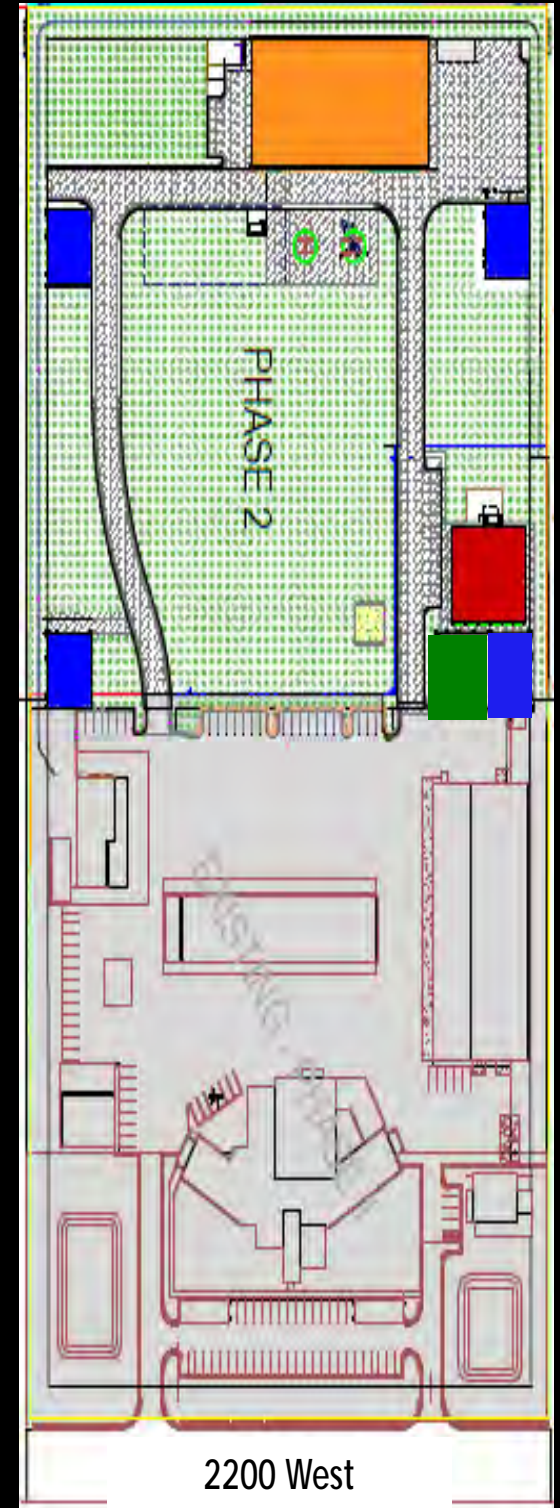
Phase II Construction

Additional Laboratory/Insectary

4 Adult Bioassay Cages (ABC's)

25 Larval Bioassay Vaults (LBV's)

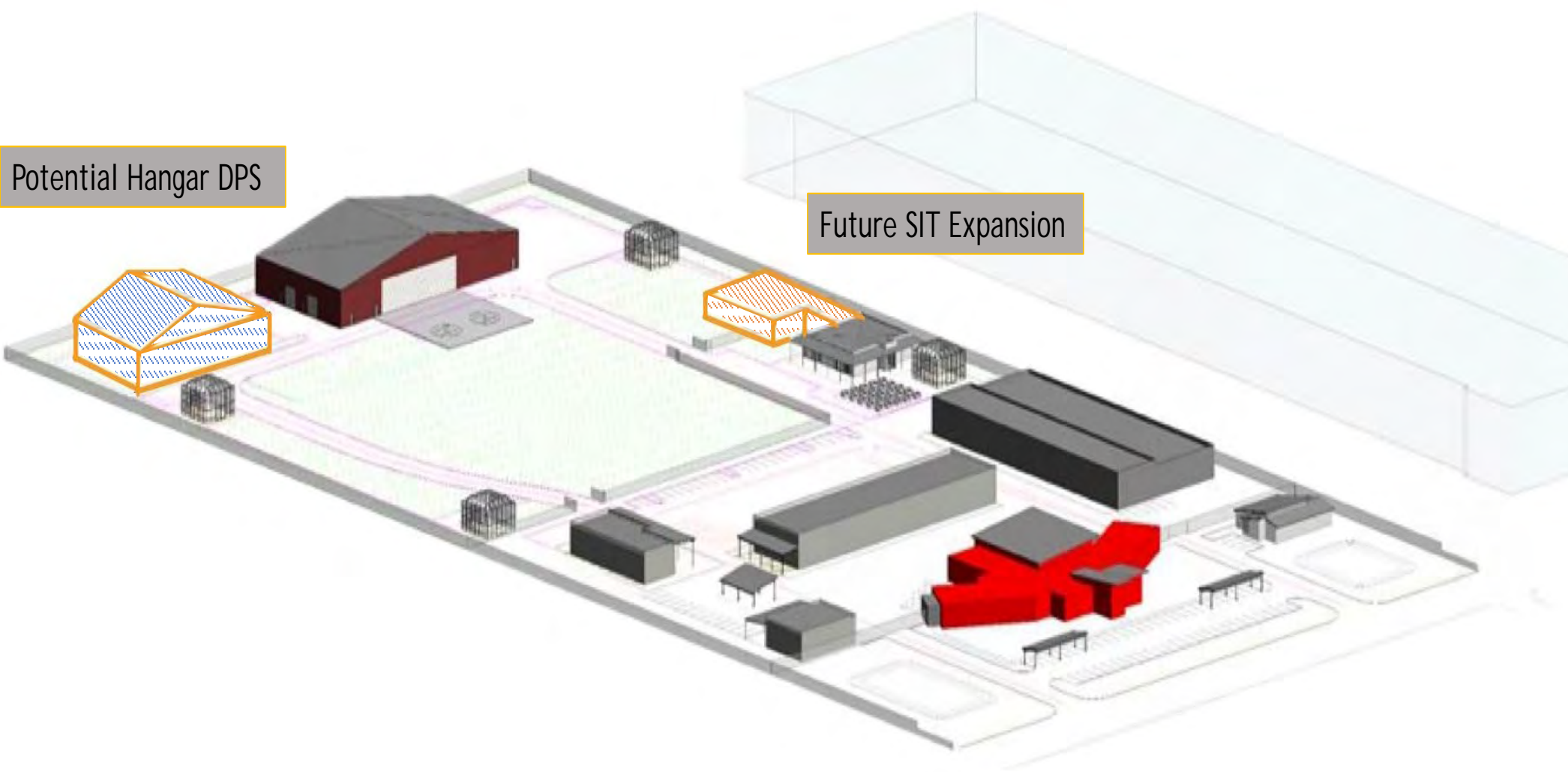
Helicopter Hangar



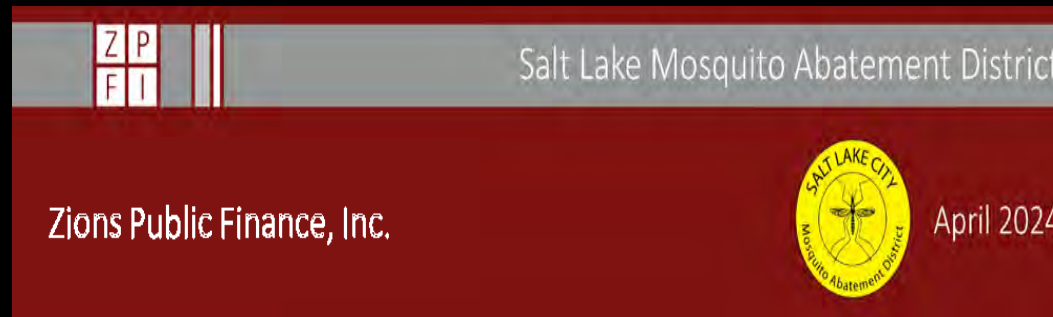
Phase II Construction

Potential Hangar DPS

Future SIT Expansion

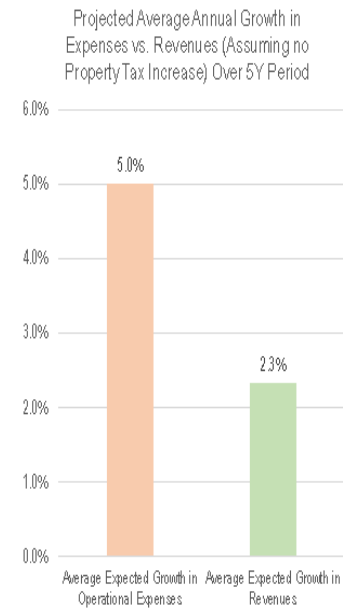
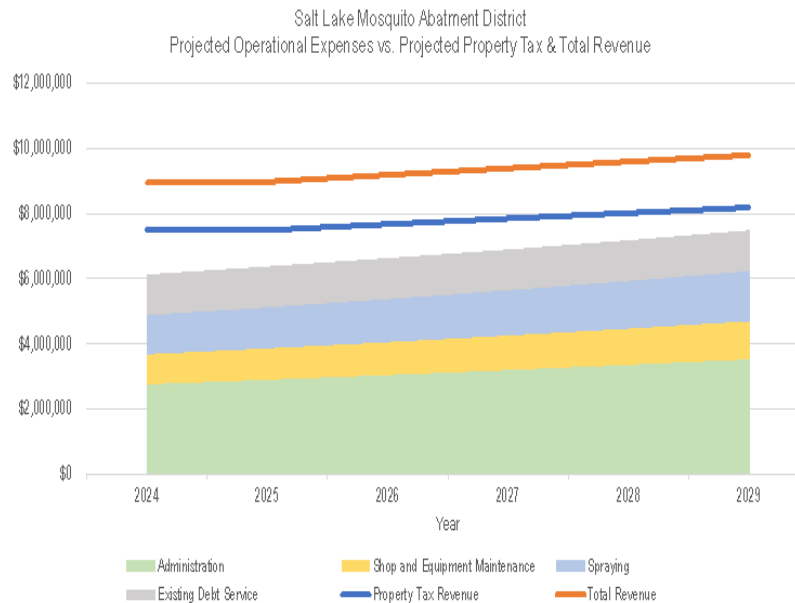


Financial Advisor Forecasting



Operational Considerations

Funds are well managed, yet Salt Lake Mosquito Abatement District (SLMAD) would likely require a future property tax increase regardless of its future capital program as new growth tapers.



Scenario Analysis

Tools to achieve the vision.

Strong Fund Balance

Beneficial Interest
Income Environment

Specific Debt Tools

Salt Lake Mosquito Abatement District Scenario Analysis	Scenario 1 - Hold Funds @ PTIF, Bond for Needed Amount, Hold Interest Income @PTIF	Scenario 2 - Expend All Funds @ PTIF, Bond for Remaining Amount	Scenario 3 - Hold Funds @ PTIF, Bond for Needed Amount, Deploy Interest Income to SLMAD Fund	Scenario 4 - Hybrid of 2 & 3	Scenario 5 - Hold Funds @PTIF, Bond for Needed Amount, Deploy Interest Income to SLMAD Fund, Tax Increase fixed at 19.5%
Amount from PTIF Expended (\$)	\$0	\$9,000,000	\$0	\$4,500,000	\$0
New Bond Amount (\$)	\$20,000,000	\$12,000,000	\$20,000,000	\$16,000,000	\$20,000,000
Projected Tax Rate Without Increase	0.0001590	0.0001590	0.0001590	0.0001590	0.0001590
Projected Tax Rate With Increase	0.0001923	0.0001789	0.0001875	0.0001829	0.0001900
Change in Levy	0.0000333	0.0000199	0.0000285	0.0000239	0.0000310
Property Tax Rate Increase (%)	20.95%	12.50%	17.90%	15.00%	19.50%
Calculated Annual Tax Impact on \$400,000 Primary Residence (\$)	\$10.29	\$7.13	\$9.15	\$8.06	\$9.75
Calculated Annual Tax Impact on \$400,000 Primary Residence (%)	29.4%	20.4%	26.2%	23.1%	26.2%
Calculated Monthly Tax Impact on \$400,000 Primary Residence (\$)	\$0.86	\$0.59	\$0.76	\$0.67	\$0.81
New Principal and Interest Expense	\$1,534,485	\$920,691	\$1,534,485	\$1,227,588	\$1,534,485
New Revenue from Property Tax Increase	\$2,058,489	\$1,425,789	\$1,830,118	\$1,612,978	\$1,949,919
Net New Revenue	\$524,004	\$505,098	\$295,633	\$385,390	\$415,434
Interest Income Scenarios					
Avg. Ann. Interest Income Earnings on \$9M @ PTIF Assuming Rates Unchanged, No Compounding	\$495,000	\$0	\$495,000	\$247,500	\$495,000
Avg. Ann. Interest Income Earnings on \$9M @PTIF Assuming ZPF/SLMAD Scenario, No Compounding	\$368,571	\$0	\$368,571	\$187,500	\$332,100
Avg. Ann. Interest Income Earnings on \$9M @ PTIF Assuming Fed Dots, Income Reinvested, No Compounding	\$242,143	\$0	\$242,143	\$121,071	\$242,143
Total Interest Income Earnings @ PTIF Assuming Rates Unchanged, No Compounding	\$10,395,000	\$0	\$10,395,000	\$5,197,500	\$10,395,000
Total Interest Income Earnings @ PTIF Assuming ZPF/SLMAD Scenario, No Compounding	\$7,740,000	\$0	\$7,740,000	\$3,937,500	\$7,740,000
Total Interest Income Earnings @ PTIF Assuming Fed Dots, No Compounding	\$5,085,000	\$0	\$5,085,000	\$2,542,500	\$5,085,000

Legend Recommended Scenario



ZIONS PUBLIC FINANCE, INC.

Projected Annual Property Taxes

	Current 2024 Rate (0.000147)	~Proposed 2025 Rate (0.000176)	Price Increase
\$623,900 House (\$343,145 taxable value)	\$50.44 year (\$4.20 month)	\$60.39 year (\$5.03 month)	\$9.95 (\$0.83 month)
\$1,000,000 Business	\$147.00 year (\$12.25 month)	\$176.00 year (\$16.67 month)	\$29.00 (\$2.42 month)

