Municipal Vulnerability Preparedness Program Action Grant Case Study: Uxbridge, Massachusetts

Project Details

Municipality: Uxbridge, MA
Project Title: Integrated Vector Disease Control
Award Year (FY): 2020
Match: $97,246.31
Match Source: MVP Core Team match hours and municipal funds
One- or Two-Year Project: One year initially, extended to two by agreement in May 2021
Municipal Department Leading Project: Uxbridge Board of Health and MVP Core Team (Fire Department, Police Department, Conservation Commission, Office of Economic and Community Development, Board of Selectmen, Department of Public Works)
Project Website URL: https://www.uxbridge-ma.gov/board-health/pages/mvp-grant-2

Community Overview:

Population size: 14,095 (2018 intercensal estimate)

EJ or Climate Vulnerable Communities: The town's highest priority for natural hazards is flooding because it lies at the convergence of the Mumford, West, and Blackstone Rivers. The MVP1 Action Grant mapped 135 road/stream crossings throughout town that put nearly all residents at risk for a flooding event. Specific vulnerable populations identified in the Massachusetts State Hazard Mitigation and Climate Adaption Plan (SHMCAP, September 2018) as being at higher risk for climate change-enhanced disease risk include the elderly, young children, people of lower socioeconomic status, race other than Caucasian, and those with disabilities, mental health challenges, and chronic disease. The town's 2018 Census Data summarizes the size of some of these potentially vulnerable populations:

Vulnerable group	Proportion of town population (number)
Under age 5	5.5% (775)
Over age 65	12.4% (1748)
Disabled, under age 65	6.9% (973)
Below poverty level	8.9% (1254)
Veterans	5.0% (705)
Foreign-born	4.6% (648)

Other unique traits (top employers, geography, history): Uxbridge is a town of contrasts. The West, Blackstone and Mumford Rivers, ponds, reservoirs and other wetland resources provide an abundance

of surface waters in three quadrants of town, thereby explaining its historical role as the earliest industrialized region in the U.S. The abundance of water contrasts greatly with the lack of public water supply and fire hydrants in the heavily forested, relatively undeveloped southwest quadrant of the town and where the Fire Department lacks capacity to effectively fight fires. This dichotomy sets the town up for the simultaneous challenges of storm water and riverine flooding and drought, described as priorities in the Town's 2018 Community Resilience Building Workshop. These challenges are further exacerbated by the unprecedented rate at which open space in town in being lost. According to Massachusetts Audubon's 2020 edition of Losing Ground, Uxbridge is ranked first among three hundred and fifty-one (351) municipalities for total area of newly developed land, standardized by town size. Without a careful, comprehensive plan for climate resiliency, "development at any cost" will threaten human health, biodiversity and the survival of our vital ecosystems.

Project Description and Goals

- **Where was the project located?** Among the project's seven tasks, only one addressed a specific geographic location, and that was Task 3: *Issue an RFR for design and permitting of nature-based solutions to ponding, with options for box culverts or similar measures to increase water management and upgrade to manage flows projected by climate change*. Two culverts, one located on Albee Road and a second one on Sutton Street, were identified as priorities because of their locations and the extent to which they were degraded. The Department of Public Works contracted with Beta Group, Inc. to design new nature-based culverts for these locations. DPW also applied for permits from the Conservation Commission, Department of Transportation, and US Army Corps of Engineers to replace these culverts with box culverts. All remaining tasks addressed town-wide projects, and these included developing a mosquito prevention and control program (Task 1), vernal pool survey (Task 2), holding a regional conference for mosquito control methods (Task 4), updating the town's Open Space and Recreational Plan (Task 5), and strengthening emergency communications (Task 6). The single task remaining (Task 7) includes this Case Report, a presentation to the Board of Selectmen in January, and outreach to the community, which will be accomplished by updating the MVP-2 webpage on the town's website.
- **What climate change impacts did the project address?** This project addressed several impacts related to climate change. More frequent storms of greater severity are expected to cause flooding throughout town, increase habitat for mosquito breeding, and reduce open space and biodiversity. The project included tasks for design and permitting of one high priority and one moderate priority culvert (Task 3) that were degraded or blocked. Related to that was the impact of climate change on insect vectors of disease as the climate warms and flooding provides additional habitat for breeding of mosquito populations that are capable of transmitting arboviruses that threaten human and other animal health. Uxbridge and many communities in central Massachusetts have not joined the Central Massachusetts Mosquito Control District, leaving each town on its own to tackle mosquito prevention and control. Task 1 provided Uxbridge with the funds to contract with VectorScape, LLP for mosquito prevention and control services. Task 4 funded planning and implementation of the Regional Mosquito Control Conference which was planned to be held in person but was held remotely because of the COVID-19 pandemic. The purpose of the conference was to provide towns

with an opportunity to discuss shared interests in mosquito prevention and control services and potentially devise collaborative ways of addressing this threat to health. Tasks 2 and 5 addressed the need to preserve biodiversity and open space as the climate changes and commercial and residential development threatens loss of open and recreational space and the animal populations that live within them. Finally, updates to the town's emergency communications systems were designed to alert residents in a timely fashion in the event of natural hazards, including flooding, forest fires, and infectious disease outbreaks.

- **What were the specific goals and tasks of the project as stated in your application?** The goals and tasks of the project were as follows:

TASK	SUBTASK	STATUS
Task 0: Hold Kick-off meeting with Town, EEA, and Consultant		COMPLETE
Task 1 Develop and implement Mosquito Prevention and Control Program	Sub-task 1.1 Evaluate public and private options	COMPLETE
	Sub-task 1.2 Regional outreach	COMPLETE
	Sub-task 1.3 Investigate public resources for distribution of BtI dunks	COMPLETE
	Sub-task 1.4 Community outreach	COMPLETE
	Sub-task 1.5. Issue RFR for a licensed provider	COMPLETE
	Sub-task 1.6: Surveillance/Control Services March 31-June 30, 2020	DELAYED – NO RESPONSE TO IFB IN 2020
	Sub-task 1.7: Surveillance/Control Services July 1, 2020-June 30, 2021	PARTIALLY COMPLETED (June 1-October 15, 2021)
Task 2: Assess Vernal Pool Locations	Sub-task 2.1 Vernal Pools - review data and inventories	COMPLETE
	Sub-task 2.2 Develop GIS mapping with key locations	COMPLETE
	Sub-task 2.3 Fieldwork	COMPLETE
	Sub-task 2.4 Technical Report and Presentation to MVP Core Team	COMPLETE
Task 3: Culvert Design and Permitting	Sub-task 3.1 Assess NOI requirements	COMPLETE
	Sub-task 3.2 RFR for design work (permitting held to FY2021)	COMPLETE
	Sub-task 3.2.1. Data Collection (for up to 3 culverts): Environmental source delineations, field surveys, subsurface explorations, incorporate state climate data	COMPLETE
	Sub-task 3.2.2 Contract Books; draft contract books	COMPLETE

Task 4: Regional Conferences for Biological and other Control Methods	Sub-task 4.1 Conference with local partners to investigate options	COMPLETE
	Sub-task 4.2. Report to MVP Core Team of plan and potential resources	COMPLETE
Task 5: Update Open Space Plan	Sub-task 5.1 Appoint Open Space Committee	COMPLETE
	Sub-task 5.2 Review and update Open Space Plan	COMPLETE
	Sub-task 5.3 Present Open Space Plan to BoS	PENDING RESPONSE BY CONSERVATION COMMISSION TO STATE COMMENTS
Task 6: Strengthen Emergency Communications	Sub-task 6.1 Identify and remove duplicate entries, CodeRed	COMPLETE
	Sub-task 6.2 Training CodeRed access and messaging	COMPLETE
	Sub-task 6.3 Community outreach	COMPLETE
	Sub-task 6.4. Purchase 3 VMB	REMOVED FROM AMENDED CONTRACT; PURCHASED WITH FUNDS FROM ANOTHER SOURCE
	Sub-task 6.5. Purchase access to reverse 911 databases	COMPLETE
	Sub-task 6.6. Identify language targets	COMPLETE
Task 7: Preliminary Presentations and Community Outreach (FY2020)	Sub-task 7.1 Presentation to Board of Selectmen	POSTPONED BY BOS FROM 12/6 TO 12/21 TO JANUARY 2022
	Sub-task 7.2 Web page with findings and recommendations	PENDING PRESENTATION TO BOS
	Sub-task 7.3 Regional sharing sessions	PENDING PRESENTATION TO BOS

- **Did your project meet the goals set forth in your application in terms of…?**
    - Employing nature-based solutions? Yes. For task #1, the goal of increased surveillance (10 sites compared to a single MDPH site) was to identify locations where mosquito species that posed a threat to human health were likely to collect, therefore providing the town with

information that it could use to place larvacides early in arboviral seasons. With this, reducing or eliminating mosquito populations of public health significance early in the season obviates the need for truck or aerial spraying of adulticides that are harmful to insects and aquatic species and the animals that depend on them for survival. For task #3, design of the two new culverts meets specifications for nature-based solutions; the DPW is positioned now to apply for funds for their construction.

- Improving equitable outcomes for and fostering strong partnerships with EJ and` other climate vulnerable populations? As stated previously, Uxbridge is not host to specific environmental justice populations. Because of its geographical features, the town's entire population can be considered to be vulnerable to the impacts of climate change, particularly flooding.
- Providing regional benefits? Yes. The Regional Mosquito Control conference, initially designed to be held in-person, was held remotely because of the burgeoning COVID-19 pandemic in 2020. The conference provided Uxbridge, state legislators, representatives of other towns, nonprofits and the private sector an opportunity to attend presentations on mosquito control measures delivered by MDPH, Mass Audubon and others. The final session in the conference was a discussion of mosquito control priorities and opportunities for collaboration among representatives of towns in attendance. Priority control measures identified were surveillance and community outreach/education. Subsequent to the conference and in 2021, Board of Health members and VectorScape, LLP principals shared information about the project informally with representatives of other towns in email exchanges, community forums and live education sessions at community events (Pout Pond Day and Uniquely Uxbridge Day). In addition, Board of Health members provided lessons learned and recommendations to the state's Mosquito Control Task Force as requested by Heidi Ricci of Mass Audubon.
- Implementing the public involvement and community engagement plan set forth in your application? Yes, although two community engagement events (Mosquito Control Conference and town forum) that were originally scheduled to be held in person were held remotely. Largely due to these events, interest on the part of town residents increased and a number of residents requested mosquito surveillance at their homes and, in one case, a school that is located near a water source.
- Finishing the project on time? No. The project was scheduled to conclude on June 30, 2021. Because the town received no responses to the IFB posted in 2020, the town purchased BtI larvicidal bricks for placement in water sources but was not able to identify a vendor certified to deliver this service and the bricks were returned. In spring 2021 a revised IFB was posted that included larvaciding services, however neither of the two potential applicants were licensed to deliver this service. The IFB was modified again to remove this item and a single applicant – VectorScape, LLP responded and was awarded the project. However, this did not happen until May and for that reason, VectorScape, LLP did not begin to identify surveillance sites until late that month. In spite of the delays, VectorScape, LLP worked with DPW and Board of Health staff and members to identify priority surveillance

sites for mosquito species capable of transmitting arboviruses, and began surveillance in early June 2021.

Results and deliverables

- **Describe and quantify project results, report on the metrics outlined in the application.**
  - ✓ The Town has developed a reputation as convener and collaborator for neighboring towns that have not joined the CMMCD, an outcome of the Regional Mosquito Control Conference. Relationships developed during this phase of the award have carried over and been tapped for the purposes of COVID-19 pandemic planning and response.
  - ✓ Uxbridge has an inventory of 159 potential vernal pools (PVPs), of which 31 PVPs on public (town or state) land were considered for surveying. Twenty-one site visits were conducted and 10 pools were confirmed as providing biological evidence for certification as significant for wildlife habitat. This includes 2 pools certified on private property with permission. Of those 10, one site had wood frog chorusing, two sites had wood frog egg masses, three sites had wood frog tadpoles, and six sites had spotted salamander egg masses. Parcels owned by the town that had certifiable vernal pools may be prioritized for further protection.
  - ✓ At two locations where badly-degraded culverts pose risks for flooding and serve as ideal habitat for mosquito reproduction, designs for new nature-based culverts have been developed and approved, and permitted by all local and state permitting organizations. The DPW is seeking funds for construction of these culverts.
  - ✓ At the conclusion of this award, the Town of Uxbridge has had nearly five months of experience with comprehensive mosquito control services provided by VectorScape, LLP. The company provided detailed reports to the Board of Health of mosquito species captured at high priority locations, and simplified reports that were uploaded to the Board of Health webpage. All reports have been cited and included in monthly MVP2 reports. The MVP Core Team anticipates opening discussions with the Town Manager and Board of Selectmen about the possibility of contracting with VectorScape, LLP for mosquito control services early in 2022 in advance of the arboviral season.
  - ✓ The Town now has a list of high priority sites at which to conduct surveillance for adult and larval stages of mosquito development in the future.
  - ✓ As a consequence of increased surveillance sites by VectorScape, LLP in Uxbridge, the risk level for arboviral disease attributable to West Nile Virus was elevated by MDPH in July from low to moderate, and MDPH incorporated surveillance data from Uxbridge into its routine state-wide arboviral disease surveillance reports. Had the town relied solely on the single surveillance site provided by MDPH, the elevated risk would not have been identified.
  - ✓ The DPW site was identified as high risk for mosquito activity because of the many unused tires and open barrels that held standing water and provided ideal habitat for mosquito reproduction. This site has been cleaned up.
  - ✓ Uxbridge and neighboring towns that have not joined the CMMCD have identified surveillance and education/community outreach as areas of mutual interest and potential shared collaboration for mosquito control services.

- ✓ The Town's Open Space Plan has been updated and approved provisionally by the State, pending modifications suggested by EEA.
- ✓ The Uxbridge Police Department streamlined its CodeRED emergency communications system by eliminating duplicate entries, received access to reverse 911 databases, conducted training in CodeRED procedures for police officers, identified Spanish as a candidate for CodeRED flyers, printed two-sided CodeRED flyers in English and Spanish, and mailed flyers to every household with property tax bills in 2021.
- ✓ With products developed using both MVP1 and MVP2 funds (Vernal Pool Inventory, OSRP and Mosquito Surveillance Reports), Uxbridge is well-positioned to develop a 10-year Municipal Vulnerability Master Plan. The Director of Economic and Community Development is presently engaged in revisioning Main Street and drafting a community-wide commercial and residential plan. The decision to proceed with this, dependent on submitting a proposal to EEA for funding, rests with the Board of Selectmen.

- **Brief summary of project deliverables with web links, if available**
  - ✓ Task 1, Mosquito Prevention and Control Program: Emails summarizing public and private options for mosquito control were attached to monthly reports; IFB for Mosquito Control Services; Introduction to VectorScape, LLP; Mosquito-borne diseases webpage; weekly surveillance reports to the Board of Health and simplified reports to the community were attached to monthly reports.
  - ✓ Task 2, Assess Vernal Pools: Vernal Pool Inventory and Certification Report, Vernal Pool Photos and Field Notes, and Vernal Pool PowerPoint presentation were all attached to monthly reports.
  - ✓ Task 3, Culvert Design and Permitting: Contract books were attached to monthly reports
  - ✓ Task 4, Regional Conference for Biological and Other Control Methods: Regional Mosquito Control Conference report.
  - ✓ Task 5, Update Open Space Plan: Conditional Letter of Approval from EEA was attached to the monthly report.
  - ✓ Task 6, Strengthen Emergency Communications: two-sided Code Red Flyers in English and Spanish and Training PowerPoint were attached to the monthly report; CodeRED signup
  - ✓ Task 7, Preliminary Presentations and Community Outreach: Municipal Vulnerability Preparedness webpage and this report.

Lessons learned

- What lessons were learned as a result of the project? Focus on both the technical matter of the project and process-oriented lessons learned. Most of the lessons learned pertain to the mosquito control program efforts:

  1. The MVP Core Team, which met monthly with few exceptions, is an efficient and effective method of keeping the project on track and evaluating progress towards goals.

2. Uxbridge has climate vulnerable populations but cannot make the case for having environmental justice populations.

3. After English, Spanish is the second-most common language spoken, but the number of people who speak Spanish as a first language is estimated at ~100.

4. Many towns in central Massachusetts/the Blackstone River Valley cannot afford the cost of services provided by the CMMCD, and the district does not allow towns to choose *a la carte* options for mosquito control.

5. Private mosquito control options are extremely limited in central Massachusetts, primarily due to regulatory requirements.

6. Towns that are not members of the CMMCD are interested in collaborating for surveillance and education related to mosquito prevention and control.

7. MDPH surveillance for arboviral diseases is limited to a single site in Uxbridge and only VectorScape, LLP, with 10 carefully chosen sites, was able to identify elevated arboviral disease risk at four sites, leading to MDPH elevating the town's risk level from low to moderate. With this information in hand, the town's residents were encouraged to take additional measures to protect themselves. Enhanced surveillance provided by VectorScape, LLP was critical to the town's understanding of threats from arboviral disease transmission.

8. At the beginning of their contract, VectorScape, LLP principals (Dr. Jean Mukherjee and Mr. Nolan Fernandez) held a public zoom call to explain their approach to mosquito control and answer questions from members of the public. They also offered educational sessions at major public events (Pout Pond Day, Uniquely Uxbridge Day) and these were quite successful as a number of people stopped at the display to view the exhibits and ask questions. Sessions were also offered to schools and other interested groups in town but Dr. Mukherjee and Mr. Nolan concluded that a better approach would be to reach out to the community in planned sessions that could capture wider audiences.

9. VectorScape, LLP identified a site at the town's DPW headquarters that was the source of significant mosquito activity because of standing water that had collected in discarded tires and open barrels. This site was located close to some of the town's sports fields, and parents had expressed concerns about the safety of their children while playing there. DPW staff was notified and the site was cleaned up.

10. Recommendations for improving mosquito prevention and control include the following:

    - Require mosquito control districts to offer *a la carte* options so that communities can reduce costs of mosquito control and respond to citizens' concerns about the health effects of measures such as aerial spraying on ecosystems and important pollinators.

- Expand the number of MDPH surveillance sites or promote and hire companies such as VectorScape, LLP to do this.
- Reduce statewide regulatory requirements for mosquito control to encourage more private companies that provide Integrated Pest Management services to offer mosquito control.
- Investigate shared options among towns for mosquito surveillance, testing and education/outreach. These options would likely reduce overall costs to individual municipalities.

- What is the best way for other communities to learn from your project/process? Because Uxbridge organized the Regional Mosquito Control Conference and also served as the regional site for a COVID-19 vaccination clinic, strong, collaborative relationships were established with 12 neighboring towns. Although not all of the towns involved declined to join the CMMCD, this collaboration can be utilized for purposes of mosquito control by sharing surveillance outcomes and educational materials. A second way for other communities to learn from this aspect of the project would be for Uxbridge to reconvene the Regional Mosquito Control conference early in 2022 to present outcomes of enhanced surveillance in 2021 before the arboviral season.

Partners and Other Support

- Include a list of all project partners and describe their role in supporting/assisting in the project
  - ✓ Heads and members of the following town departments, as members of the MVP Core Team: Board of Health (Dr. Kristin, Black, Director (to 9/20) and Erin Hightower (from 10/1/20 to present) and Drs. David Tapscott, Joann Lindenmayer and Cay DenHerder, members of the Board of Health), Public Works Department (Benn Sherman, Director, and Paul Hutnak, Chief Civil Engineer), Police Department (Chief Mark Montminy), Fire Department (Chief Thomas Dion, Firefighter Steve Tancrell), Department of Economic and Community Development (Michael Gallerani, Director), Conservation Commission (Heidi Jones and Michele Grenier, Conservation Agents), Council on Aging and Senior Center (Lisa Bernard, Director), Board of Selectmen (Susan Franz, member). The Core Team met monthly to prepare for grant submission, review progress towards goals, review expenditures, identify challenges to completing objectives and identify solutions to barriers encountered.
  - ✓ The Academic Public Health Volunteer Corps: Andrew Dey, an MPH candidate from Boston University organized, moderated and drafted the final report for the Regional Mosquito Control Conference and uploaded the final report, updated information on the MVP1 and MVP2 project webpages, and developed separate mosquito control resources for the Town's website;
  - ✓ Presenters at the Regional Mosquito Control Conference: Drs. Catherine Brown (State Epidemiologist) and Martha Gach (Conservation Coordinator at Broad Meadow Brook Conservation and Wildlife Center, Mass Audubon), Heidi Ricci (Director of Policy and

Advocacy, Mass Audubon) and Christopher Horton, (Director, Berkshire Country Mosquito Control Project) delivered presentations.

- ✓ Attendees at the Regional Mosquito Control Conference:
  - **Legislative delegation:** Bill Fredericks, Office of Senator Ryan C. Fattman; Lindsay Sabadosa, State Representative, 1st Hampshire District; Michael Soter, Massachusetts House of Representatives; Seth Nadeau, Office of Congressman Jim McGovern;
  - **State Officials:** Hillary King, MA EOEEA; Jennifer Forman Orth, MA Department of Agricultural Resources; Timothy Deschamps, Central MA Mosquito Control Project;
  - **Uxbridge Officials:** David Tapscott, Uxbridge Board of Health; Joann Lindenmayer, Uxbridge Board of Health; Lauren Steele, Uxbridge Conservation Commission; Paul Hutnak, Uxbridge Department of Public Works; Steven Sette, Uxbridge Town Manager; Cameron Clark, Uxbridge Conservation Commission;
  - **Municipal officials from towns other than Uxbridge:** Andrew Pelletier, Southbridge Board of Health; Diane Tiernan, Upton Board of Health; Donald Makowski, Warren Board of Health; Fran Fortino, Whately Board of Health; Garry Kessler, Westborough Conservation Commission; Gary Menin, Sr., Sterling Board of Health; James Philbrook, Kathleen Walker, Kristin Kustigian and Kimberly Buccini, Charlton Board of Health; Jeff Paster, Lancaster Board of Health; Jennifer Sullivan, Town of Webster; Judy Baker, Town of Sutton; Laureen Gilbert and Marcella Stasa, Oxford Board of Health; Lisa Daoust, Spencer Board of Health; Lyndsey Butler, City of Gardner; Marcelino "Tex" Sarabia, Hardwick Board of Health; Maureen Doyle, Southbridge Conservation Commission; Michelle Buck, Town of Leicester; Missy Kakela-Boisvert and Tom Fichtner, Mendon Board of Health; Roberta Armenti, Westhampton Board of Health; Neil Angus, Devens Enterprise Commission;
  - **Academia:** Kavya Elangovan, Kimberly Putney and Andrew Dey, Academic Public Health Volunteer Corps; Stephanie Granger, liaison from Harvard School of Public Health to Academic Public Health Volunteer Corps
  - **Nonprofit organizations:** Jane Rascal, EcoHealth Advocates; Judith Eiseman, Kestrel Land Trust; Mark Richardson, Tower Hill Botanic Garden; Paige Dolci, Mass Audubon
  - **Private sector:** Dave Lewcon, Dave Lewcon Apiaries; Laurie Sanders, Conservation Works LLP; Peter Demers, Sanofi
  - **Individuals/unknown affiliation:** David Small
- ✓ Jessica Baldeck, MS candidate in Animals and Public Policy, Center for Animals and Public Policy, Tufts Cummings School of Veterinary Medicine, conducted the vernal pool survey and delivered a PowerPoint presentation to the Board of Selectmen.
- ✓ VectorScape, LLP, Principals Dr. Jean Mukherjee (DVM, PhD) and Mr. Nolan Fernandes (MS) were contracted to deliver mosquito control services, including site identification in collaboration with the Board of Health and DPW, surveillance (speciation of adult

mosquitoes, testing for Eastern Equine Encephalitis and West Nile Virus), reporting to the Board of Health and reporting to the public.

- ✓ Beta Corp, Inc. conducted the design work for culverts on Sutton Street and Albee Road.
- ✓ The Conservation Commission contracted with the Central Massachusetts Regional Planning Commission (Danielle Marini) to draft a revised Open and Recreational Space Plan. The plan has been approved provisionally by the state and awaits amendments by members of the Conservation Commission in order to be fully approved and adopted.

Project photos

- In your electronic submission of this report, please attach (as .jpg or .png) a few high-resolution (at least 300 pixels per inch) representative photos of the project. Photos should not show persons who can be easily identified, and avoid inclusion of any copyrighted, trademarked or branded logos in the images. MVP may use these images on its website or for other promotional purposes, so please let us know if there is someone who should receive credit for taking the photo.
- Task 1: Mosquito Prevention and Control Program (photos courtesy of VectorScape, LLP):
  - ✓ Site of repeated flooding at DPW
  - ✓ VectorScape, LLP personnel dipping for larvae in standing water at DPW
  - ✓ Dipper with mosquito larvae
  - ✓ VectorScape, LLP personnel setting gravid adult mosquito trap
  - ✓ Light trap for adult mosquitoes in surveillance site
  - ✓ Adult mosquitoes in light trap
- Task 3: Culvert Design and Permitting (photos courtesy of Paul Hutnak, Chief Civil Engineer, DPW)
  - ✓ Flooding at Albee Road culvert site 1
  - ✓ Flooding at Albee Road culvert site 2
  - ✓ Sutton Street culvert upstream
  - ✓ Sutton Street culvert downstream