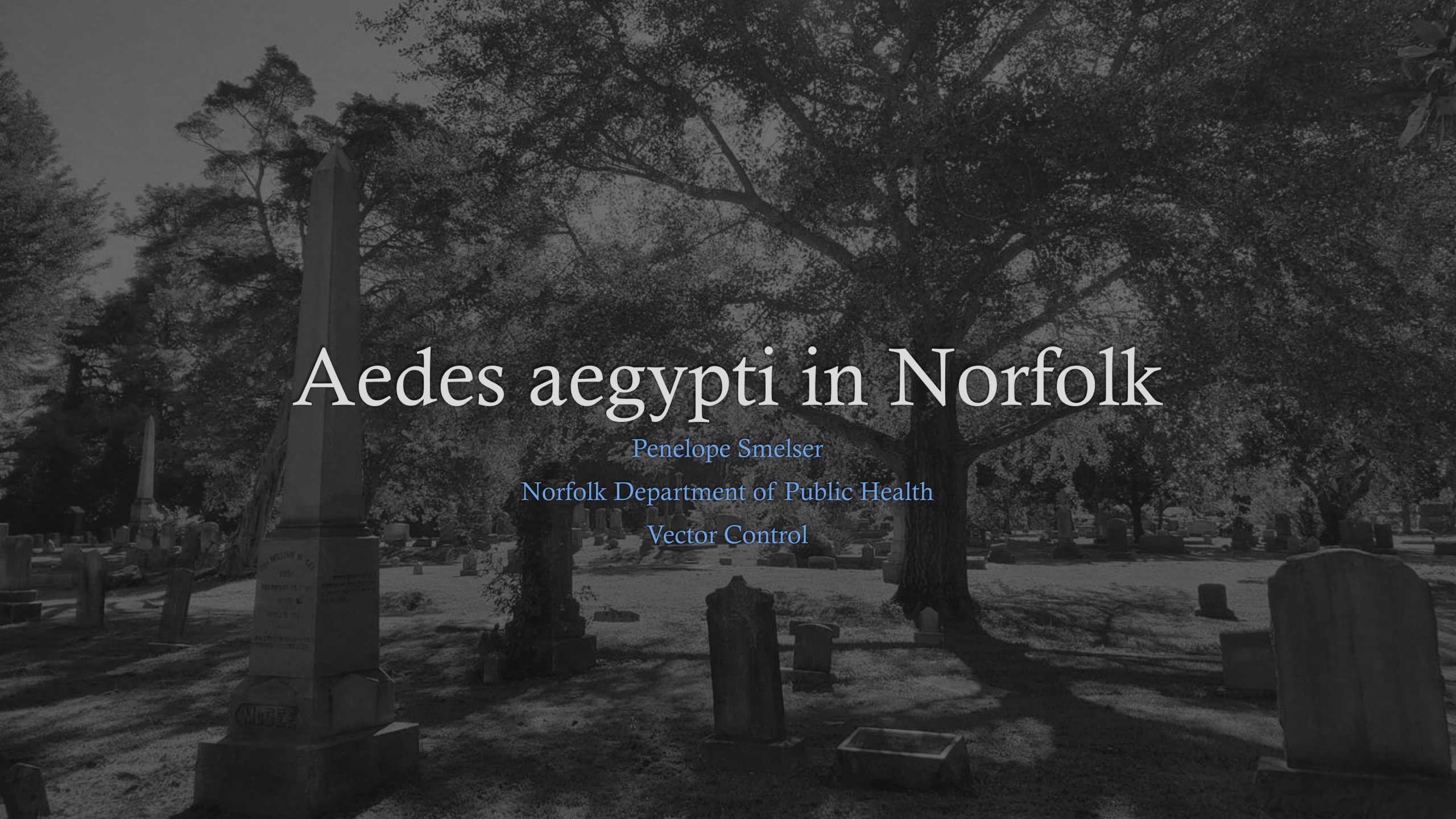


Aedes aegypti in Norfolk

Penelope Smelser

Norfolk Department of Public Health

Vector Control

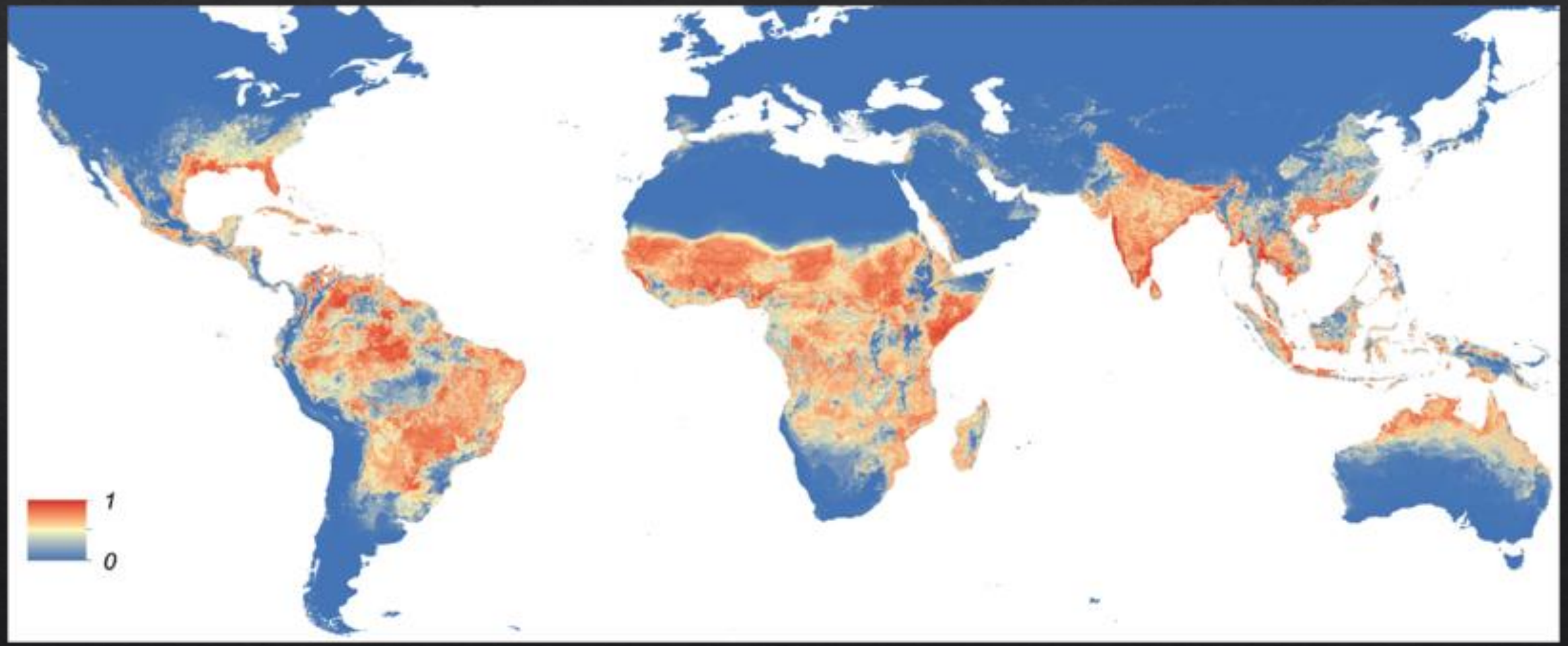
A familiar face in unfamiliar territory

- In May 2023, a single female *Aedes aegypti* was collected from a CDC light trap in Norfolk.
- This was the first *Aedes aegypti* collected in Norfolk in at least 20+ years.
- Further surveillance would yield additional adult and larval specimens.

The Main Character

- *Aedes aegypti* is THE prominent vector for many arboviruses: dengue, zika, chikungunya and yellow fever.
- Found in close proximity to humans, *Aedes aegypti* is an urban mosquito
- Breeds in artificial containers
- Distribution globally in tropical and sub-tropical regions and in temperate regions during summer months.

Aedes aegypti Global Distribution



- Kraemer, MU & Sinka, ME & Duda, KA & Mylne, Adrian & Shearer, FM & Barker, Christopher & Moore, Chester & Carvalho, RG & Coelho, Giovanini & Bortel, W & Hendrickx, Guy & Schaffner, Francis & Elyazar, Iqbal & Teng, Hwa-Jen & Brady, Oliver & Messina, Jane & Pigott, David & Scott, TW & Smith, David & Hay, Simon. (2015). The global distribution of the arbovirus vectors Aedes aegypti and Ae . albopictus. Elife. 4. e08347. 10.7554/eLife.08347.

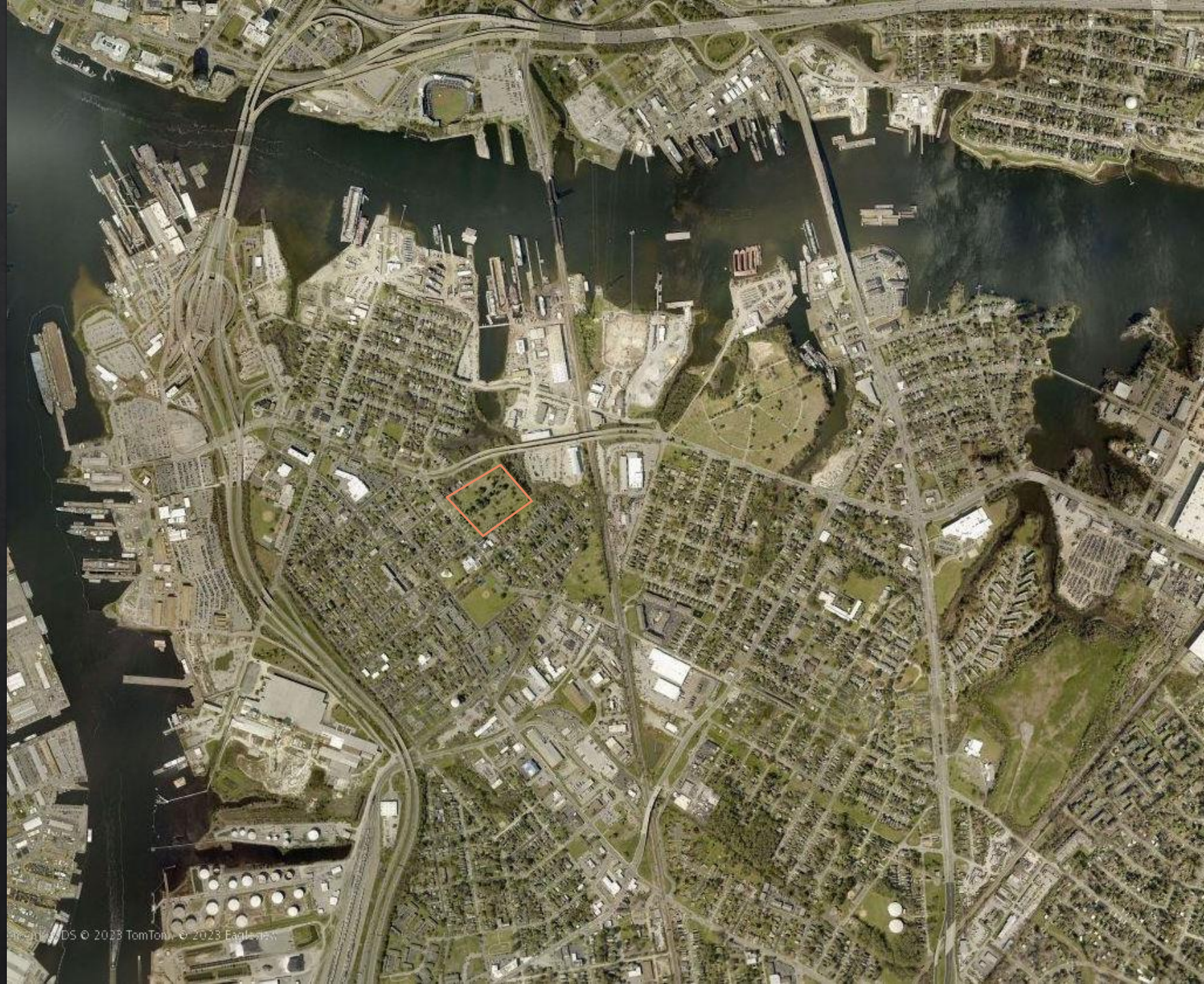
Magnolia Cemetery

- Small cemetery located in the southern part of the City.
- Established in 1860 and purchased by the City of Norfolk in 1911
- Virtually zero cemetery visitors observed in the past 17 years.
- Routine trap site since 2006


FOR
INFORMATION
CALL 441-1967
MAGNOLIA CEMETERY
CITY OF NORFOLK

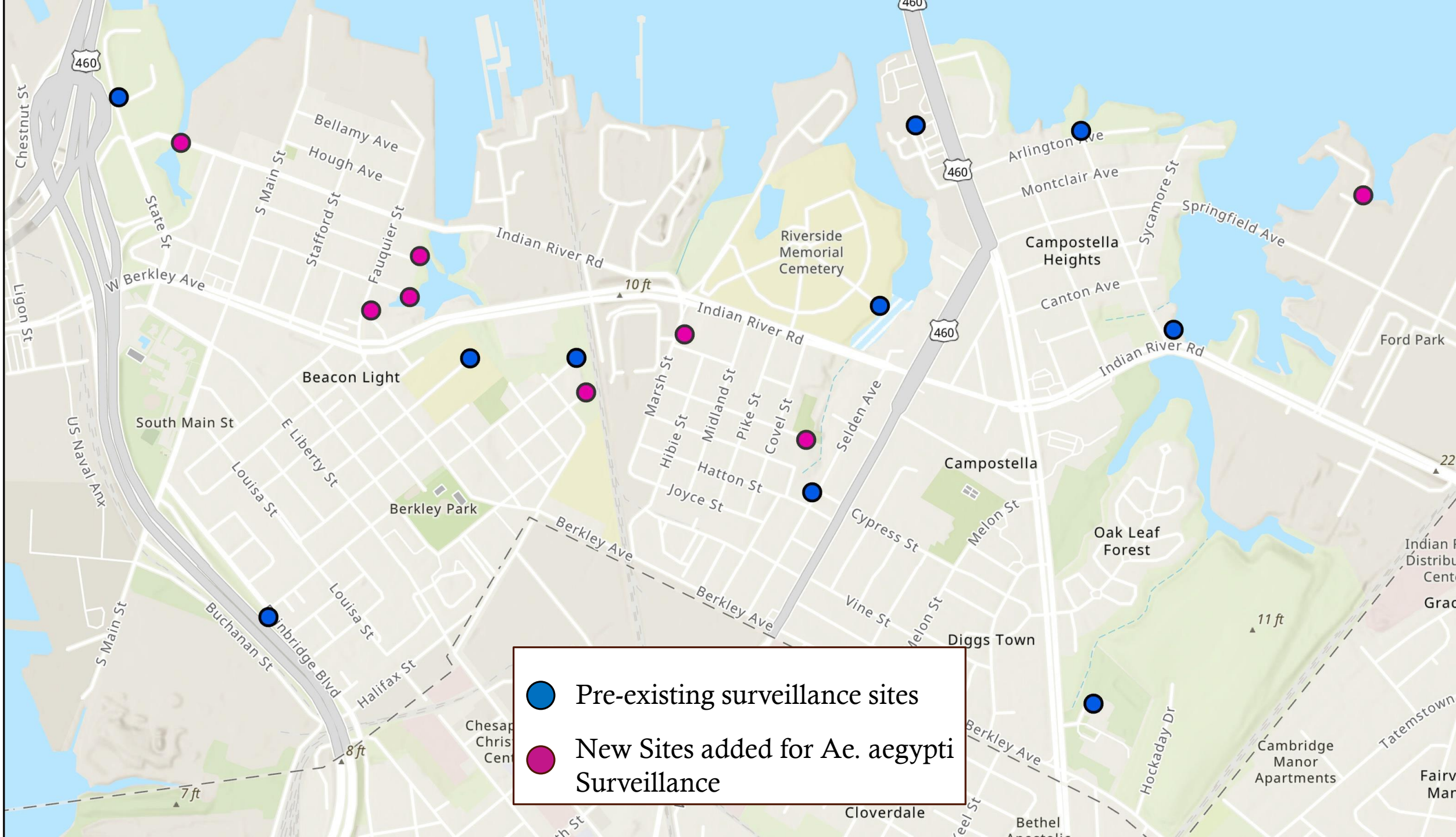
Berkely Campostella

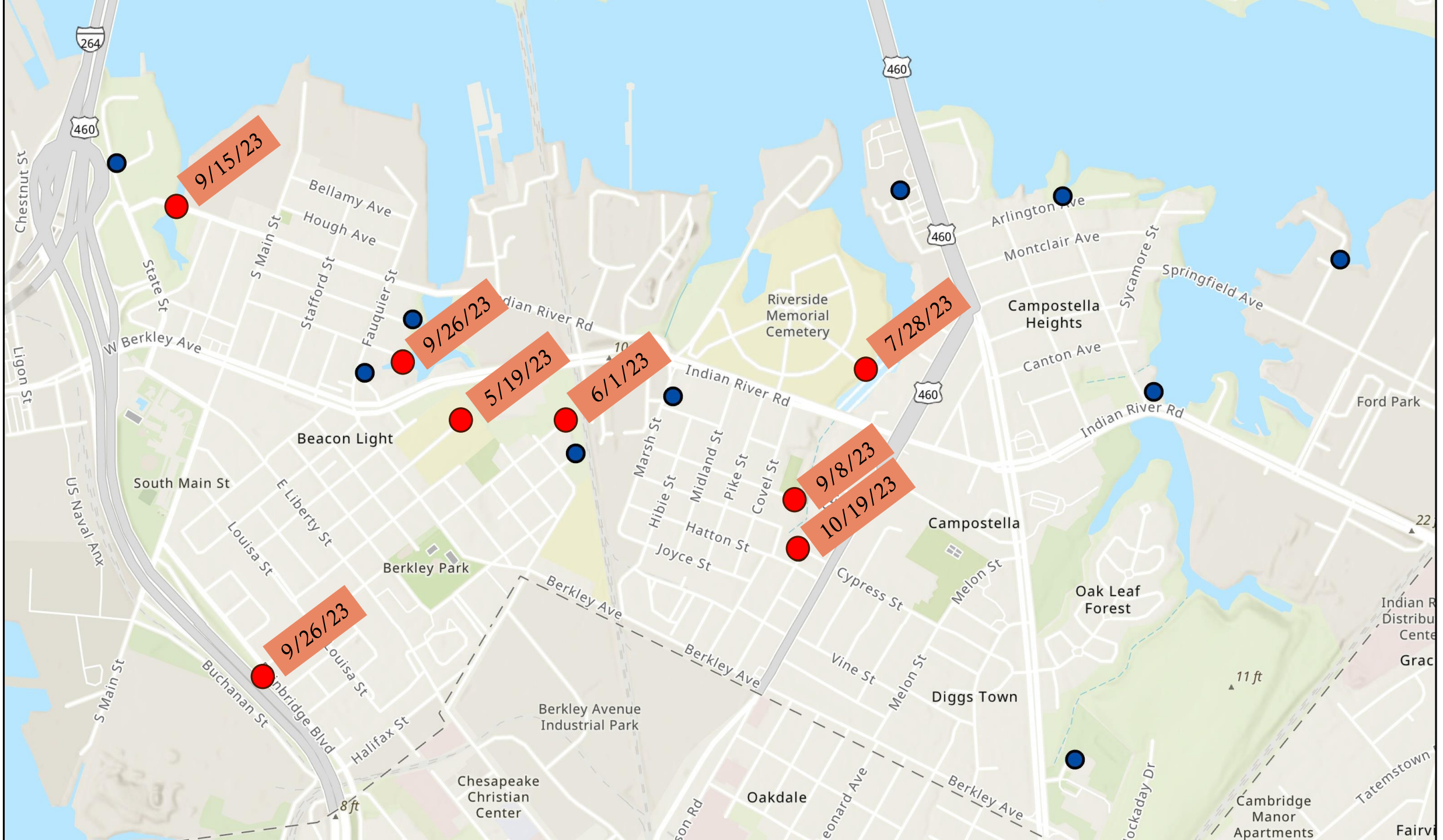
- Annexed by the City of Norfolk in 1906
- Mix of Residential and Commercial Properties
- 4 Shipyards along the Elizabeth River
  - Colonnas
  - BAE
  - Lyon
  - General Dynamics/NASSCO



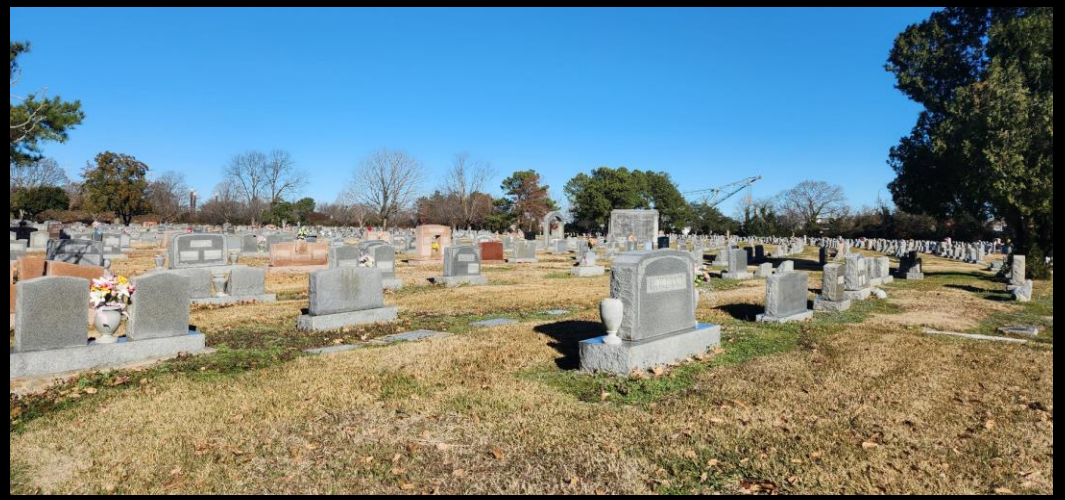
Adult Surveillance

- Weekly Trapping in the Berkely/Campostella Neighborhood with BG Sentinel traps and Gravid Traps
- Added additional sites to pre-existing trap sites.


Pre-existing surveillance sites
New Sites added for Ae. aegypti Surveillance
460
Chestnut St
Bellamy Ave
Hough Ave
S Main St
Stafford St
Fauquier St
State St
Indian River Rd
W Berkley Ave
10 ft
Lagoon St
Riverside Memorial Cemetery
Campostella Heights
Arlington Ave
Montclair Ave
Sycamore St
Springfield Ave
Canton Ave
Ford Park
Beacon Light
South Main St
E Liberty St
Louisa St
US Naval Anx
Berkley Park
Marsh St
Hibie St
Midland St
Pike St
Covel St
Selden Ave
Hatton St
Joyce St
Campostella
Cypress St
Melon St
Oak Leaf Forest
Berkley Ave
Vine St
Diggs Town
11 ft
Buchanan St
Halifax St
8 ft
7 ft
Hockaday Dr
Cambridge Manor Apartments
Tatemstown
Cloverdale
Bethel


9/15/23
9/26/23
5/19/23
6/1/23
7/28/23
9/8/23
10/19/23
9/26/23
Beacon Light
Berkley Park
Berkley Avenue Industrial Park
Chesapeake Christian Center
Oakdale
Diggs Town
Campostella
Campostella Heights
Riverside Memorial Cemetery
Oak Leaf Forest
Ford Park
Cambridge Manor Apartments
Indian River Rd
W Berkley Ave
Berkley Ave
South Main St
Bellamy Ave
Hough Ave
Arlington Ave
Montclair Ave
Springfield Ave
Canton Ave
Hatton St
Joyce St
Vine St
Cypress St
Melon St
Halifax St
Buchanan St
Chestnut St
State St
S Main St
Stafford St
Fauquier St
Ligon St
US Naval Anx
E Liberty St
Louisa St
Marsh St
Hibie St
Midland St
Pike St
Covel St
Sycamore St
Tatemstown
460
264
8 ft
11 ft


CAMPOSTELLA
COMMUNITY CENTER
NORF. DEPT. OF PARKS & REC.



Adult Surveillance Summary

- Traps set in Berkely-Campostella Section of Norfolk
  - 82 BG Sentinel Traps
  - 67 Gravid Traps
  - 9 CDC Light Traps
- Total of 81 *Aedes aegypti* collected
- Collected in all 3 trap types
- Specimens collected from 8 sites, all within 1-mile radius of Magnolia Cemetery
- Last collection was on December 5, 2023

Larval Surveillance

- Larval Samples were collected from Magnolia Cemetery, Riverside Cemetery and surrounding neighborhoods
- Magnolia Cemetery contains many concrete and brass urns
- Ditch located in the western corner of the cemetery contained lots of trash and containers
- Tires, furniture, trash dumped in the woods
- Artificial containers found in nearby yards

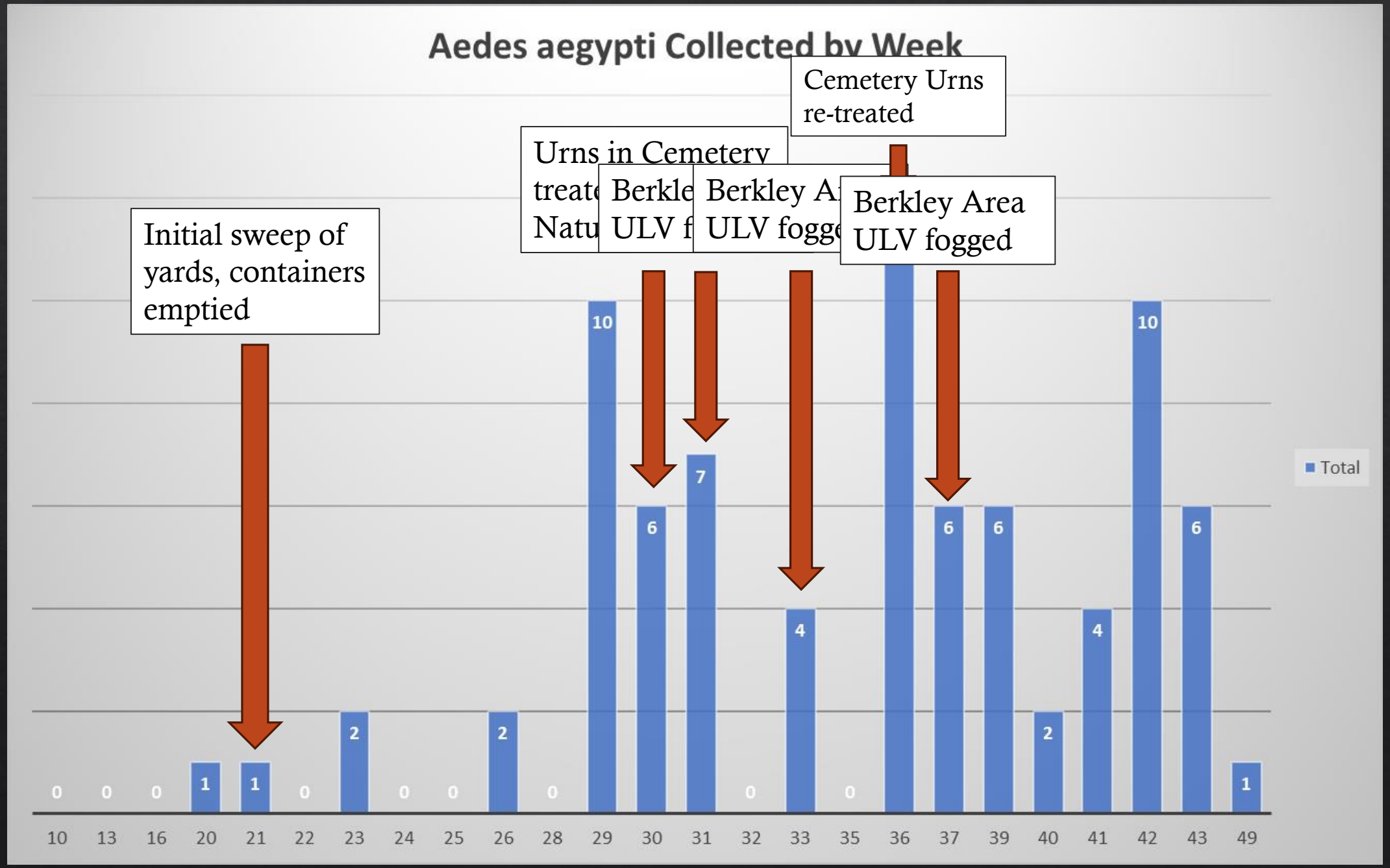
Larval Habitats in Magnolia Cemetery

Larval Surveillance Summary

- 82 Larval samples collected between May 19 and September 8
  - 53 samples positive for *Aedes albopictus*
  - 7 samples positive for *Culex pipiens*
  - 3 samples positive for *Aedes aegypti*
- All *Aedes aegypti* larval samples were collected from Magnolia Cemetery
- All samples positive for *Aedes aegypti* also contained *Aedes albopictus*

Control

- Artificial containers were emptied on initial sweep of residences near Magnolia Cemetery in May and early June.
- Urns in cemetery were treated with Natular DT on July 27 & 28.
- Berkely-Campostella neighborhood was ULV-fogged on August 1, August 11, and September 12.
- Urns in cemetery re-treated with Natular DT when evidence of breeding is observed on September 8.
- Where possible, urns were turned over to prevent future breeding.


Aedes aegypti Collected by Week
Initial sweep of yards, containers emptied
Urns in Cemetery treate
Natu
Berkle
ULV f
Berkley A
ULV fogge
Cemetery Urns re-treated
Berkley Area ULV fogged
Total
0 0 0 1 1 0 2 0 0 2 0 10 6 7 0 4 0 10 6 6 2 4 10 6 1
10 13 16 20 21 22 23 24 25 26 28 29 30 31 32 33 35 36 37 39 40 41 42 43 49

Looking Forward

- In January 2024, 20 specimens were shipped to the Connecticut Agricultural Experiment Station for genotyping
- Information will be added to the global aegypti reference panel.
- Results should be available in a few months.

Looking Forward: 2024 Season

- Can *Aedes aegypti* overwinter in Norfolk?
- *Aedes aegypti* do not enter diapause, restricting them to tropical and sub-tropical environments but…
- Recent studies have challenged this belief
- *Aedes aegypti* may overwinter in the egg stage

Looking Forward: 2024 Season

- Wait and see…

- Thank you, any questions?