

# Creating Reports in Microsoft Power BI using the VectorSurv Gateway



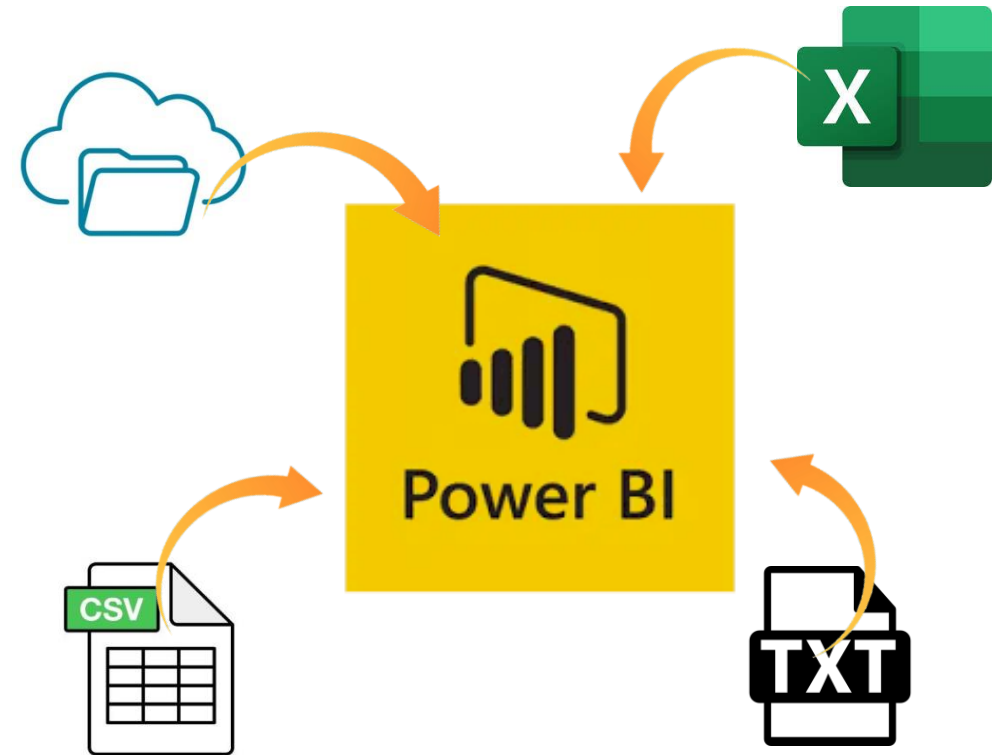
March 26<sup>th</sup>, 2026  
AMCA 92<sup>nd</sup> Annual Conference

Jung Ma  
Assistant Vector Ecologist  
San Gabriel Valley Mosquito and Vector Control District



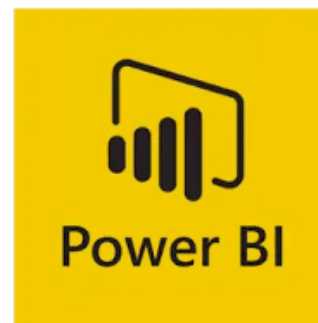
# Power Business Intelligence (BI)

- Free data visualization and reporting platform
- Easily connect unrelated data and file types
  - Excel, text files, CSVs, XMLs, cloud-based sources
- Create visualizations: tables, graphs, maps, incorporations from R, ArcGIS, etc
- **Automatically updates changes in data**



# What we use it for

- Connect to mosquito data recorded in VectorSurv Gateway
- Easily generate reports and interactive dashboards that help make informed decisions
  - Automated report-generating process, save for manually changing certain data filters to the desired criteria



# Workflow

- Surveillance Report Power BI file is pre-built
- Most of the work is as simple as changing the “Week” filter
- Export and finish



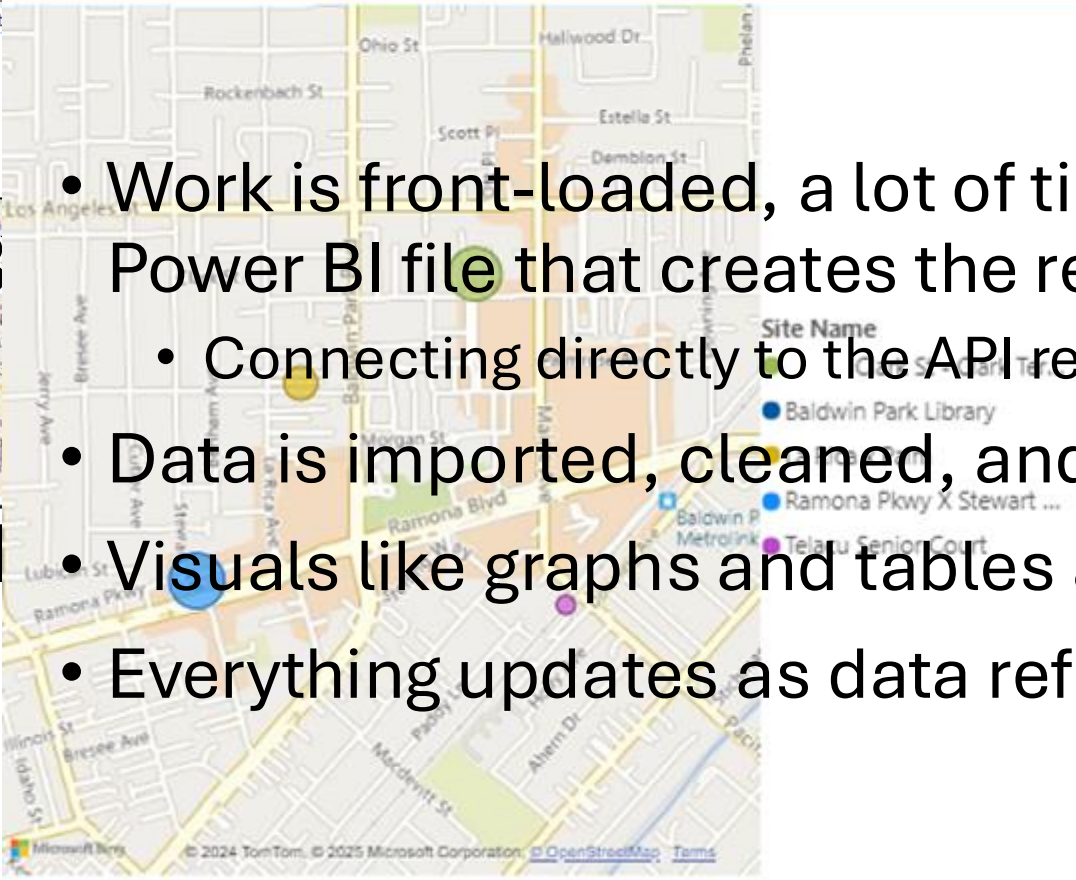
# Enhanced Trapping: Baldwin Park

# Week 34

## Workflow

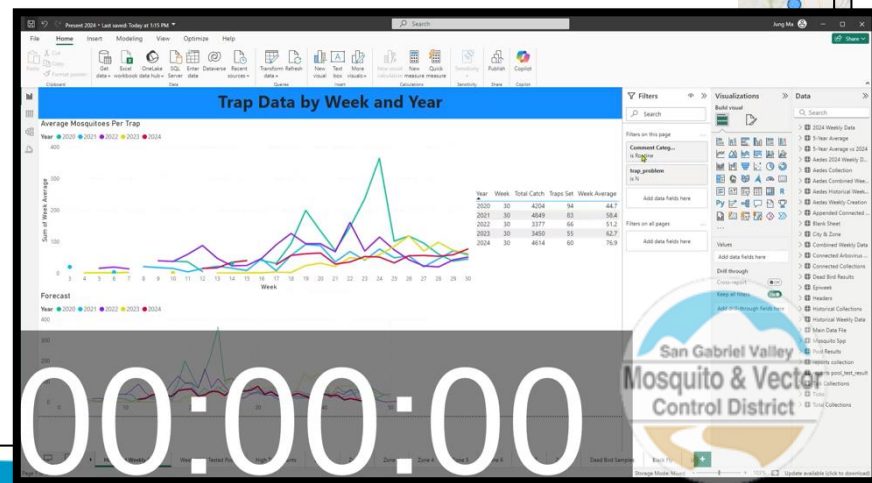
- Work is front-loaded, a lot of time and effort goes into creating the Power BI file that creates the reports
  - Connecting directly to the API reduced time consuming, error-prone steps
- Data is imported, cleaned, and manipulated. Calculations set up
- Visuals like graphs and tables are pre-built
- Everything updates as data refreshes

Zone	Site Name	Collection Date	Trap Type	Total Mosquitoes	Percent Males	Total Female Invasive Aedes	Percent Invasive Aedes Males
4	Clark St - Clark Terrace Apartments	08/22/2024	GRVD	81	4%	11	0%
4	Ramona Pkwy X Stewart Ave	08/22/2024	GRVD	89	33%	5	17%
4	Clark St - Palm	08/22/2024	GRVD	28	18%	4	0%
4	Telacu Senior Court	08/22/2024	GRVD	6	0%	2	0%
4	Baldwin Park Library	08/22/2024	GRVD	0	0%	0	0%



Note: This enhanced trapping was conducted in response to a WNV+ human case

4/10/10	South Pasadena	38
6/10	Temple City	51
5/10	Walnut	35
9/10	West Covina	49



00:00:00



# Workflow

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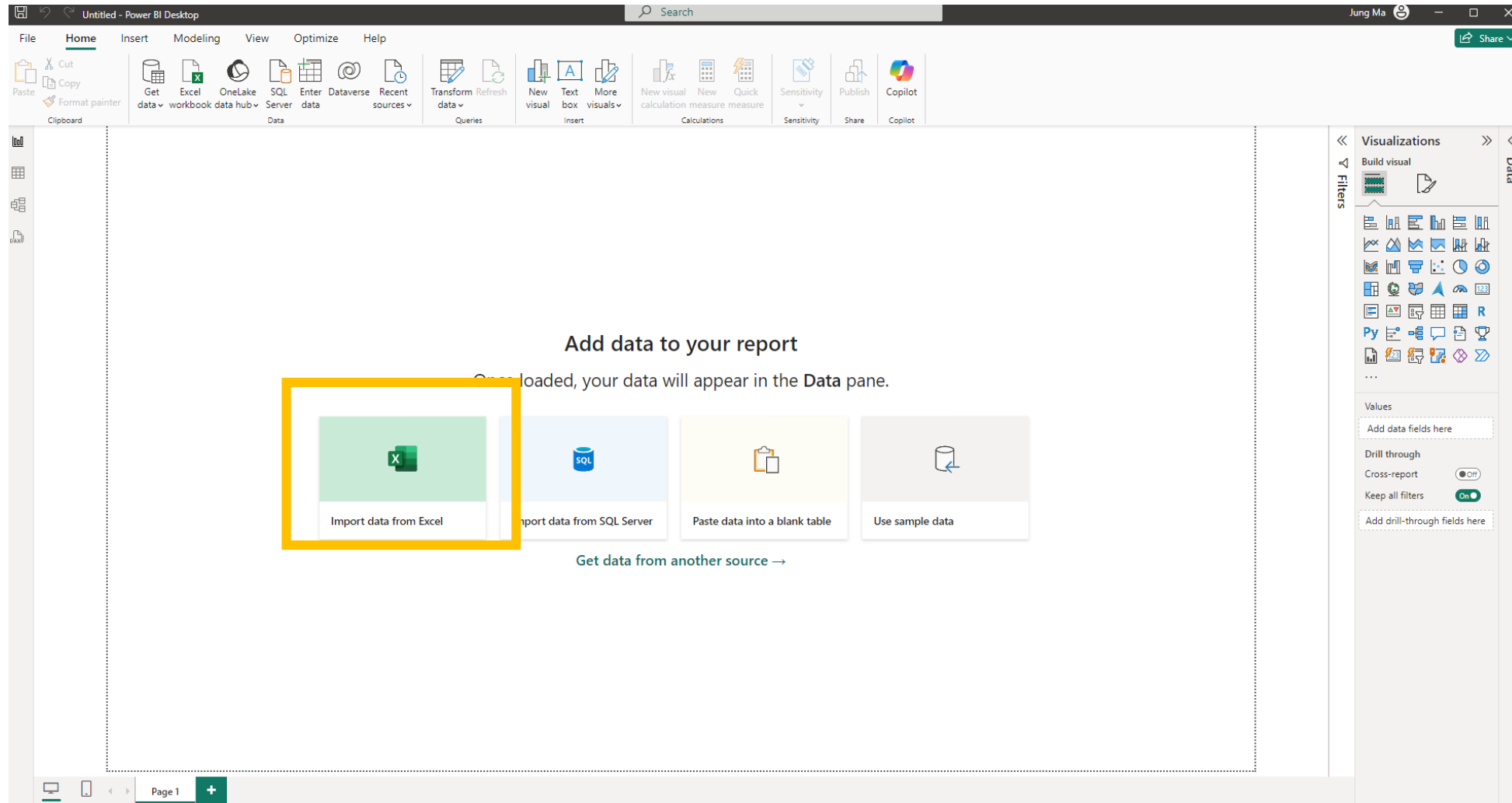


# Building the file

- Import data
- Make connections
  - Model View
  - Power Query
- Make the visual
  - Refine



# Building the file: Import Data



# Building the file: Build Connections Model View

The screenshot shows the Power BI Desktop interface with the 'Model View' selected. Two tables are visible:

- 30 collections**:
  - calculated\_neighborhood\_distance
  - calculated\_state
  - calculated\_subcounty
  - city
  - code
  - collection\_date
  - collection\_id** (highlighted in yellow)
  - Column71
  - comments
- 30 pools**:
  - city
  - code
  - collection\_date
  - collection\_id** (highlighted in yellow)
  - comments
  - disease\_week
  - group
  - latitude
  - longitude

A relationship line connects the 'collection\_id' fields of both tables, with a '1' on each end, indicating a one-to-one relationship. An orange arrow points from the 'collection\_id' in the '30 pools' table to the 'collection\_id' in the '30 collections' table, with the text 'Drag & Drop' written below it.

# Building the file: Build Connections Power Query

The screenshot displays the Microsoft Power Query Editor interface. The main area shows a data table with the following columns: agency\_code, agency\_collection\_num, collection\_id, code, name, and street. The table contains 26 rows of data, with the first row being a header row. The data is as follows:

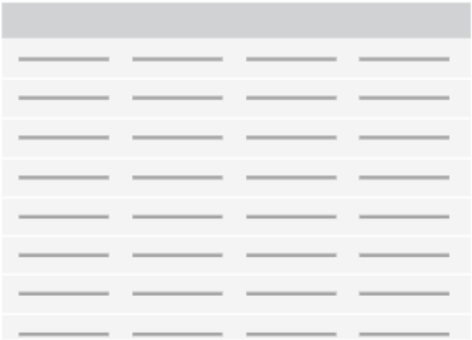
	agency_code	agency_collection_num	collection_id	code	name	street
1	SGVA		1200	3205805	1006	Lemon Creek Bicentennial Park (WA)
2	SGVA		1201	3205806	8	Cal Poly Pomona University
3	SGVA		1202	3205807	29	Pomona Cemetery
4	SGVA		1203	3205808	956	Snow Creek Park (WA)
5	SGVA		1204	3205809	469	Westmont Park (PO)
6	SGVA		1205	3205810	1148	Lincoln Park (PO)
7	SGVA		1206	3205811	64	Cortez Park (WC)
8	SGVA		1207	3205812	1076	Benedict Way(PO)
9	SGVA		1208	3205813	1066	Western University
10	SGVA		1209	3205814	64	Cortez Park (WC)
11	SGVA		1210	3205815	29	Pomona Cemetery
12	SGVA		1211	3205816	956	Snow Creek Park (WA)
13	SGVA		1212	3205817	1076	Benedict Way(PO)
14	SGVA		1213	3205818	469	Westmont Park (PO)
15	SGVA		1214	3206215	291	El Monte Historical Museum
16	SGVA		1215	3206217	887	Granada Park
17	SGVA		1216	3206219	505	La Loma Park (MP)
18	SGVA		1217	3206220	450	Bassett Park (LP)
19	SGVA		1218	3206221	695	Klingerman Park (RO)
20	SGVA		1219	3206239	297	Avenida Cesar Chavez
21	SGVA		1220	3206266	695	Klingerman Park (RO)
22	SGVA		1221	3206268	887	Granada Park
23	SGVA		1222	3206273	445	Garvey Park (RO)
24	SGVA		1223	3206276	1071	Langley Senior (MP)
25	SGVA		1224	3206278	291	El Monte Historical Museum
26						

The interface also shows a ribbon with various transformation options, a right-hand pane for query settings and applied steps, and a status bar at the bottom indicating 71 columns and 78 rows.



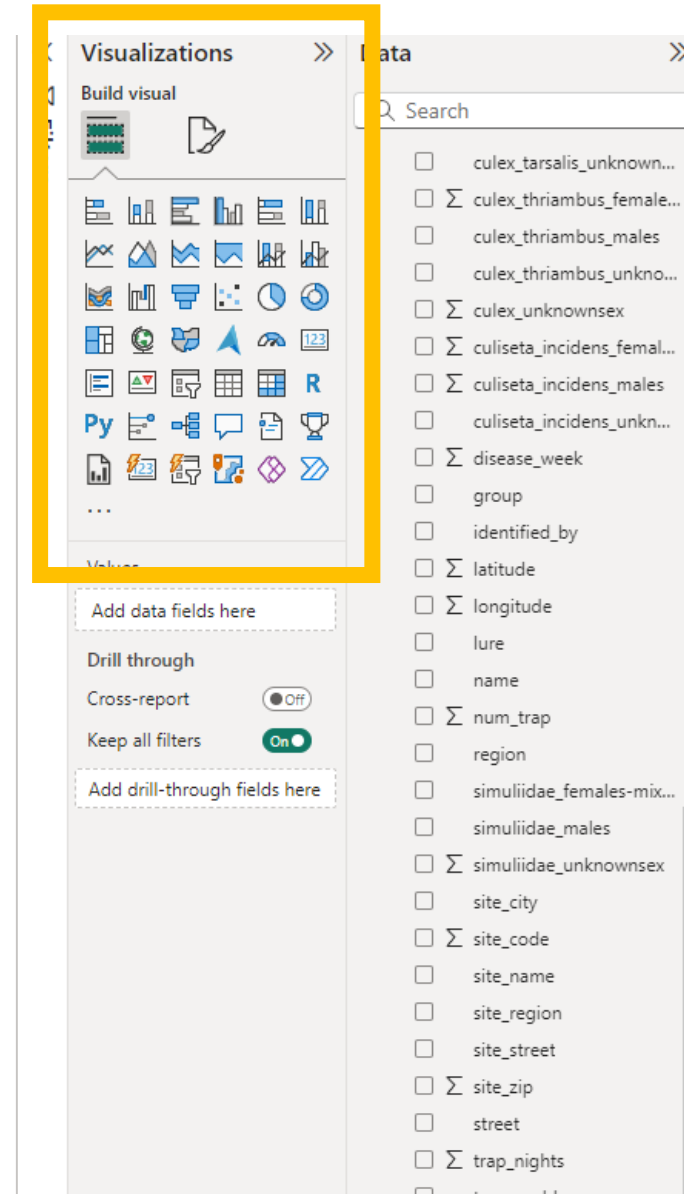
# Building the file: Make visuals

① Select or drag fields to populate this visual



A placeholder for a table visualization, showing a grid of horizontal lines representing data rows.

① Select or drag fields to populate this visual



A screenshot of a data visualization tool interface. The 'Visualizations' panel is highlighted with a yellow border. It contains a 'Build visual' section with a grid of visualization icons. Below the icons are sections for 'Add data fields here', 'Drill through', 'Cross-report' (set to Off), 'Keep all filters' (set to On), and 'Add drill-through fields here'. The 'Data' panel on the right shows a search bar and a list of data fields with checkboxes.

**Visualizations**

Build visual

Icons: [Table], [Map], [Bar Chart], [Line Chart], [Pie Chart], [Scatter Plot], [Funnel], [Gauge], [R], [Py], [Lightning Bolt], [Globe], [Document], [Award]

Values

Add data fields here

Drill through

Cross-report  Off

Keep all filters  On

Add drill-through fields here

**Data**

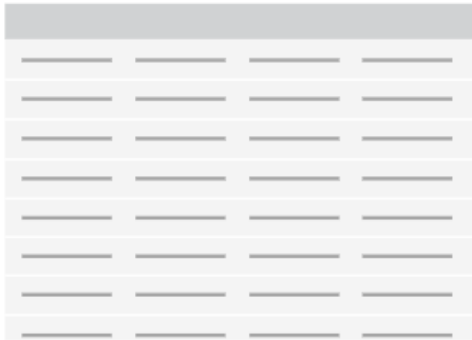
Search

- culex\_tarsalis\_unknown...
- $\Sigma$  culex\_thriambus\_female...
- culex\_thriambus\_males
- culex\_thriambus\_unkno...
- $\Sigma$  culex\_unknownsex
- $\Sigma$  culiseta\_incidens\_femal...
- $\Sigma$  culiseta\_incidens\_males
- culiseta\_incidens\_unkn...
- $\Sigma$  disease\_week
- group
- identified\_by
- $\Sigma$  latitude
- $\Sigma$  longitude
- lure
- name
- $\Sigma$  num\_trap
- region
- simuliidae\_females-mix...
- simuliidae\_males
- $\Sigma$  simuliidae\_unknownsex
- site\_city
- $\Sigma$  site\_code
- site\_name
- site\_region
- site\_street
- $\Sigma$  site\_zip
- street
- $\Sigma$  trap\_nights



# Building the file: Make visuals

① Select or drag fields to populate this visual



① Select or drag fields to populate this visual



Visualizations >> Data >>

Build visual

Filters

Values

Add data fields here

Drill through

Cross-filter  Off

Keep all filters  On

Add data fields through here

Drag & Drop

Search

- culex\_tarsalis\_unknown...
- Σ culex\_thriambus\_female...
- culex\_thriambus\_males
- culex\_thriambus\_unkno...
- Σ culex\_unknownsex
- Σ culiseta\_incidens\_femal...
- Σ culiseta\_incidens\_males
- culiseta\_incidens\_unkn...
- Σ disease\_week
- group
- identified\_by
- Σ latitude
- Σ longitude
- lure
- name
- Σ num\_trap
- region
- simuliidae\_females-mix...
- simuliidae\_males
- Σ simuliidae\_unknownsex
- site\_code
- site\_name
- site\_street
- Σ site\_zip
- street
- Σ trap\_nights

Control District

# Building the file: Make visuals

site_name	culex_quinquefasciatus_females-mixed	WNV Results
(A6) Casitas Ave	11	
Avenida Cesar Chavez	418	Negative
Fair Oaks Ave	84	Negative
Baldwin Park Library	19	Positive
Baldwin Park Unified School District	40	Negative
Bassett Park (LP)	1	
Bassett Park (LP)	16	
Bassett Park (Studies)	6	
Benedict Way(PO)	2	
Benedict Way(PO)	67	Negative
BP Neighborhood	5	
Cal Poly Pomona University	3	
CAL Tech (PA)	3	
CAL Tech (PA)	49	Negative
Church of Christ	74	Negative
Colby Trailhead		
Cortez Park (WC)	6	
Cortez Park (WC)	96	Negative
Creekside Park (WA)	62	Negative
El Monte Historical Museum	5	
El Monte Historical Museum	35	Negative
FC Jeanette Ln-Big Dalton		
FC-Dundry Ave-Big Dalton	1	Negative
Garvey Park (RO)	70	Negative
Granada Park	3	
Granada Park	36	Negative
Grand/Cienega Ave	30	Negative

Select or drag fields to populate this visual



Visualizations >> Data

Build visual

Filters

Search

30 collections

30 pools

Columns

- site\_name
- culex\_quinquefasciatu...
- WNV Results

Drill through

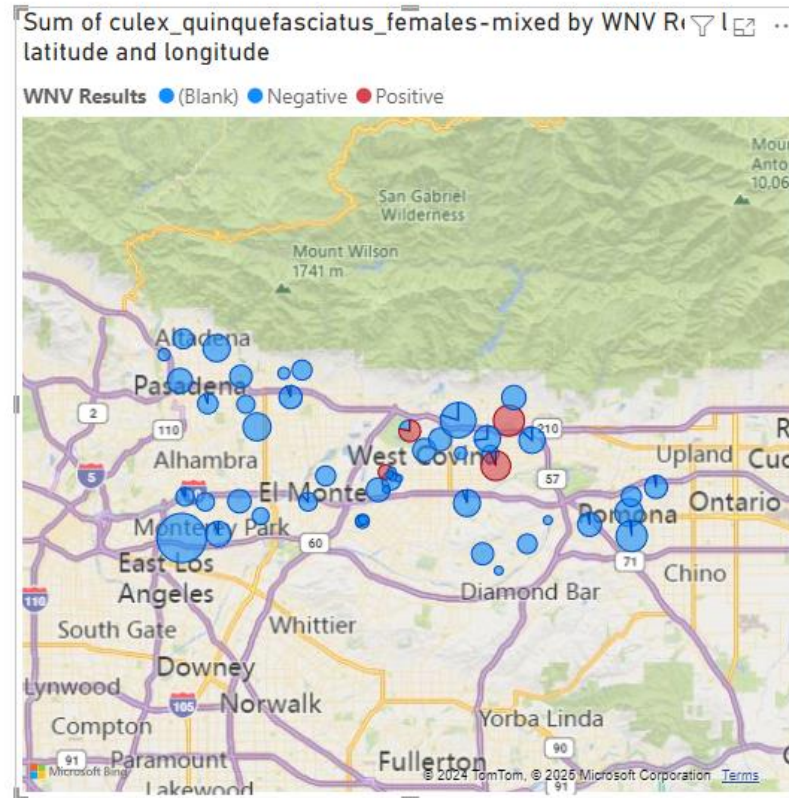
Cross-report  Off

Keep all filters  On

Add drill-through fields here

# Building the file: Make visuals

site_name	culex_quinquefasciatus_females-mixed	WNV Results
(A6) Casitas Ave	11	
Avenida Cesar Chavez	418	Negative
Fair Oaks Ave	84	Negative
Baldwin Park Library	19	Positive
Baldwin Park Unified School District	40	Negative
Bassett Park (LP)	1	
Bassett Park (LP)	16	
Bassett Park (Studies)	6	
Benedict Way(PO)	2	
Benedict Way(PO)	67	Negative
BP Neighborhood	5	
Cal Poly Pomona University	3	
CAL Tech (PA)	3	
CAL Tech (PA)	49	Negative
Church of Christ	74	Negative
Colby Trailhead		
Cortez Park (WC)	6	
Cortez Park (WC)	96	Negative
Creekside Park (WA)	62	Negative
El Monte Historical Museum	5	
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FC Jeanette Ln-Big Dalton		
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Garvey Park (RO)	70	Negative
Granada Park	3	
Granada Park	36	Negative
Grand/Cienega Ave	30	Negative



Visualizations

Build visual

Filters

Search

WNV Results

Latitude

longitude

Bubble size

Sum of culex\_quinque...

Tooltips

Drag & Drop

San Gabriel Valley Mosquito & Vector Control District



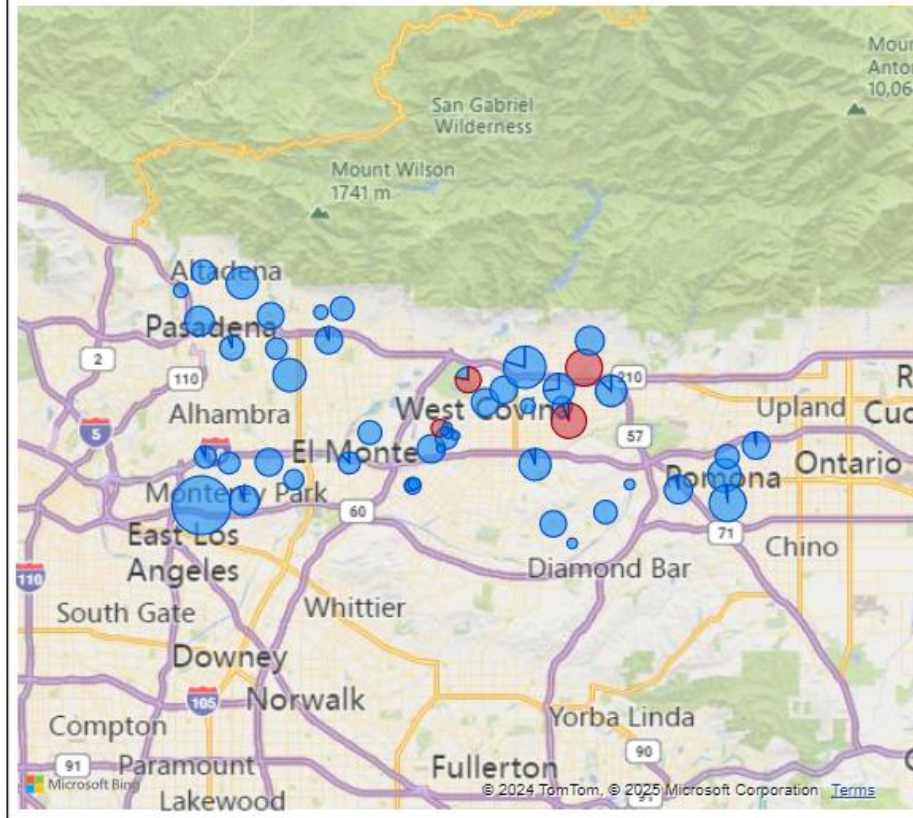
# Building the file: Refine visuals

## Cool Table

Site Name	Female Cx quinq	WNV Results
Mesa Glen Care Center (GL)	141	Positive
Kahler Russel Park (formerly Wingate)	119	Positive
Santa Fe Dam	47	Positive
Baldwin Park Library	19	Positive
Avenida Cesar Chavez	418	Negative
Slauson Park	158	Negative
Pomona Cemetery	141	Negative
Western University	113	Negative
Norman's Nursery (Duarte Rd)	111	Negative
Rubio Wash	103	Negative
Cortez Park (WC)	96	Negative
Fair Oaks Ave	84	Negative
Lone Hill Park	84	Negative
La Loma Park (MP)	82	Negative
Little Dalton Wash (GL)	78	Negative
Church	74	Negative

## Nice Map

WNV Results ● (Blank) ● Negative ● Positive



## Visualizations >>

Format page



Search

> Page information

> Canvas settings

> Canvas background

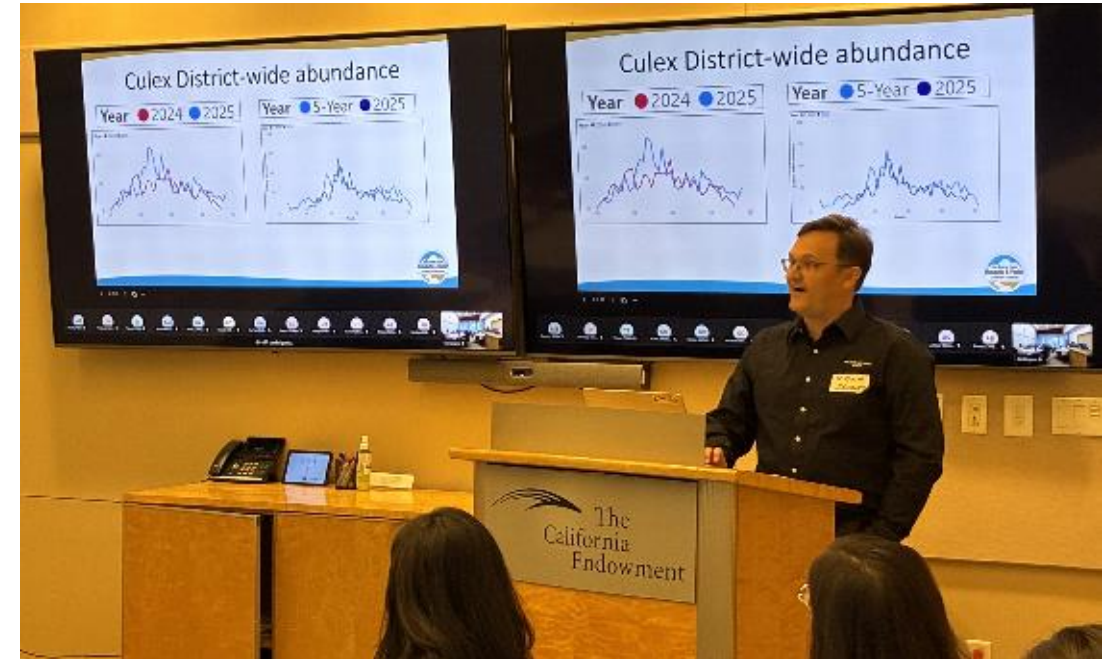
> Wallpaper

> Filter pane

> Filter cards

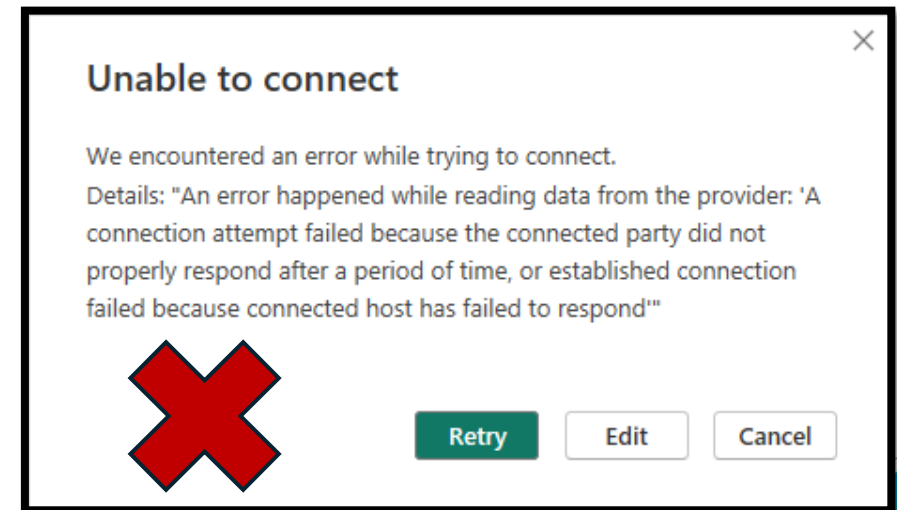
# Pros

- Integrate many data sources into one comprehensive file
- Usable for non-technical users
- Once set up, mostly automated for established pages
- Can make new data visuals easily, even for other projects



# Cons

- Learning curve
- Time lag
  - Takes time for API to update with the latest entered data
- Power Bi can be “process hungry”, takes more CPU and memory resources to process large datasets
- Technical problems may need IT intervention



# THANK YOU

**Jung Ma**

Assistant Vector Ecologist

San Gabriel Valley Mosquito and  
Vector Control District

[jma@SGVmosquito.org](mailto:jma@SGVmosquito.org)

626-814-9466

    @SGVmosquito

