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Get connected. Get hands-on.

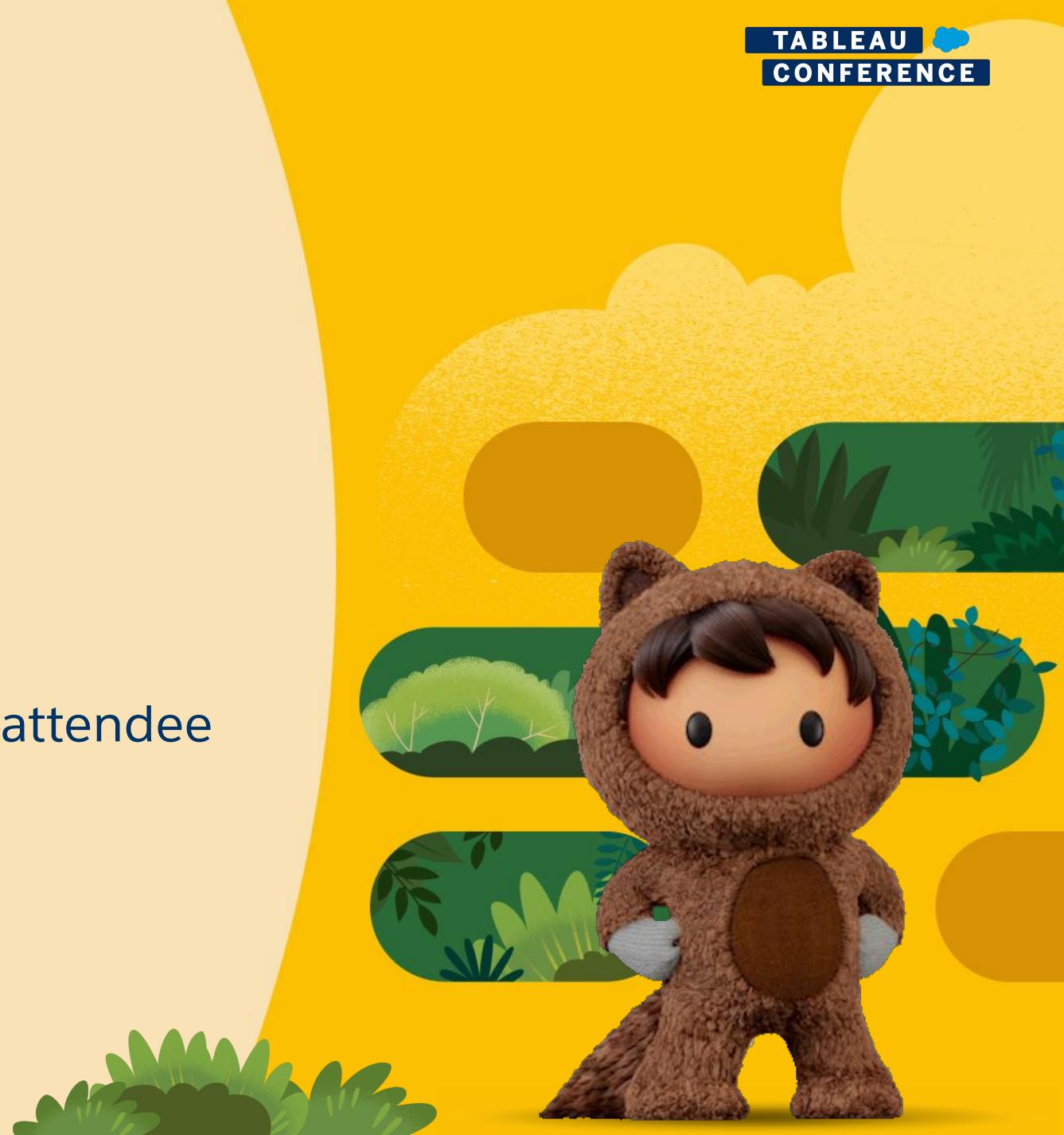
WIFI

Signal: TC23HOTS

Password: HOTS@TC23

LAB ACCESS

1. Log into the event: sforce.co/tc23attendee
2. Navigate to **Sessions**
3. Click on the tab for today
4. Search for **#HandsOn**
5. Click **Access lab**



More than just a map

geospatial analytics in Tableau

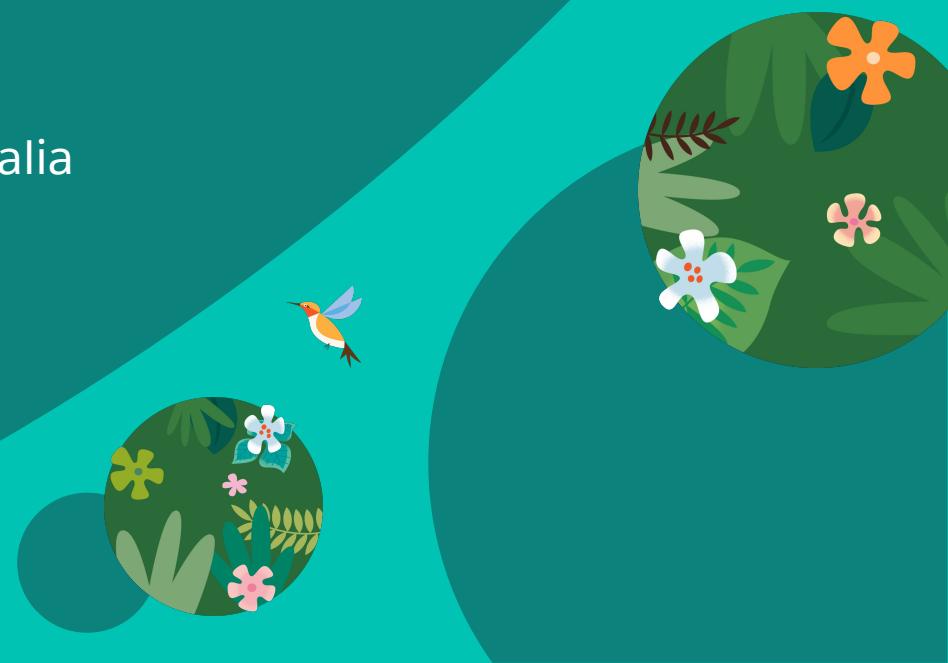
Ross Paulson

Principal Solution Engineer
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Leesburg, Virginia, USA

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More than just a map

geospatial analytics in Tableau

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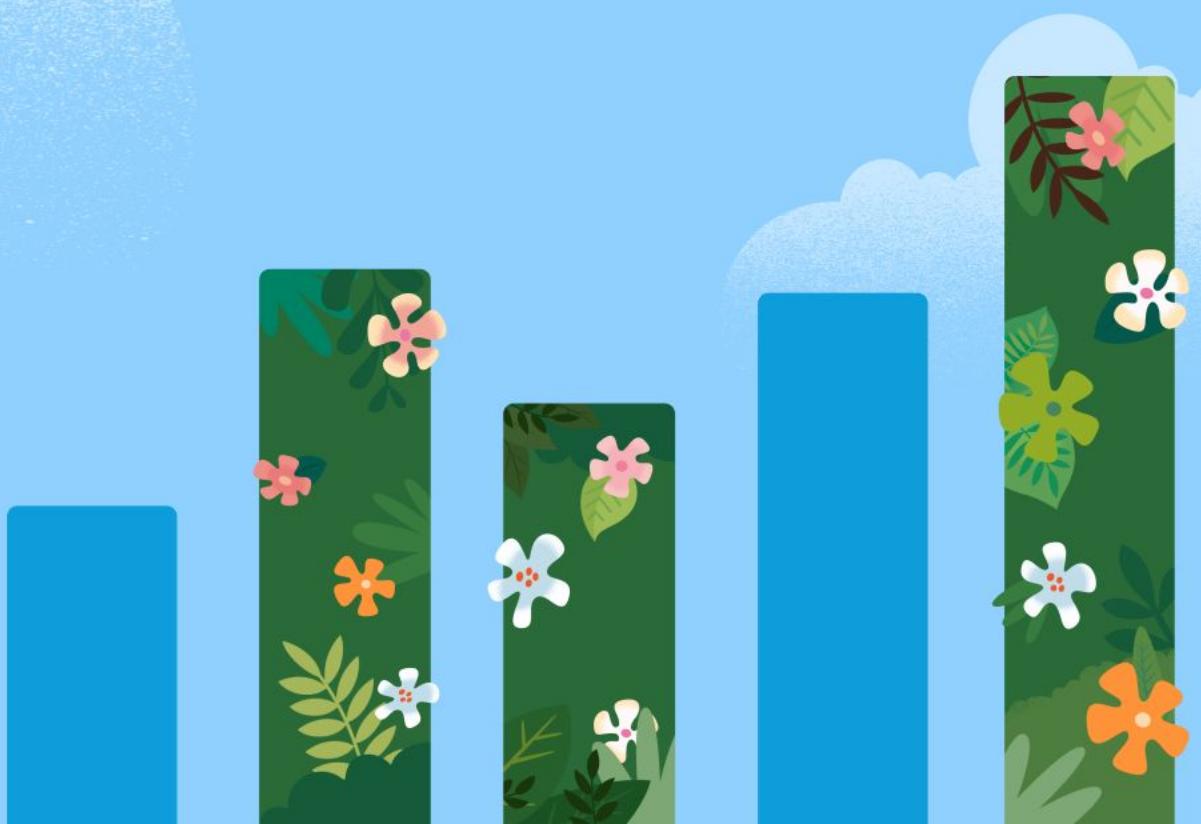
More than just a map

geospatial analytics in Tableau

Hands-on training | Ross Paulson & Marc Psaila
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Welcome!



More than just a map

geospatial analytics in Tableau

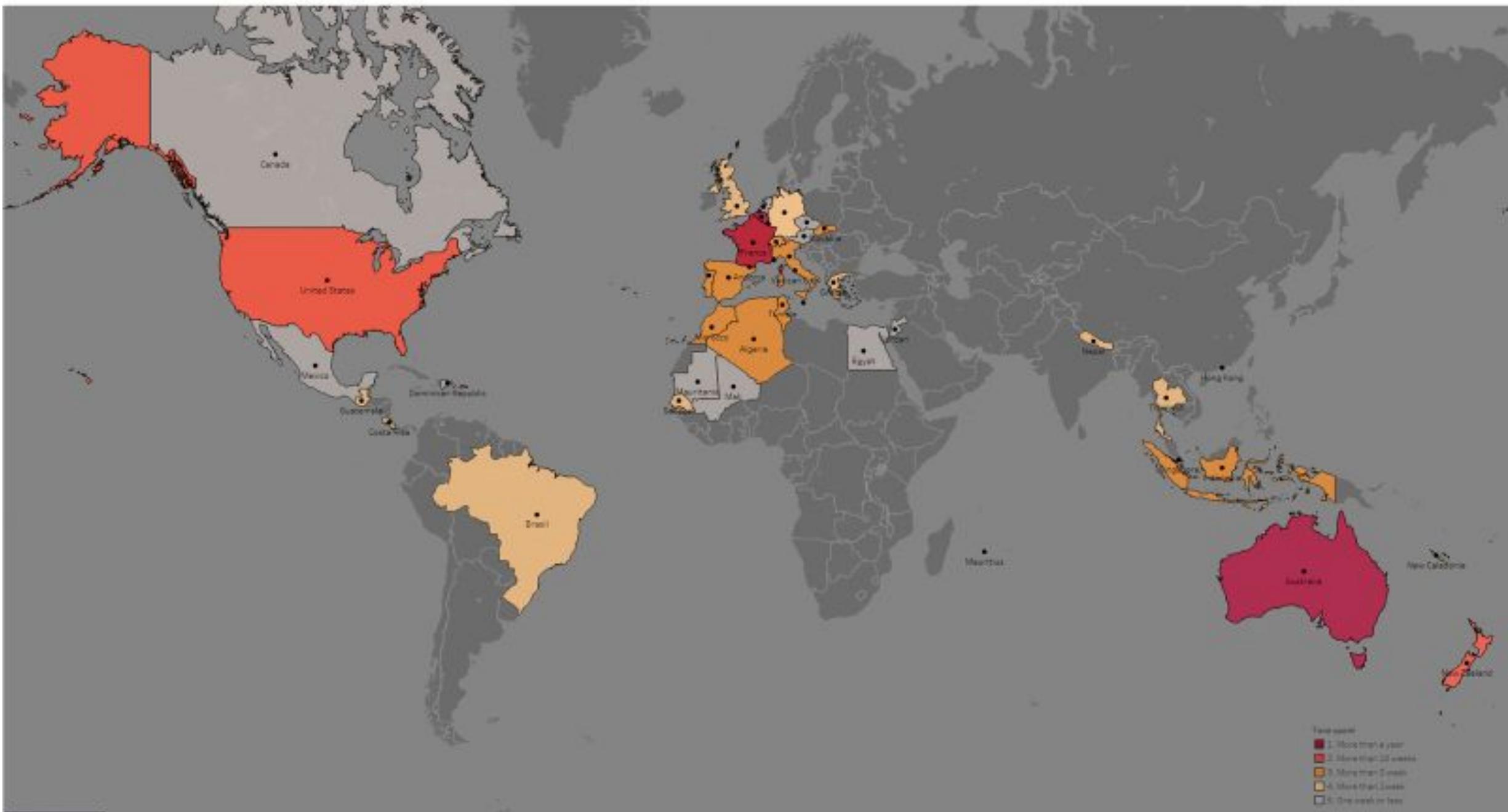


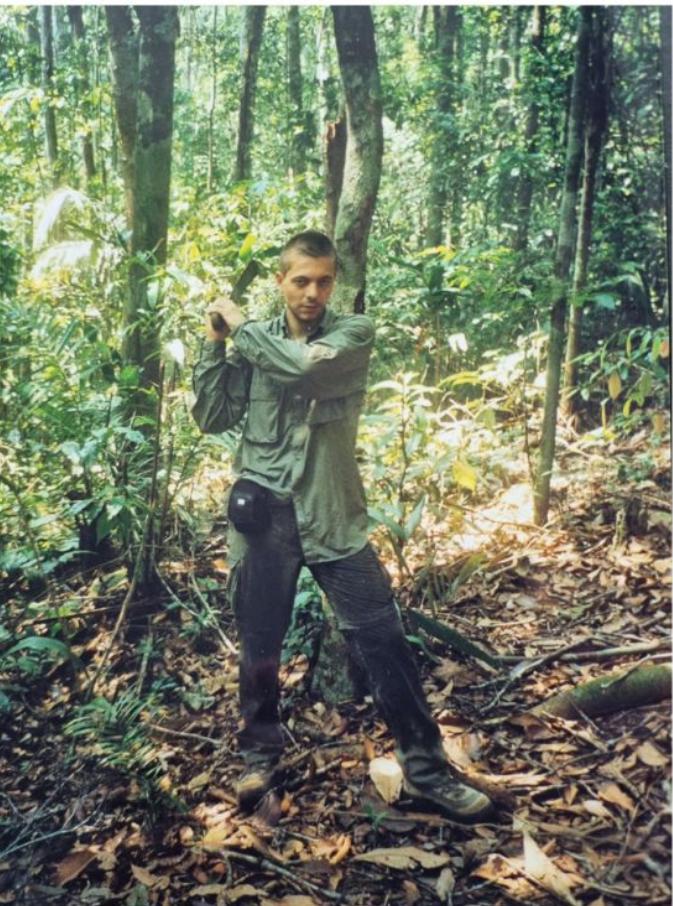
Marc Psaila

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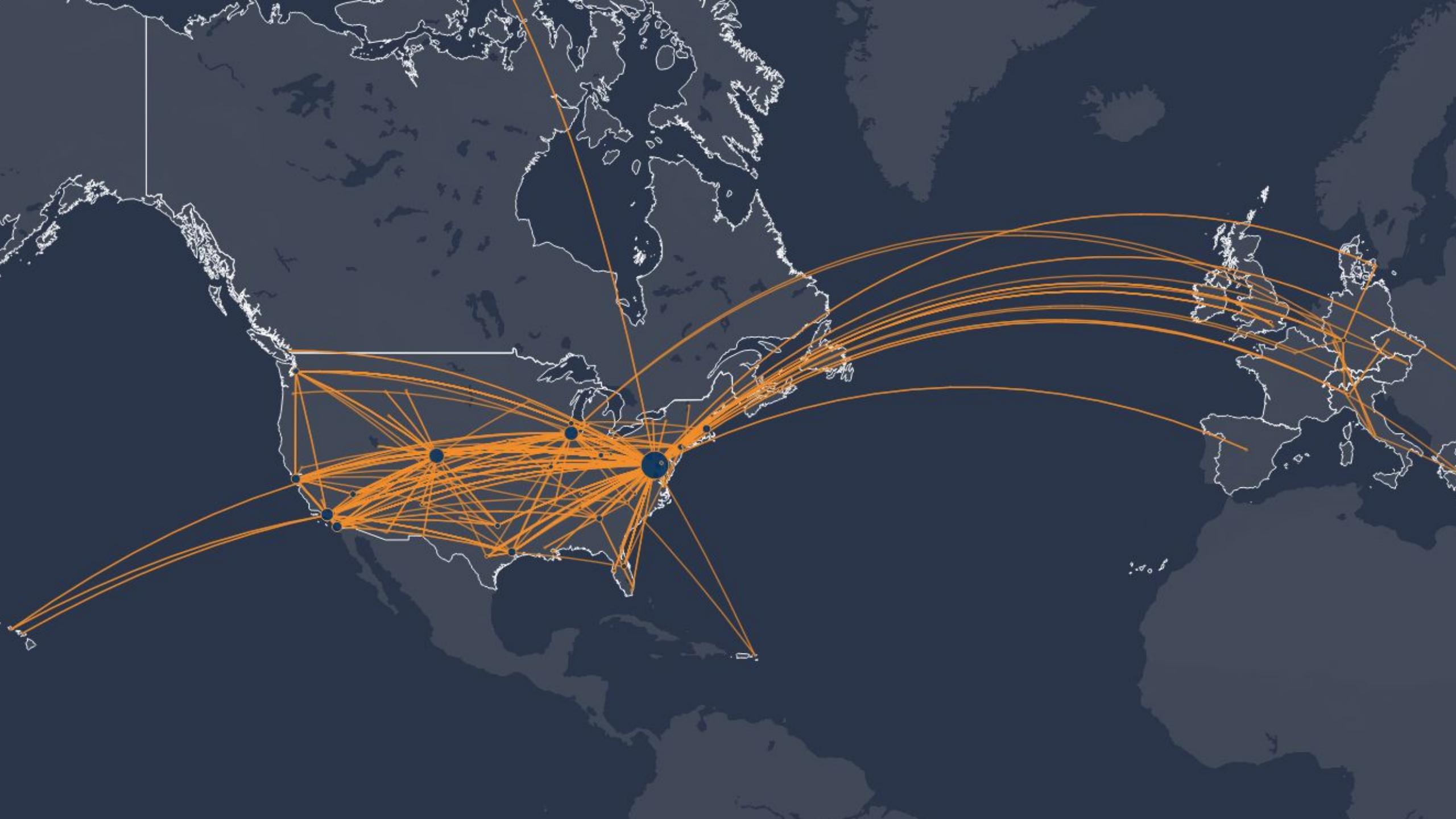


Ross Paulson

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Agenda

History and basics

why Tableau mapping is easy

Marc >> find relationships around places

Geocoding, Makepoint, Buffer and Distance

Ross >> spatial relations to natural features

Spatial intersection, Map Layers

Area & intersects



House Rules

If you struggle with the Hand-on exercises
=> Reach out to the **Assistants** in the room

If you have a question related to what has
been talked about by the presenter
=> Ask the question to the **Presenters** but
better to wait until the end of each part



VM - how to open...

History of Tableau Mapping





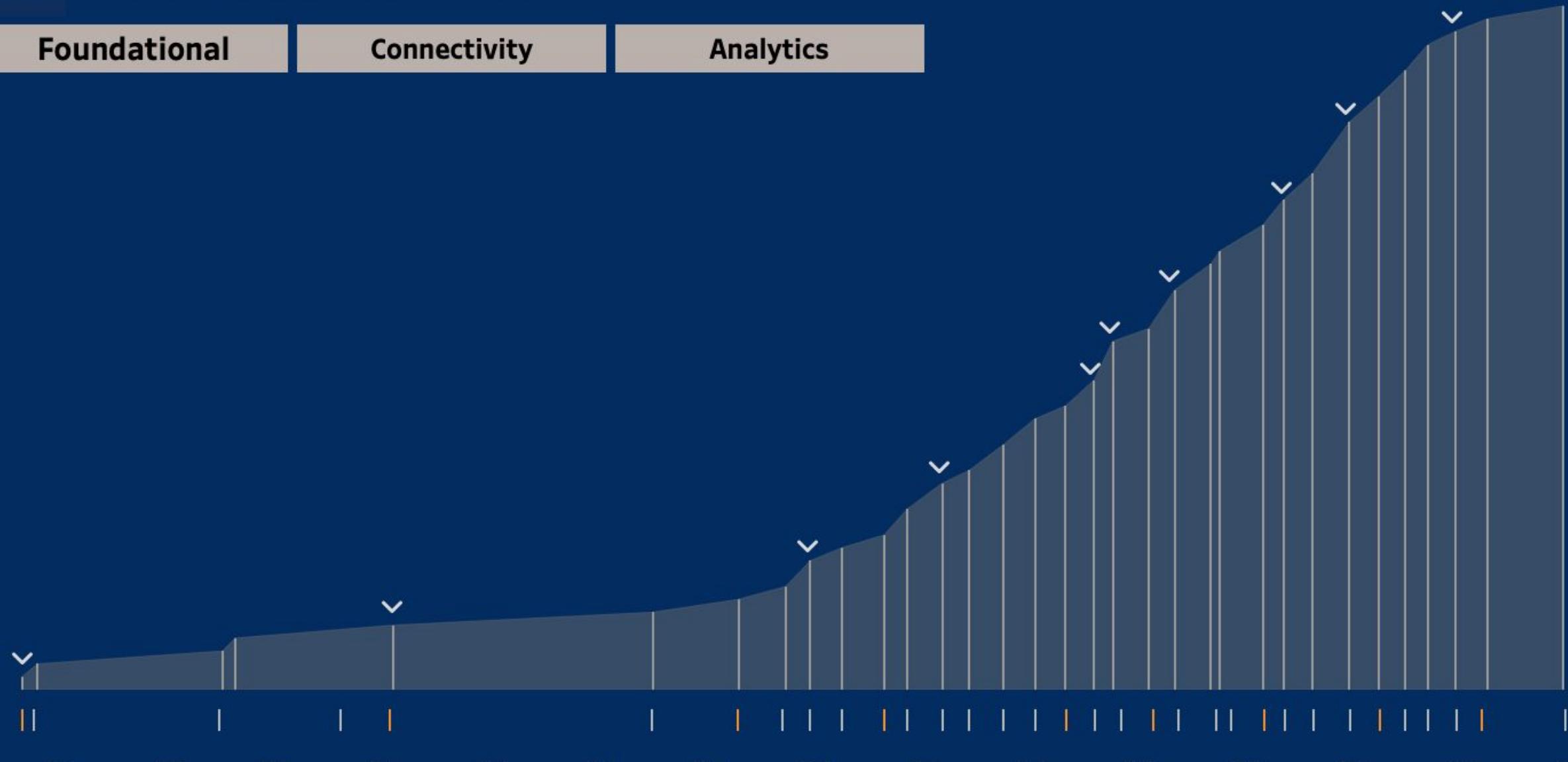
What's new Spatially!

A history of mapping features in Tableau

Foundational

Connectivity

Analytics





What's new Spatially!

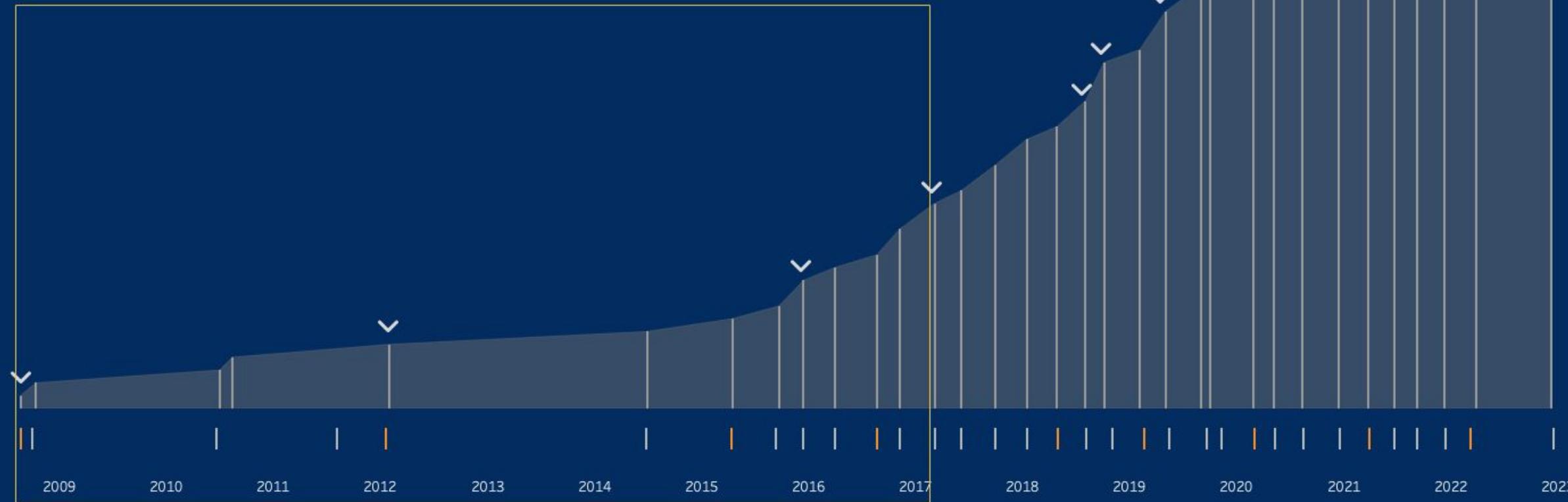
A history of mapping features in Tableau

Foundational

Connectivity

Analytics

v4 >> 10.2





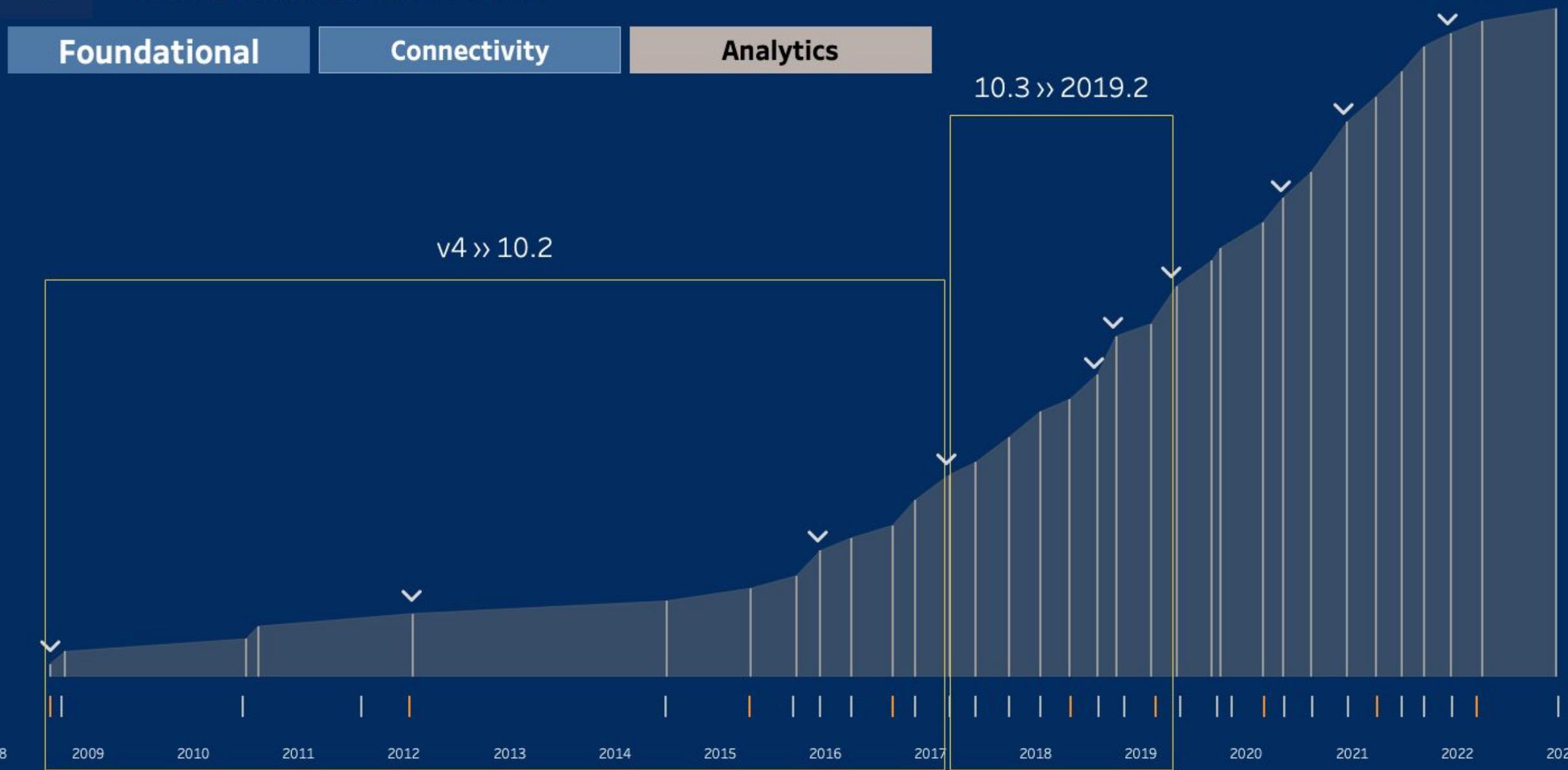
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What's new Spatially!

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2019.3 >>

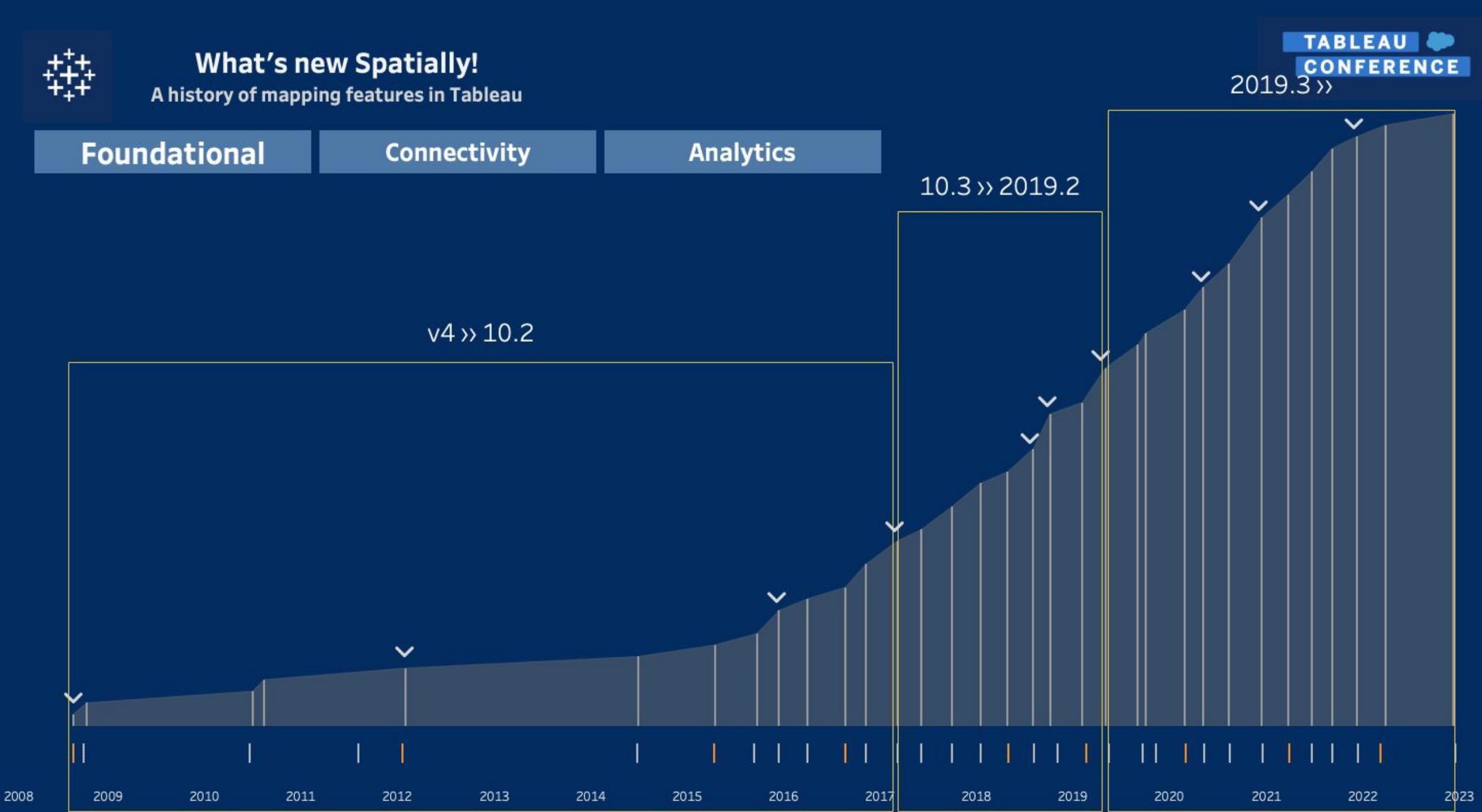
Foundational

Connectivity

Analytics

v4 >> 10.2

10.3 >> 2019.2





What's new Spatially!

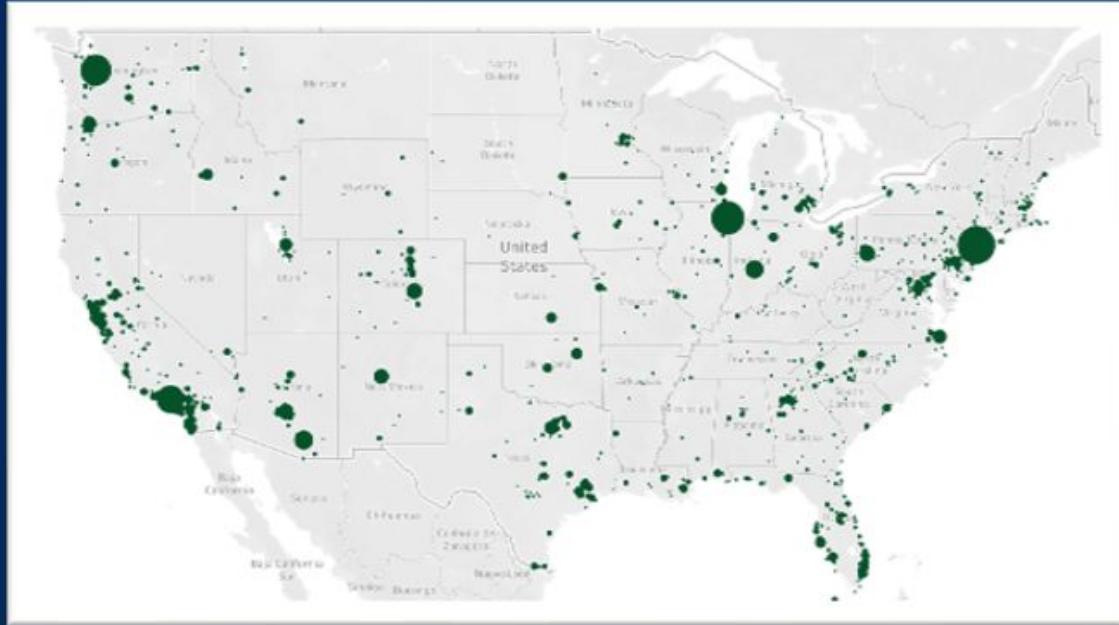
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What's new Spatially!

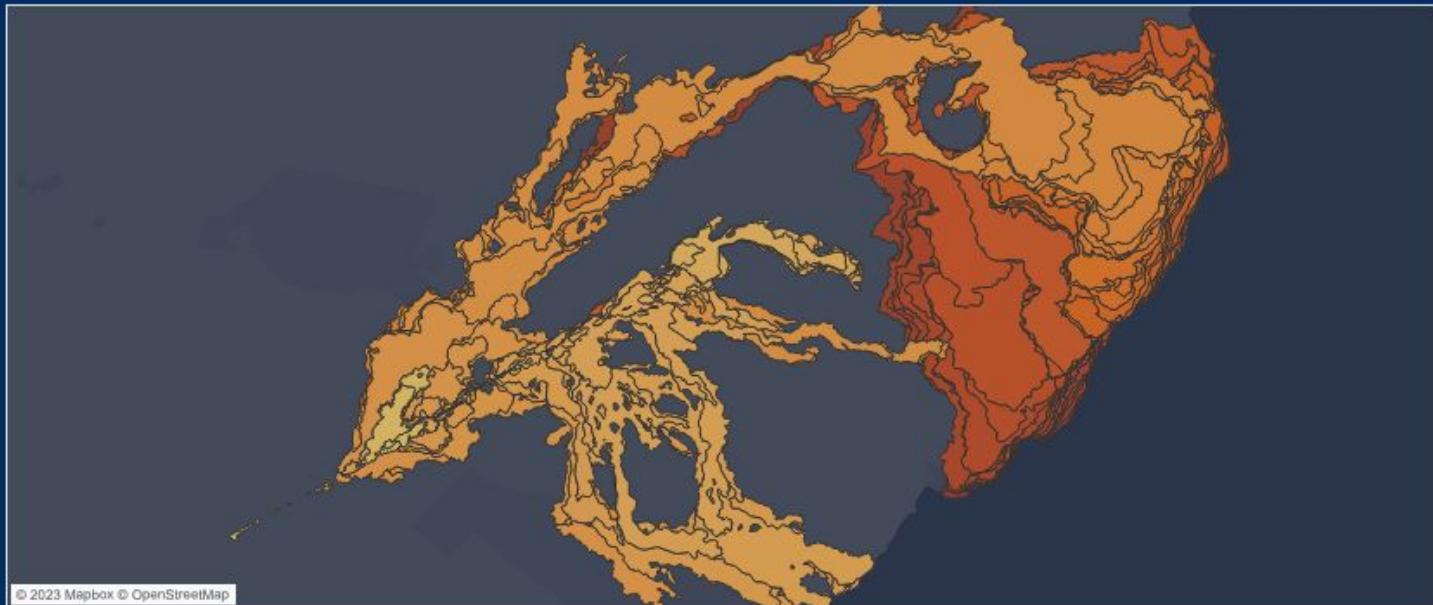
A history of mapping features in Tableau

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2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

2021

2022

2023



What's new Spatially!

A history of mapping features in Tableau

Foundational

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Analytics





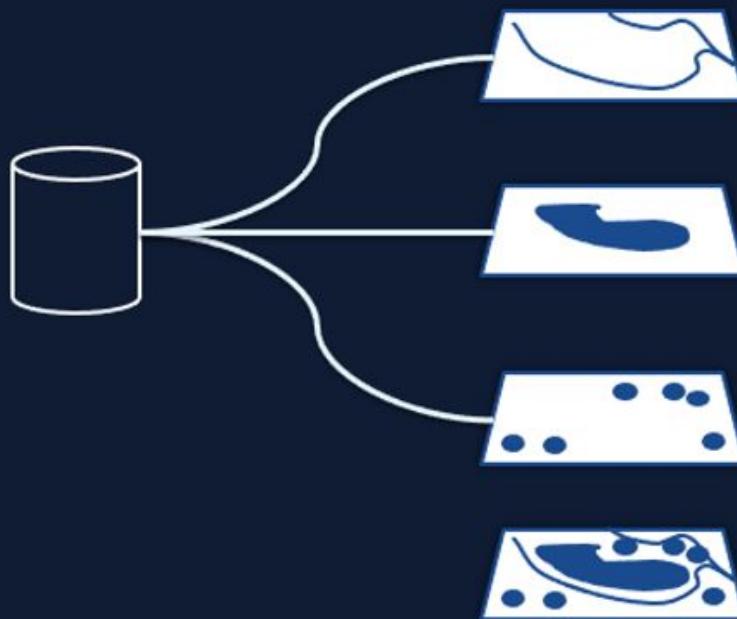
What's new Spatially!

A history of mapping features in Tableau

2020.4 Map Layers

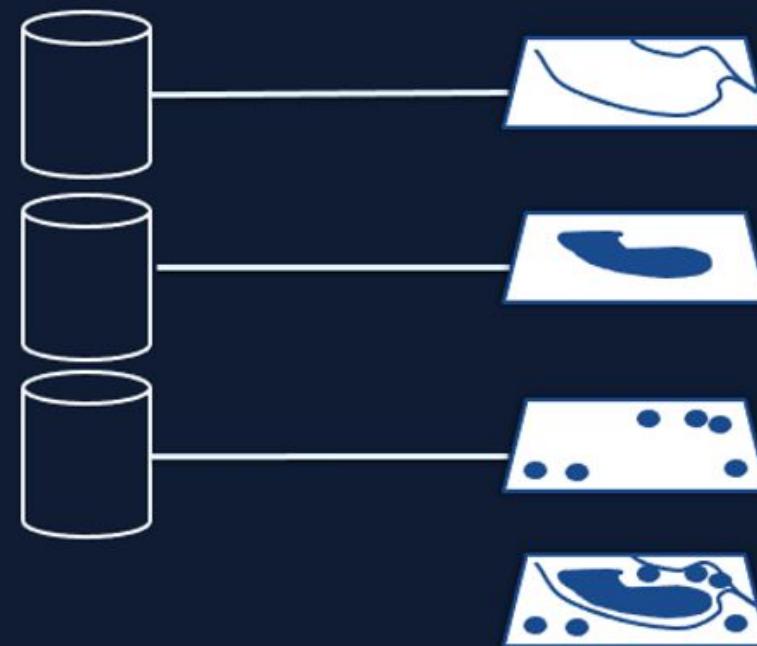
Data joins required to create layered maps

- Disable Selection and
- Add to Zoom Extent



2021.3 Map Layer Improvements

Data joins not required to create layered maps



Part 1: Schools and Train Stations in NSW





Sydney Rail Network



- T** Transport Sydney Trains
- T1** North Shore, Northern & Western Line
- T2** Airport, Inner West & South Line
- T3** Bankstown Line
- T4** Eastern Suburbs & Illawarra Line
- T5** Cumberland Line
- T6** Carlingford Line
- T7** Olympic Park Line



- L** Transport Light Rail
 - L1** Dulwich Hill Line
- Station • Interchange • Terminus
Light Rail Stop • Interchange with trains • T2



Makepoint(<Latitude>,<Longitude>)

What is it, and why is it important?



Spatial data - has 'Geometry' built in

Useful for doing spatial joins

Spatial Join



V4.0



Since V4, - Spreadsheets, txt files, and non-spatial databases mapped with Latitude and Longitude fields

Spatial join

2018.2

Spatial files

10.2 & 10.4

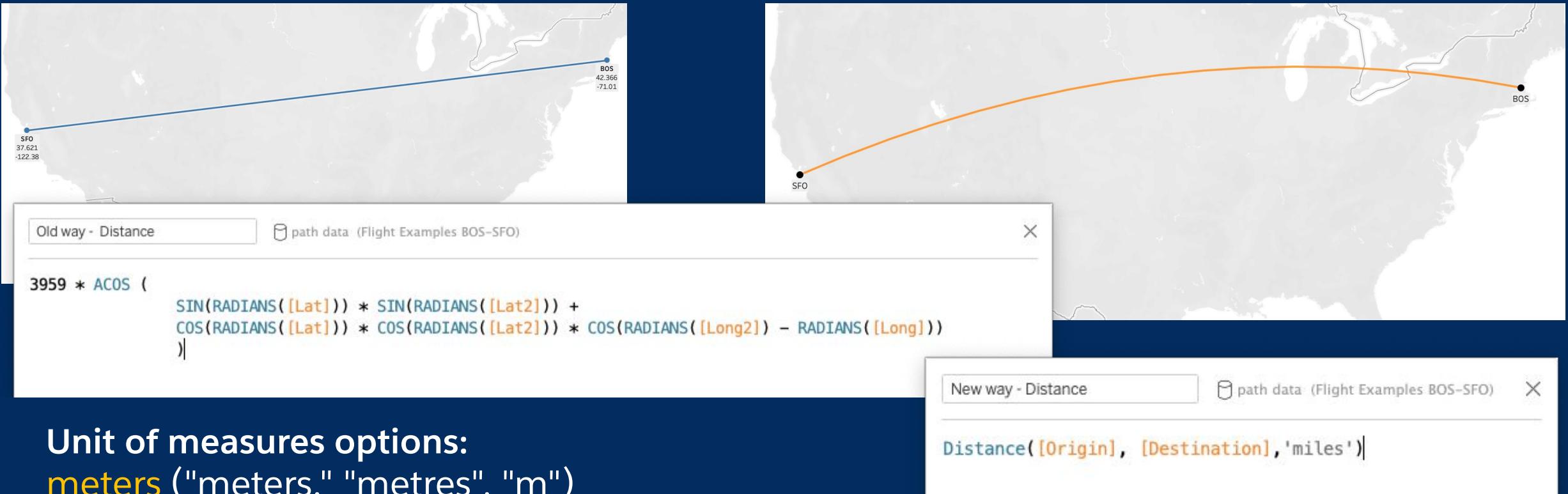
Spatial functions

2019.2 - 2022.4

Using Makepoint() Tableau converts Lat/Lon fields to **spatial geometries** for use with **spatial joins** and other **spatial calculations** such as *Distance*, *Buffer*, *Makeline* and *Intersects*



DISTANCE(<Origin Point>, <Destination Point>, <Unit Of Measure>)



Unit of measures options:

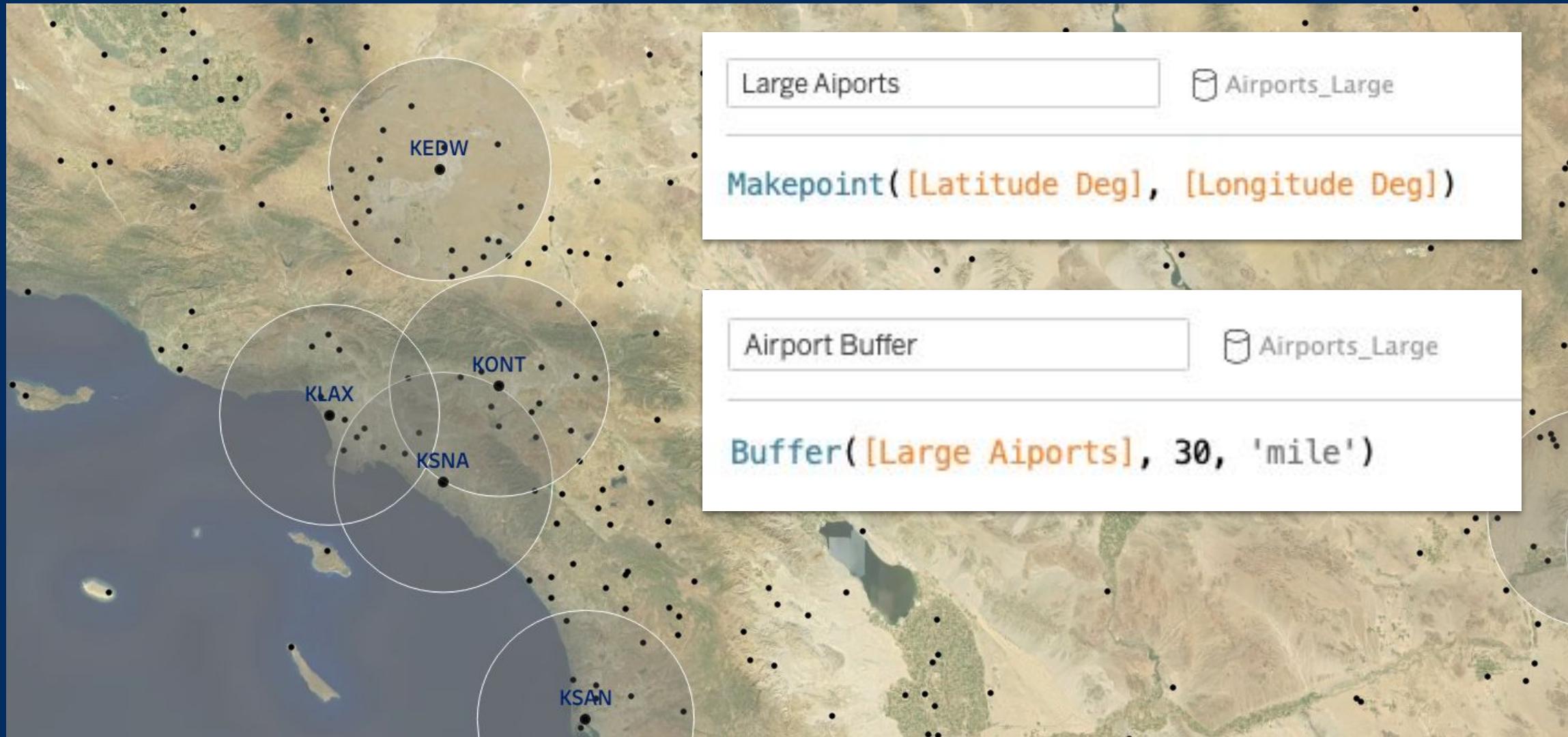
meters ("meters," "metres", "m")

kilometers ("kilometers," "kilometres," "km")

miles ("miles" or "mi")

feet ("feet," "ft")

BUFFER(<Point>, <Radius>, <Unit Of Measure>)



Part 1 Summary:

Station

StationEntrances

Makepoint([Lat], [Long])

Distance from Selected School

Schools

DISTANCE([Selected School], [Schools], 'km')

Within Radius

Schools

[Distance from Selected School]<=[Radius]

Selected Area

Schools

BUFFER([Selected School], [Radius], 'km')

Selected School

Schools

MAKEPOINT([Selected Lat], [Selected Lon])

Schools

Schools

Makepoint([Latitude], [Longitude])

Part 2: Lava Analysis in Hawaii



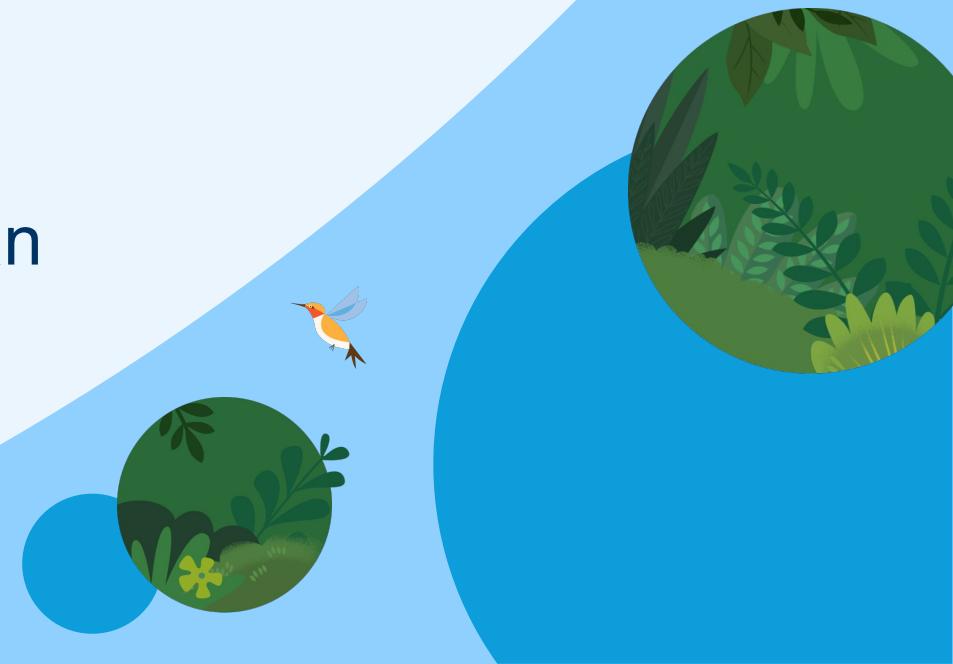
An aerial photograph capturing a massive lava flow from a volcanic eruption. The flow, which is bright orange-red at its source and turns dark grey as it cools, stretches across the landscape. It has already covered several square kilometers of green, agricultural land and has reached the edges of small settlements with houses and roads. A thick plume of white smoke rises from the lava's edge, and smaller fires are visible where the lava has just reached the ground.

Spatial Joins

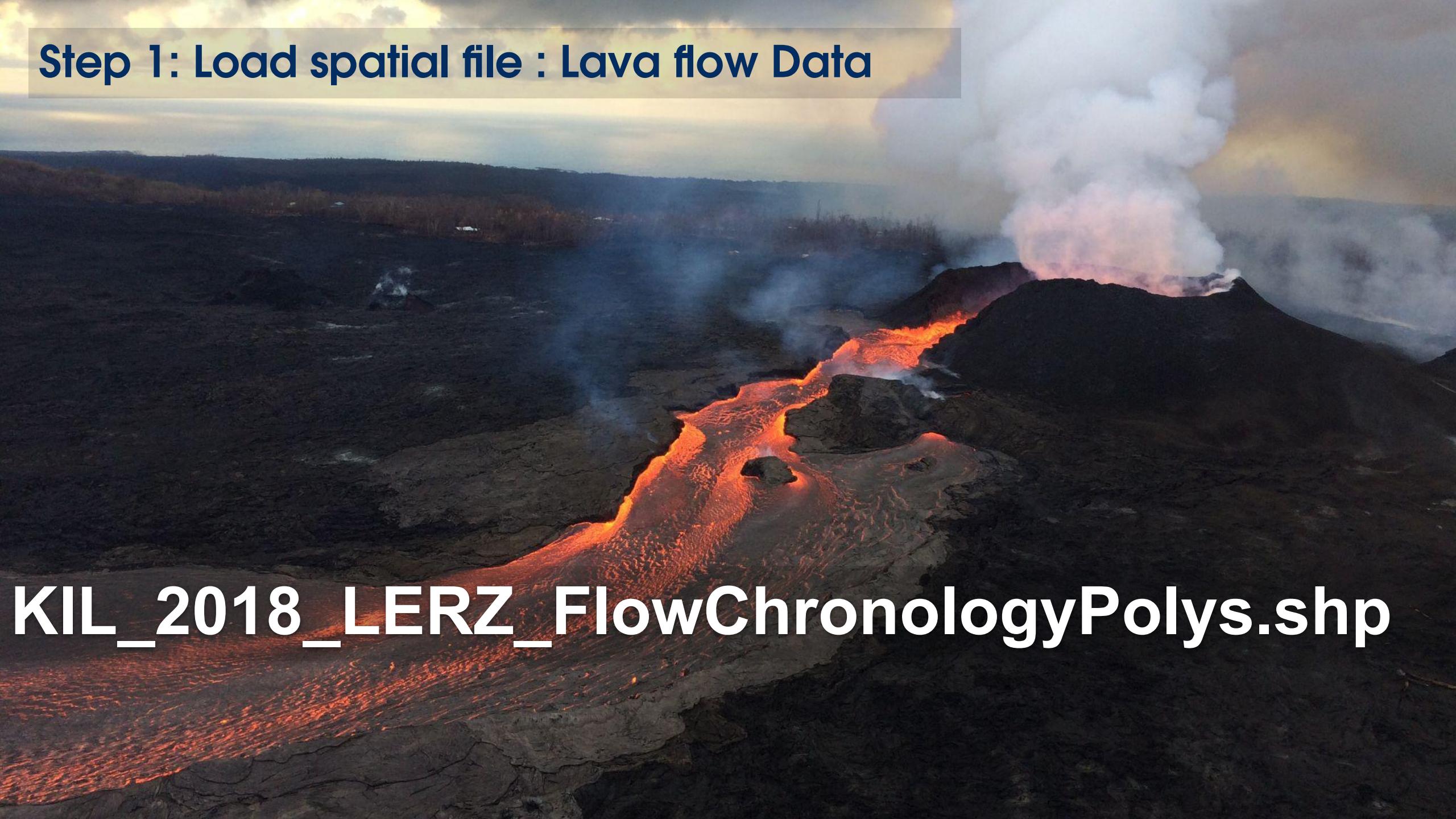
Data | United States Geologic Survey (USGS)

**Geospatial database of the 2018 lower East Rift
Zone eruption of Kīlauea Volcano, Hawai‘i**

Collected by the Hawaiian
Volcano Observatory staff



Step 1: Load spatial file : Lava flow Data



KIL_2018_LERZ_FlowChronologyPolys.shp

Lava flow



BUFFER(<Polygon>, <Unit Of Measure>)

Lava Area

AREA([lava flow], 'mile')



Step 2: Load text file : Structures

BigIslandHawaii.csv

KIL_2018_LERZ_FlowChronologyPolys.shp is made of 2 tables. ⓘ

KIL_2018_LERZ_FlowChronology... — Sheet1

Join

Inner	Left	Right	Full Outer
Data Source			Sheet1
Lava Flow	Intersects	Makepoint([Lat],[Lon])	
<i>Add new join clause</i>			

Structures



KIL_2018_LERZ_FlowChronologyPolys



Makepoint([Lat] , [Lon])

The calculation is valid.

4 Dependencies ▾

Apply

OK

Destroyed Structures



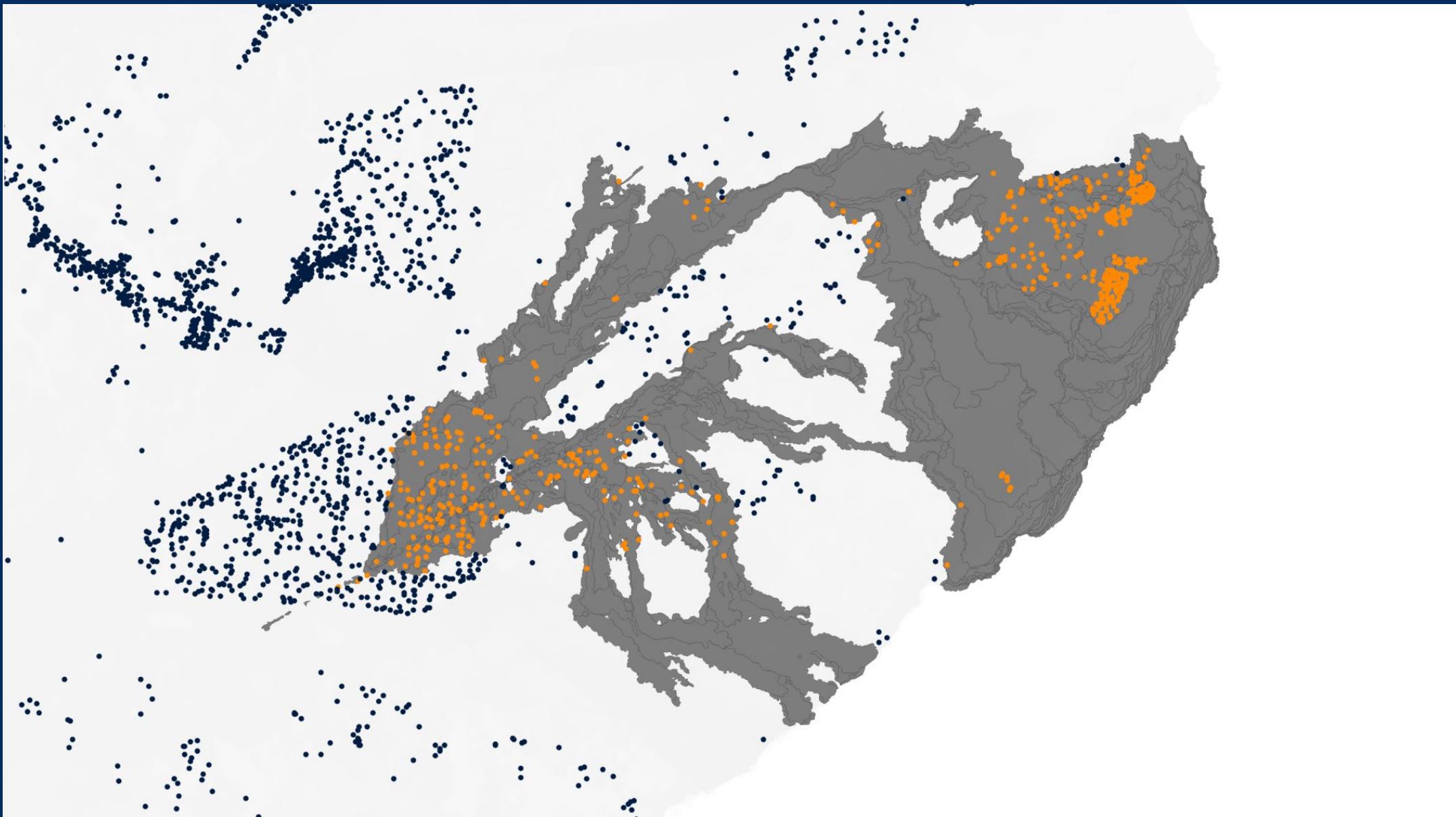
KIL_2018_LERZ_FlowChronologyPolys.shp is made of 2 tables. ⓘ

KIL_2018_LERZ_FlowChronology... — Sheet1

Join

Inner	Left	Right	Full Outer
Data Source			Sheet1
Lava Flow	Intersects	Makepoint([Lat],[Lon])	
<i>Add new join clause</i>			

Destroyed Structures



In Lava Flow?



KIL_2018_LERZ_FlowChronologyPolys



INTERSECTS([Lava Flow] , [Structures])

The calculation is valid.

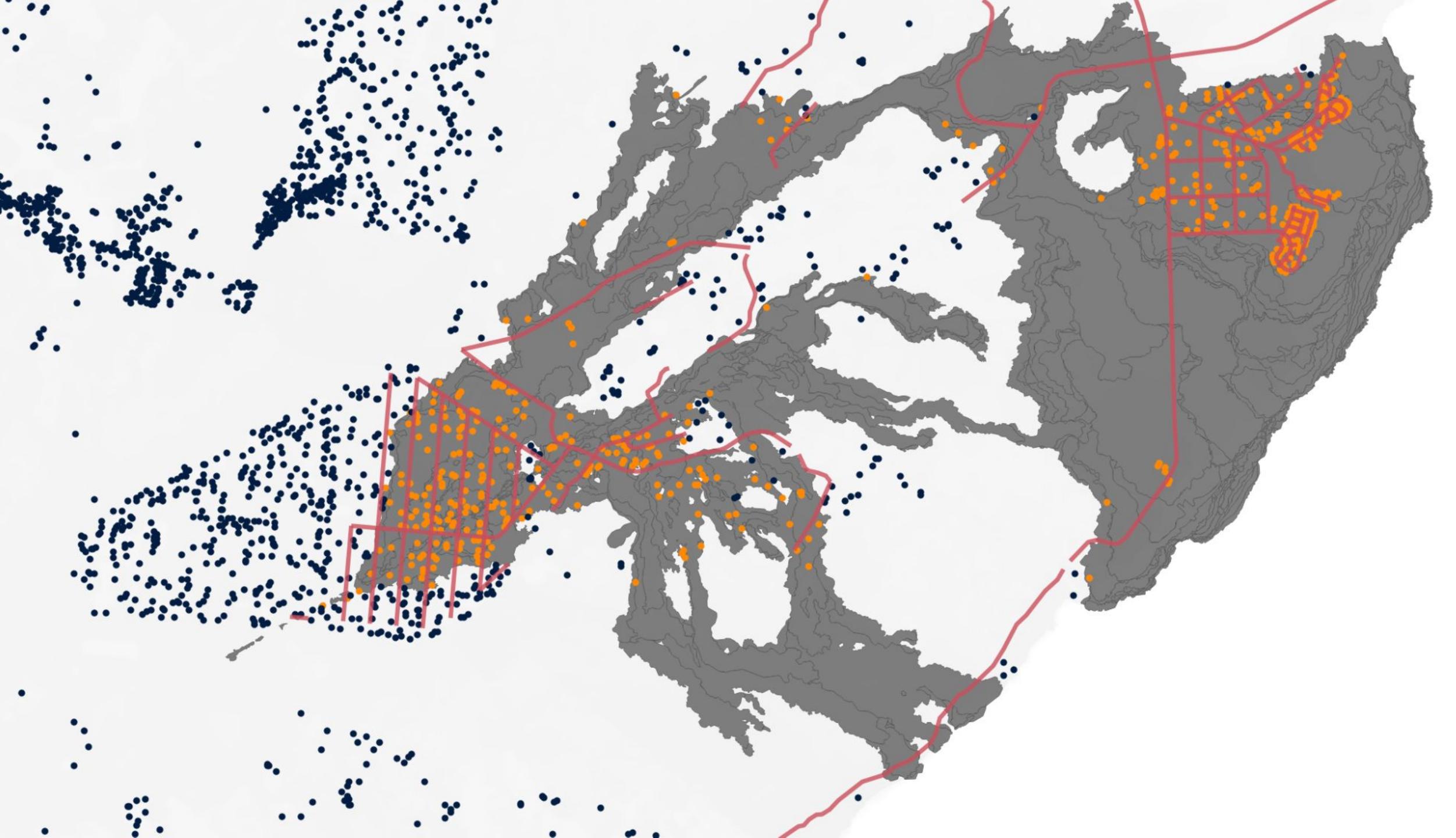
1 Dependency ▾

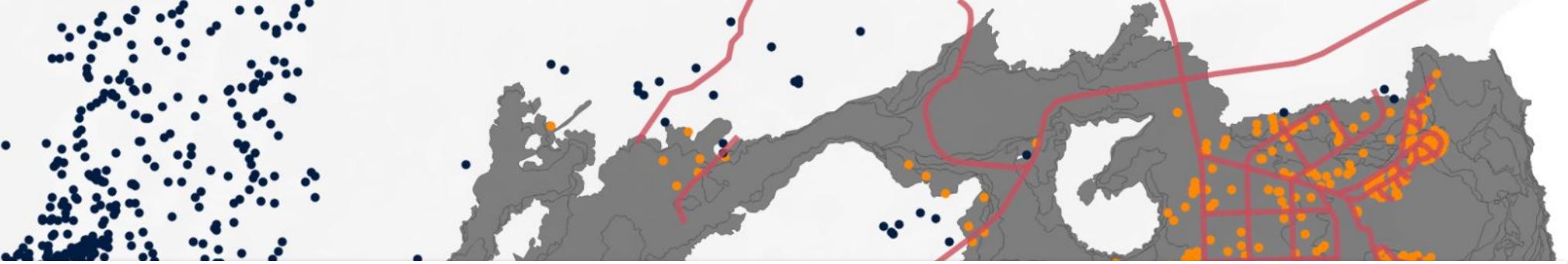
Apply

OK

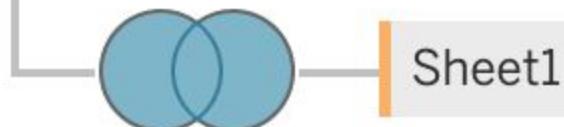
Step 3: Load spatial file : Roads

Roads__Hawaii_County.shp



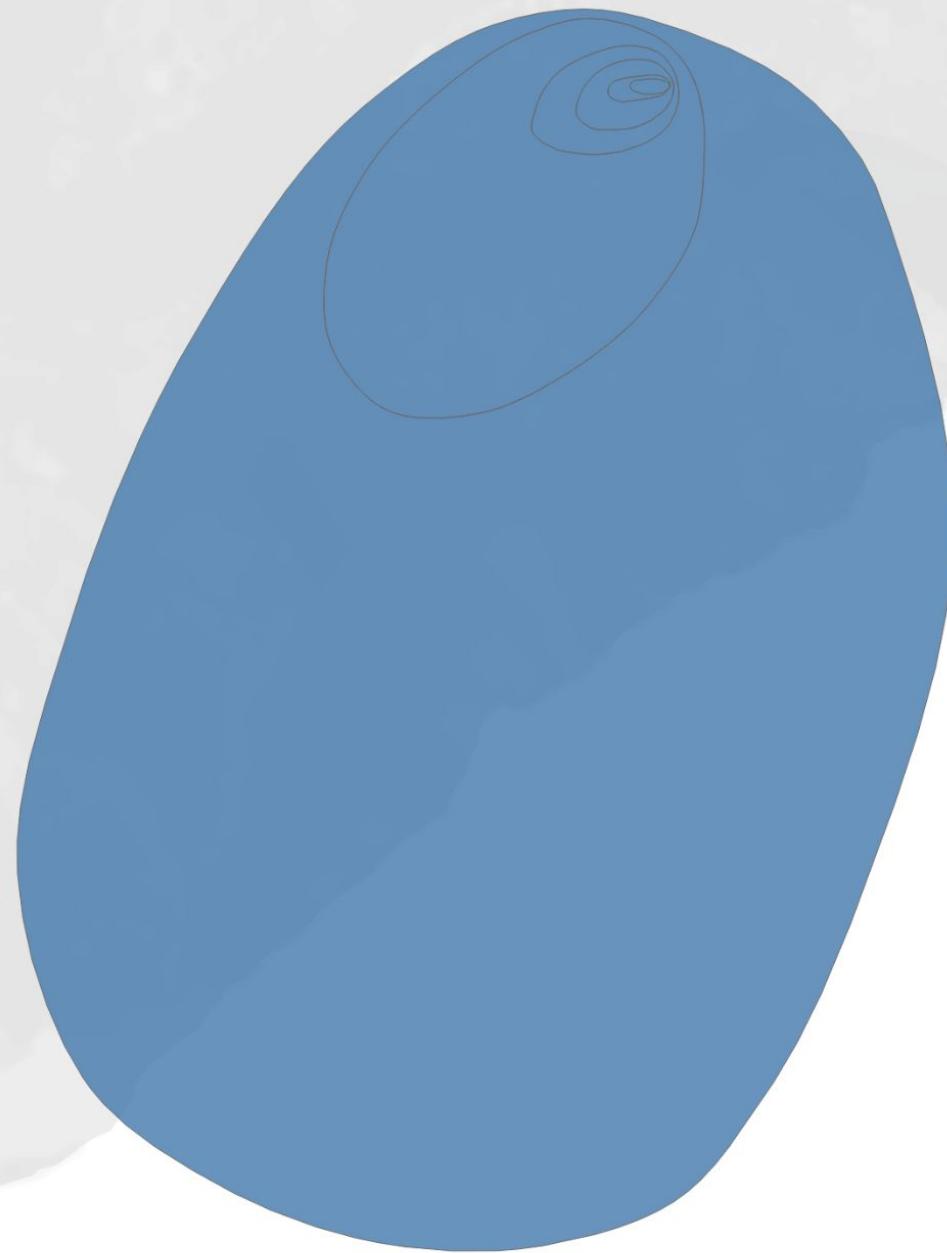


KIL_2018_LERZ_FlowChronologyPolys.shp is made of 3 tables. ⓘ

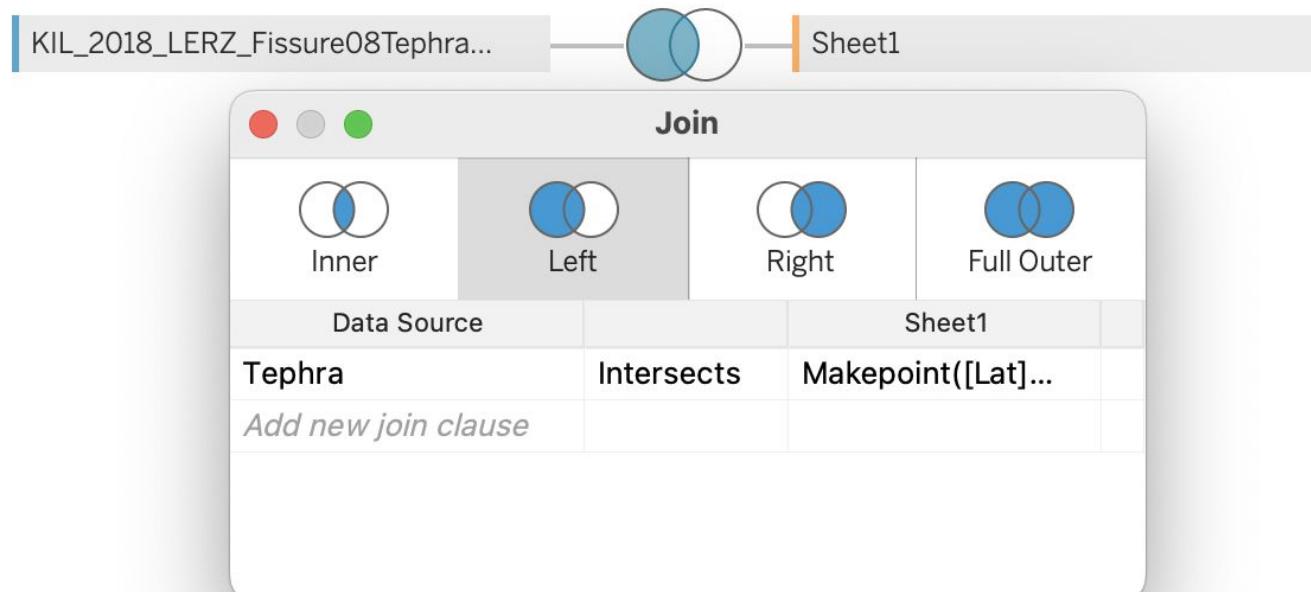


Step 4: Load spatial file:
Tephra

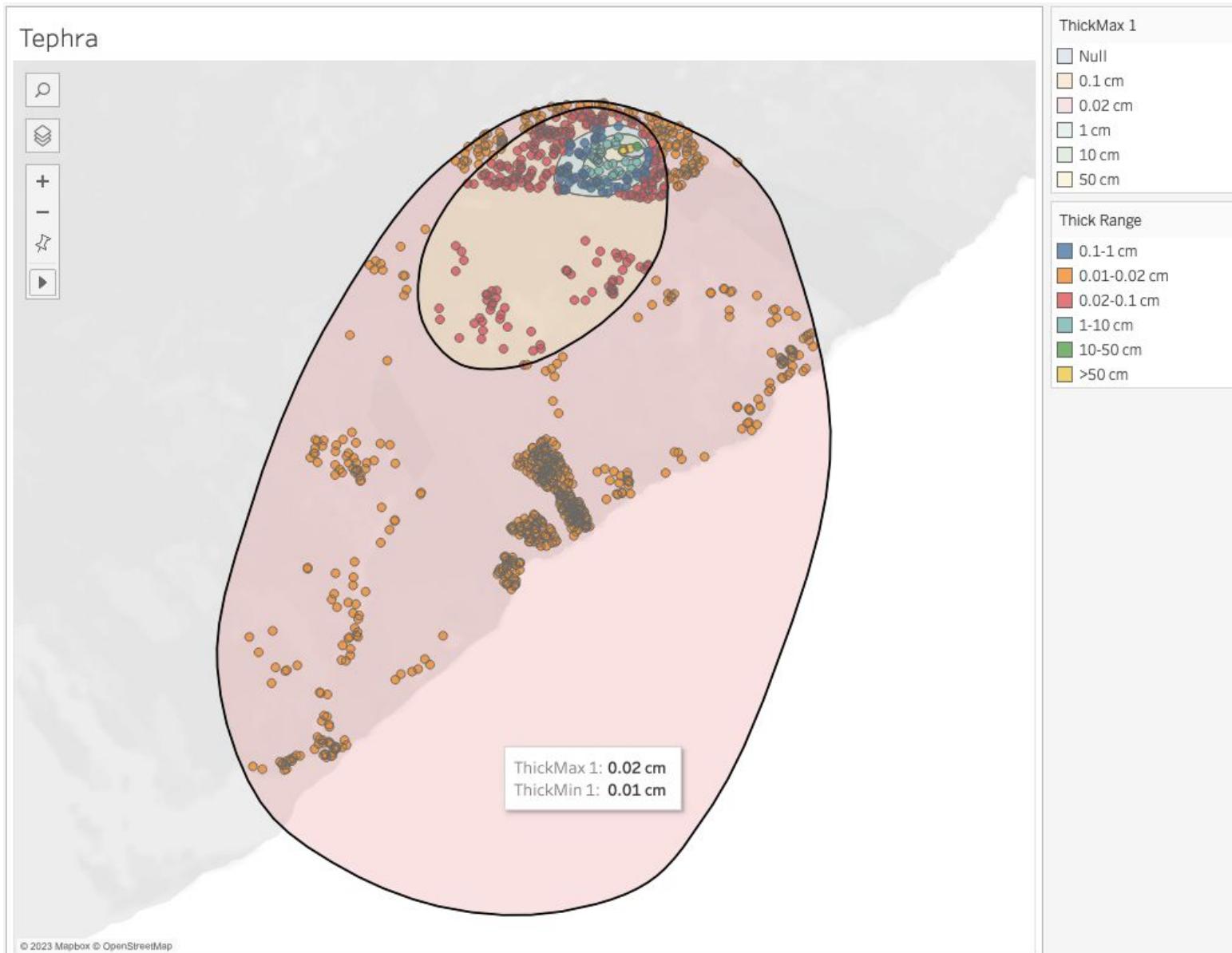
KIL_2018_LERZ_Fissure08TephraPolys.shp



KIL_2018_LERZ_Fissure08TephraPolys.shp is made of 2 tables. ⓘ



How much “Ash” (Tephra) fell where



Part 2 Summary:

In Lava Flow?

KIL_2018_LERZ_FlowChronologyPolys

INTERSECTS([lava flow], [Structures])

Structures

KIL_2018_LERZ_FlowChronologyPolys

Makepoint([Lat], [Lon])

Lava Area

KIL_2018_LERZ_FlowChronologyPolys

AREA([lava flow], 'mile')

SESSION REPEATS

More than just a map

May 9th | 8:00 am - 9:30 am | Seaside F

More than just a map

May 10th | 10:00 am - 11:30 am | Seaside AB



SESSION REPEATS

More than just a map

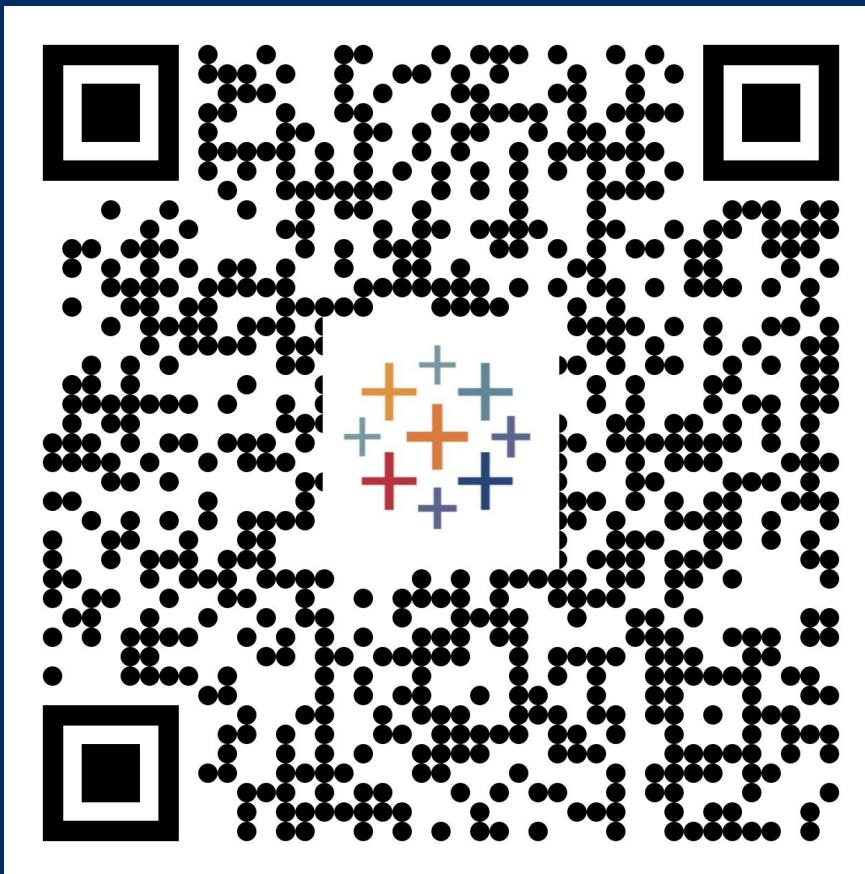
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More than just a map

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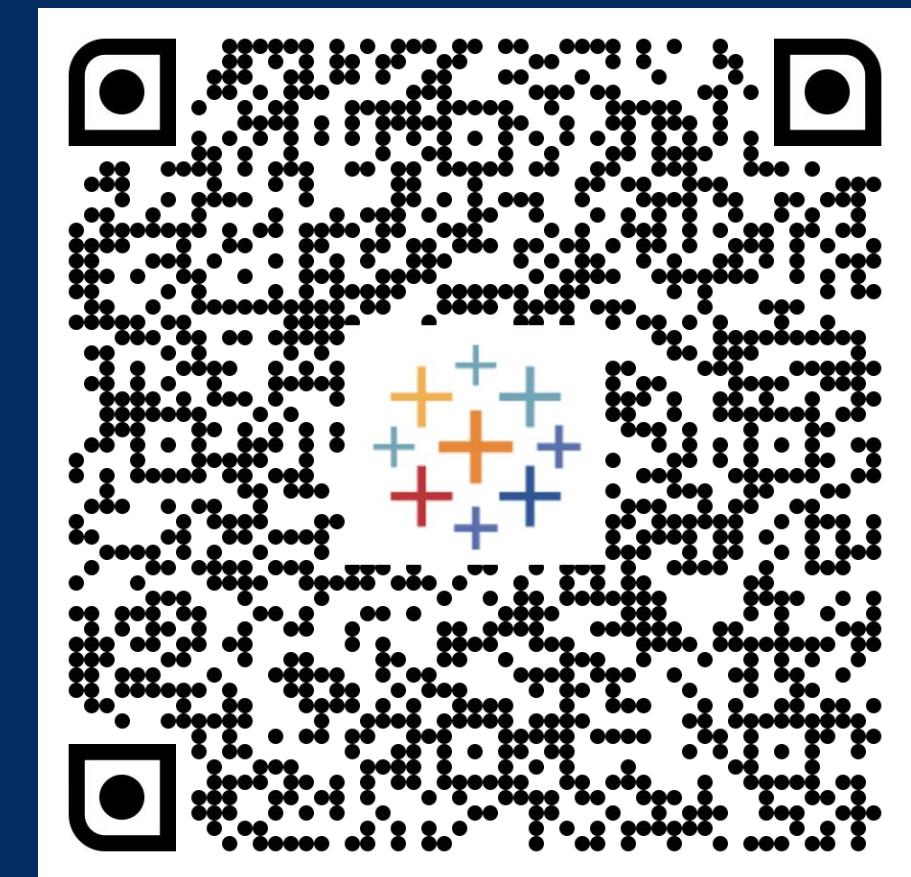


Download the data...



<https://www.qrcode-monkey.com/#>

Tableau Public viz



More than just a map

geospatial analytics in Tableau

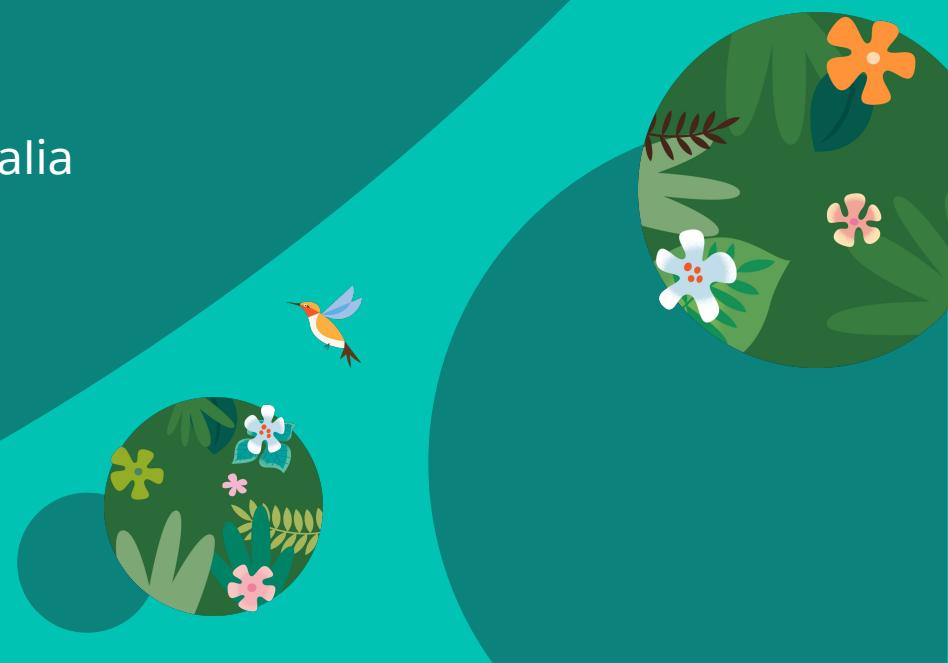
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Thank
you





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Thank you