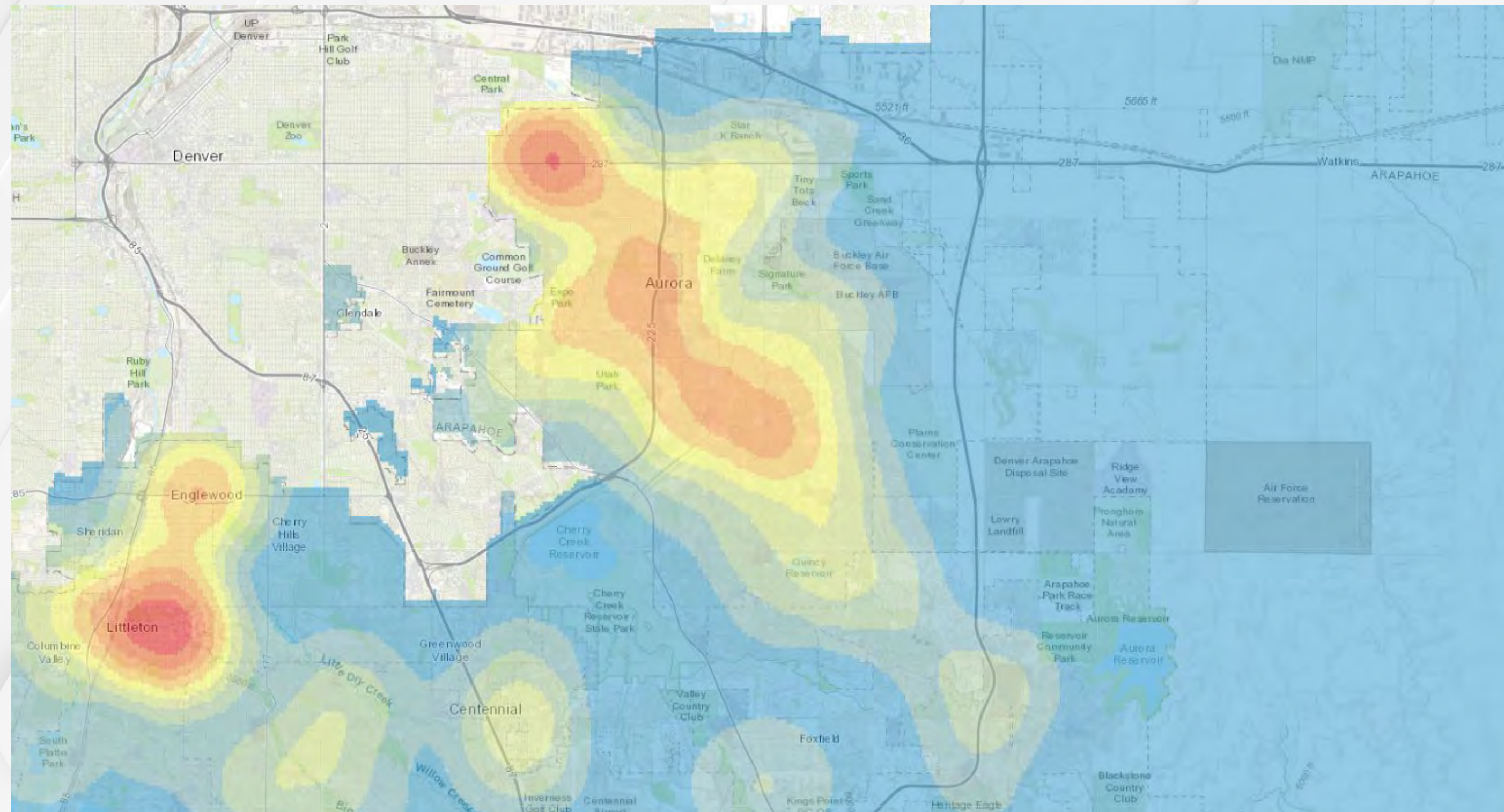


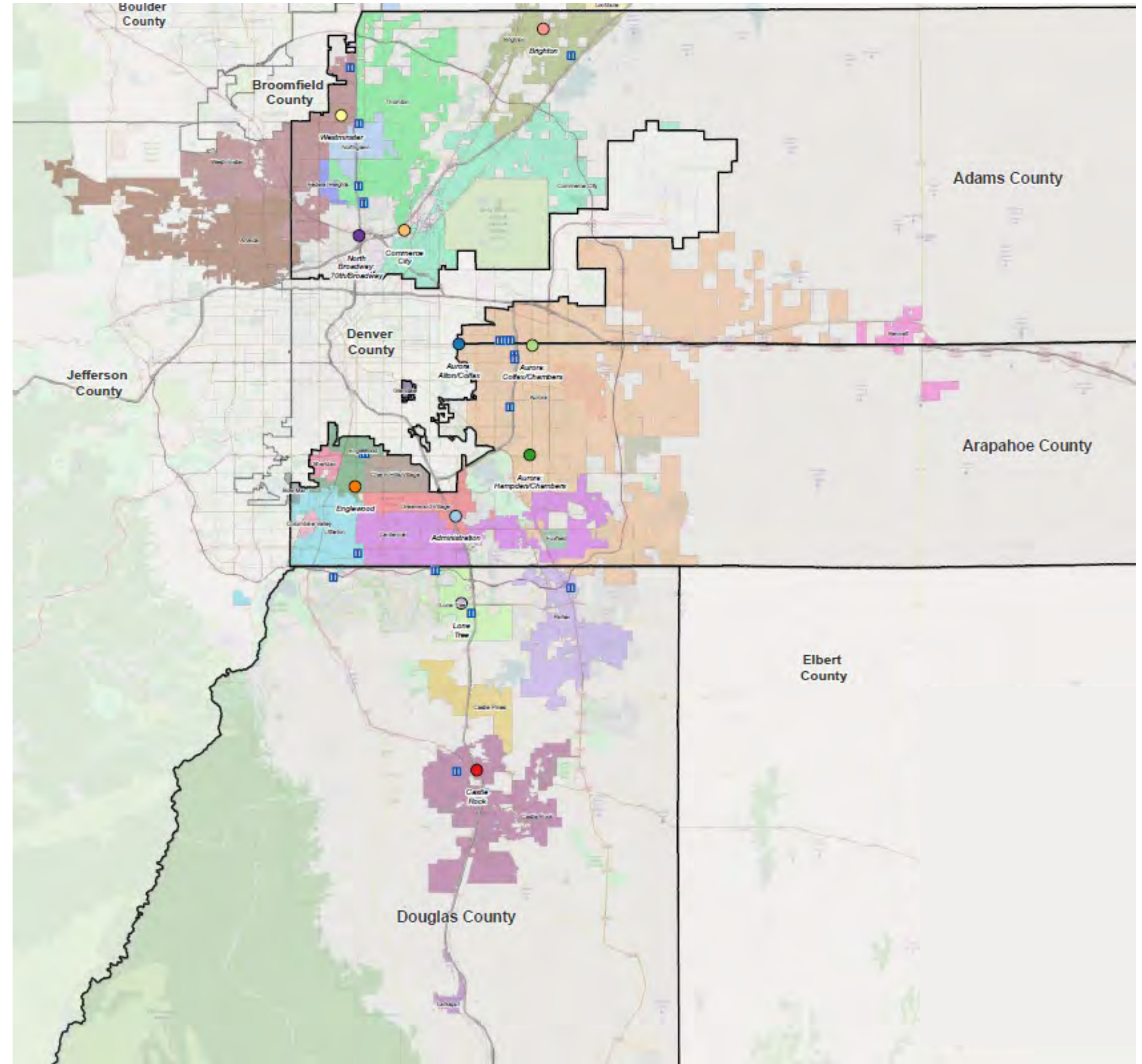
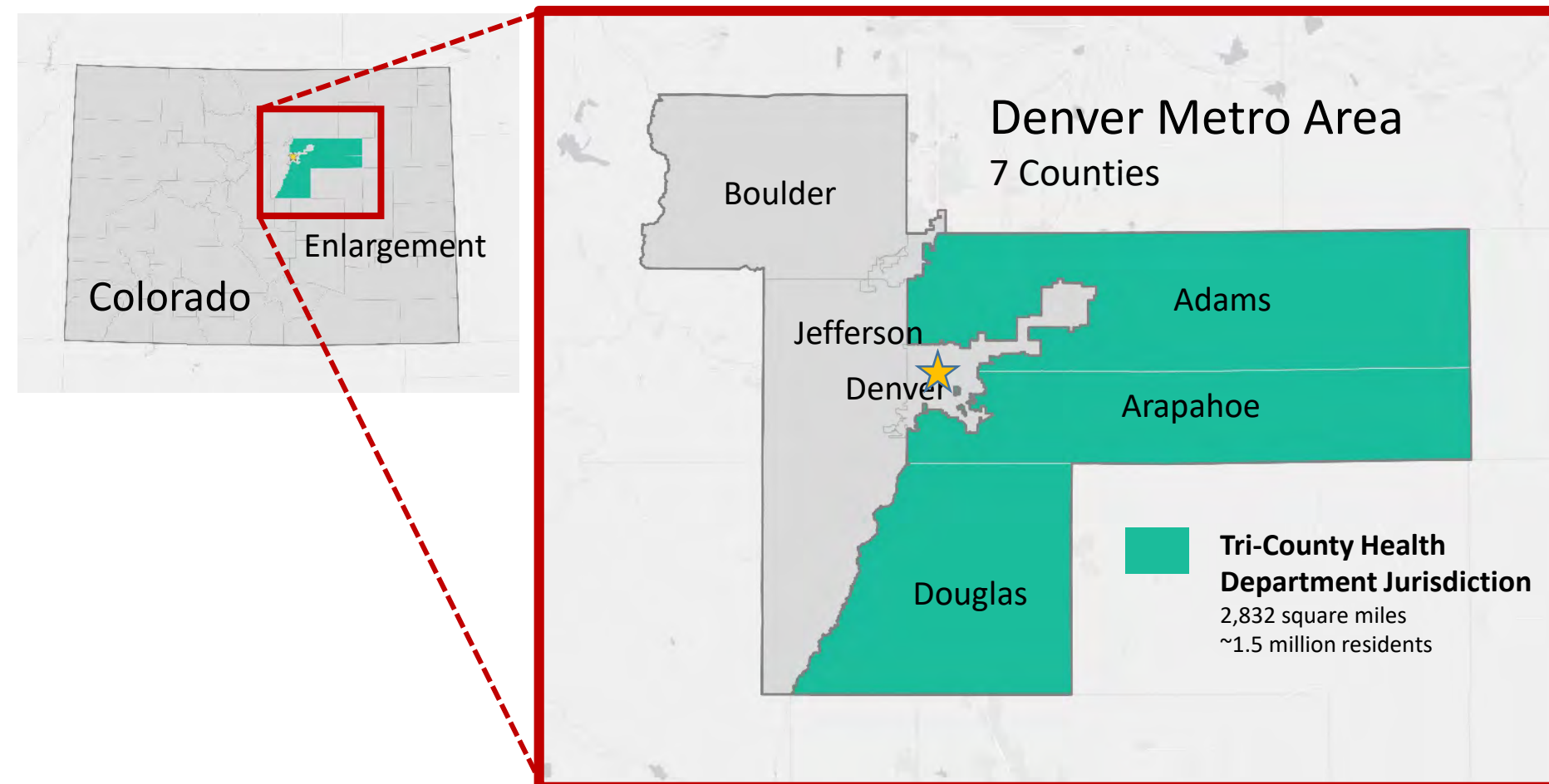
Using GIS for Covid19 Case and Contact Investigations



Adams, Arapahoe, Douglas Counties | Colorado

Tri-County Health Department

Adams, Arapahoe, Douglas Counties



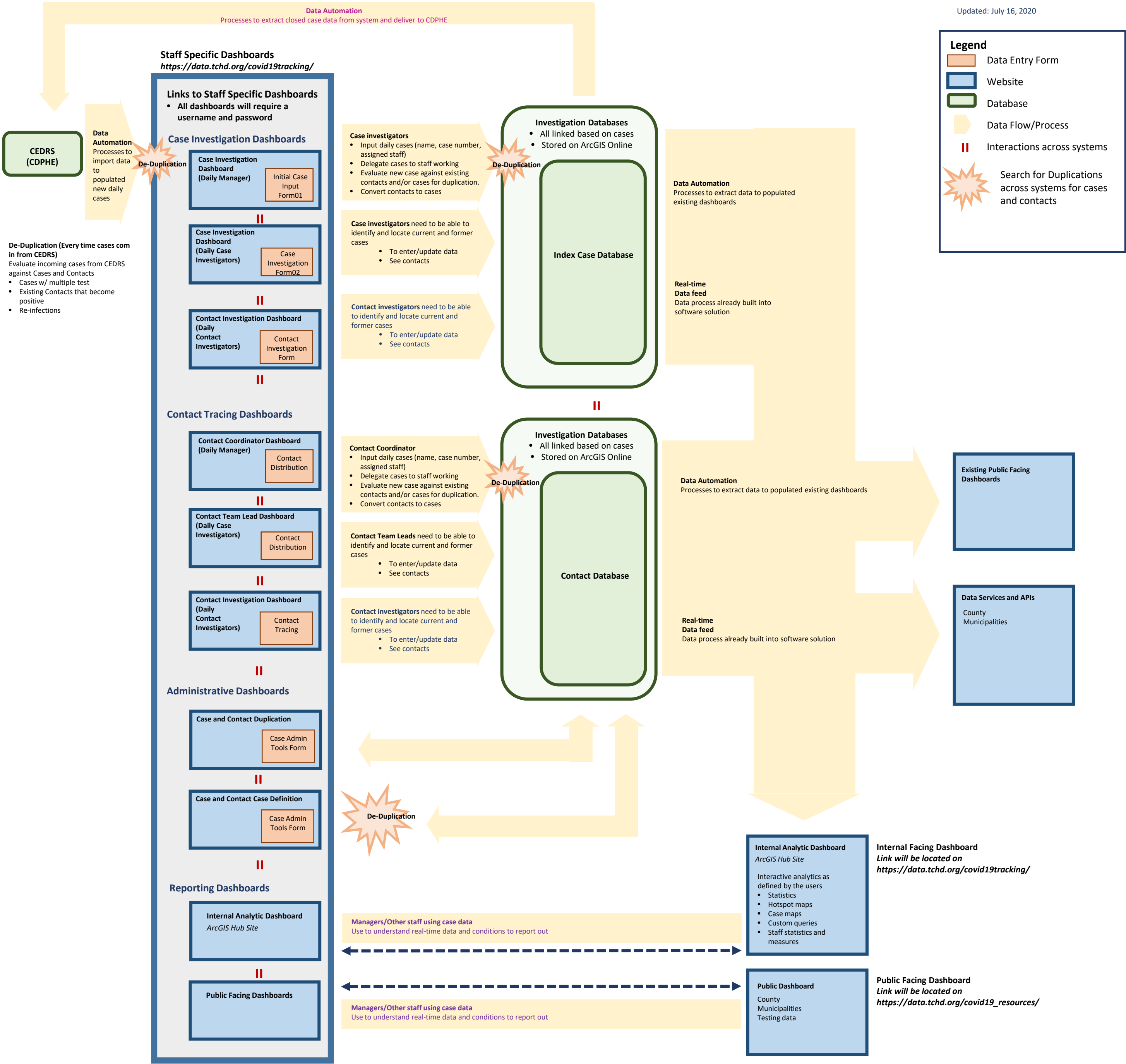
Tri-County Health Department (TCHD)

is the local public health agency for three (Adams, Arapahoe, Douglas) of the seven counties that make up the Denver metro region. TCHD serves approximately 1.5 million residents across 27 municipalities consisting of urban, suburban, and rural environments.

- ~ 425 employees
- 3 health data analysts
- 4 seats of ArcGIS Desktop
- 1 ArcGIS server license

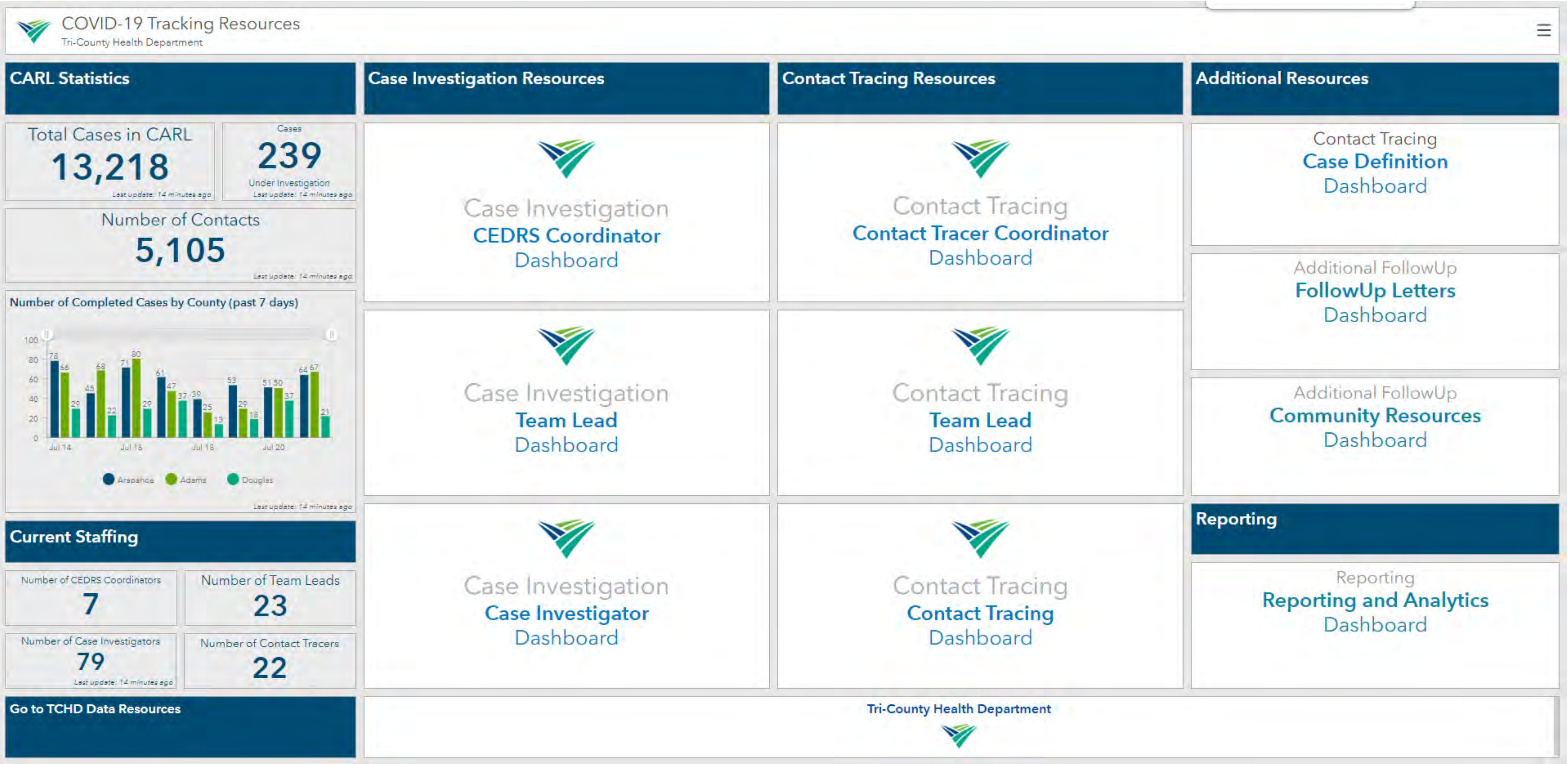
COVID19 Case Investigation Main Dashboard

Using ESRI ArcGIS Online



COVID19 Case Investigation Main Dashboard

Using ESRI ArcGIS Online Dashboards



Real-time general statistics from CARL

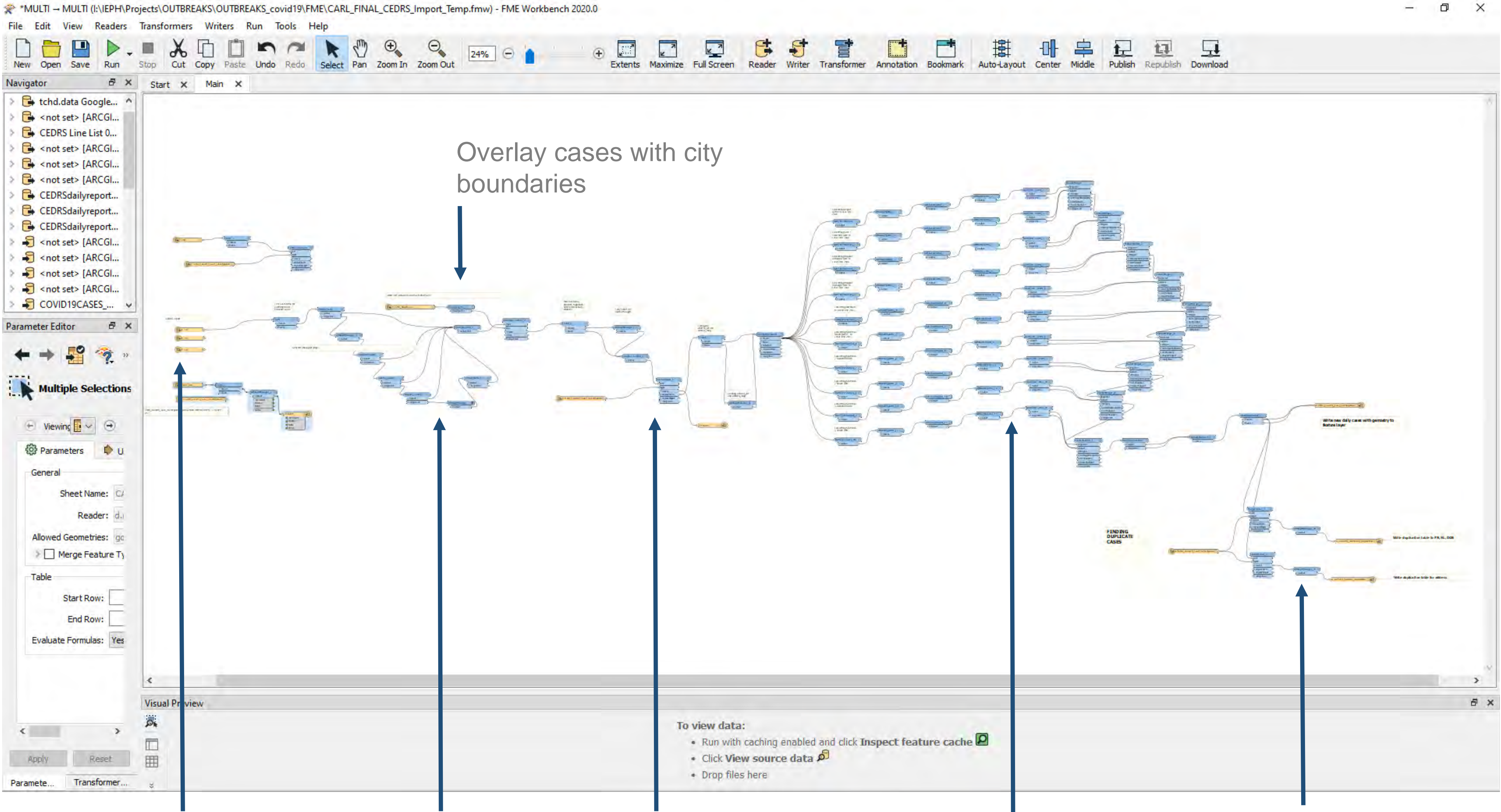
Case investigation workflow dashboards

Contact tracing workflow dashboards

Case investigation follow-up dashboards

COVID19 Case Importing Process

Using FME Workbench



Import cases from
State reportable
disease database

Geocode addresses
using each county's
geocoding service

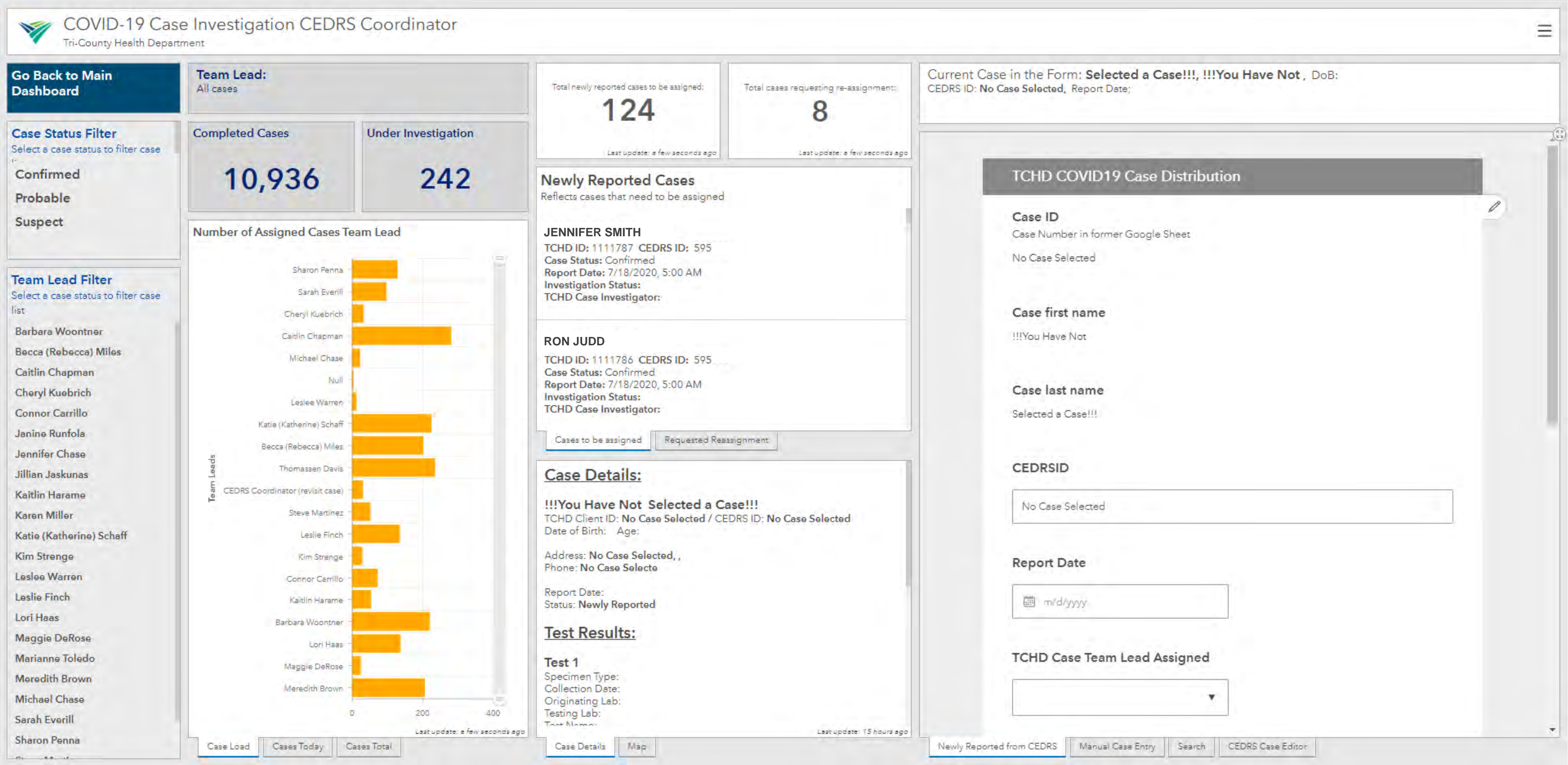
De-duplicate
against existing
records in CARL

Format date fields

Write cases to
feature service

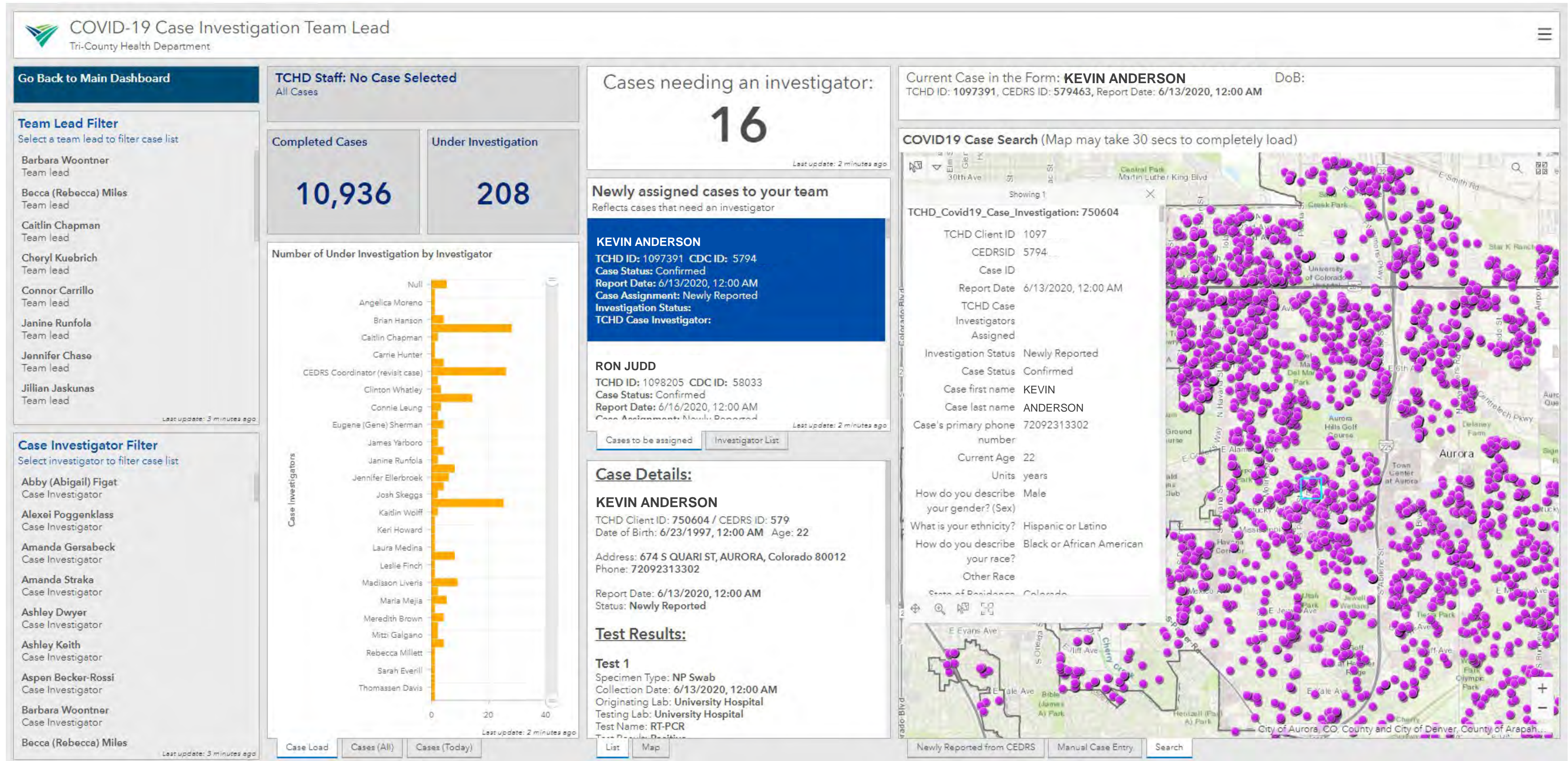
COVID19 Case Investigation Coordinator

ArcGIS Online Dashboard



COVID19 Case Investigation Team Lead

ArcGIS Online Dashboard



COVID19 Case Investigator

ArcGIS Online Dashboard

COVID-19 Case Investigator Dashboard

Tri-County Health Department

Go Back to Main Dashboard

Filter Options

Case Status Filter

Select a case status to filter case list

Closed

Newly Reported

Under Investigation

In progress

Case Investigator Filter

Select a case investigator to filter case list

Abby (Abigail) Figat (Case Investigator)

Alexei Poggenklass (Case Investigator)

Amanda Gersabeck (Case Investigator)

Amanda Straka (Case Investigator)

Ashley Dwyer (Case Investigator)

Ashley Keith (Case Investigator)

Aspen Becker-Rossi (Case Investigator)

Barbara Woontner (Case Investigator)

Becca (Rebecca) Miles (Case Investigator)

Brian Hanson (Case Investigator)

Brianna Patton (Case Investigator)

Caitlin Chapman (Case Investigator)

Candace Bray (Case Investigator)

Carolyn Blue (Case Investigator)

Carrie Hunter (Case Investigator)

Cheryl Kuebrich (Case Investigator)

Cases Completed

10,308

Last update: a few seconds ago

Cases Under Investigation

208

Last update: a few seconds ago

Current Case in the Form: KEVIN BROOKS DoB: 6/21/1974, 5:00 AM

CEDRS ID: 595 TCHD ID: 1111841 Infectious Period: -

REMINDER: Click SUBMIT at the end of EACH form

Case List

KEVIN BROOKS

TCHD ID: 1111841

CEDRS ID: 5950

Report Date: 7/18/2020, 5:00 AM

Investigation Status: Assigned | Under Investigation

RON JUDD

TCHD ID: 1111822

CEDRS ID: 5950

Report Date: 7/18/2020, 5:00 AM

Investigation Status: Assigned | Under Investigation

STACY EMERICK

TCHD ID: 1111806

CEDRS ID: 5950

Last update: 6 minutes ago

Case Details

KEVIN ANDERSON

TCHD ID: 1111841 CEDRS ID: 5950

Case Status: Confirmed

Report Date: 7/18/2020, 5:00 AM

Investigation Status: Assigned

TCHD Case Investigator: Maria Mejia

Interview Date:

Section: Call Log

Date/Time Assigned:

Interviewer: Maria Mejia

Call Log

Interview Date:

Interviewer: Maria Mejia

Communication Status 01

Status: CALL_NOTALK_CALLBACK

Date/Time: 7/18/2020, 1:30 PM

Communication Status 02

Status:

Last update: a few seconds ago

Case Details

Case Notes

Map

TCHD COVID19 Case Symptoms

Symptoms present during course of illness?

☐ Symptomatic

☐ Asymptomatic

☐ Unknown

Infectious Period

Start date of infectious period,
* Two days prior to symptom onset, for unknown symptom onset or asymptomatic, use two days prior to specimen collection date.

m/d/yyyy

End date of infectious period,
* Ten days after symptom onset, for unknown symptom onset or asymptomatic, use 10 days after specimen collection date.

m/d/yyyy

Test Results

Search

Call Log

Demographics

Symp

Exposures

Outbreaks

Occupation

Clinical

Contacts

Events

Closing


Notes

Last update: a few seconds ago

Tri-County Health Department

COVID19 Contact Tracing Coordinator

ArcGIS Online Dashboard



COVID-19 Contact Tracing Coordinator

Tri-County Health Department

Go Back to Main Dashboard

Select a priority level to filter contacts:

High

Med

Low

Last update: a few seconds ago

Team Lead Filter

Select a team lead to filter case list

Barbara Wootner

Team lead

Becca (Rebecca) Miles

Team lead

Caitlin Chapman

Team lead

Cheryl Kuebrich

Team lead

Connor Carrillo

Team lead

Janine Runfola

Team lead

Jennifer Chase

Team lead

Jillian Jaskunas

Team lead

Kaitlin Hareme

Team lead

Karen Miller

Team lead

Katie (Katherine) Schaff

Team lead

Kim Strenga

Team lead

Leslee Warren

Team lead

Leslie Finch

Team lead

Household Contacts

17

Need Assignment

Non-Household Contacts

1

Need Assignment

Newly Reported Contacts Needing Assignment

Reflects case contacts that need a team lead

KEVIN LOYD

Contact Type: household

Relationship with Case: child

TCHD Contact ID:

Contact Investigation Status: Newly Reported

Investigation Priority: High

Index Case:

Contacts for case: CEDRS ID 580527

Case Name: STEVE ALLEN

TCHD Case Investigator: Caitlin Chapman

TCHD Case Team Lead:

RON JUDD

Contact Type: household

Relationship with Case: grandmother

TCHD Contact ID:

Contact Investigation Status: Newly Reported

Investigation Priority: High

Index Case:

Contacts for case: CEDRS ID 580

Case Name: RICHARD MAKEN

TCHD Case Investigator: Caitlin Chapman

TCHD Case Team Lead:

STACY EMERICK

Contact Type: household

Relationship with Case: grandfather

TCHD Contact ID:

Contact Investigation Status: Newly Reported

Investigation Priority: High

Index Case:

Contacts for case: CEDRS ID 580

Case Name: RICHARD MAKEN

TCHD Case Investigator: Caitlin Chapman

TCHD Case Team Lead:

CONNOR POWELL

Contact Type: household

Current Case in the Form: Kevin Loyd

DoB: 10/15/2015, 6:00 PM

Contact ID:

TCHD COVID19 Contact Tracing Distribution

Contact Information

TCHD Client ID

Contact first name

KEVIN

Contact last name

LOYD

What type of contact is this?

☒ Household

☐ Non-Household

Relationship with Case

child

Cases

Contact Load

Contact All

Contact Today

Need Assignment

Reassignment

Team List

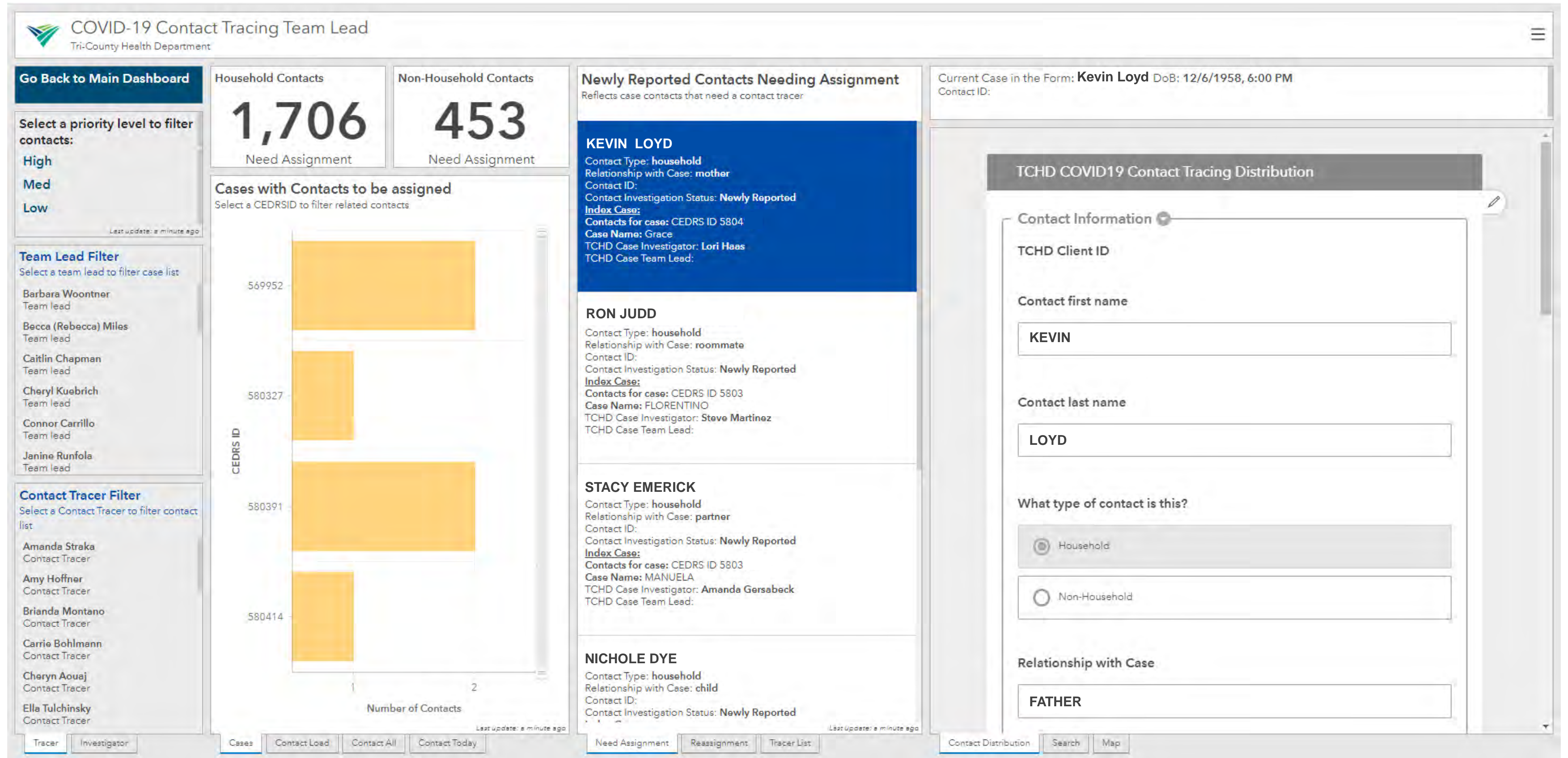
Contact Distribution

Contact Search

Map

COVID19 Contact Tracing Team Lead

ArcGIS Online Dashboard



ArcGIS Online Dashboard

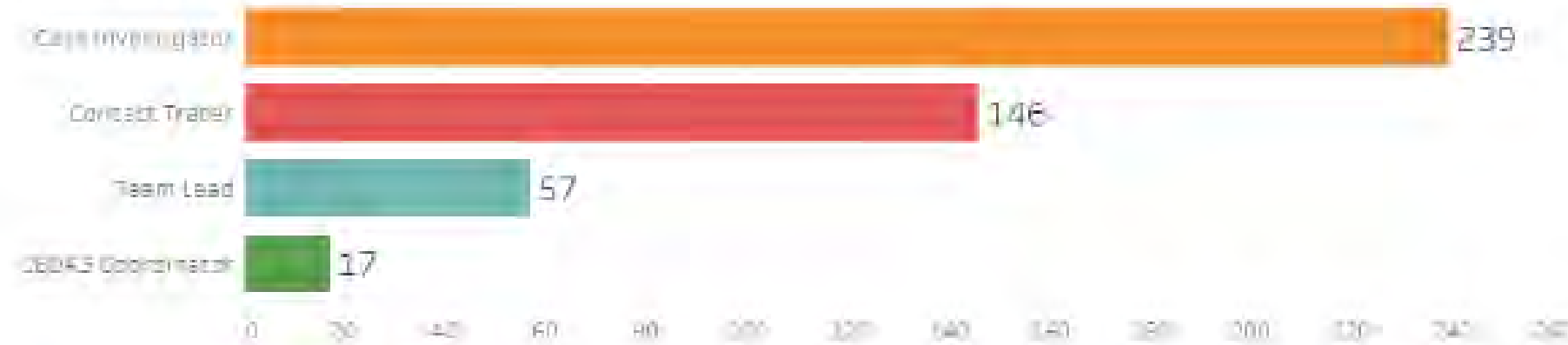


Tri-County
Health Department

COVID19 Internal Dashboards

COVID-19 STAFFING

Staff engaged in CI/CT



County Filter

applies to all case and contact data

All

Case and Contact Date Filter

To view the past week, please slide the lower filter to the appropriate date.

9/24/2020 10/8/2020

COVID-19 CASE INVESTIGATION

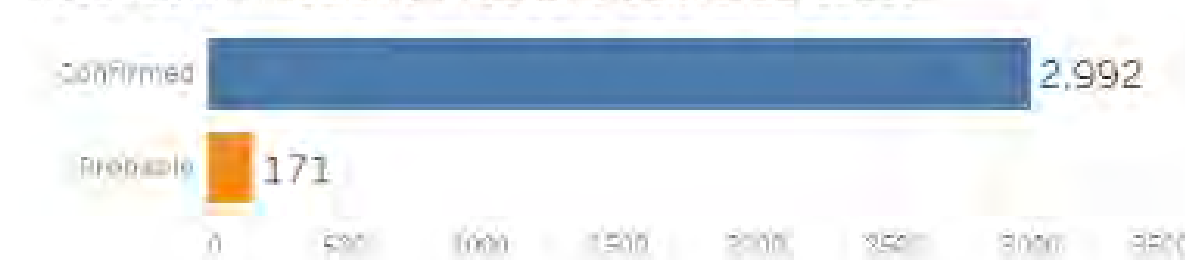
Case Ethnicity Filter

- ☒ (All)
- ☒ Hispanic or Latino
- ☒ Not Hispanic or Latino
- ☒ Null
- ☒ Prefer not to answer
- ☒ Unknown

Case Race Filter

- ☒ (All)
- ☒ Null
- ☒ American Indian or Alaska Native
- ☒ Asian
- ☒ Black or African American
- ☒ Native Hawaiian or Other Pacific Islander
- ☒ Other Race
- ☒ Prefer not to answer
- ☒ Unknown
- ☒ White

Total Confirmed and Probable COVID-19 cases



Total Confirmed and Probable COVID-19 cases

3,163

Average Days from COVID-19 Case Report to Interview

0.3504

Median Days from COVID-19 Case Report to Interview

0

Maximum Days from COVID-19 Case Report to Interview

18.00

Case Interviews Attempted

828

Case Interviews Completed

1,953

Cases Initiated within 24 hours of report

2,647

COVID-19 CONTACT INVESTIGATION

Contact Ethnicity

- ☒ (All)
- ☒ Null
- ☒ Hispanic or Latino
- ☒ Not Hispanic or Latino
- ☒ Unknown

Contact Race

- ☒ (All)
- ☒ Null
- ☒ American Indian or Alaska Native
- ☒ Asian
- ☒ Black or African American
- ☒ Native Hawaiian or Other Pacific Islander
- ☒ Other Race
- ☒ Prefer not to answer
- ☒ Unknown
- ☒ White

Total Contacts reported/ascertained **2,327**

Average number of contacts identified per case

2.529

Median number of contacts identified per case

2

Average Days from COVID-19 Contact Report to Interview

0.3795

Median Days from COVID-19 Contact Report to Interview

0

Maximum Days from COVID-19 Contact Report to Interview

11.00

Contact Interviews Attempted

405

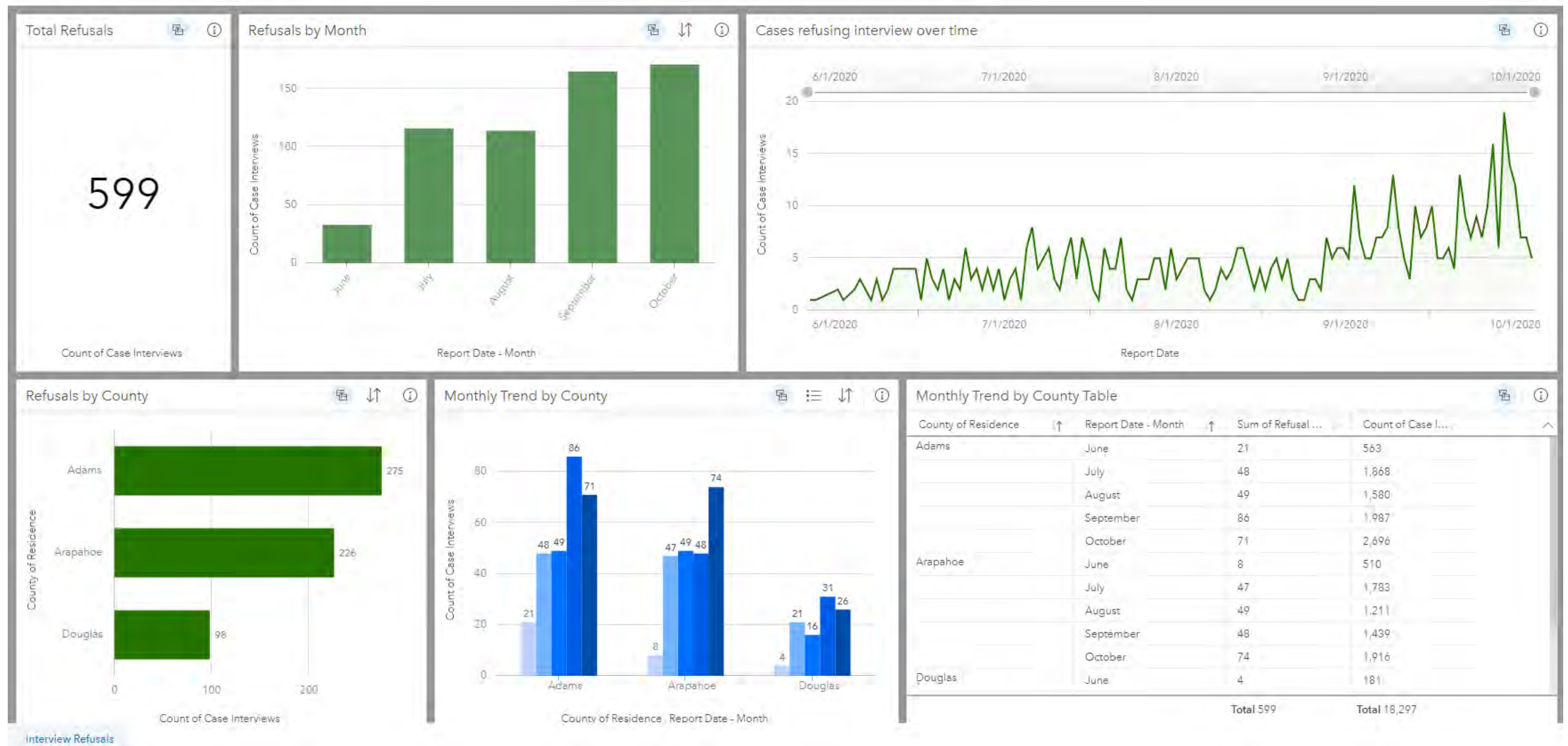
Contact Interviews Completed

1,236

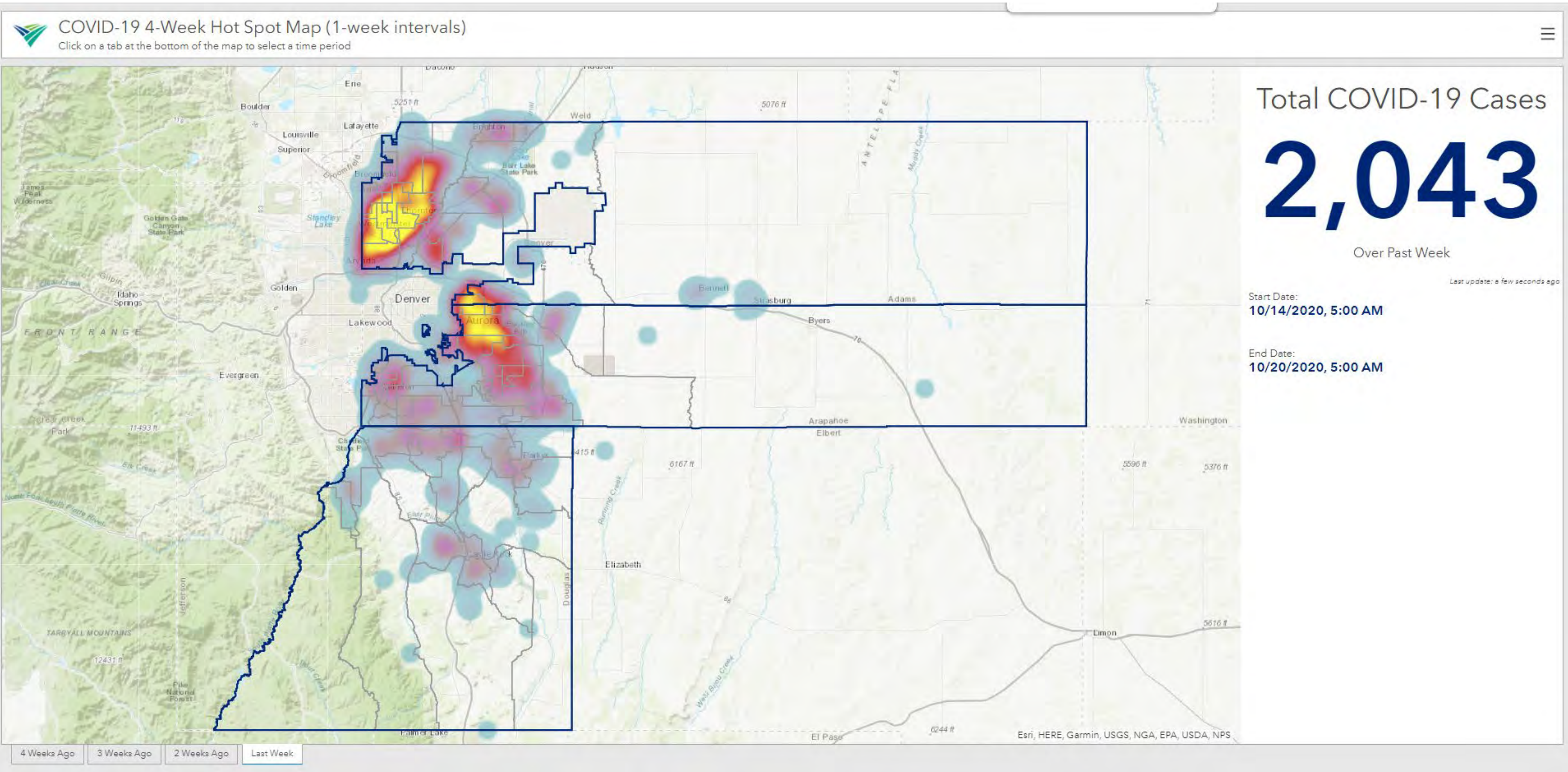
Contacts Initiated within 24 hours of report

1,596

COVID19 Internal Dashboards

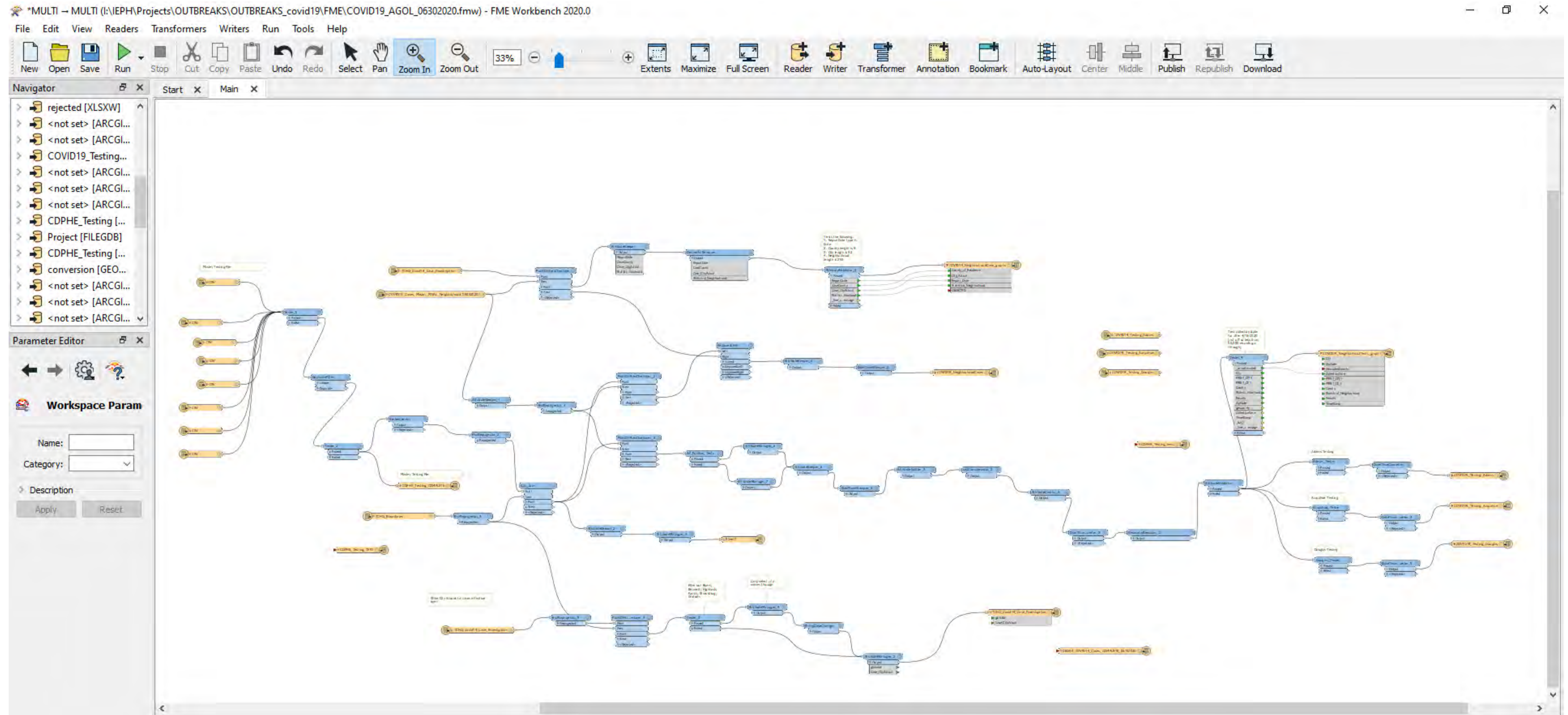


COVID19 Internal Dashboards



COVID19 Data Export to Public Dashboards

Using FME Workbench



COVID19 Public Dashboards

Tableau Dashboard



COVID-19 Case Reporting (updated October 20, 2020)

Representing cases in Adams, Arapahoe, and Douglas Counties | Colorado

These data are for monitoring and surveillance purposes, and may differ from official data from the Colorado Department of Public Health and Environment (CDPHE). These differences may be explained by case investigation findings, differences in timing of data uploads and updates, etc. All county variances will be evaluated based on official data from CDPHE. TCHD is providing these data to allow for the evaluation of general trends across a host of relevant indicators.

Positive COVID-19 Cases

Adams, Arapahoe and Douglas Counties

Cumulative Since 1/1/2020

26,897

COVID-19 Deaths

Adams, Arapahoe and Douglas Counties

Deaths among people with COVID

Cumulative Since 1/1/2020

May not represent all COVID-19-related deaths

704

COVID-19 Cases by County

Cases currently reported to Tri-County Health Department. These totals may be higher than daily total case counts.

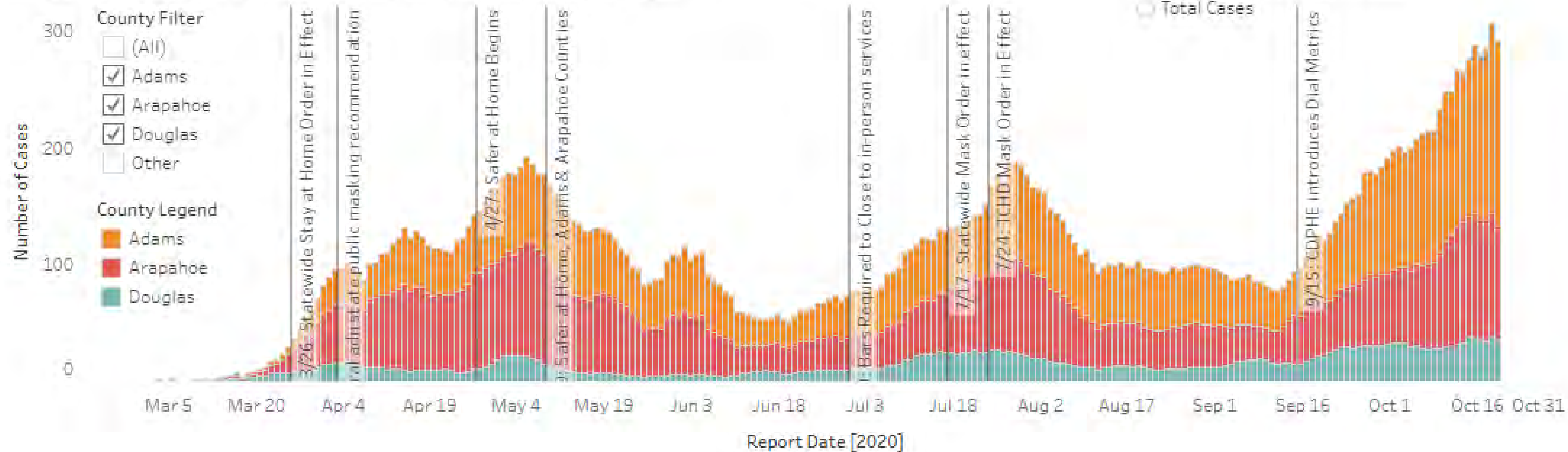
Cumulative Since 1/1/2020



Daily COVID-19 Cases by County

This histogram shows the daily incidence of newly reported cases of laboratory-confirmed COVID-19 cases by Report Date.

This graph can be filtered by County or to see 3-day or 7-day rolling averages.



<https://data.cdn.org/covid19/>

COVID19 Public Dashboards

Tableau Dashboard

Case Exposure Metrics - Data Since September 29

Adams, Arapahoe and Douglas Counties

Case County: (All) Municipality: (All) Statistical Neighborhood: (All) Age Range: (All) Report Date (Data collected since 9/29/2020): 9/29/2020 to 10/19/2020

Total Cases with Completed Interview

Sep 29 - Oct 19

5,496

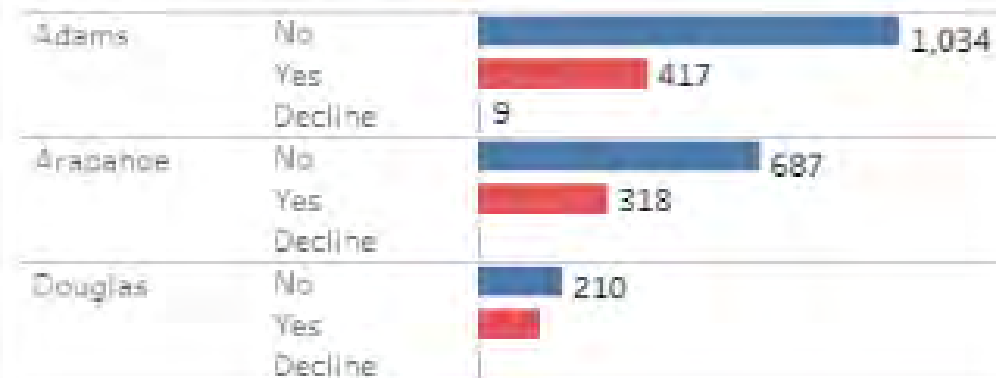
Cases with Interactions

Cases Interacting Prior to Illness Onset: 889
Cases Interacting During Infectious Period: 1,835

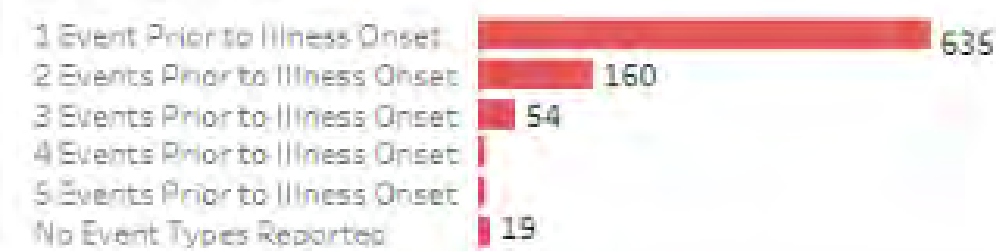
Interactions by Cases

Total Interactions: 3,106
Interactions Prior: 1,229
Interactions During: 1,877

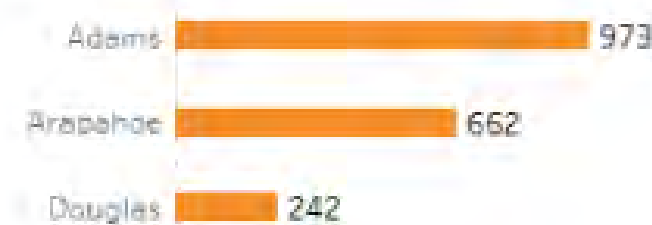
Cases Reporting Exposure Interactions in 14 Days Prior to Illness Onset



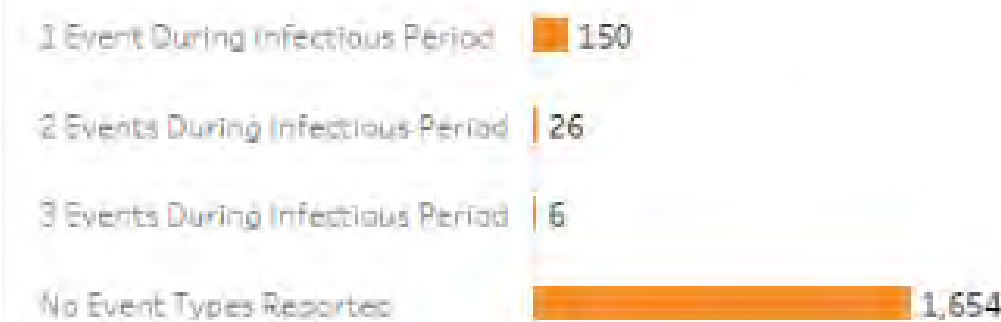
Number of Reported Interactions by Cases Prior to Illness Onset



Interactions During Infectious Period Where Exposure Could Happen

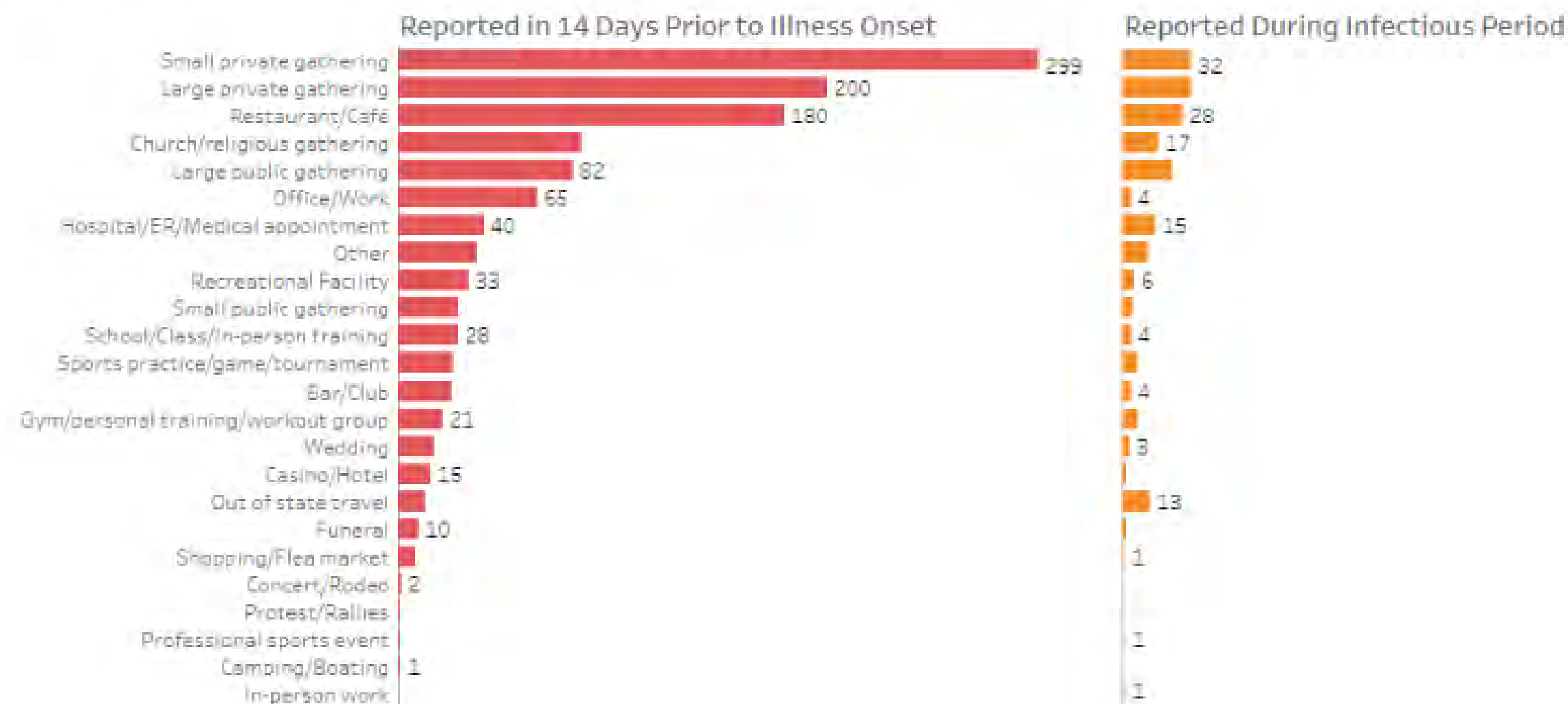


Number of Reported Interactions by Cases During Infectious Period



Categories of Commonly Reported Places Cases Reported Going: Sep 29 - Oct 19

Note: Excludes interactions where no interaction type was supplied



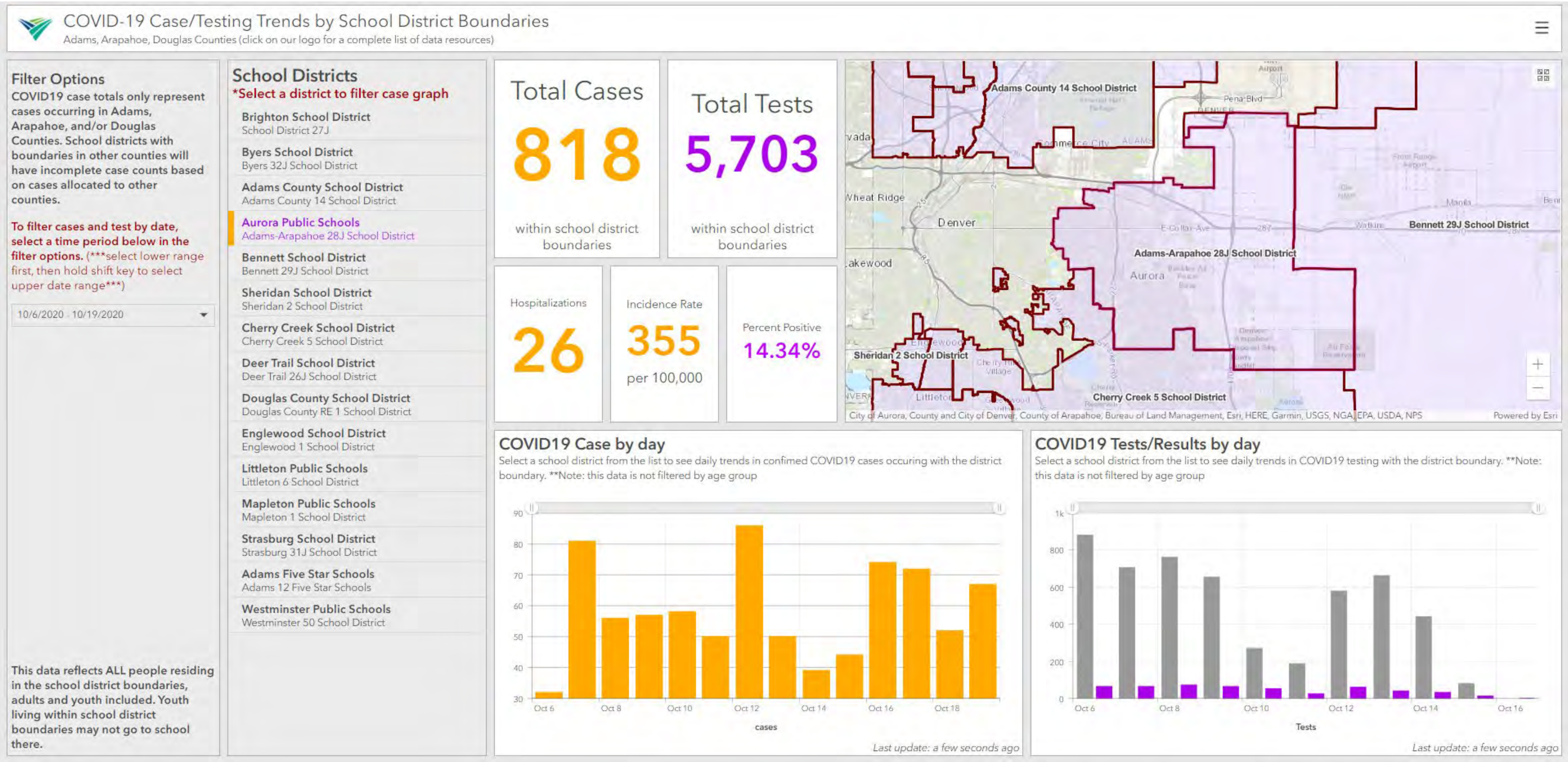
<https://data.tchd.org/covid19/>

ArcGIS Online Dashboard



COVID19 Public Dashboards

ArcGIS Online Dashboard



<https://tchdgis.maps.arcgis.com/apps/dashboards/acc52b381eed47219319864b3db95890>

For questions contact:

Adam Anderson

aanderson@tchd.org

Informatics, Epidemiology, and Health Planning Manager

To see dashboards in this presentation:

https://data.tchd.org/covid19_resources/