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# MEMORANDUM

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Date: April 16, 2020

To: The Honorable Chairman and Members  
Pima County Board of Supervisors

From: C.H. Huckelberry   
County Administrator

Re: **Visual Display of COVID-19 Cases in Pima County by Zip Code**

As you know, the State of Arizona recently released information and data regarding the number of COVID-19 cases in Arizona by zip code. This data should be carefully reviewed, as it very often will cause undue concern regarding COVID-19 infections within a zip code.

We have portrayed the same information by a census tract boundary. Health Department Director, Dr. Bob England, had an extensive interview with the *Arizona Daily Star* on cautioning individuals about reading too much into the COVID-19 zip code map. Dr. England and the Health Department have tried to put this information in its proper context (Attachment 1).

I have attached two COVID-19 maps (Attachment 2 and 3).

The first map mirrors the Arizona Department of Health Service (ADHS) and shows the cases by zip code and graphically displays the number of cases in each (Attachment 2). The State data has provided a gradation of cases from zero to greater than 40 and color-coded those gradations that are then reflected in the zip code map. It is important to note that zip code areas vary widely in size but more importantly have no relation to population density.

Our GIS staff prepared the second map showing the same number of cases but portrayed by census track using the same gradation levels and color codes. (Attachment 3) Census track has the value of having approximately the same population size.

As you can see, the maps portray an entirely different visual image of cumulative COVID-19 cases within Pima County. This is one of the reasons we cautioned the public about interpreting this information as representative of the spatial distribution of COVID-19 cases. To further demonstrate how even the census track information could be misinterpreted, for the one census track with the darkest color (more than 40 cases) most cases occur at a single point location within the census track.

Another area that needs to be included and understood is that this case density as well as location will vary over time. As a person becomes infected and a positive test result is recorded, the test reporting may lag between 2 and 8 days behind actual testing. In addition,

The Honorable Chairman and Members, Pima County Board of Supervisors  
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a person over the course of approximately 14 days will progress through the infection and should no longer be reported as an active infection case at the end of the period.

Finally, all the cases represented graphically in these maps are also likely to be the most symptomatic and the sickest. We continue to press our Federal and State partners for additional testing resources and processing capacity so that we can have the most reliable estimate of this pandemic in Pima County.

We are also producing a dot map where cases are located geographically. This map will be updated every week with cases older than 21 days falling into a different color code.

CHH/mp

#### Attachments

c: Jan Leshar, Chief Deputy County Administrator  
Francisco García, MD, MPH, Deputy County Administrator & Chief Medical Officer,  
Health and Community Services  
Dr. Bob England, Director, Health Department

# ATTACHMENT 1



## COVID-19 zip code data should be viewed cautiously

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On April 12, the [Arizona Department of Health Services](#) updated its COVID-19 dashboard to include additional information about cases and deaths, more detailed demographic information, as well as case counts broken down by zip code. The link to that site is provided on Pima County's [COVID-19 Health Information and Resources website](#).

This important information gives a simplified snap shot of the impacts of COVID-19 statewide and in Pima County. There are a few things the Health Department suggests the public note while looking at this data, especially when trying to decide what it means to the level of risk for a given age range, ethnicity or zip code.

Remember that the data we are seeing now only reflects individuals who have tested positive for COVID-19. While more testing is being done every day, the limitations in testing have meant that most tests so far have only been done for those who are very sick, are known contacts of an already confirmed case, or are healthcare workers. This means that the map may reveal where concentrations of people who got tested live – not necessarily where the risk of coming in contact with the virus is higher. This also means that for every confirmed case on a map, there are probably dozens of people who have not been tested but have the virus, and do not live in that zip code.



In addition, most testing right now is being done through commercial labs, which can take, on average, one week to be reported. Because of this, when new data is posted we are really looking at infections that have occurred weeks ago and thus, may not be representative of the current risk in our community.

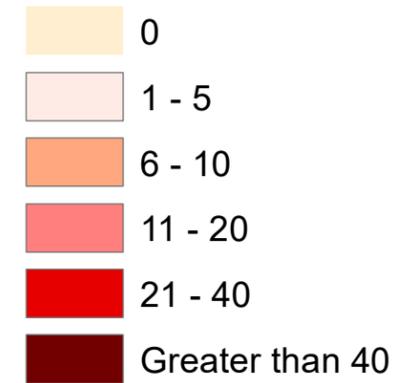
Zip code counts include anyone in that zip code who has tested positive, whether their infection occurred two months ago and has resolved, or two weeks ago and is still active. Thus, while zip code data is informative, it should not be used to determine whether or not residents of a particular zip code are or are not at risk of COVID-19, advises Dr. Cara Christ, director of ADHS.

Note: Traffic on the ADHS page is highest in the morning, when numbers are updated. Therefore, the page may load more slowly during that time period.

# ATTACHMENT 2

# COVID-19 Reported Cases between March 11 and April 11 by Zip Code

## Number of Cases per Zip Code



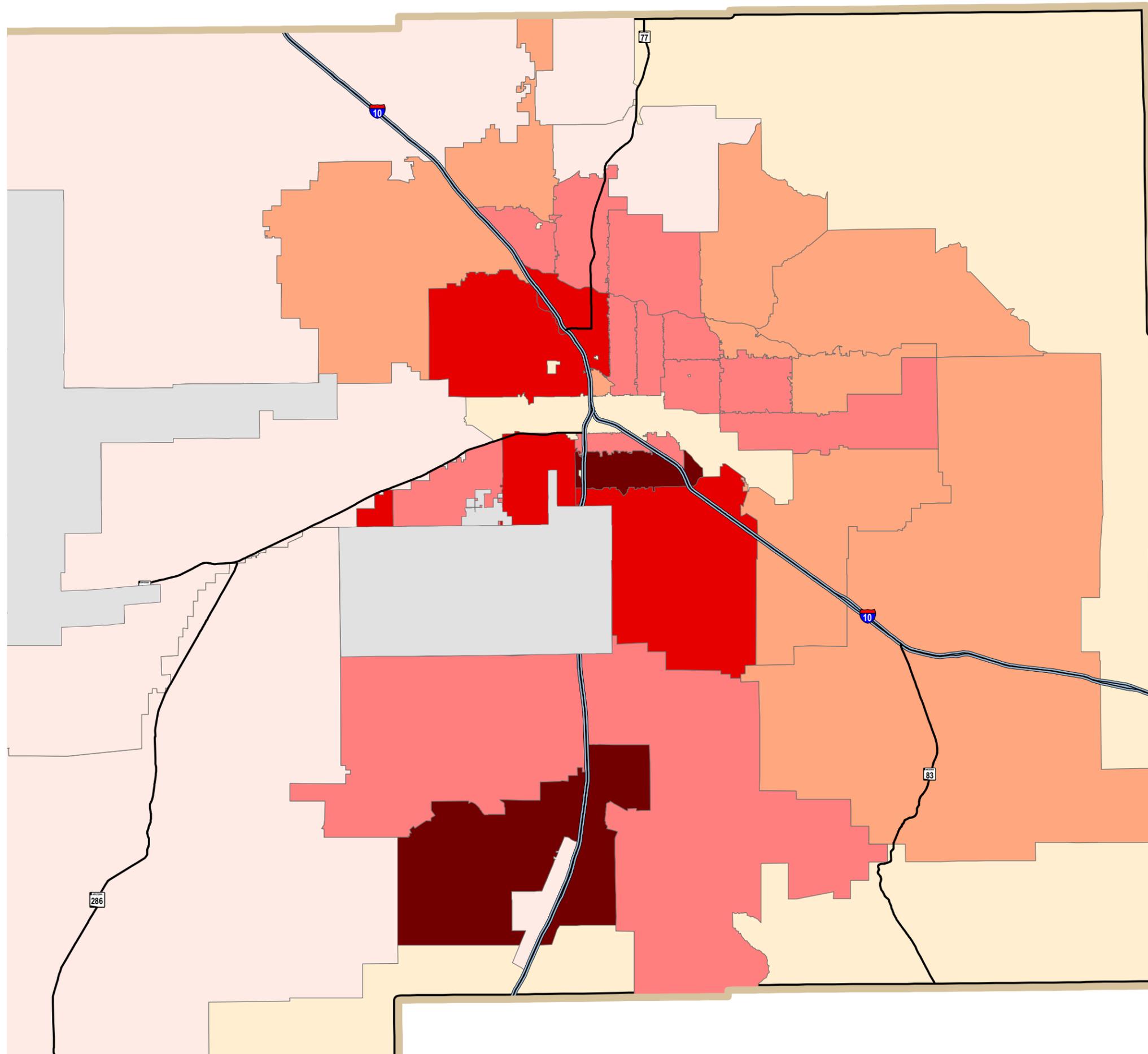
Not Mapped (54)  
i.e. PO Box, Outside County,  
Invalid County Address



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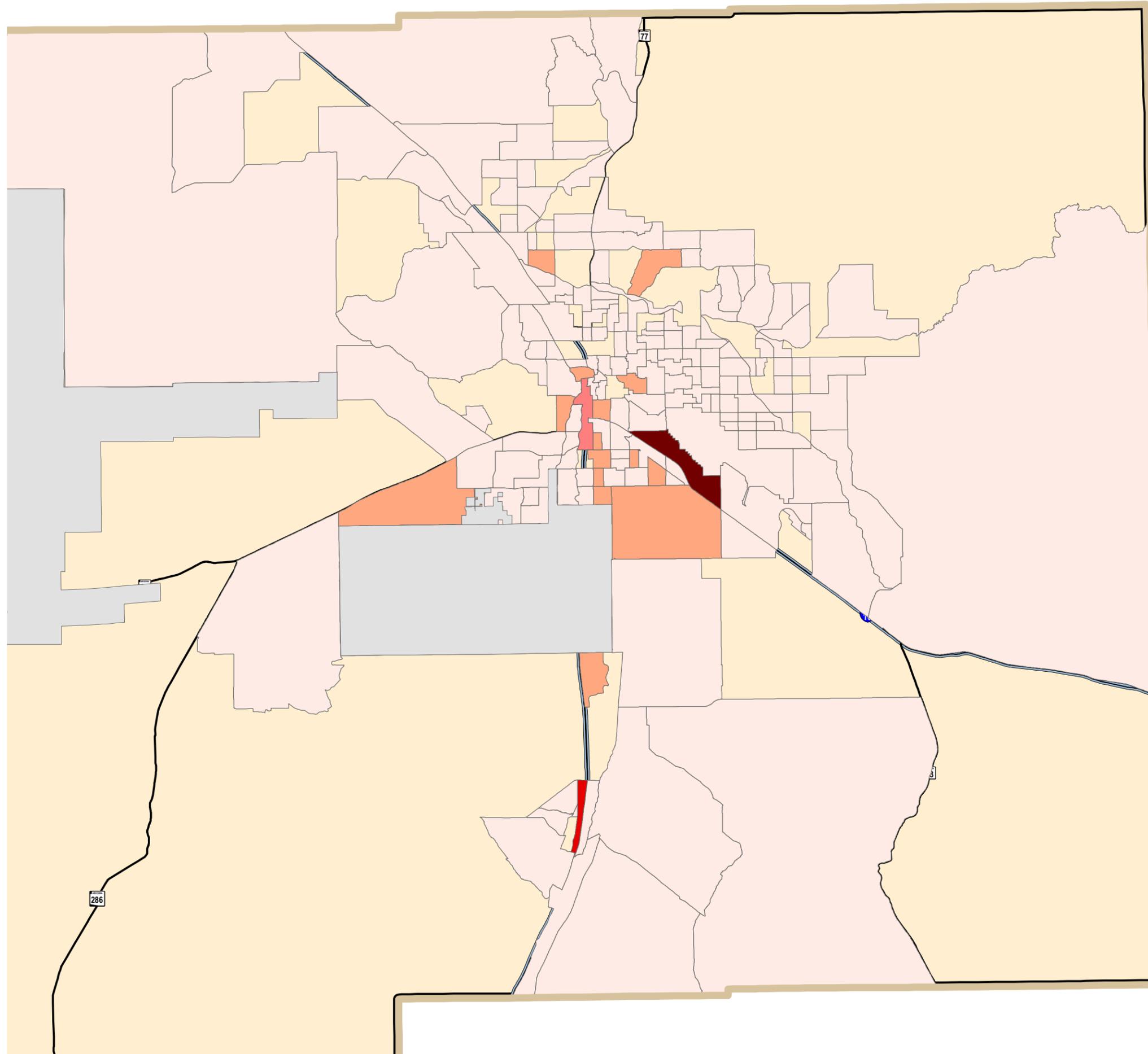
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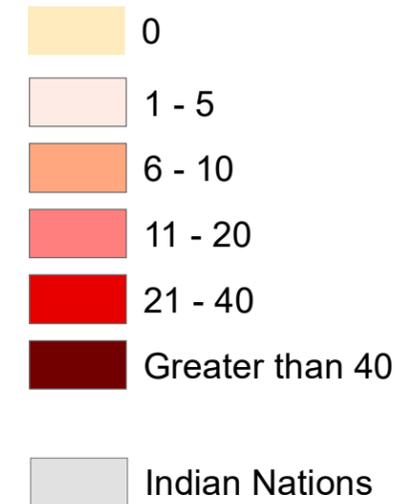


# ATTACHMENT 3

# COVID-19 Reported Cases between March 11 and April 11 by Census Tract



## Number of Cases per Census Tract



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