



# Spatial and temporal analysis of traffic crashes in Washington, DC

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A photograph of a busy city street, likely New York City, showing a cyclist in the foreground and a yellow taxi in motion. The background features tall buildings and a crowd of pedestrians.

## Motor Vehicle Crashes in the United States

- Each day, 100 people die
- Each year, more than 2.5 million people are treated in emergency departments
- Each year, more than \$63 billion is spent on medical care and loss of productivity

Centers for Disease Control and Prevention, n.d.

# Traffic fatalities in Washington, DC

Year	Fatalities
2015	26
2016	28
2017	30
2018	36

Metropolitan Police Department, 2019

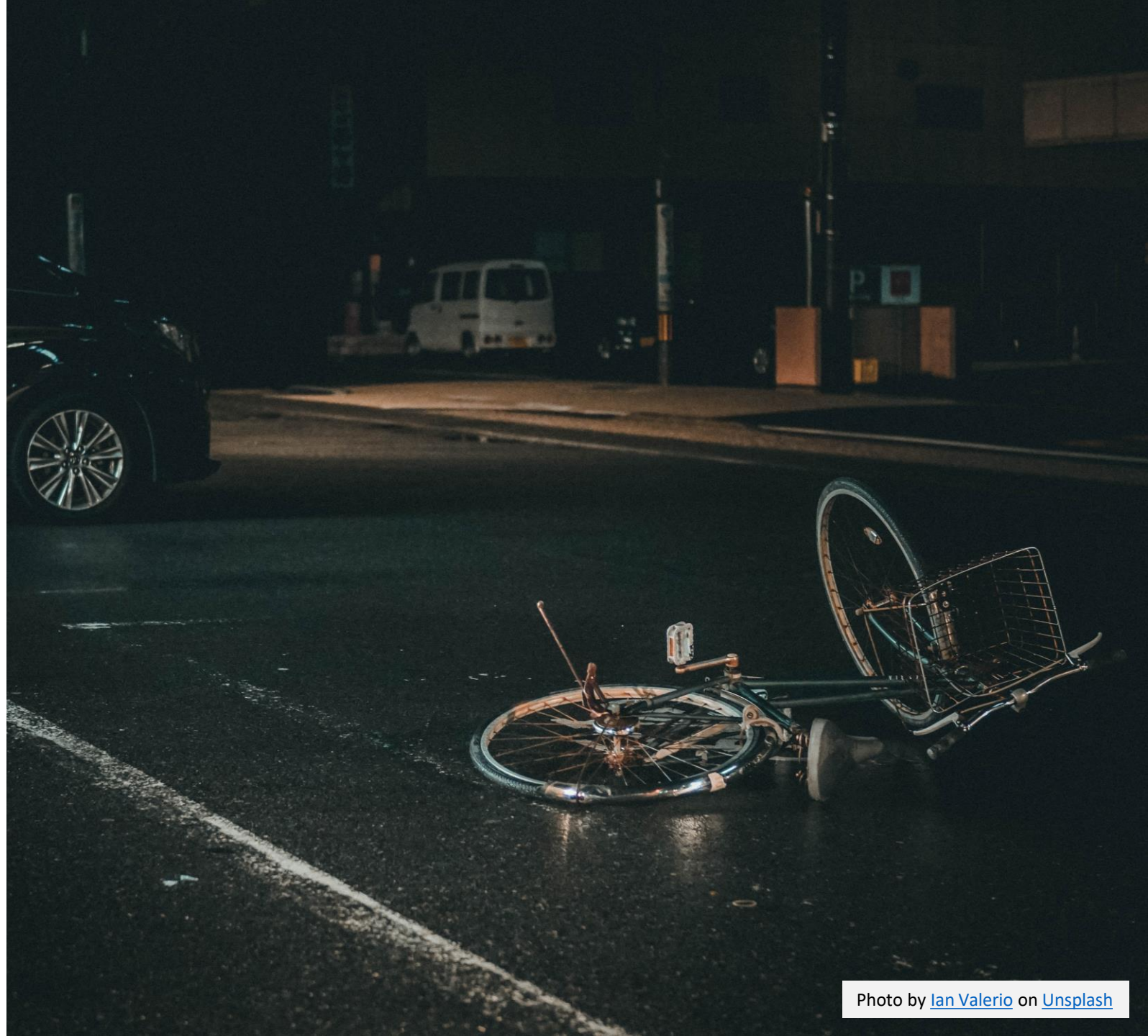


Photo by [Tae Kim](#) on [Unsplash](#)

# Goals and Objectives

Analyze and visualize the spatial and temporal trends in the reported crashes in Washington, DC before and after the Vision Zero initiative was implemented.

- Is there statistically significant clustering of traffic crashes?
- How have the spatial clustering of crashes changed over time?
- Are there consistently dangerous road segments?
- Do these dangerous road segments vary by mode of transit (vehicle, bicycle, or pedestrian)?
- What time of day do the most crashes occur?
- Which day of the week do the most crashes occur?

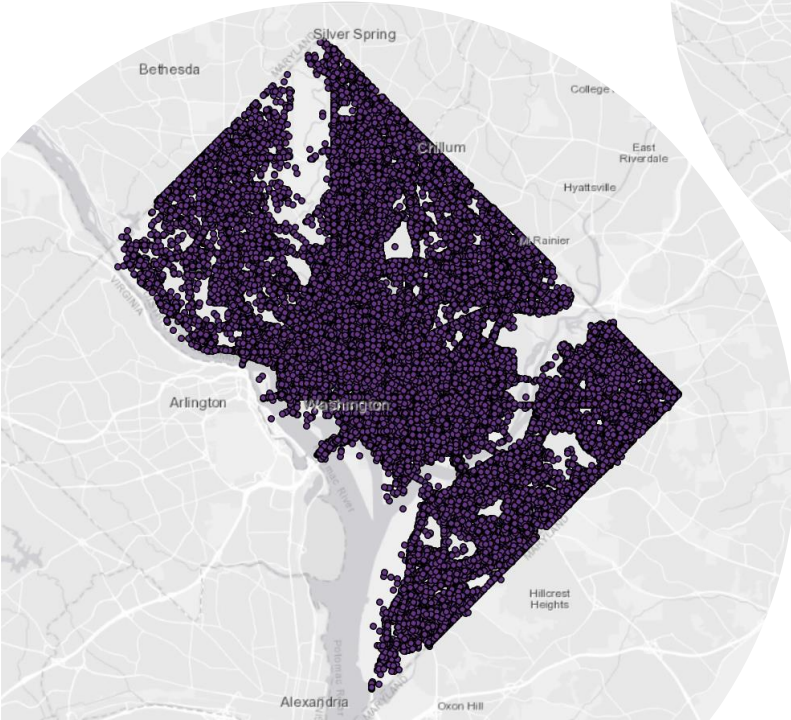
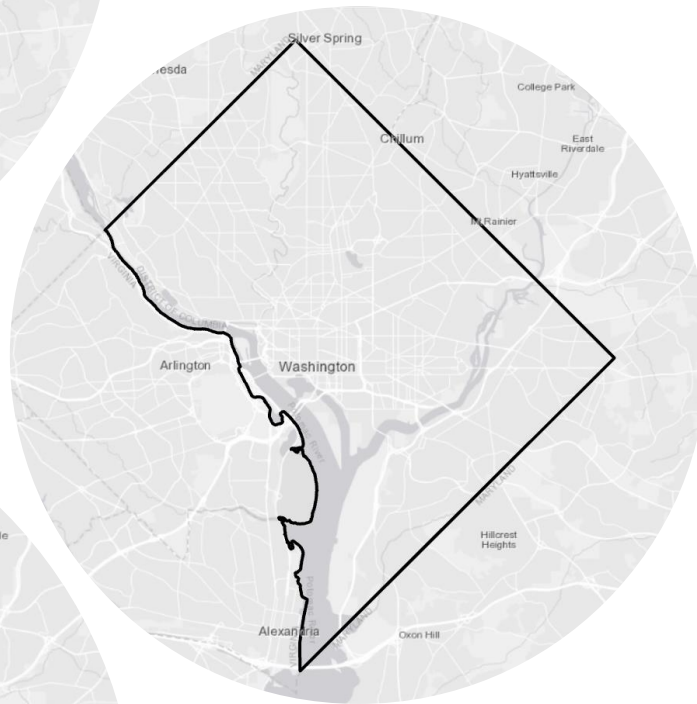
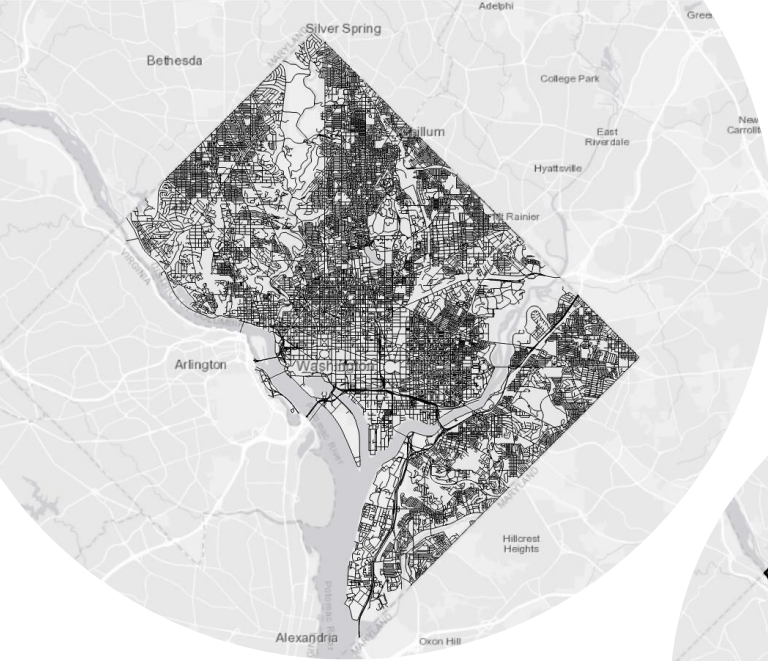


## Data

- Crashes in DC
- Street centerlines
- Washington DC boundary

## Technology

- ArcGIS Pro 2.3



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**Literature review**

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**Acquire the data**

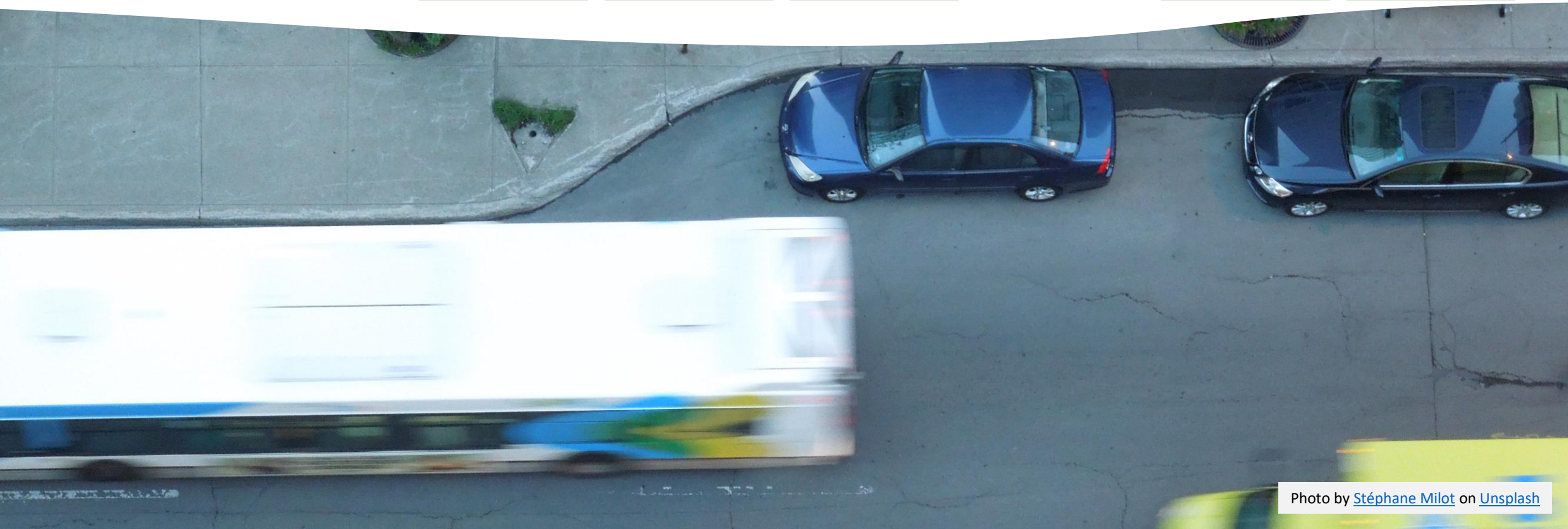
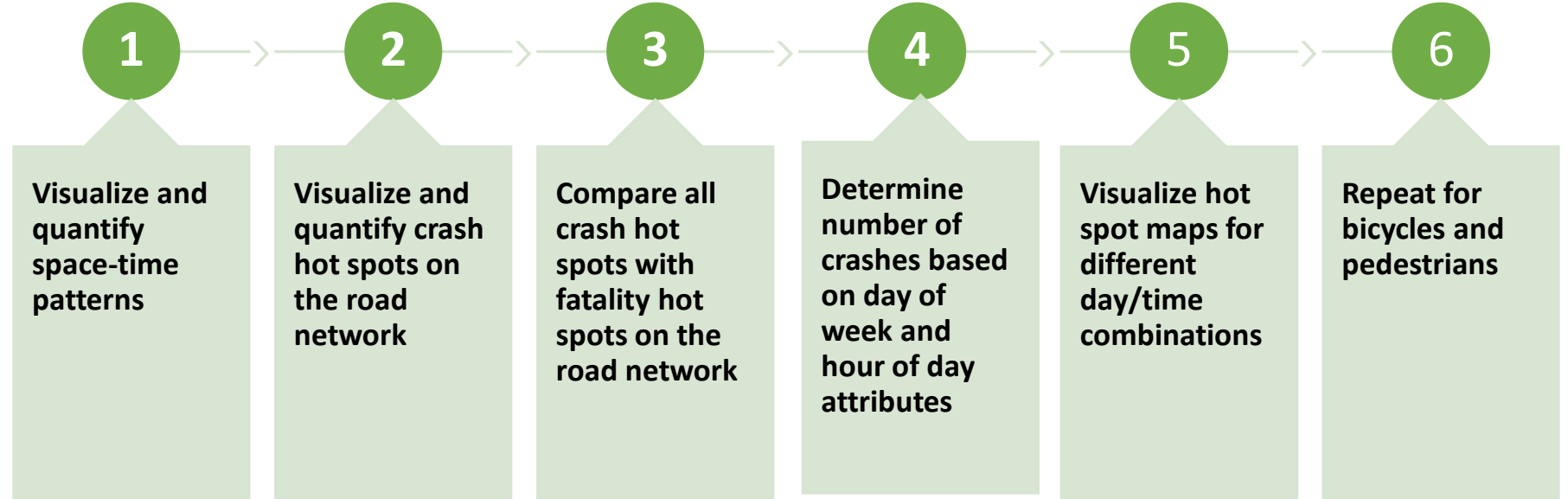
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**Prepare data**

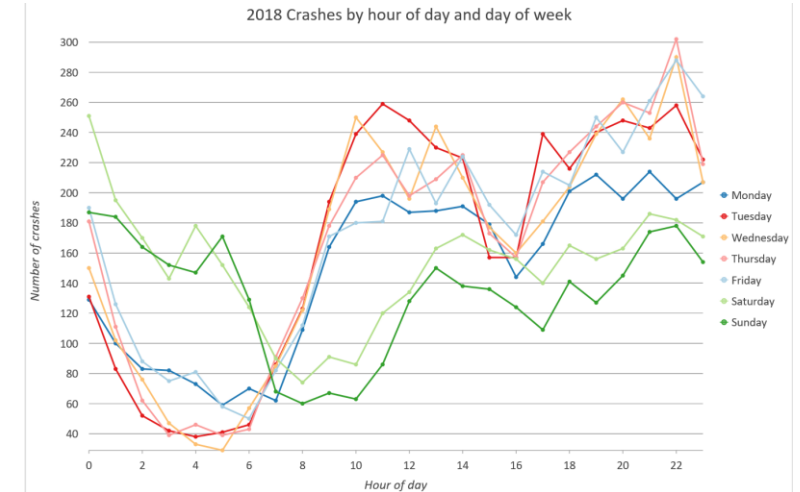
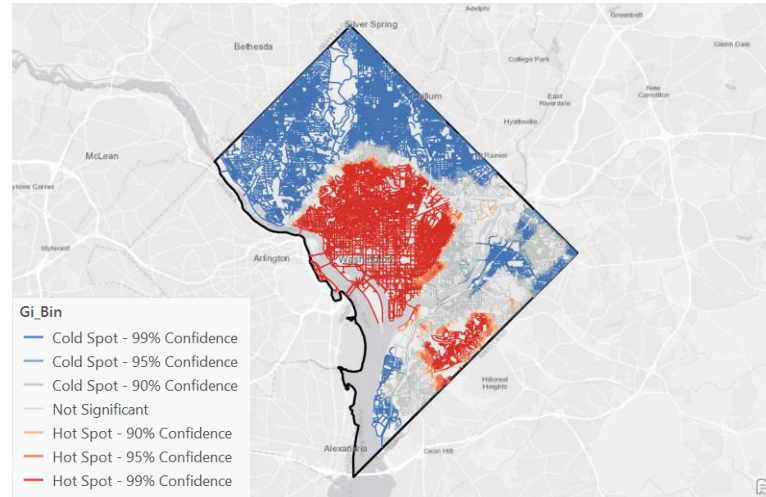
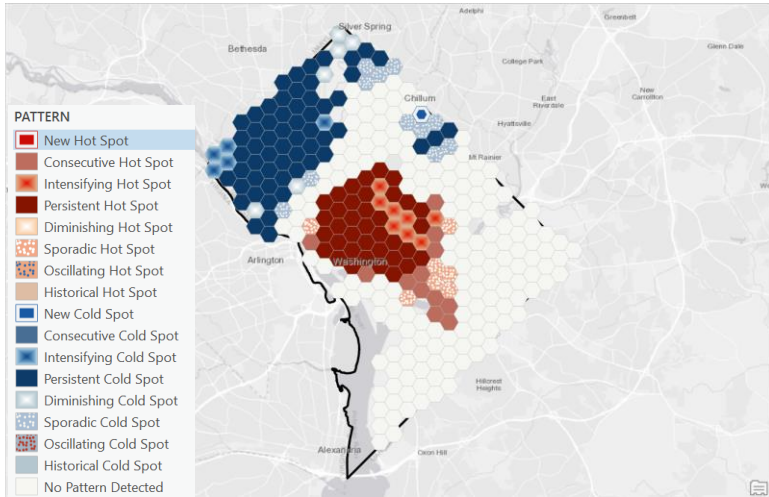
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**Perform quantitative  
analysis**





# Expected Results



- Test the hypothesis that there are areas where there are a statistically significant high number of traffic crashes, indicating dangerous road segments
- These results can help the District of Columbia prioritize dangerous road segments to implement crash reduction measures



# Summary of Project Milestones

Date	Milestone
May 3 <sup>rd</sup>	Peer review presentation
May 15 <sup>th</sup>	Summer classes begin
Week of May 27 <sup>th</sup>	Complete quantitative analysis
May 31st	Deadline to submit abstract for <a href="#">Lightning Talk</a> at Esri UC
July 8 <sup>th</sup>	596B presentation at Esri UC
Week of July 22 <sup>nd</sup>	Submit final capstone project paper
July 24 <sup>th</sup>	Summer classes end



# References

Centers for Disease Control and Prevention. (n.d.). Cost Data and Prevention Policies | Motor Vehicle Safety | CDC Injury Center. Retrieved April 18, 2019, from <https://www.cdc.gov/motorvehiclesafety/costs/index.html>

Metropolitan Police Department. (2019). Traffic Fatalities. Retrieved March 17, 2019, from <https://mpdc.dc.gov/page/traffic-fatalities>