Evaluating the Impact of the Arlington Restaurant Initiative on Alcohol-Related Crimes in Clarendon

SDAL SOCIAL & DECISION ANALYTICS LABORATORY — DATA SCIENCE FOR THE PUBLIC GOOD

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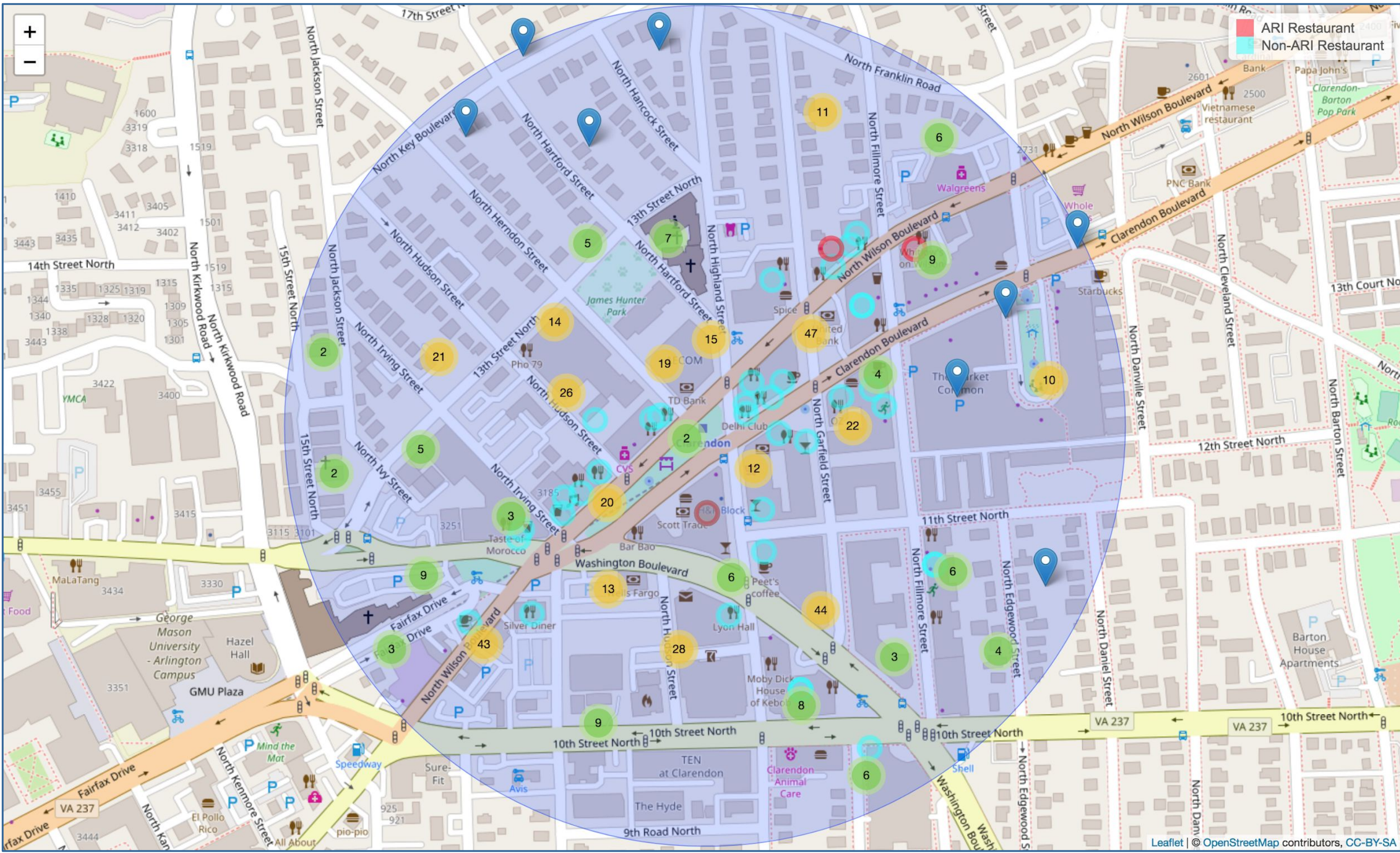
Project Overview

- **Background:** Arlington County features some of the most unique restaurants and nightlife destinations in the Washington D.C. metro region. Areas such as Clarendon, however, with a large number of restaurants have become a difficult issue for police to manage due to alcohol-related crimes such as malicious wounding, sexual assault, public intoxication, assault on police, DUI, disorderly conduct, and rape.
- Arlington County Police Department (ACPD) launched the *Arlington Restaurant Initiative (ARI)* that focuses on best practices for restaurants and nightlife to reduce the risk of alcohol-related disorder. The initiative grew out of the *Clarendon Detail*, the creation of a team of patrol officers using overtime to control pedestrian and road traffic, and to ensure that intoxicated patrons are protected from harm.

Clarendon Detail Contacts

	2016	2017
Assaults/Disputes	451	570
Drunk in Public (DIP) / Sent on Way (SOW)	1,308	1,400
DIP Pedestrians		5,375
Uber/Taxi Obstructions	4,080	8,465
Bannings	25	31
Reports	190	123
Field Observation Report (FOR)	8	47
Contacts	8,922	15,898
Arrests		98
Virginia Uniform Summons (VUS)		39

Summary of Clarendon Detail Resources

	2016	2017
Weekend Days	117	109
Officers	1,153	1,254
Avg. Officers per Day	**9.9**	**11.5**

- Officers working the Clarendon Detail collect activity logs (summarized on the left) to capture information about all contacts between police and citizens on the busiest nights regardless of whether or not a formal incident report was written.
- The logs revealed that, despite the impact of excessive alcohol consumption on the crimes listed above, only about 10% of police contacts with the public result in an arrest.
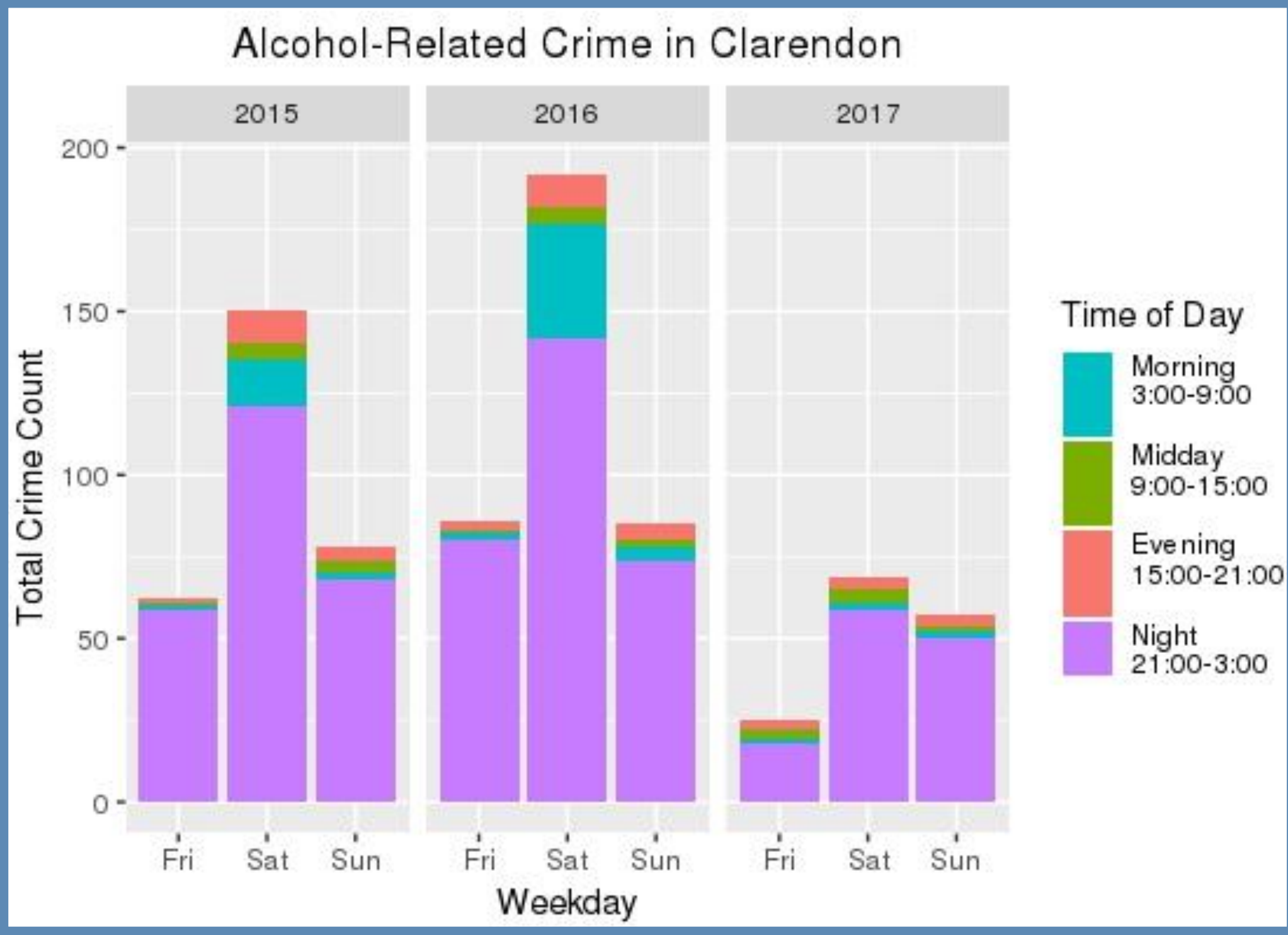
- **Objective:** Evaluate effectiveness (social and economic impact) of ARI in Clarendon to help ACPD sustain and support the program.

Clarendon has over 40 restaurants (pinned in blue circles) with ABC (Alcohol and Beverage Control) licenses and an average of 5,500 patrons per weekend night. Each year, approximately 580,00 patrons visit Clarendon between 21:00 and 03:00, especially during holidays and special "drinking" events. Alcohol-related crime counts in Clarendon on Friday, Saturday, and Sunday between 21:00 and 03:00 for 2015-2017 are given in yellow and green circles.
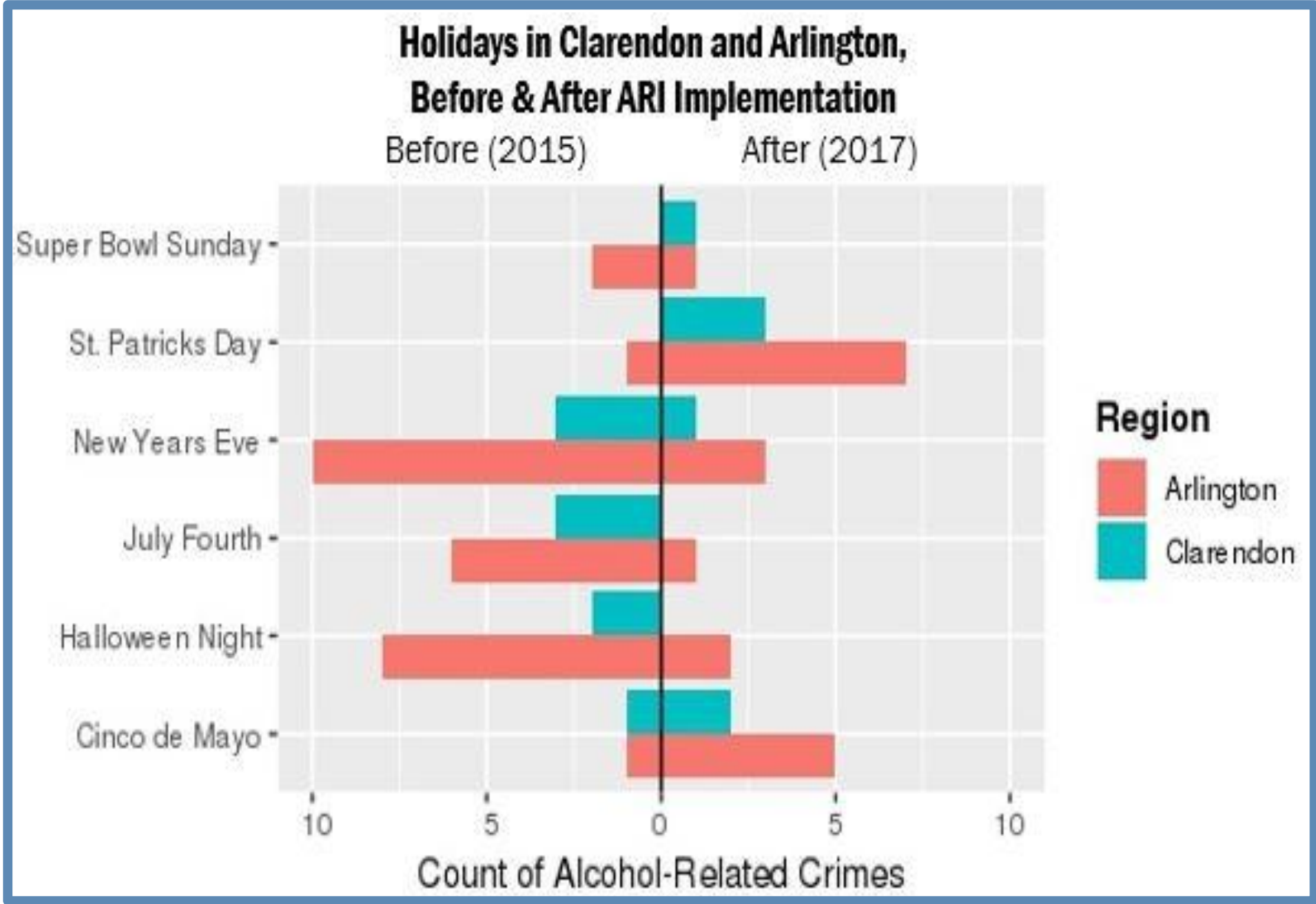
Exploratory Data Analysis

- Crime incident data were obtained from the Arlington County Police Incident Log dataset using the API.
- Spatial and temporal filters were applied to obtain data for the Clarendon area (about a 0.4 km radius from the Clarendon metro station) from 21:00 to 03:00, the time frame in which the majority of alcohol-related crimes occur.
- Focused on five different categories of crime: aggravated assault, disorderly conduct, drunk in public, DUI, rape/sexual assault. Table on the right summarizes crime rates for the time periods and area of study.
- Conducted exploratory analysis of spatial and temporal variation, and the differences between trends in Clarendon and Arlington.

Year	Aggravated Assault	Disorderly Conduct	Drunk in Public	DUI	Rape / Sexual Assault	Underage Drinking / Fake ID
2015	92	22	176	40	2	1
2016	74	41	188	51	7	2
2017	35	6	162	27	9	0

- ARI works to decrease alcohol-related crimes between the hours of 21:00 and 03:00 (night), when observed nightlife is most active.
- The figure on the left includes only the alcohol-related crime types (shown in table above) that occurred within the Clarendon area.
- The intervals in this graph depict the importance of the continuation of this program, as there is a sharp decrease in alcohol-related crimes since the program strategies were implemented in 2016.

The goal is to show the effect of ARI on the rate of crime in Arlington during special "drinking" events and holidays.

- We chose the holidays that are normally associated with increased rates of alcohol consumption.
- The graph includes alcohol-related crimes committed between the hours of 21:00 to 03:00 (night) for Clarendon and Arlington (incl. Clarendon) before and after the ARI strategies were implemented in 2016.
- This plot shows a general decrease in crime in both regions on holidays.

Cost of Crimes

	Miller, Chonen, Wiersema (1996)	Miller et al. (1996)	Aos et al. (2001)	Cohen et al. (2004)	McCollister (2010)	Other Ticket Fees (before other legal fees)
Aggravated assault	$14,673	$24,493	$120,514	$96,547	$122,198	
Drunk in Public, Disorderly Conduct & Public Urination						$250
DUI	$28,097					$300
Rape/sexual assault	$135,806	$142,065	$422,180	$326,880	$274,925	
Underage Drinking / Fake ID						$500

Note: all unit costs expressed in 2016 dollars. Unit cost values were inflated using the Bureau of Labor Statistics inflation calculator based on the consumer price index (CPI), U.S. Department of Labor (2018), http://www.bls.gov/data/inflation_calculator.htm.

Not only is the ARI important in improving safety and quality of life in Arlington, but it also helps save taxpayer money.

The table on the left shows the economic cost of crimes from a variety of studies that use different methods of cost estimation. Some of the methods include tangible costs, intangible costs, or both.
- **Tangible costs** include costs such as medical expenses, lost wages/productivity, and the cost to repair property.
- **Intangible costs** are the cost of pain and lost quality of life.

The Miller (1996) studies and ticket fees do only tangible costs while the other studies include both tangible and intangible.

Next Steps

- This study illustrates an exploratory analysis of the effect of ARI on alcohol-related crimes before and after it was implemented in 2016.
- The next step is to develop methods to estimate the reduction in crime that is solely due to the ARI since other factors also have a role in the reduction of crimes.
- The crime cost estimates will then be used to calculate the cost savings as a result of the ARI program.
- The interactive version of the plots and the model results will be illustrated on our dashboard during the DSPG 2018 symposium.

References/Acknowledgements

[1] Miller, Cohen, Wiersema. *Victim Cost and Consequences: A New Look*, National Institute of Justice, 1996. Heaton. *Hidden in Plain Sight: What Cost-of-Crime Research Can Tell Us About Investing in Police*, RAND Corporation, 2010.
[2] McCollister, French, Fang. *The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation*, Drug and Alcohol Dependence, 2010.
[3] Maurer et al. *Experts Report Challenges Estimating Costs and Suggest Improvements to Better Inform Policy Decisions*, GAO highlights, 2017.
[4] Arlington County. 2018. Police Incident Log. http://bit.ly/2InPzoE.

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