

Analyzing the Economic Impacts of Events within Prince George's County

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Abstract

This collaborative project between PALS students, and representatives from M-NCPPC, Department of Parks and Recreation (DPR), Prince George's County began as a data analysis effort. We were to analyze existing data from M-NCPPC, Department of Parks and Recreation for insights into how hosted events and rental facilities impact the economics of Prince George's County as a whole. For example, one task would consist of analyzing the amount of money spent within Prince George's County by out-of-County tourists during their attendance at a M-NCPPC, Department of Parks and Recreation service or event.

Due to the COVID-19 outbreak, many changes have been instituted by state and local governments. Restrictions on group activities and indoor facility use have impacted DPR operations and limited the scope of the services that they can provide during the outbreak. We can expect that the scope will return to its usual size as restrictions are lifted, but in the meantime, there is a new opportunity to capture data about Parks and Recreation users in Prince George's County. We hope that this data capture will ultimately help the Department of Parks and Recreation in formulating new insights as COVID-19 continues to impact organizations and people.

This shift of scope altered our data analysis project into one of data capture. The task is to create a data collection method that will help capture economic losses endured by Prince George's County due to the service cancellations caused by the COVID-19 outbreak. This method will also capture user interest in online-formatted services hosted by M-NCPPC, Department of Parks and Recreation. We also aim to capture current user behavior of remaining assets (parks and trails). The chosen data collection will be two surveys.

Definition of Terms

Economic impact: Any additional expenditure, apart from any that DPR itself charges, that a user incurs for attending or reserving a DPR service or event. While originally this was only meant to be the definition for non-Prince George's County residents, current circumstances apply this definition to Prince George's County residents as well.

Events: We use DPR's definition of events—classes, museums and natural sites, performances and exhibits, sports and fitness programs, and trips and excursions. DPR also hosts limited-time programming depending on the season, so this report includes festivals and summer day-camps because its survey will be deployed during the summer season.

Rentals: We use DPR's definition of rentals—fields, historic sites, park buildings, picnic shelters, and rooms in a community center or complex.

Tourist: A person who does not reside within Prince George's County.

Methods

Process

This project required a lengthy development process, including determining the final goal and how to proceed, aggravated by the disruptions of the ongoing outbreak. The focus eventually landed on the creation of two surveys. We decided to create two surveys instead of one because the separate data gathered in each survey could better provide DPR with more insightful information. Survey development began in a shared spreadsheet. The sample below includes a portion of the current use survey.

Question	Response Type	Response Options (If Applicable)	Reasoning (Use studies if needed)
How frequently do you visit a Prince George's County park or trail?	free response/select a response	Respondents can write a number, then select from a drop down menu to represent the time frame. "Per Week", "Per Month"	This question helps to further flesh out park usage

How frequently do you visit a park or trail within Prince George's County?

- Never
- Once a week
- A few times per week
- Once a month
- A few times per month
- Once a year
- A few times per year

The image on top is snipped from the spreadsheet and shows a break-down of how each survey question was developed. The spreadsheet served as a blueprint and allowed the questions to be refined based on group feedback.

Obstacles

The most significant obstacle was the COVID-19 outbreak, which was only a problem at the beginning of the process. Time was spent establishing the project's goal and firming up loose plans to use park data to create data stories and other methods to scope out economic impact.

Once the outbreak began, access to the parks, staff, and data became impossible. Because of COVID-19 the project pivoted to finding out how much economic loss M-NCPPC had suffered as a result of the outbreak. At the same time, we developed the idea for a second survey that would capture the ongoing use of park assets.

As a team, we responded to these obstacles via virtual meetings to share information with Juanita Moore and Prince George's County DPR staff, particularly concerning survey deployment.

Deliverables

Economic Impact Survey

This survey will focus on capturing the potential economic losses that Prince George's County may have endured due to event, rental, and reservation cancellations. As closures continue, it's important to record what has been missed the most from Parks and Recreation, in hopes that it can make reopening strategies more effective. As the COVID-19 outbreak continues, it's important to gauge interest in online programming such as online concerts, day camps, or classes. These alternatives could be valuable in serving the community.

Current Use Survey

This survey aims to capture the current use of assets that remain open—the parks and trails. We hope to gain insight on how people are using them, including their specific activities. We want to see if behaviors are changing due to social distancing guidelines and gain insight into how the community perceives Prince George's County DPR amid this crisis. We aim to find out how important it is to residents that parks and trails stay open, and if communication of closures and re-openings is effective.

Hosting

Both surveys are publicly hosted on Open Town Hall for users to fill out on the M-NCPPC, Department of Parks and Recreation, Prince George's County website. PDF versions of each survey are contained in the Documents folder accompanying this report. Both of the surveys are public here: <https://www.mncppc.org/2707/Open-Town-Hall>

Outcome - Mock Data Visualizations

Survey development is the first part of this project. The following mock data and visualizations showcase the possible outcomes of analyzing the collected survey data. The three mock visualizations represent possible forms of analytics at the conclusion of this project.

This data was randomly generated by the authors. Actual data will likely differ in response types and amounts. The mock data is intended to illustrate the design forms the data can take and potential insights that each design form can display. These design forms can work with the collected survey data.

These are not the only possible design forms. These visualizations represent mock data in dashboards but other design forms such as data stories, infographics, and presentations are within the scope of possible design forms for this data.

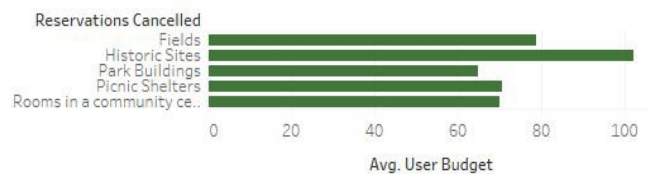
Visualization 1



Reservations Cancelled By Amount and Average General Budget for Additional Expenditures (EI)

Reservations Cancelled	Avg. User B..	Number of R..	Potential Lo..
Fields	81	54	4,385
Historic Sites	81	46	3,720
Park Buildings	79	32	2,540
Picnic Shelters	59	40	2,355
Rooms in a community center or complex	75	38	2,850

Average Other Expenditures by Cancelled Reservation Type (EI)



Average Gas Expenditures by Cancelled Reservation Type (EI)



Average Food Expenditures by Cancelled Reservation Type (EI)



Average Hotel Expenditures by Cancelled Reservation Type (EI)

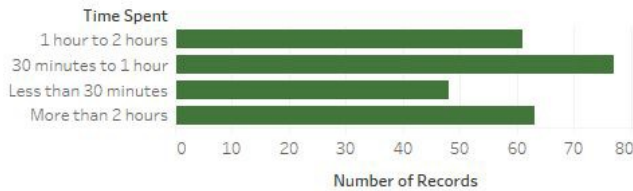


This dashboard illustrates rental facilities reservation data from the Economic Impact Survey. It begins with a table that breakdowns the average user's budget for each of the reservations, and the number of respondents. Multiplying those numbers creates a potential loss figure. Based on survey responses, we see that Prince George's County businesses may have lost \$4,300 as a result of cancelled field reservations. The circle graphs break the figures down by three business sectors specified in the survey. The larger the circle, the more respondents impacted that business sector. On the bottom right closures of historic sites have impacted the food-business sector.

Visualization 2



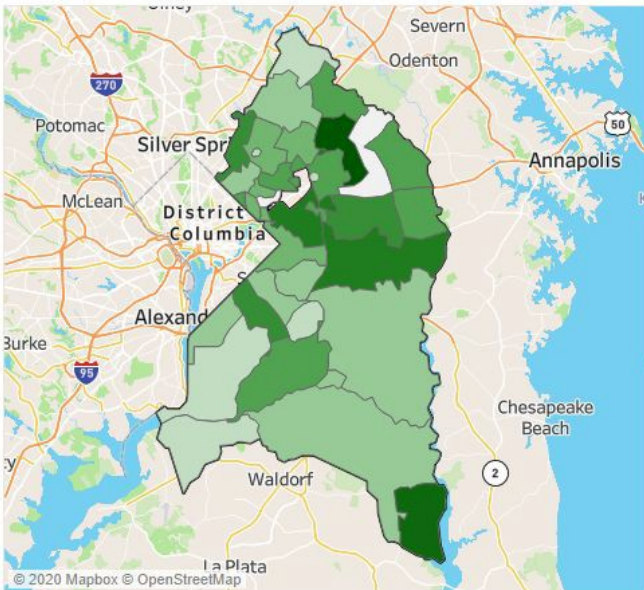
Time Spent at Park or Trail



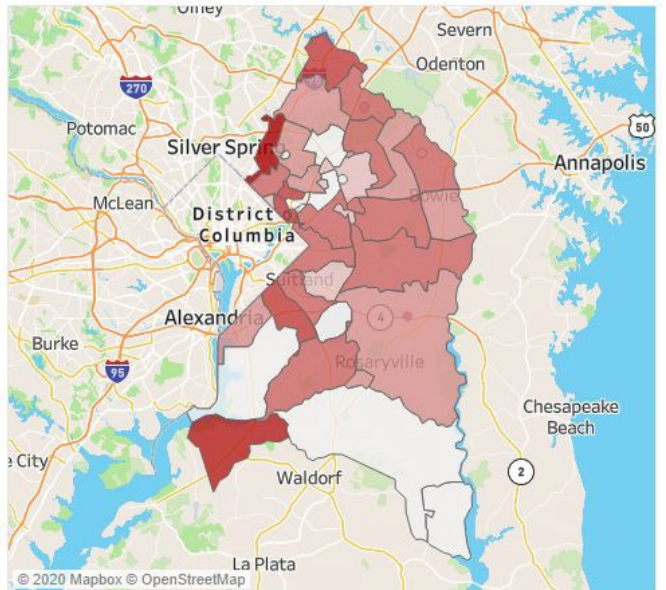
Current Usage By Activity

Activities	Count
Biking	58
Canoeing/Kayaking/Boati..	73
Fishing	58
Walking/Jogging	60

Park Users Who Have Maintained or Increased Usage



Reports of Being Unable to Follow Social-Distancing Guidelines



This visualization is based on Current Use Survey data and begins with a bar chart illustrating the amount of time users spend at a park or trail. The table summarizes activities conducted during the COVID-19 outbreak. The two heat maps are by zip code. A darker shade indicates more responses from that zip code that met the selected criteria. The green map shows that parks and recreation use has increased across the County, while the red map shows where people feel they can't follow social distancing guidelines, potentially because of increased use. This map could help in decisions such as making some loop-trails one-way only to help people feel more comfortable.

Visualization 3

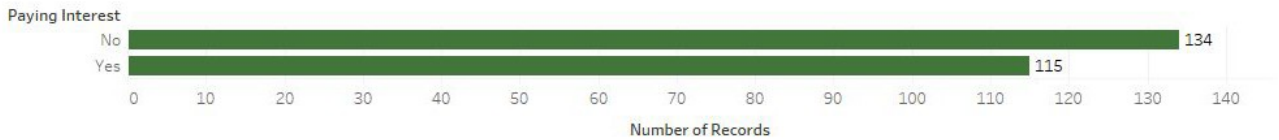


Online Programming Interest Dashboard

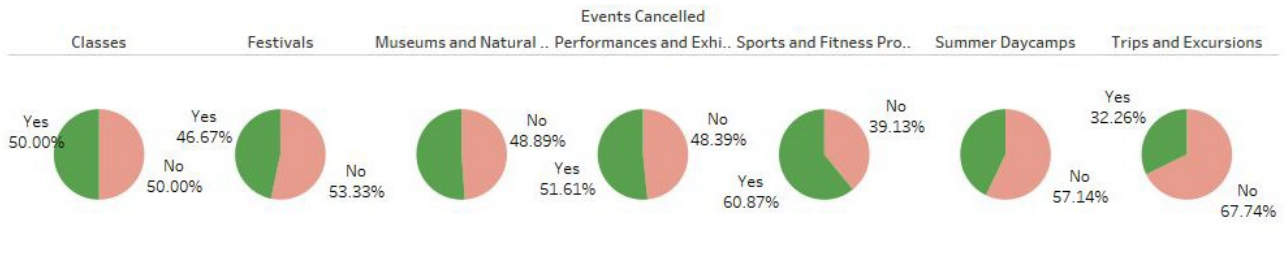
By Event Cancelled

Events Cancelled	Avg. Online Interest	Number of Records
Classes	3.03	32.00
Festivals	3.40	30.00
Museums and Natural Sit..	2.89	45.00
Performances and Exhibits	2.61	31.00
Sports and Fitness Progra..	3.43	23.00
Summer Daycamps	3.23	35.00
Trips and Excursions	2.58	31.00

Interest in Paying for Online Programming



Event Breakdown



Visualization 3 illustrates online programming interest. The table shows the average online interest rating in selected events presented in a virtual format. The number of records columns show how many people selected a specific event type. The bar chart shows the number of people willing to pay for online programming. The responses are then broken down by event type, represented by the row of pie charts.

Recommendations

Maximizing Exposure

The two surveys are intended to gather as many responses as possible and so maximizing exposure to users is an important to create valid data analysis. Two techniques include QR Codes and registered emails.

QR Codes

Generating QR Codes for flyers available at DPR sites will help maximize the survey responses. This is especially important for gathering information about tourists. Flyers with QR codes in facilities along the County's borders could help gather economic impact and current use information from tourists in neighboring counties. A QR code sample for each survey is provided in the documents folder.

Registered Emails

A second way to maximize exposure is using registered emails from the PARKS DIRECT platform. A PARKS DIRECT mailing list will reach people more likely to be reserving facilities and attending events, ultimately contributing to maximizing survey responses.

Sampling for PARKS DIRECT

For the Current Use Survey, we recommend a simple random sample of five percent of the registered emails on the PARKS DIRECT platform. For the Economic Impact Survey, we recommend a five percent sample of registered emails per available zip code. If this method proves effective in gathering responses, deployment to the entire PARKS DIRECT platform should be considered

Future Plans

iConsultancy Fall 2020

This survey project should be shared with other UMD students and a DPR analytics team. Survey data can be developed by a data analytics team next semester. Using statistical analysis tools such as R or Python, the data can reveal insights and trends to for predictions that would benefit DPR. Forexample, the Current Use Survey that shows how people are using parks, will enable analysts to spot trends in facilities that are being overused, underused, or misused, and guide decisions about park investment strategies.

Another way the data could be useful for the iConsultancy team would be in creating data stories, which would help DPR staff have a better understanding of the data without having to learn data skills. This can bring about a data-driven culture within the team, plus the ability to make quick and right decisions using the created data stories.

Conclusions

This project was a learning experience for the team. it was the first time many of us had worked on a client-directed project. In addition, the COVID-19 outbreak required us to shift a data analysis project to a data capture project and we were able to create a data collection method that will help capture economic losses endured by Prince George's County due to the outbreak and the resulting service cancellations.

This report is the first part of the project. As surveys gather information about users during the outbreak, we hope that data visualizations can be created that provide significant insights to M-NCPPC, Department of Parks and Recreation, Prince George's County.

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Current Use Survey

M-NCPPC, Department of Parks and Recreation, Prince George's County

We aim to gather information about the use of our parks and trails during the COVID-19 outbreak. It is estimated that this survey will take about 5 minutes to complete. Survey responses are anonymous and are only to be used within M-NCPPC, Department of Parks and Recreation, Prince George's County

1. Please enter your 5-digit Zip code.

2. Please select your age range.

- | | |
|-----------------------------|-----------------------------------|
| <input type="radio"/> 5-12 | <input type="radio"/> 36-50 |
| <input type="radio"/> 13-17 | <input type="radio"/> 51-59 |
| <input type="radio"/> 18-24 | <input type="radio"/> 60 and over |
| <input type="radio"/> 25-35 | |

3. Have you utilized any parks or trails within Prince George's County during the COVID-19 outbreak?

- Yes
- No

4. If Yes, what activities are you currently engaging in with the currently open parks and trails?

- Walking/Jogging
- Biking
- Fishing
- Canoeing/Kayaking/Boating
- Tennis
- Golfing

5. If your activity is not listed above, please enter the activity here.

6. How frequently do you visit a park or trail within Prince George's County?

- Never
- A few times per month
- Once a week
- Once a year
- A few times per week
- A few times per year
- Once a month

7. How much time do you spend at a park or trail?

- Less than 30 minutes
- 30 minutes to 1 hour
- 1 hour to 2 hours
- More than 2 hours

8. Since the COVID-19 outbreak, has your usage of our parks and trails increased?

- It has increased
- It has decreased
- It is the same

9. Are you still able to continue the activities you normally do prior to the outbreak?

- Yes
- No

10. Are you able to maintain current social distancing guidelines within our parks and trails?

- Yes
- No

11. From Not Important (1) to Extremely Important (5), please rate how important our parks and trails are to you during the COVID-19 outbreak.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. From Not Effective (1) to Extremely Effective (5), please rate our effectiveness in informing you about ongoing closures due to the COVID-19 outbreak.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Please enter any suggestions to help us improve your current experience at our parks and trails.



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Economic Impact Survey

M-NCPPC, Department of Parks and Recreation, Prince George's County

This survey is intended to measure the potential economic losses that Prince George's County may experience due to the COVID-19 outbreak and resulting cancellation of events and rental facilities hosted by M-NCPPC, Department of Parks and Recreation, Prince George's County. It is estimated this survey will take about 5 minutes to complete. Survey responses are confidential and are only to be used within M-NCPPC, Department of Parks and Recreation.

1. Please enter your 5-digit zip code.

2. Please select your age-range.

- 5-12
- 13-17
- 18-24
- 25-35
- 36-50
- 51-59
- 60 and over

3. How frequently do you use any of our services? (Classes, Parks, Community Centers, Events, Rentals)

- | | |
|--|---|
| <input type="radio"/> Never | <input type="radio"/> A few times per month |
| <input type="radio"/> Once a week | <input type="radio"/> Once a year |
| <input type="radio"/> A few times per week | <input type="radio"/> A few times per year |
| <input type="radio"/> Once a month | |

4. Please select the cancelled events that you had planned to attend.

- I did not have plans to attend an upcoming event
- Classes
- Museums and Natural Sites
- Performances and Exhibits
- Sports and Fitness Programs
- Trips and Excursions
- Festivals
- Summer Day Camps

5. Please select the rental facilities you had intended to book.

- I did not reserve or have intentions to reserve a facility
- Fields
- Historic Sites
- Park Buildings
- Picnic Shelters
- Rooms in a community center or complex

The next set of questions are to understand any additional costs that may occur aside from those required by M-NCPPC, Department of Parks and Recreation for their events or rental facilities. Please select the response that best aligns with your answer.

6. The event or reservation I planned to attend would have encouraged me to purchase food from a restaurant or grocery store within Prince George's County.

- Yes
- No
- I am not sure
- I did not have plans to attend an event or reservation

7. The event or reservation I planned to attend would have encouraged me to book a hotel room within Prince George's County.

- Yes
- No
- I am not sure
- I did not have plans to attend an event or reservation

8. The event or reservation I planned to attend would have encouraged me to purchase gas from a gas station within Prince George's County.

- Yes
- No
- I am not sure
- I did not have plans to attend an event or reservation

9. The event or reservation I planned to attend would have encouraged me to spend money on any goods or service other than those specified above. (Within Prince George's County)

- Yes
- No
- I am not sure
- I did not have plans to attend an event or reservation

10. If you answered yes to any of the questions above, please estimate the total dollar amount that you would have budgeted for the additional expenditures.

11. From Not Interested (1) to Extremely Interested (5), how interested would you be in online events hosted by the Department of Parks and Recreation in Prince George's County? (Online Classes, Online Concerts, Online Camps)

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Would you be willing to pay for these online events?

- Yes
- No



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How Can We Make Your Current Parks Experience Better?

Let Us Know By Taking The Survey Below!

Open your camera and click the link that appears upon scanning this code.



Then press “Current Use Survey”

Or go to <https://www.mncppc.org/2707/Open-Town-Hall>

and select “Current Use Survey”



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Has COVID-19 Affected Your Reservations With Us?

Let Us Know By Taking The Survey Below!

Open your camera and click the link that appears upon scanning this code.



Then press “Economic Impact Survey”

Or go to <https://www.mncppc.org/2707/Open-Town-Hall>

and select “Economic Impact Survey”