FAIRMOUNT PARK CONSERVANCY

Knight Foundation

WILLIAM PENN FOUNDATION

Report on Pre-Construction Usage at Bartram's Mile

Prepared by: PennPraxis for The Fairmount Park Conservancy

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PennPraxis

I. PROJECT INTRODUCTION

The Fairmount Park Conservancy (FPC) retained PennPraxis to assist in the design and implementation of data collection and baseline monitoring of current public usage patterns at four Philadelphia parks due to undergo renovation or expansion. This series of renovations and expansions is related to the Reimagining the Civic Commons Initiative (RCC). In order to document the impacts of the Initiative, PennPraxis designed surveys and monitoring protocols that could both measure current conditions and be implemented again in the future to compare pre-project and post-project public usage. This comparison will allow FPC to identify changes in use, behavior, and opinions associated with the Civic Commons interventions. This documentation initiative is supported by the Knight Foundation and William Penn Foundation. This work ran from mid-July and continued through September.

This document contains the results of PennPraxis' research and surveying related to Bartram's Mile (Bartram's). Herein are also presented the tools developed for use in this research, and the details related to their development. This document also makes recommendations for additional or more detailed research. Corresponding documents report research on the Lovett Memorial Library and Park, the Viaduct Rail Park and Discovery Center projects.

PennPraxis conducted preliminary research to discern the priority questions/hypotheses. PennPraxis then determined what activities were important to measure and what was reasonably measurable given time and resources. Subsequently, several survey instruments were developed. These tools took the form of in-person questionnaires and a protocol for mapping behavior in public spaces. The survey questionnaire was designed to be compatible with research conducted by Pennsylvania State University on behalf of FPC on the fifth Civic Commons site in West Fairmount Park—Centennial Commons. These surveys were also tailored to collect some information specific and appropriate to the individual parks.

PennPraxis' survey instruments are designed to test the following hypotheses:

> Hypothesis 1. *The Civic Commons interventions will be associated with an increase in use of civic assets.*
>
> Hypothesis 2. *Interventions will be associated with increased diversification of park usership and broader socio-economic integration and distribution of the benefits of park use.*

These are "alternative hypotheses" to be tested against the "null hypotheses" that there is no change in activity, benefit or distribution of benefit associated with the interventions.

The data collected using the instruments developed by PennPraxis should adequately provide a description of changes associated with the development of the Civic Commons projects. PennPraxis determined that the resources are not available to conduct a survey of the scope necessary to assign causality to the relationship between the Civic Commons interventions and changes in usership or behavior at or around the sites.

BASELINE SURVEY RESULTS: *SELECTED FINDINGS*

- Majority of users came from the surrounding neighborhood, yet the park also drew numerous users from a city and regional base. Most users traveled by car. Users overall were well-educated with the vast majority completing a Bachelor's degree or a Graduate/ Professional degree.

- User base as a whole is diverse but not all activities had diverse groups of users. Local residents participated less in some of the most popular activities, such as hiking and walking or boating, and tended to be more engaged in fishing, lounging, and recreational enjoyment. Participants in specific activities tended to cluster rather that co-mingle, meaning that the site's diverse user base may not be mixing.

- Survey subjects who reported living in the 19143 zip code, where Bartram's is located, were more than twice as likely as the average 19143 resident (or the average Philadelphia resident) to hold a bachelor's degree. These visitors from 19143 were more than seven times more likely than a resident of the adjacent census tract to have a bachelor's degree. What this suggests is that the "local" visitors are disproportionately coming from parts of the neighborhood that are not immediately adjacent to the site.

- Strong user base participated in a broad range of activities. Average usership for Bartram's as a whole ranged from 50 persons/hour during some weekday periods to over 200 persons/hour during programmed weekend activity periods.

- Usage highly concentrated at about a half-dozen locations in the park.

- Users stated a strong affinity for the park and liked the quality of the facilities. Local residents expressed slightly stronger feelings of ownership of the park than the average user.

- Users expressed a strong desire to use the proposed trail connection to Center City for commuting and recreation, expressing that they would make use of such a trail connection in the future.

II. STUDY SITES

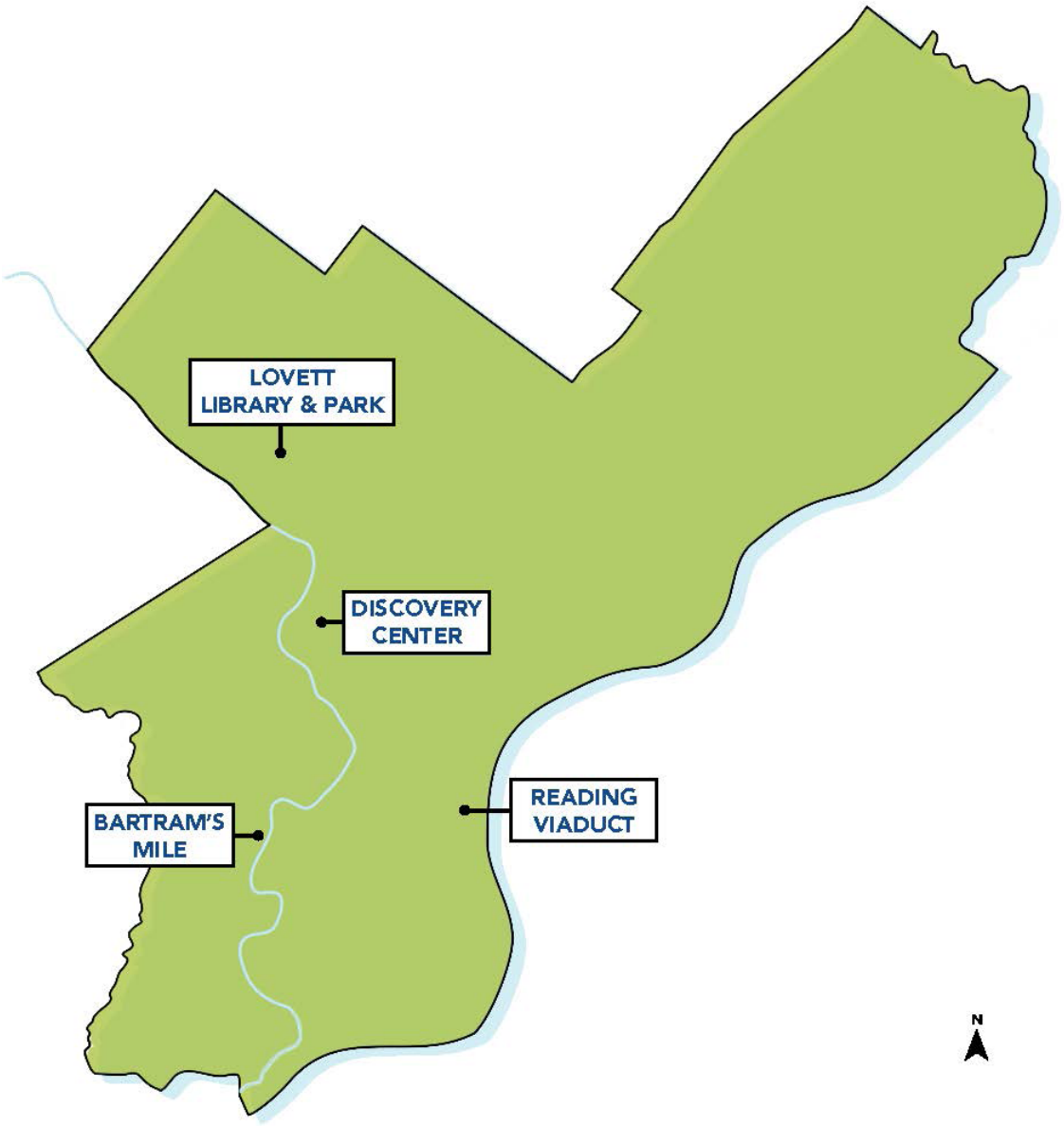

Figure 1. Four Civic Commons sites in Philadelphia studied by PennPraxis

This first phase of the RCC data collection took place at the Lovett Memorial Library and Park (Lovett) and Bartram's Mile (Bartram's) sites (Figure 1). These two sites are quite different in many respects. PennPraxis considered each site's idiosyncrasies in order to develop specialized measurement instruments for each site, in addition to generalizable tools.

Bartram's is a 45-acre public park and historic site along the Schuylkill River in Southwest Philadelphia (Figure 2). The site is home to the oldest botanical garden in the United States, Bartram's Garden. The park is being expanded to annex adjacent former industrial sites. The enlarged property will then become part of a regional greenway connecting the park to Center City Philadelphia and points beyond by pedestrian bridge. Philadelphia Parks & Recreation and the Schuylkill River Development Corporation (SRDC) will spearhead the project. The site is currently host to a large community farm, a non-profit gardening center, a boat launch and a popular gazebo which is used for barbecues and picnics. The site is frequented by tourists and the historic area is used as a venue for weddings and other large events. Bartram's is adjacent to a large public housing complex and several active industrial facilities. During the survey period, the 56th Street entrance and the pier south of the farm were closed to the public. The improvements north of the property shown on the map were not open to the public either, and were not monitored by PennPraxis.

Figure 2. Map of Bartram's Mile site

III. METHODOLOGY

Preliminary Research

Prior to creating surveying instruments and methods, PennPraxis surveyed existing research, conducted site visits and administered a series of interviews in order to determine how best practices in survey delivery and site observation could be applied.

PennPraxis decided to deploy two types of survey instruments – an in-person intercept survey and a "participant observation" (PO) behavioral survey. The intercept survey is designed to determine the demographic profile of park users, elucidate information about park usage and relate this information to various visitor attitudes and opinions. The PO surveys are designed to measure the intensity, nature and pattern of usage at each site in space and time. Ultimately, this information can be related to programming and design interventions which are designed to understand the way in which the space is used, leading to potential programming interventions. Each survey type is addressed separately in this section.

Participant Observation Survey Instrument

The (PO) survey instrument was designed to test Hypothesis 1 and discern whether the interventions will be associated with increased usage at the sites. Furthermore, the PO instrument will allow one to determine whether the type, diversity and spatial arrangement of usage changes in association with the intervention. This additional information can be related to some elements of Hypothesis 2: different types of park usage behavior are associated with different types of user benefits and different user groups.

Description

The PO instrument is a detailed map of the study site upon which a researcher logs observations of park users using a set of coded keys which indicate the type of behavior a subject is exhibiting and basic demographic information about them. For a half-hour period, an observer logs each individual subject they observe once during a circuit of a site. The subject is coded on the map as being male, female or child. The subject is also coded as exhibiting one of sixteen behaviors—a list which includes Standing, Sitting, Bicycling, Using Electronic Device, Reading, Drinking/Eating, Observing Nature and more.

These observations can then be associated with the time-of-day, temperature, weather and weekday. They can be mapped and spatial-temporal patterns can be detected.

The PO survey instrument is included in Appendix I.

Development

PennPraxis' development of this instrument was inspired by the rich tradition of observational research by design scholars in public spaces. The modern successor to the work of William H. Whyte and Jane Jacobs is the Danish architect Jan Gehl. Gehl's work (and the work of his Gehl Institute) inspired the creation of the PO survey. The Gehl "toolkit" (Gehl Studio San Francisco, 2015) for assessing diversity and vibrancy in public space includes methodology for logging the location, time, nature and circumstance of an individual's behavior in the space.

PennDesign Associate Professor of City and Regional Planning Stefan Al and Ph.D. student Jae-Min Lee lent their expertise in the creation of the PO survey instrument. Mr. Lee created an extremely

detailed mapping and coding methodology for the purpose of his doctoral research and permitted PennPraxis to adapt his tools for use in this study. By combining the types of behaviors and information used for Mr. Lee's maps with observed types of behaviors gathered during site visits, PennPraxis researchers developed the final instrument. Dr. Al provided general guidance and direction for the development of the instrument.

Deployment

PennPraxis observers deployed PO survey instruments during the hours of 7:30-9:30AM (morning), 11:30AM-1:30PM (mid-day) and 4:30-6:30PM (late afternoon/evening), recording each of these time periods on seven separate occasions. These seven occasions consisted of three weekend or holiday observations and four weekday observations for each time period). Each two-hour time period was further subdivided into four half-hour observation periods. Sampling took place during June and July, 2016.

For each thirty-minute observation window, the observer would survey the entire site by foot or bicycle, recording each person's behavior the first time that person was encountered by the observer. Regardless of that individual's movement about the site or potentially changing behavior, they were not logged again during that period. The observer recorded whether that person was a male, female or child. The observer also recorded the weather, temperature and date of the observation. These observations were recorded using paper and pen.

Data Processing and Analysis

The data were converted into a digital format by manual entry using the open-source geocoding website geojson.io. Geojson.io is a site which allows one to manually draw points on a map and assign them attributes in a table. The data can then be exported as comma-separated values data (CSV) where each datum is joined with the latitude and longitude of the associated point or as a geodatabase (shp or geojson). A sample of the data can be seen in Figure 3. PennPraxis designed a protocol for coding data using geojson.io which will be available for use by the client and partners.

Male	Female	Child	Day	Month	Year	Hour	Min.	Weekday	Code	Activity	Temp.	Longitude	Latitude
0	1	0	4	6	2016	13	30	Saturday	T	Sitting	83	-75.188	40.0568
1	0	0	4	6	2016	13	30	Saturday	S	Standing	83	-75.187	40.0568
1	0	0	4	6	2016	13	30	Saturday	O	Sports	83	-75.188	40.0571
1	0	0	4	6	2016	13	30	Saturday	O	Sports	83	-75.188	40.0571
1	0	0	4	6	2016	13	30	Saturday	O	Sports	83	-75.188	40.0571

Figure 3. Sample of Raw Data

Subsequent to coding the data, all of the individual observation data sets were coalesced into a master dataset, which was then cleaned and manipulated using the statistical software language "R." The data can also be manipulated in this fashion using Microsoft Excel but such manipulation cannot be automated. The ggplot package (Grammar of Graphics) in R allows for highly customizable informational graphics. PennPraxis's R programs will be available for use by the client and partners.

The coalesced data sets, consisting of all observations at each site, were then mapped and analyzed using ArcGIS to determine the density of use and the spatial patterns of usage.

Intercept Survey Instrument

PennPraxis developed an intercept survey instrument in order to test Hypothesis 2 and explore whether future interventions will be associated with increased diversification of park usership and broader socio-economic integration and distribution of the benefits of park use. To test this hypothesis, these surveys were designed to document the socio-economic and locational characteristics of park users and associate that information with their level of park usage and stated attitudes about ownership, safety and attachment related to the park. These surveys also represented an opportunity for PennPraxis to collect additional information on behalf of various stakeholders and solicit feedback about park quality.

Description

The intercept survey instrument consists of thirty-four questions which were administered in person to visitors of each park in the study, and a varying number of questions which were park-specific. These questions are divided into the following categories: General Usage, Quality, Experiences, Community, Personal Ownership and Demographics. The question formats vary. Surveys took between five and ten minutes to complete. The survey instrument is included in Appendix II.

The surveys were administered using pen-and-paper and also using iPads running the iSurvey application. The iSurvey application is a product of Harvest Your Data, which provides a back-end data visualization suite and data collection apparatus on a subscription basis.

PennPraxis designed the survey to be generally compatible with a survey administered at the "Centennial Commons" site in West Fairmount Park by a team of researchers from the Pennsylvania State University (PSU) in 2015. This team was led by Principal Investigator Andrew Mowen. This compatibility will allow for a widened analysis which can compare parks to one another (cross-sectional analysis) and compare individual parks or aggregated data over time (longitudinal analysis). This desire for compatibility is reflected in both the form and content of the questionnaire but also in the use of iSurvey and Harvest Your Data, which were both employed by PSU. It is notable that the types of activities which PennPraxis asked respondents to report are different from those measured during participant observation. This difference owes both to the desire for congruity with the PSU study but also because observed behavior is different from a person's stated intent and reason for visiting, which may not be outwardly observable.

Unfortunately, time and resources did not allow for a replication of PSU's "matched control" research model. The PSU researchers were able to assign statistical significance to survey results from Centennial Commons relative to a control group (Mowen, Hickerson, Benfield, Pitas, & Kim, 2015), PennPraxis will attempt to make no such claims.

Development

PennPraxis developed the in-person survey instrument after a series of interviews with stakeholders and scholars. First, PennPraxis interviewed relevant site staff and stakeholders (Figure 5). Professor Andrew Mowen, a member of the PSU study team, reviewed draft questionnaires and provided insight into the functionality of the Harvest Your Data platform. PennDesign Assistant Professor of City and Regional Planning Erick Guerra, an expert in "revealed preference" survey methodology, reviewed draft questionnaires and advised PennPraxis regarding survey length and technique, and hypothesis development. PennPraxis also conducted site visits to inform the crafting of site-specific questions. The questions and format were refined after field trials.

Name of Interviewee	Organization
Maitreyi Roy	Bartram's Garden
Zoe Axelrod	Schuylkill River Development Corporation
Danielle Gray	Schuylkill River Development Corporation
Amy Weidensaul	Audubon Pennsylvania
Sharon Barr	Discovery Center
Nancy Goldenberg	Center City District
Joel Nichols	Free Library of Philadelphia
Michael Barsanti	Free Library of Philadelphia
Brad Copeland	Mt. Airy USA
Kim Massare	Mt. Airy USA
Scott Brady	Delaware Valley Regional Planning Commission
Sean McGill	Delaware Valley Regional Planning Commission
Melissa Kim	Friends of the Rail Park
Sunanda Ghosh	Friends of the Rail Park

Figure 4. Interviewees

Deployment

Surveys were conducted in-person, on site using both pen-and-paper and iPad survey methods during the months of June and July, 2016. PennPraxis created a calendar of events expected to generate large crowds and sampled some of these days in order to maximize efficiency and increase sample size.

Data Processing

Most surveys were inputted using iPads in the field, and pen-and-paper surveys were coded using the iPads into iSurvey and timestamped with the original survey date. Bulk data sets were downloaded directly from Harvest My Data in SPSS file formats and manipulating using the statistical software language "R." Data visualizations were done using the ggplot package in R and mapping was done using both ArcGIS and R.

IV. RESULTS

Participant Observation

Average usage at Bartram's during the survey period was much higher on weekends than on weekdays. In sum, over 36 hours of observation, a total of 2,752 users were observed in the park. Because observation periods were often consecutive half-hour blocks, gross observation statistics may contain double-counts of specific individuals. Rate statistics (like Figure 5) are more reliable indicators of overall usage.

During the week, between 25 and 50 persons used the site per hour depending on time of day, whereas during the weekend, usership in the morning and evening was in the 50 to 100 per hour range, with an average of over 250 users per hour during the mid-day hours 11:30AM-1:30PM. This significant mid-day weekend number is likely a result of programmed events taking place during that time frame.

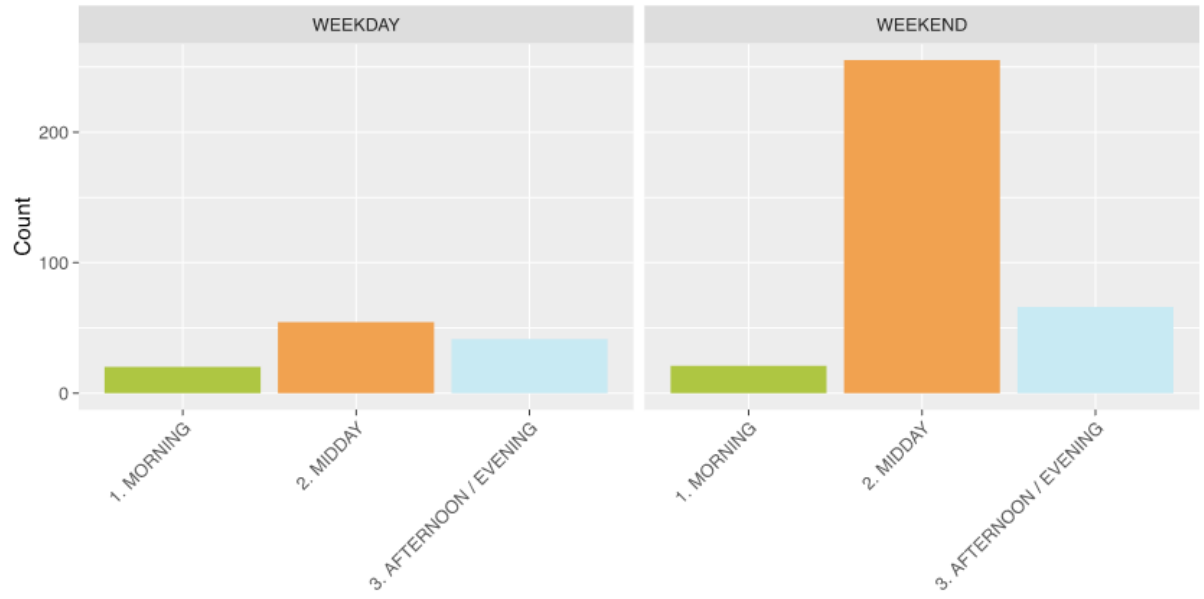

Figure 5. Persons observed per hour at Bartram's on weekends and weekdays by time of day

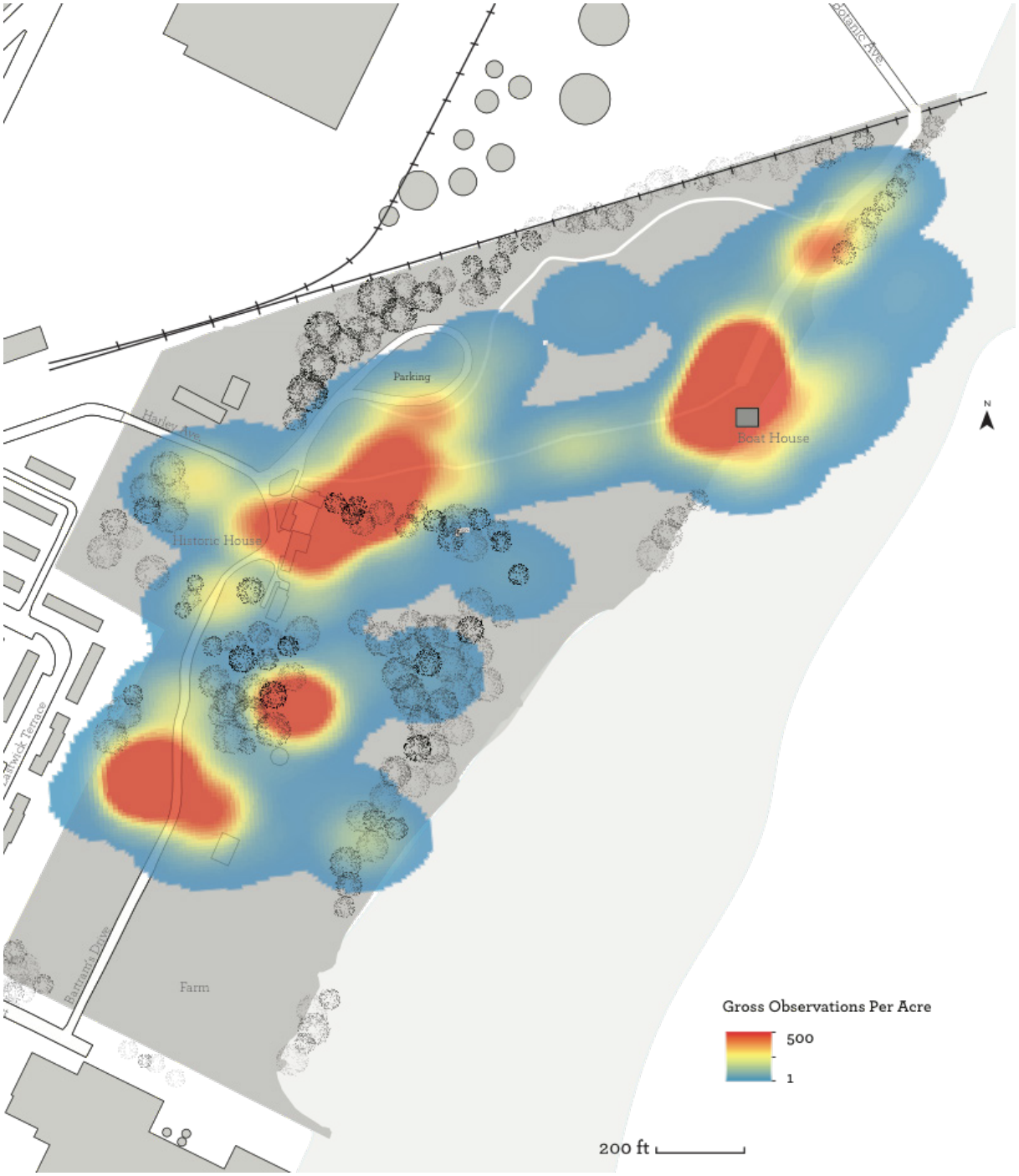

Figure 6. Kernel Density heatmap of gross observations at Bartram's showing relative intensity of use

Usage was concentrated in several distinct areas – the parking area, the boat launch, the gazebo, the historic garden/house area and the picnic areas near the farm and orchard. The heat map in Figure 6 is graphic representation of the areas which saw the heaviest usage during the observation period. The number of observations were large enough that simple representation as points does not allow one to assess the relative amount of usage. By layering a future map on top of Figure 6 and finding the difference in use in space, one can determine the areas impacted by the intervention.

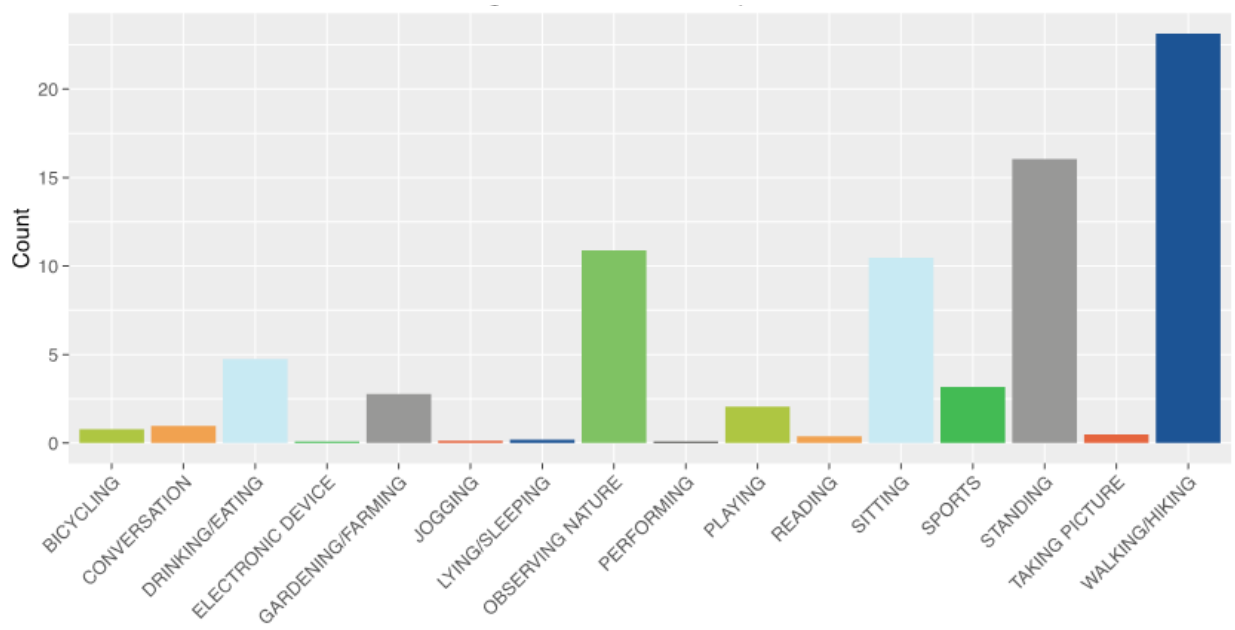

Figure 7. Hourly usage rates at Bartram's by activity

Subjects participated in a diverse range of behaviors at Bartram's, including walking/hiking, observing nature (including fishing, birdwatching etc.), gardening, eating and drinking and just hanging out (see Figure 7). These activities were both active and passive. It should be noted that a wide range of behaviors were categorized as "observing nature," from bird-watching to fishing to garden-related tourism. On average, more than 20 people per hour could be found walking/hiking on the property, and more than 10 per hour either observing nature, sitting or standing.

Maps from a few selected time periods (Figures 8, 9, and 10 – shown on the following pages) illustrate how these behaviors tended to cluster in predictable areas. Individuals tended to fish or boat in specific spots, and farming was obviously limited to the southern part of the property. Hikers and bikers stuck to the trail areas, while those "observing nature" were most frequently found either at the historical site or on the river. Picnickers and camp groups preferred areas where there were tables set up for such purposes. Often, individuals were observed standing near or sitting in vehicles in the parking loop.

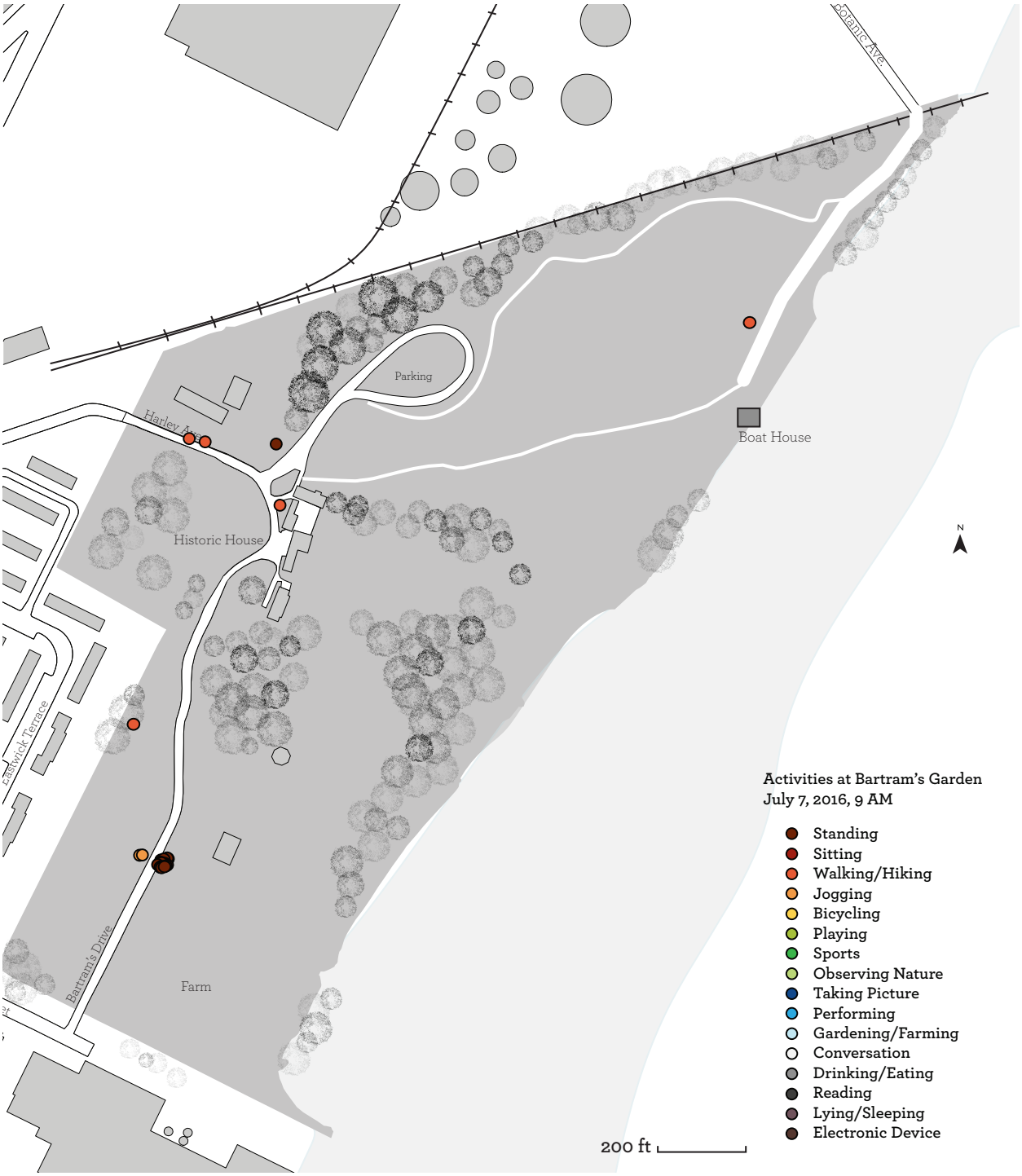

Figure 8. Sample usage period – July 7th, 2016, 9-9:30 AM

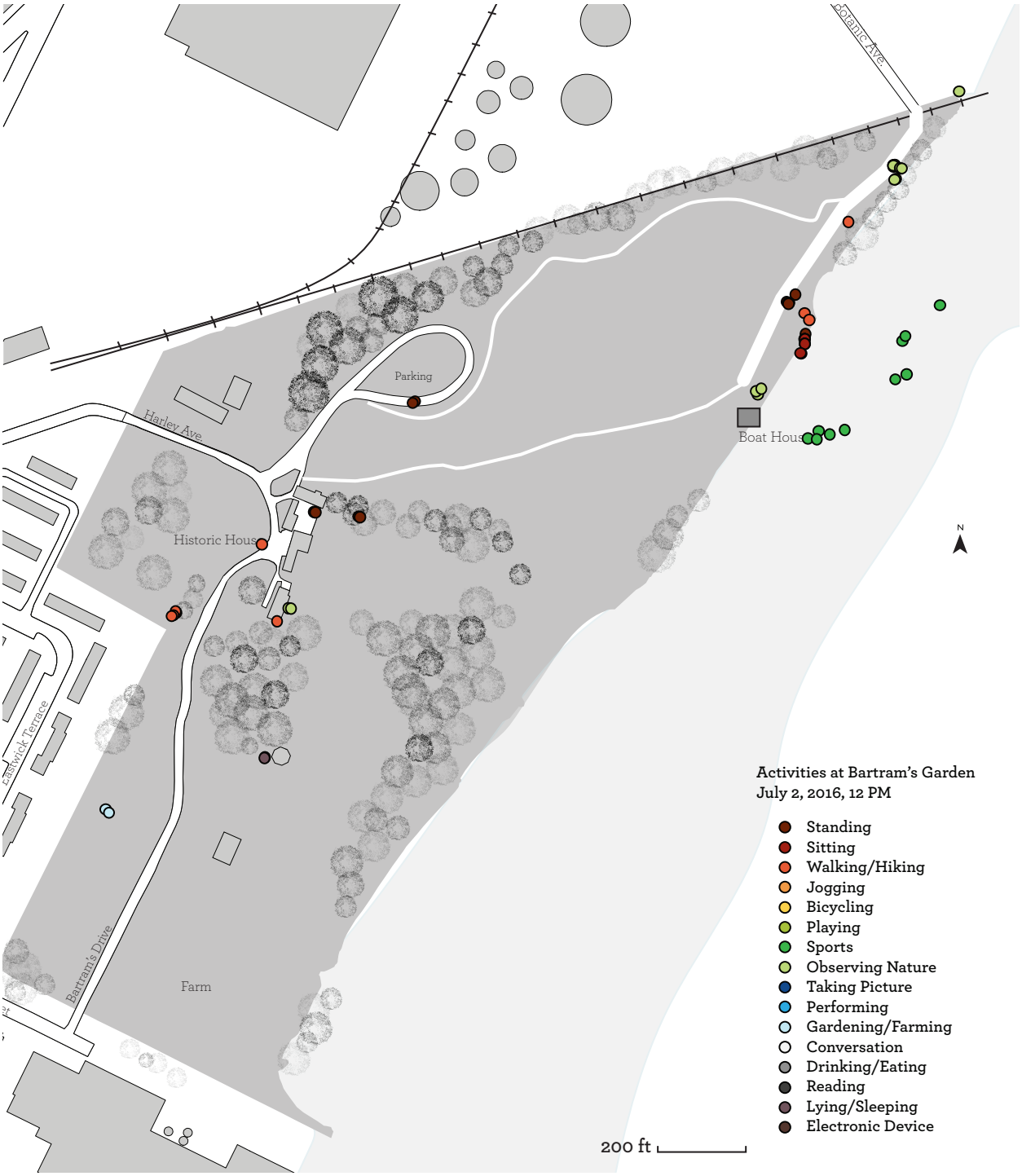

Figure 9. Sample usage period – July 2nd, 2016, 12-12:30 PM

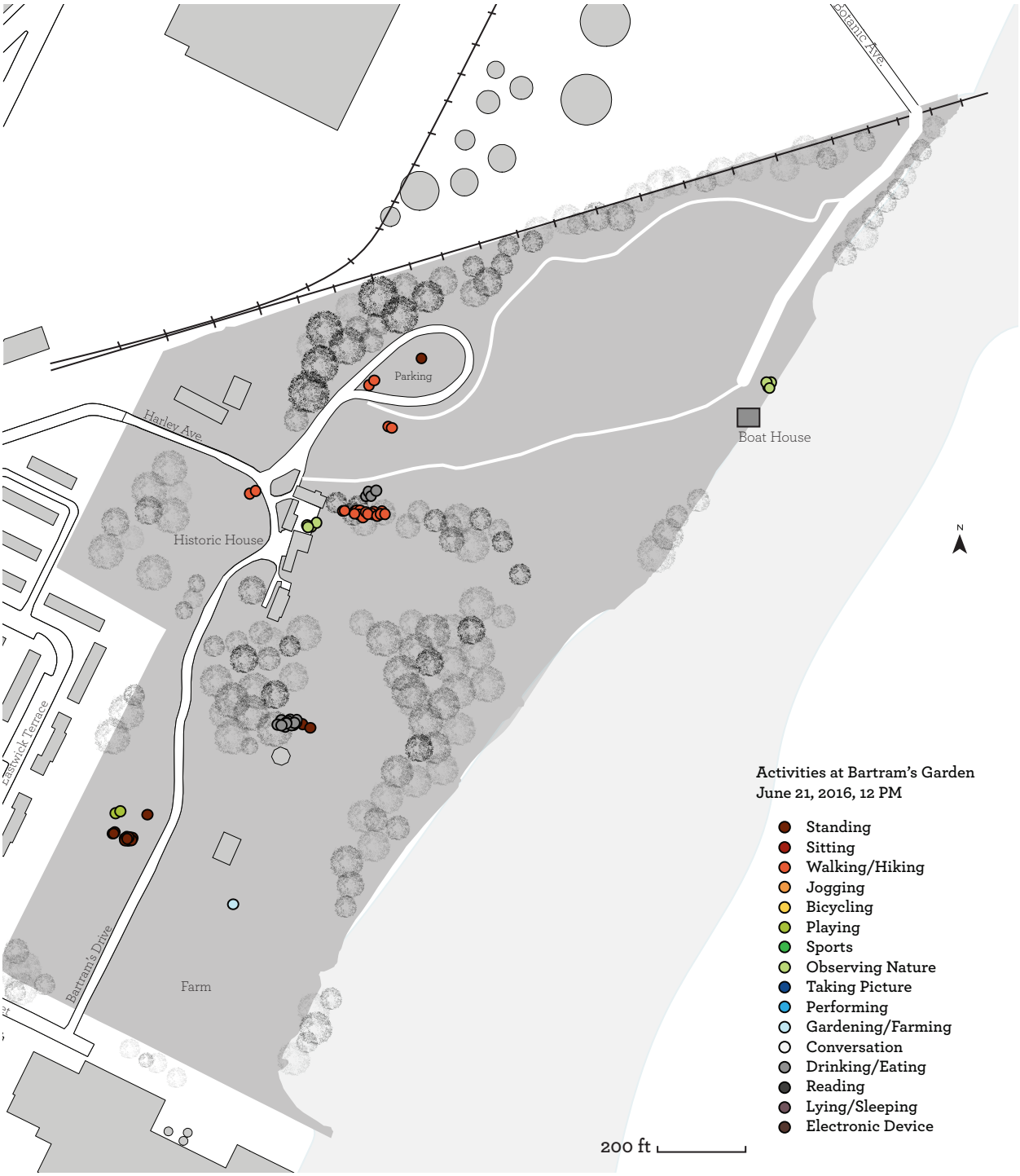

Figure 10. Sample usage period – June 21st, 2016, 12-12:30 PM

Survey

By July 25th, PennPraxis had collected 109 surveys in 27 of hours of canvassing on site. This capture rate of 4.04 surveys per hour compares favorably to the PSU study's capture rate of 1.92 surveys/ hour (Mowen, Hickerson, Benfield, Pitas, & Kim, 2015). If the sample is taken as an approximation of the larger stakeholding population (that of the City of Philadelphia with approximately 1.5 million residents), the margin of error for 95% confidence interval in survey results is approximately 9%.[1] This section contains a general description of findings and some charts and tables of particular interest.

A complete set of charts and tables describing all survey findings can be found in Appendix III.

The average visitor to Bartram's was a repeat visitor under the age of 50 who arrived by automobile. The majority of visitors were from West, Southwest and South Philadelphia but visitors came from all over the city (Figure 11). Over a third (36%) reported living outside the city.

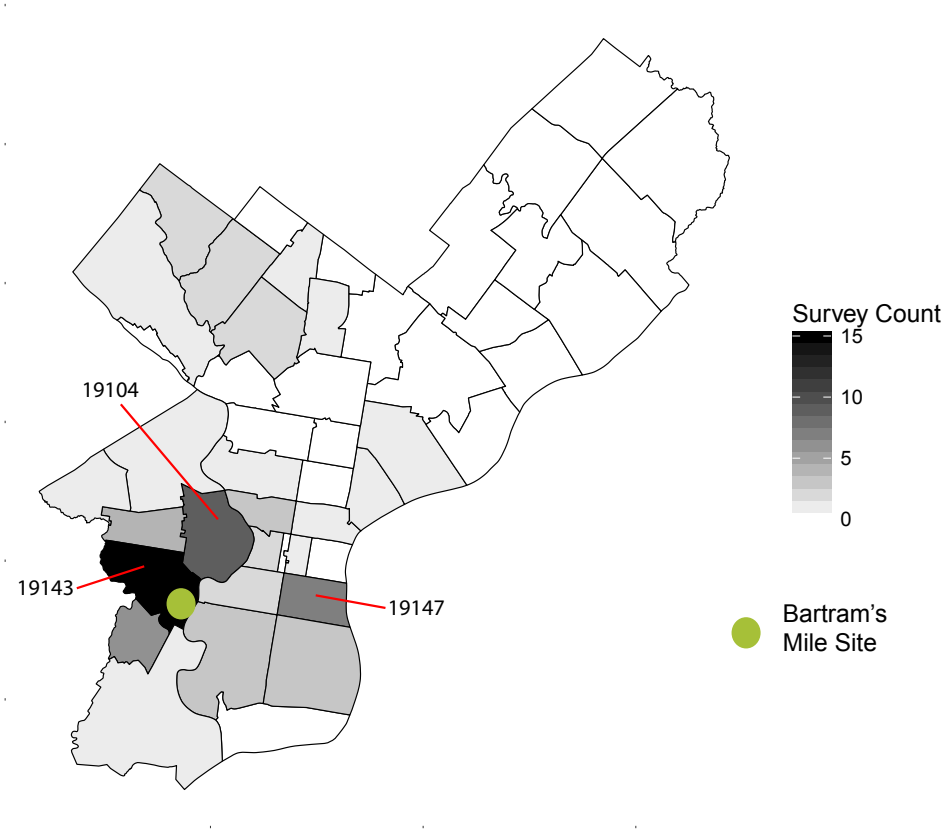

Figure 11. Counts of Philadelphia resident survey subjects by zip code

1 Margins of error for survey sample point estimates were calculated using the following formula $\bar{p} \pm z_{\alpha/2}\sqrt{\bar{p}(1-\bar{p})}/_{n}$ where $\bar{p}$ represents a point estimate for the survey sample, n represents the population size and $z_{\alpha/2}$ represents the 95th percentile of the standard normal distribution population (Yau, 2013).

The average visitor held a bachelor's degree. Seventy-three percent of those who agreed to take the survey had a bachelor's degree or more. The majority of visitors (53%) identified their race as white. The second most likely response to questions regarding the visitor's race was "Black or African American" (25%). For information regarding the distribution of responses to demographic questions, refer to Appendix III.

The most popular reasons for visiting were to either attend an event or to participate in one of the following popular activities: nature watching, boating, fishing, lounging or exercising (Figure 12). There was some variability in the diversity within activity groups. Boating and events attracted diverse groups. Fishing, hiking and nature watching did not have diverse constituencies.

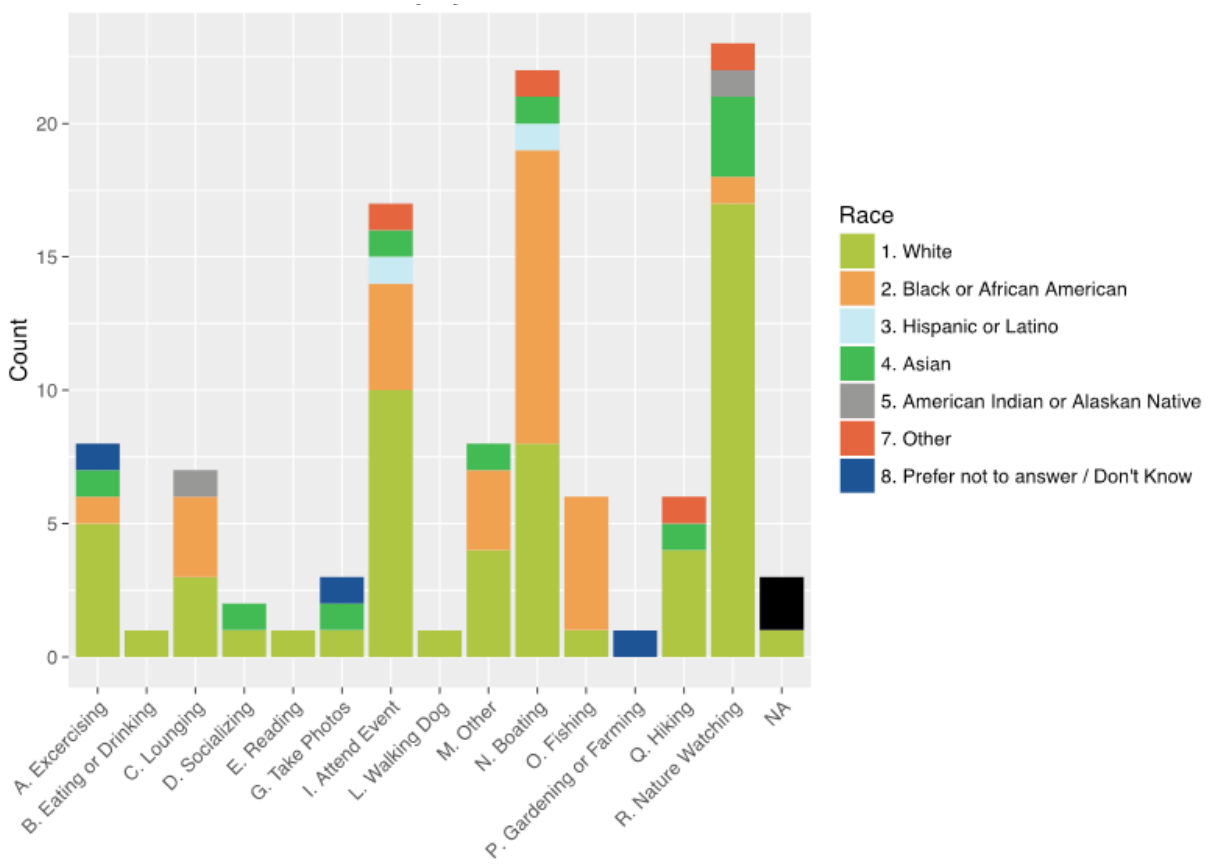

Figure 12. Respondent activity plans subdivided by self-reported racial categories

To further complicate this picture, residents of West or Southwest Philadelphia made up a minority of the most popular visitorship categories (boating and nature watching), despite being the most frequent visitors to the park and making up a plurality of the overall survey volume (Figure 13).

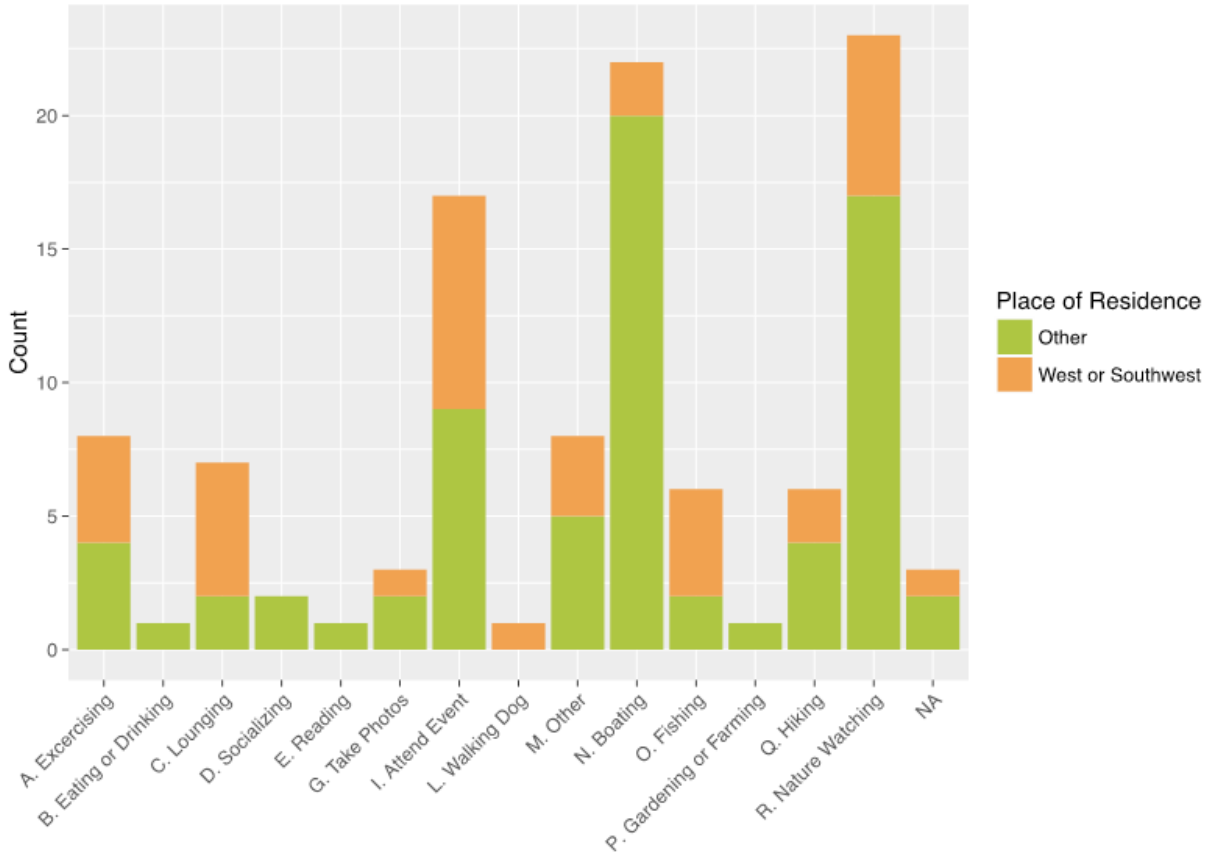

Figure 13. Respondent activity plans subdivided by area of origin – West or Southwest Philadelphia or other

The average Bartram's survey subject visited the park an average of once per month and reported spending over an hour on the site. Overall, interviewees expressed positive impressions of the park's facilities, cleanliness and safety.

On average, respondents rated facilities, cleanliness and safety above four on a possible five-point scale – with one being "Extremely Poor" and five being "Excellent" (Figure 14).

Please indicate your overall level of satisfaction with the…	Mean Score (out of 5)
11. Park's facilities and features	4.3
12. Cleanliness of the park	4.2
13. Safety of the park	4.3
14. Availability of signage and general information	3.8

Figure 14. Attitudes regarding Bartram's facilities

When asked about the importance of different reasons for visiting the park users expressed the opinion that physical exercise, socializing, stress relief and "experiencing nature" were extremely important to them (Figure 16). Users were asked about the degree to which they found various reasons for visiting to be important using a five-point scale, with one being "Not at all important" and five being "Extremely important."

Overall, how important are the following reasons for your visit?	Mean Score (out of 5)
15. Experiencing nature (sights, sounds, smells)	4.6
16. Exercising or doing physical activity	3.9
17. Socializing (friends, family, colleagues)	3.9
18. Relieving stress	4.4

Figure 15. Attitudes regarding reasons for usership

When asked about their feelings of ownership or attachment to the park, visitors tended to express a strong belief that the park was valuable to the neighborhood but did not express a strong degree of personal ownership of the park (Figure 16). Subjects were asked to describe their level of agreement with a set of statements using a five-point scale, with one being "Strongly disagree" and five being "Strongly agree." Residents of West or Southwest Philadelphia zip codes expressed a slightly stronger feelings of ownership, reporting an average score of 3.4 out of 5 in their level of agreement with the statement "I feel a very high degree of personal ownership of this park." The mean "ownership" score was 3.1.

To what degree do you agree or disagree with the following statement…	Mean Score (out of 5)
19. "People in this park share the same values."	3.6
20. "People in this park can be trusted."	4.0
21. "This park/site is an important part of the neighborhood/community."	4.5
22. "This section of the park benefits all residents from the surrounding neighborhood."	4.2
23. "I believe this parks helps put this neighborhood in the right direction."	4.4
24. "This park is important to me and my family."	4.1
25. "I feel a very high degree of personal ownership of this park."	3.1

Figure 16. Attitudes regarding ownership and community

Users were asked about their transportation behavior in anticipation of the connection of the Bartram's site to the east bank of the Schuylkill River and to points in Center City through the Bartram's Mile project. The majority of respondents (65%) from West and Southwest Philadelphia said they would use a connector to travel to Center City for work or errands. Sixty-five percent of West or Southwest residents and sixty percent of overall respondents said they would use it to travel to Center City for social or recreational trips. It should be noted that while the majority of those surveyed reported biking, walking or using public transit to travel to Center City, the overwhelming majority (70%) of those surveyed traveled to Bartram's by automobile.

PennPraxis asked users some specific questions relating to perceptions of Schuylkill River water quality. Respondents had generally neutral opinions about the water's quality for "recreational activity onshore" and "boating or kayaking." Park users had strong negative opinions regarding the water's quality for both swimming and eating locally caught fish (Figure 17). Respondents with a high school degree, GED or less made up a disproportionately larger percentage of those who rated the quality of the water quality for swimming and eating fish as "OK" or "Good." However, that result was within the margin of error and should be treated as conditional.

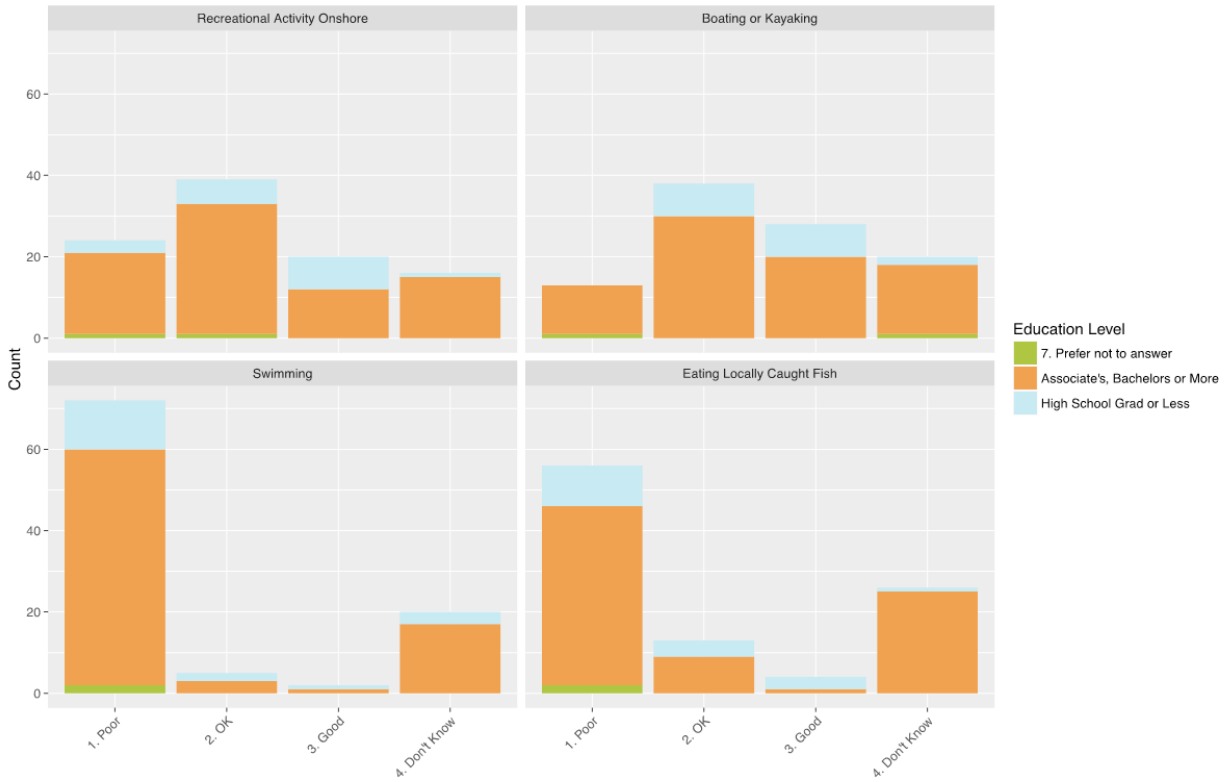

Figure 17. Attitudes regarding Schuylkill River water quality, subdivided by highest reported level of educational attainment

V. DISCUSSION

These surveys establish a baseline which will allow the Fairmount Park Conservancy and the Civic Commons Partners to determine the magnitude and nature of changes in usage and attitudes associated with the Civic Commons interventions. Much of the surveying done by PennPraxis is designed to be descriptive in nature, with the possibility that analytically interesting trends will emerge in a longitudinal analysis. However, there are several interesting observations about the baseline data that are worth noting.

The intensity and type of usage observed at Bartram's during PO surveying may change with the construction of new trail that links the property to Center City. At present, there are several distinct areas which were seen to have characteristic usage patterns. The gazebo was primarily used for eating and drinking, the boat launch for boating and fishing, the historic area for walking or natural observation. Future observation may see these patterns shift or intensify.

Furthermore, the opening of new areas of the park will see the establishment of brand new usage patterns. The most northerly areas of the property were not open to the public during the study period, and one can only speculate as to the types and intensities of use they may see.

This research is designed, in part, to ascertain the socioeconomic diversity of park usership (Hypothesis 2). It is notable that visitorship to Bartram's is notably more diverse than the immediate neighborhood. PennPraxis' survey found a mix of locals and non-locals using the park. *The Reimagining the Civic Commons – Metrics* study (City Observatory, 2016) describes the immediately adjacent neighborhood as overwhelmingly African American with a low level of education. PennPraxis' survey research found that visitors to Bartram's tend to hold college degrees and the plurality of them identify their race as white. This is congruent with the finding that visitors came from a broad range of zip codes, with most coming from West and Southwest Philadelphia or from outside the city. Using zip code and education as proxies for income, one might reasonably assume that the average Bartram's visitor earns more than residents of the adjacent neighborhood.

The PO survey showed anecdotal clustering of certain activity types, and within activity types, there is variability in the racial diversity within activity groups. This implies that there may be stratification within the space. For example, very few African-Americans reported participating in nature watching, the park's most popular activity. Very few white visitors reported participating in fishing. Some activities are solitary, while others are social. One recommendation that may be drawn from this observation is that perhaps it would be best to focus diversity efforts on socially-oriented activities or spaces or high density activity areas like the boat launch or gazebo.

Another notable finding from Bartram's is the decidedly neutral attitude of survey respondents in regards to their sense of ownership of the park despite stated belief in the importance and value of the park. In fact, those surveyed at Bartram's described themselves as feeling less of a degree of ownership than those surveyed by PSU in West Fairmount Park and Cobb's Creek Park. There is room for improvement in this key stewardship metric.

Those who agreed to take the PennPraxis survey showed strong enthusiasm for using the proposed bridge from Bartram's to Center City. It is worth noting that the majority of those responding to the survey arrived at Bartram's by automobile but state a willingness to use other modes of transit in their stated commuting behavior. This suggests that the bridge may be a boon to those who wish to bike to Bartram's or to Center City but find it too difficult.

Survey questions related to perceptions of Schuylkill River water quality show a willingness to partake in activities near the river, or to participate in boating. There is room for improvement in both of these areas, however, and it will be interesting to see what kind of relationships emerge between the level of participation in boating and kayaking programs and perceptions of water quality.

VI. FUTURE RESEARCH

In future years, this site-specific study can be replicated to generate a year-over-year comparison of usage after the interventions in the Civic Commons spaces are complete. The study can also be expanded to encompass new park land, such as the unopened northern unit of Bartram's. Building toward this longitudinal data analysis is critical to address the two basic hypothesis most directly. For these future iterations, PennPraxis has developed custom computer programs in R for quickly visualizing data outputs from digitally administered surveys. Data visualizations can also be viewed and downloaded from the Harvest My Data dashboard, though they are difficult to manipulate.

At present, the Bartram's survey does not have a sample size quite equal to that of the PSU study, but margins of error are roughly similar. Despite the fact that sample capture rates were relatively good, additional hours of surveying could increase the baseline sample, should the client choose to increase the sample size. Online surveys would be a low-cost option. However, there are some problems inherent in giving these surveys outside of the context in which they make intuitive sense—when the user is in or adjacent to the park and when a survey administrator can provide clarification or help upon request. Some questions will not make sense to online users. For example, "how did you travel to the park today?" is a question that can be used to accurately assess travel behavior in person, but makes little sense elsewhere, especially if the interviewee has to attempt to abstract some kind of average visit in his mind in order to answer. This may lead to some unreliable data. Therefore, it is highly desirable to replicate the on-site surveys created in this first round of data collection.

There are several additional data sources which can be used to create a richer picture of the impact of the Civic Commons interventions. Depending on the granularity and sample sizes of some available third party data, it may be possible to construct some causal econometric models. These data sources are detailed in Figure 18.

Data	Source	Application
Indigo Bike Share Usage	opendataphilly	Determine intervention impact on travel patterns
Licenses & Inspections permit data	Azavea "License to Inspect"	Monitor Germantown Avenue corridor health
Social Media Traffic	Twitter, Instagram, etc.	Assess popularity of Commons sites
Pedestrian, Bike Counts	Delaware Valley Regional Planning Commission	Assess impacts on visitation and commuting

Figure 18. Additional Data Sources for Greater Depth on RCC Projects

PennPraxis has communicated with the Delaware Valley Regional Planning Commission (DVRPC) and Locus Partners regarding remote traffic counting and mode choice surveying, and they have stated an interest in collaborating in order to study travel patterns along the Schuylkill River. PennPraxis and Locus have both identified sites for potential remote monitoring at all the Civic Commons sites. **Note: All illustrations of Electronic Sensors on maps contained in Appendix I indicated potential future locations identified by PennPraxis, having reviewed the sites, spoken to site staff, and reviewed Locus Partners' report.**

Lastly, future research should be accompanied by a more granular, more comprehensive demographic analysis of the areas adjacent to study sites.

VII. REFERENCES

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APPENDIX I. Participant Observation (PO)_Survey Instrument

Figure 1. Participant Observation Map of Northern Half of Bartram's Mile Site

Figure 2. Participant Observation Map of Southern Half of Bartram's Mile Site

2016 Reimagining the Civic Commons Visitor Survey

Date: _____
Time: _____
Interviewer Name:_____
Location: _____

GENERAL USAGE

"The first set of questions is about your use of the park and the activities you do here."

1. Is this your first visit to this site/park?

☐ Yes ☐ No

If NO, skip Questions 2 – 3. If YES, answer Questions 2 – 3.

2. Are there physical barriers to accessing the site/park?

☐ Yes. Please describe: _____

☐ No ☐ Maybe

3. Are you interested in visiting the site/park more frequently?

☐ Yes ☐ No ☐ Maybe

4. How did you travel to the park today?

☐ Walk ☐ Bicycle ☐ Public transit ☐ Automobile ☐ Other

5. Which entrance did you take to enter this site/park? MAP HERE

_____

6. What kinds of activities are you planning to do at the park? FLASH CARD HERE

_____

7. Including today, please estimate how many times over the last 30 days you visited this park.

☐ Once ☐ 2-5 Times ☐ 5 - 10 times ☐ More than 10 times

8. Please estimate how many total minutes you expect to spend in this section of the park during today's visit.

☐ 0 - 10 minutes ☐ 10 - 30 minutes ☐ 30 minutes - 1 hour ☐ More than 1 hour

9. How many people are in your group today?

Number of adults _____

Number of children/youth (under 18 years) _____

10. Would you say that you visit this place more, less, or about the same as in the past?

☐ More ☐ Less ☐ About the same

QUALITY

"Now I'm going to ask you to rate your satisfaction with the park facilities and maintenance. These questions are on a scale of 1 to 5 – with 1 being a rating of 'Extremely Poor,' 3 being 'Fair' and 5 being 'Excellent'."

11. Please indicate your overall level of satisfaction with the park's facilities and features.

Extremely Poor Poor Fair Good Excellent

Figure 1. Intercept Survey for Bartram's Mile - RCC 2016

1 2 3 4 5

12. Please rate the cleanliness of the park.

Extremely Poor	Poor	Fair	Good	Excellent
1	2	3	4	5

13. Please rate the safety of the park.

Extremely Poor	Poor	Fair	Good	Excellent
1	2	3	4	5

14. Please rate the availability of signage and general information in the park.

Extremely Poor	Poor	Fair	Good	Excellent
1	2	3	4	5

EXPERIENCES

"Now I'm going to ask you about different activities and you can tell me how important they are as reasons for your visit. These questions are on a scale of 1 to 5 – with 1 being a rating of 'Not At All Important,' and 5 being 'Extremely Important'."

15. Experiencing nature (sights, sounds, smells)

Not at all important		Neutral		Extremely Important
1	2	3	4	5

16. Exercising or doing physical activity

Not at all important		Neutral		Extremely Important
1	2	3	4	5

17. Socializing (friends, family, colleagues)

Not at all important		Neutral		Extremely Important
1	2	3	4	5

18. Relieving stress

Not at all important		Neutral		Extremely Important
1	2	3	4	5

COMMUNITY

"Now I'm going to make a few statements about the users of this park and the park's importance to the community. Tell me if you agree or disagree with these statements using a scale of 1 to 5 – with 1 being a rating of 'Strongly Disagree,' and 5 being 'Strongly Agree'."

19. "People in this park share the same values."

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

20. "People in this park can be trusted."

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

21. "This park/site is an important part of the neighborhood/community."

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

22. "This section of the park benefits all residents from the surrounding neighborhood."

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

23. "I believe this parks helps put this neighborhood in the right direction."

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

PERSONAL OWNERSHIP

24. "This park is important to me and my family."

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

25. "I feel a very high degree of personal ownership of this park."

Strongly Disagree		Neutral		Strongly Agree
1	2	3	4	5

DEMOGRAPHICS

26. What is your age?

☐ Under 18 ☐ 18 – 34 ☐ 35 – 49 ☐ 50 – 65 ☐ 65 +

27. In what zip code do you live?_____

28. How long have you lived there? _____

29. How would you describe your employment status?

☐ Employed ☐ Unemployed ☐ Retired ☐ Student
☐ Other _____ ☐ Prefer not to answer

30. If you are employed, in what zip code do you work?_____

31. What is the highest degree or level of education you have completed?

☐ < than 9th grade ☐ 9th-12th grade ☐ High school Graduate or GED
☐ Associate's Degree ☐ Bachelor's Degree ☐ Graduate or Professional Degree
☐ Prefer not to answer

32. Which of the following would you use to describe your race or ethnic background?

☐ White ☐ Black or African American
☐ Hispanic or Latino ☐ Asian
☐ American Indian or Alaskan Native ☐ Hawaiian or Pacific Islander
☐ Other _____ ☐ Prefer not to answer/ Don't know

33. Please identify your gender.

☐ Male ☐ Female ☐ Other ☐ Prefer not to answer

34. Have you ever visited any of the following sites?

☐ Bartram's Mile
☐ West Fairmount Park Near the Please Touch Museum
☐ East Fairmount Park
☐ Lovett Library & Park
☐ Reading Viaduct

2016 Reimagining the Civic Commons Visitor Survey – Bartram's Mile

Date: _____
Time: _____
Interviewer Name: _____
Location: _____

BARTRAM'S GARDEN (ONLY)

40. Do you use the trails at Bartram's Garden?

☐ Yes ☐ No ☐ Not sure

41. Do you travel to Center City for work or errands?

☐ Yes ☐ No

42. (If yes) What mode do you most commonly use to travel to Center City for work or errands?

☐ Walk ☐ Bicycle ☐ Public Transit ☐ Automobile ☐ Other

43. If the Bartram's Mile were connected to Center City, what mode would you use to travel to Center City for work or errands?

☐ Walk ☐ Bicycle ☐ Public Transit ☐ Automobile ☐ Other

44. Do you travel to Center City for social or recreational reasons?

☐ Yes ☐ No

45. (If yes) What mode do you most commonly use to travel to Center City for social or recreational reasons?

☐ Walk ☐ Bicycle ☐ Public Transit ☐ Automobile ☐ Other

46. If the Bartram's Mile trail were connected to Center City, what mode would you use to travel to Center City for social or recreational reasons?

☐ Walk ☐ Bicycle ☐ Public Transit ☐ Automobile ☐ Other

47. Overall, how would you rate the quality of the water in the Schuylkill River for recreational activity onshore?

☐ Poor ☐ Okay ☐ Good ☐ Don't know

48. Overall, how would you rate the quality of the water in the Schuylkill River for boating or kayaking?

☐ Poor ☐ Okay ☐ Good ☐ Don't know

49. Overall, how would you rate the quality of the water in the Schuylkill River for swimming?

☐ Poor ☐ Okay ☐ Good ☐ Don't know

50. Overall, how would you rate the quality of the water in the Schuylkill River for eating locally caught fish?

☐ Poor ☐ Okay ☐ Good ☐ Don't know

51. How would you rate the physical access to the river from this site?

☐ Poor ☐ Okay ☐ Good ☐ Don't know

APPENDIX III. Full Report of Survey Findings

1. Is this your first visit to this site/park?

Yes	No	NA
45	62	2

2. (If yes to Q1) Are there physical barriers to accessing the site/park?

None of those answering “yes” to this question offered free-response suggestions.

Yes	No	Maybe	NA
29	14	14	18

3. (If yes to Q1) Are you interested in visiting the site/park more frequently?

Yes	No	Maybe	NA
31	1	6	71

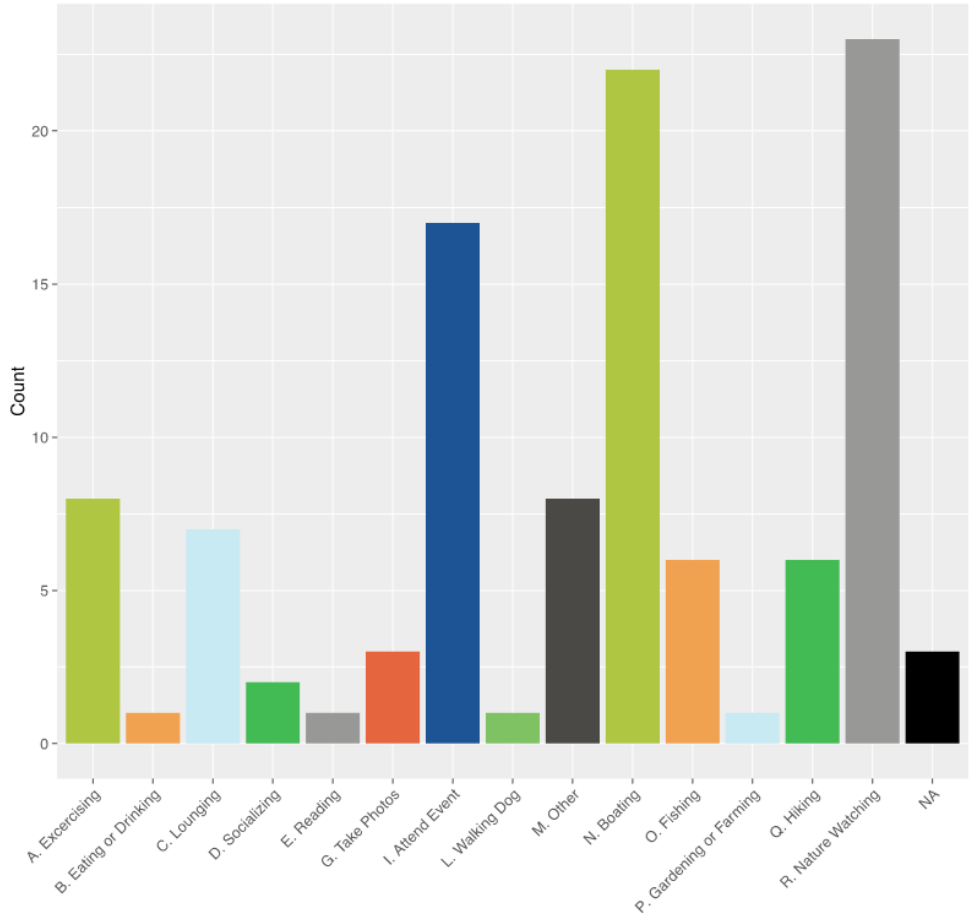
4. How did you travel to the park today?

Walk	Bicycle	Public Transit	Automobile	Other	NA
8	15	6	76	2	2

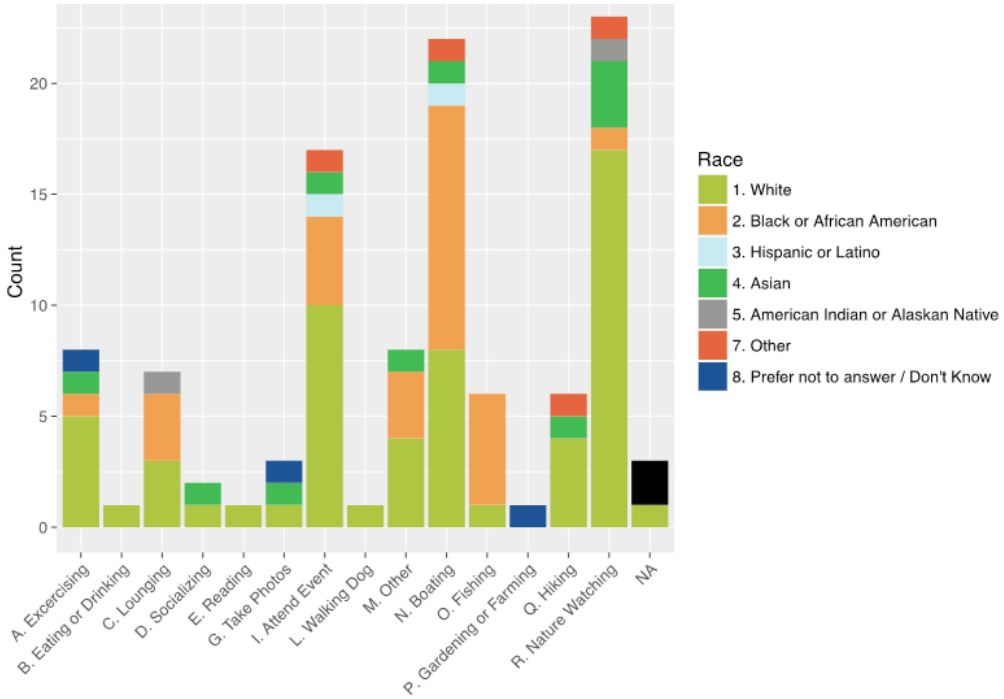
5. Which entrance did you take to enter this site/park?

Main Entrance	51st and Botanic	56th St	Swing Bridge	NA
99	6	1	0	3

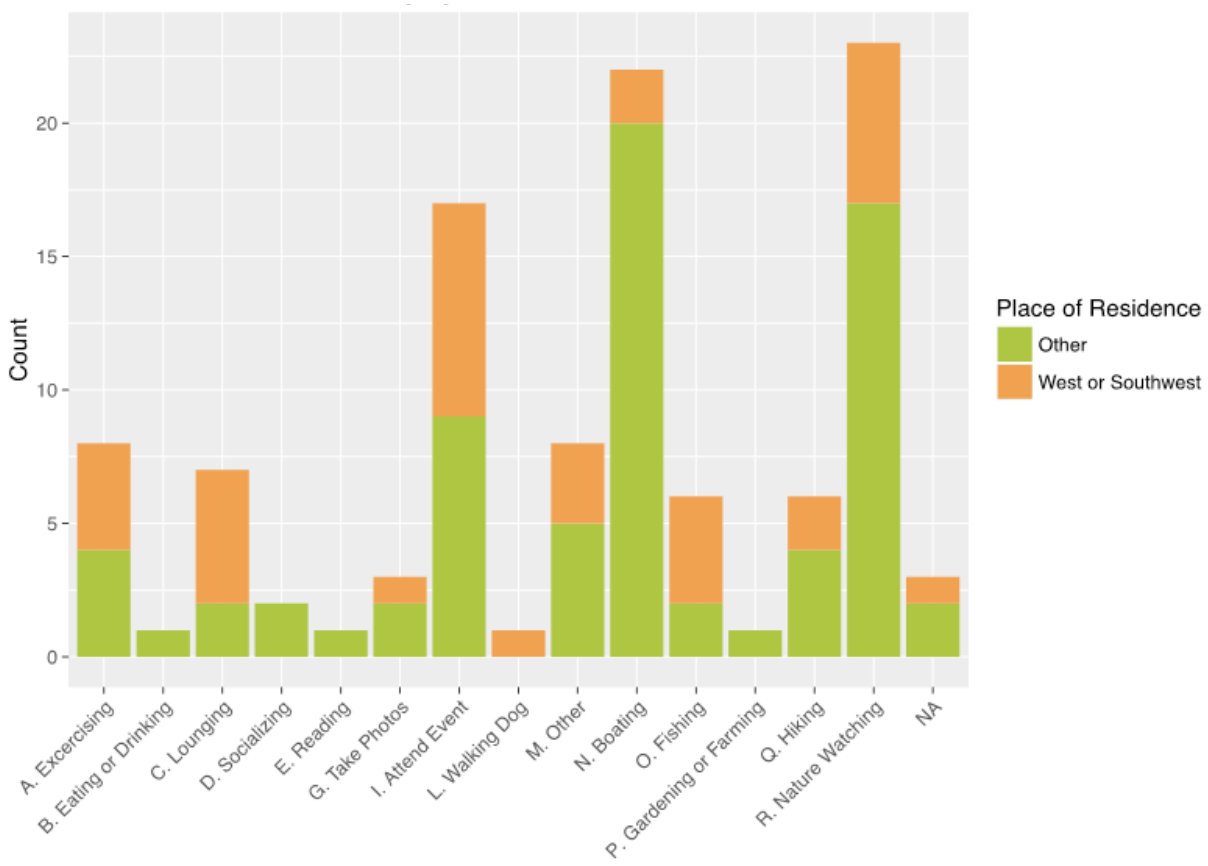
6. What kinds of activities are you planning to do at the park?



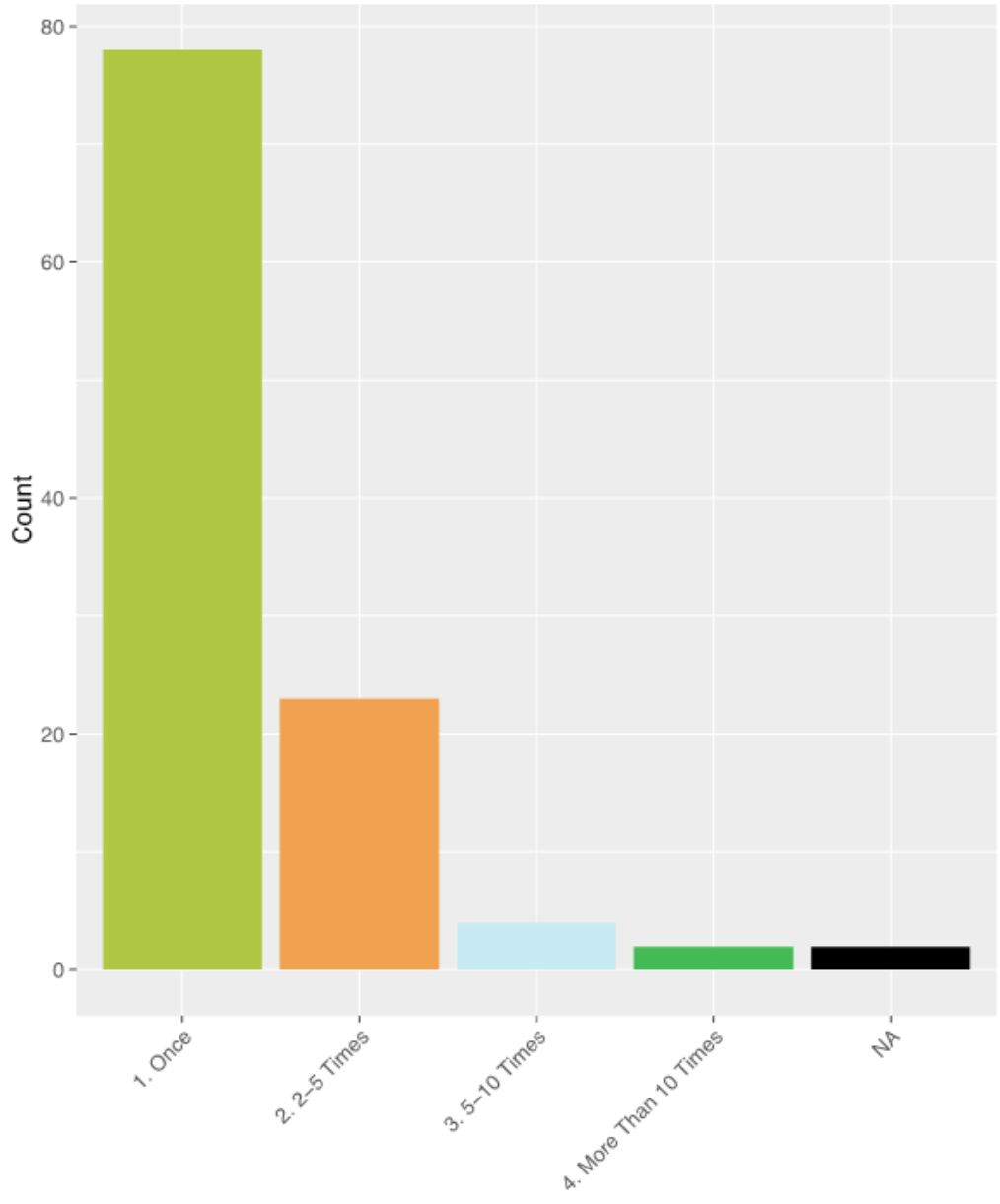
6a. What kinds of activities are you planning to do at the park (by self-identified racial group)?



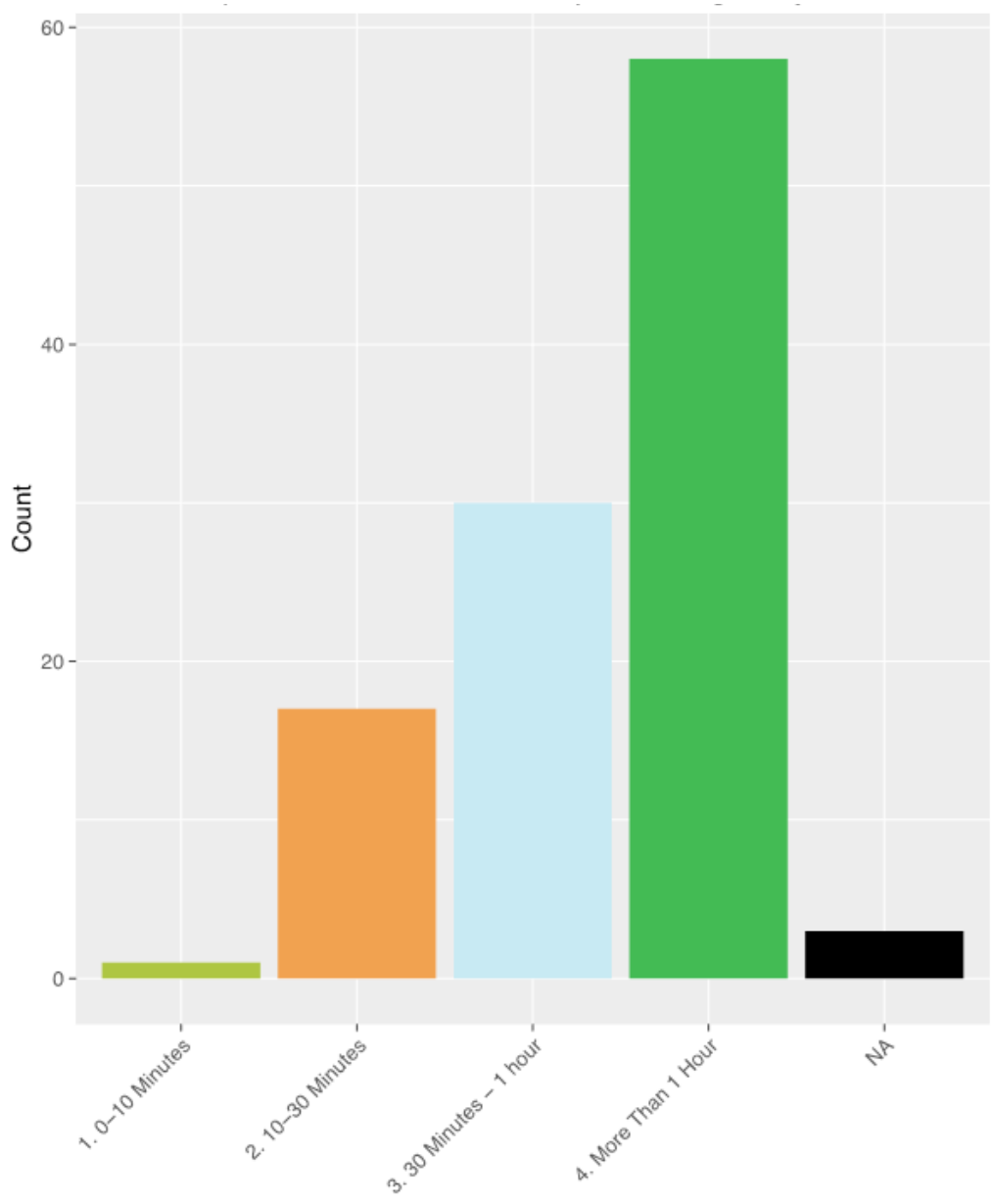
6b. What kinds of activities are you planning to do at the park (by area of residence in Philadelphia)?



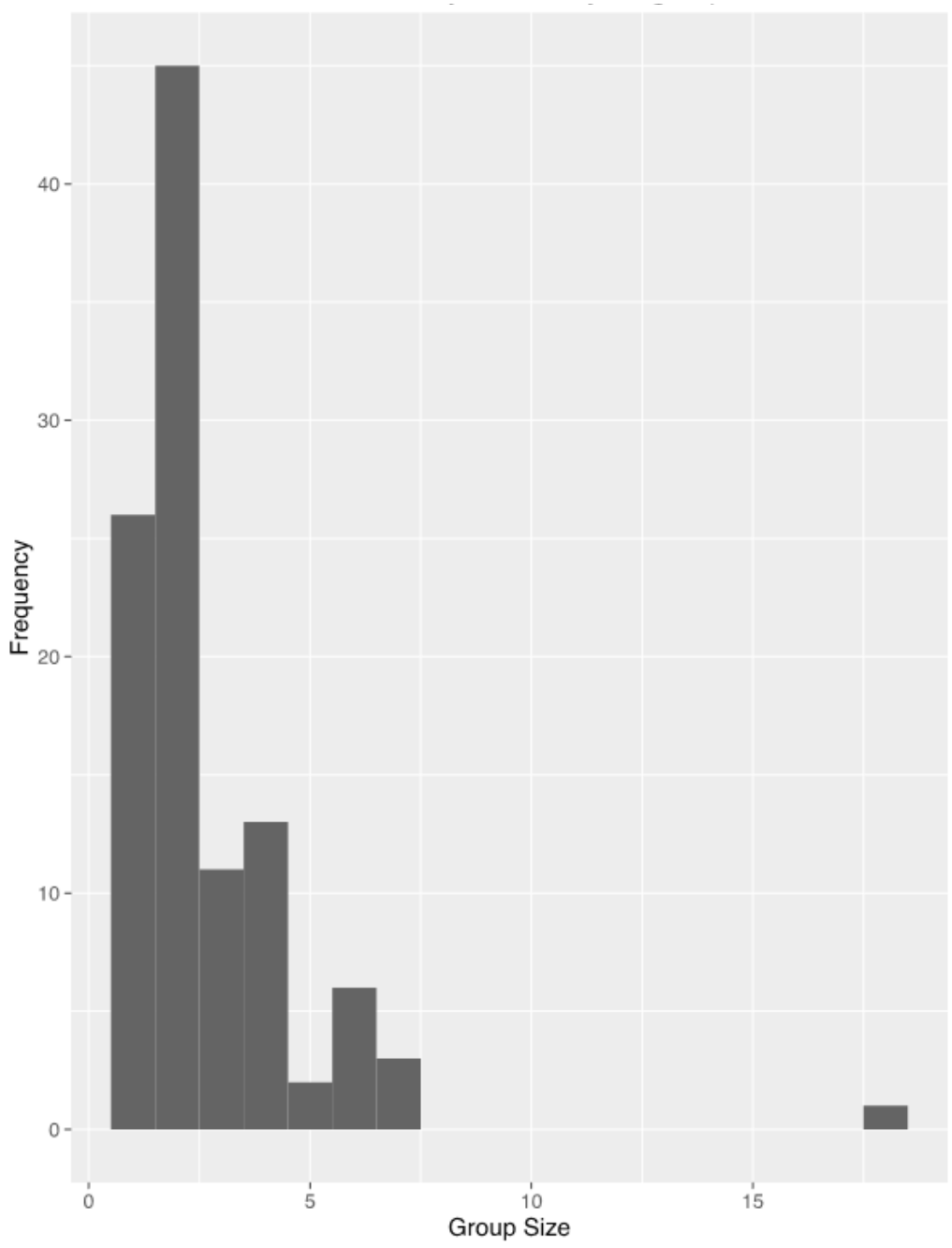
7. Including today, please estimate how many times over the last 30 days you visited this park.



8. Please estimate how many total minutes you expect to spend in this section of the park during today's visit.



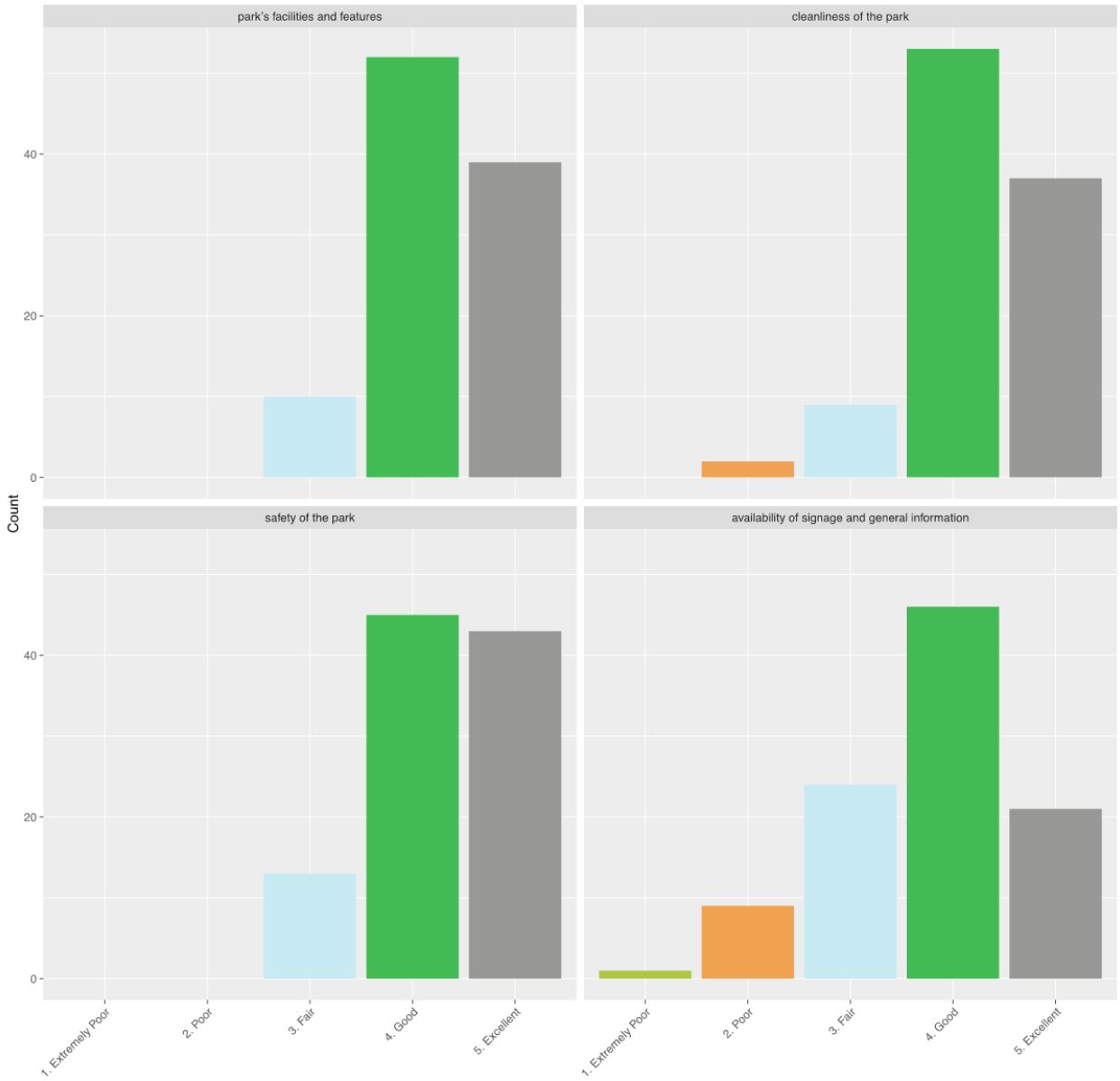
9. How many people are in your group today?



10. Would you say that you visit this place more, less, or about the same as in the past?

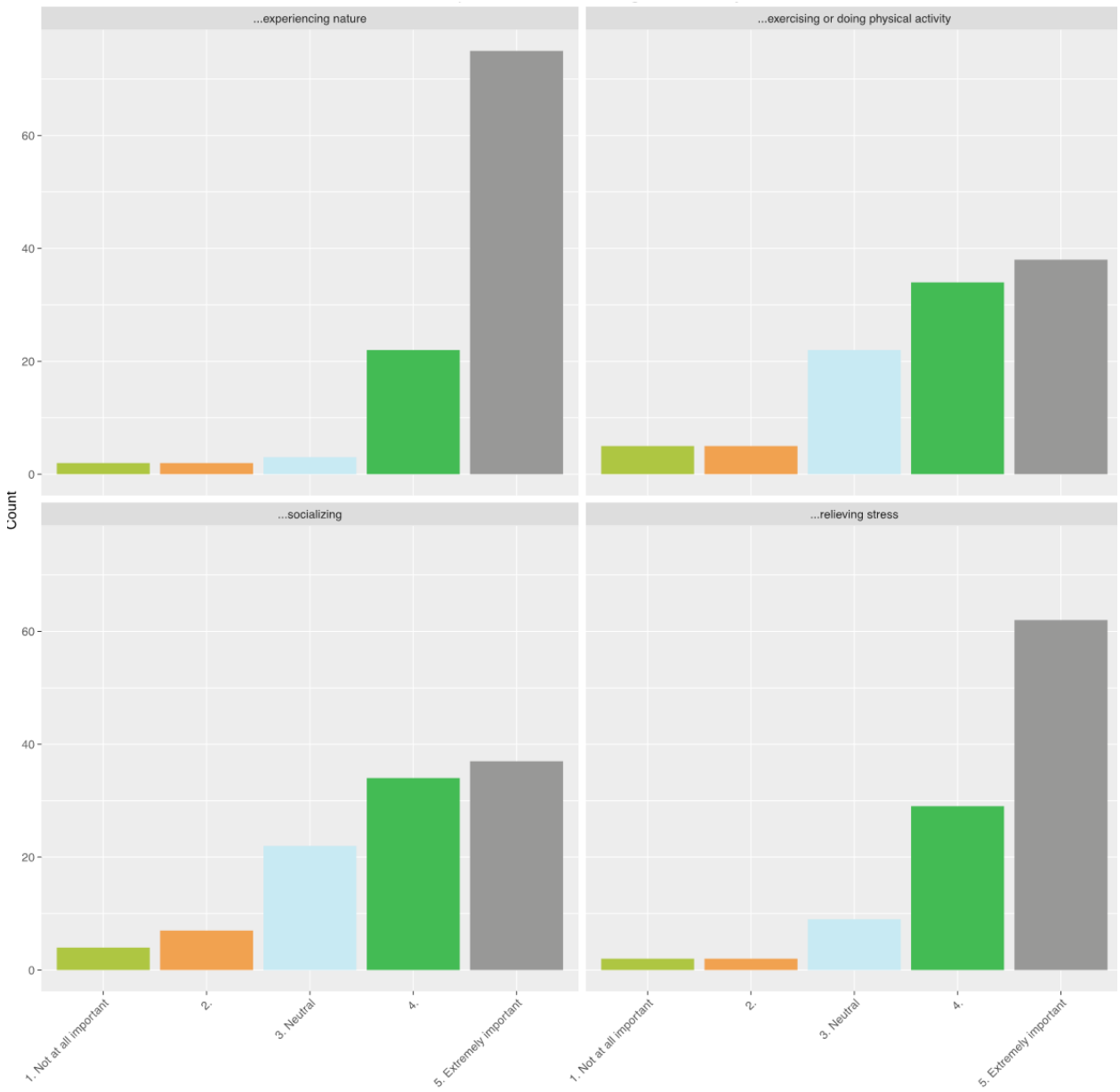
More	Less	About The Same	NA
47	11	35	16

11-14. Please indicate your overall level of satisfaction with the…



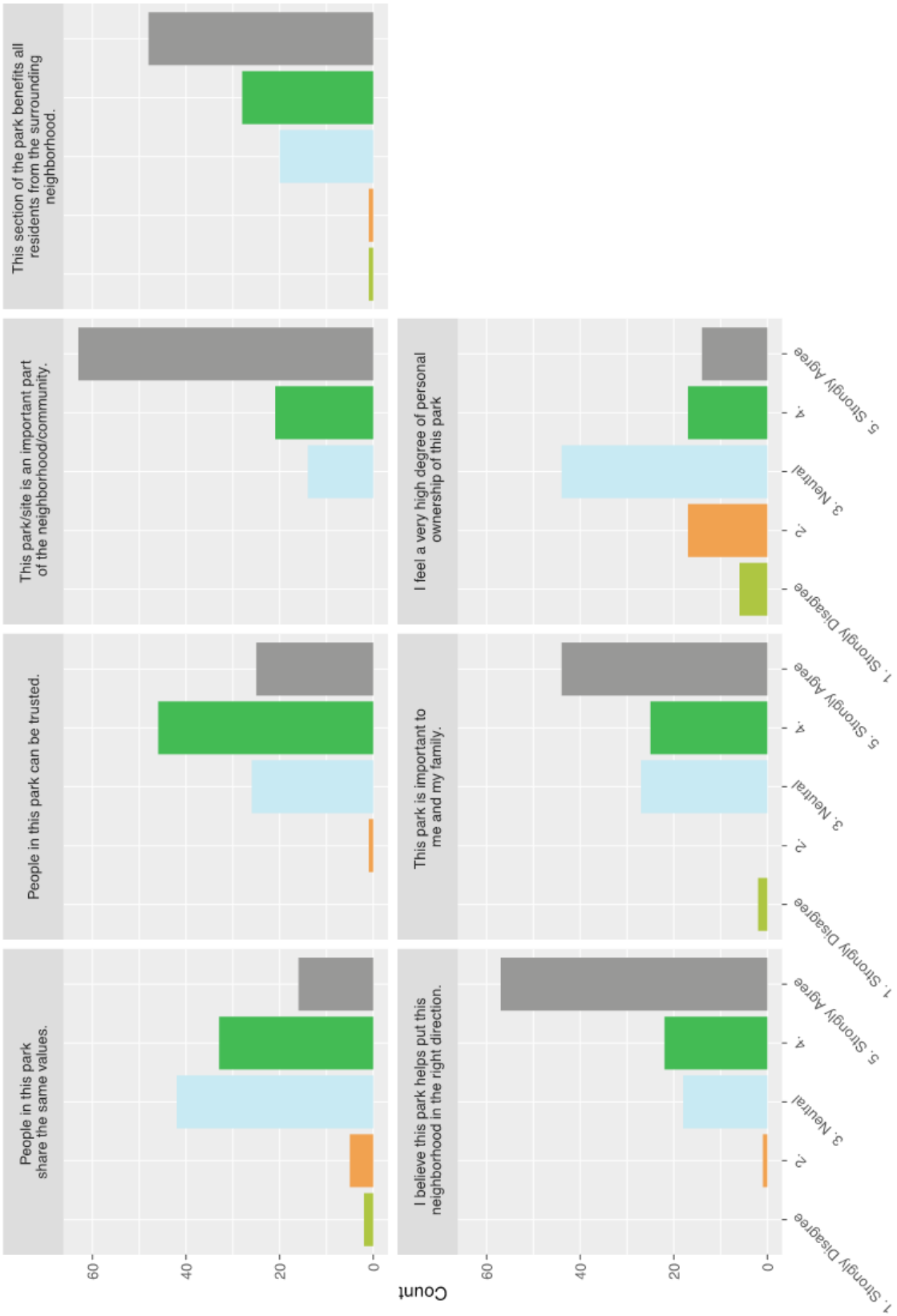
Question	Mean Score (out of 5)
11. Park's facilities and features	4.3
12. Cleanliness of the park	4.2
13. Safety of the park	4.3
14. Availability of signage and general information	3.8

15-18. Overall, how important are the following reasons for your visit?



Question	Mean Score (out of 5)
15. Experiencing nature (sights, sounds, smells)	4.6
16. Exercising or doing physical activity	3.9
17. Socializing (friends, family, colleagues)	3.9
18. Relieving stress	4.4

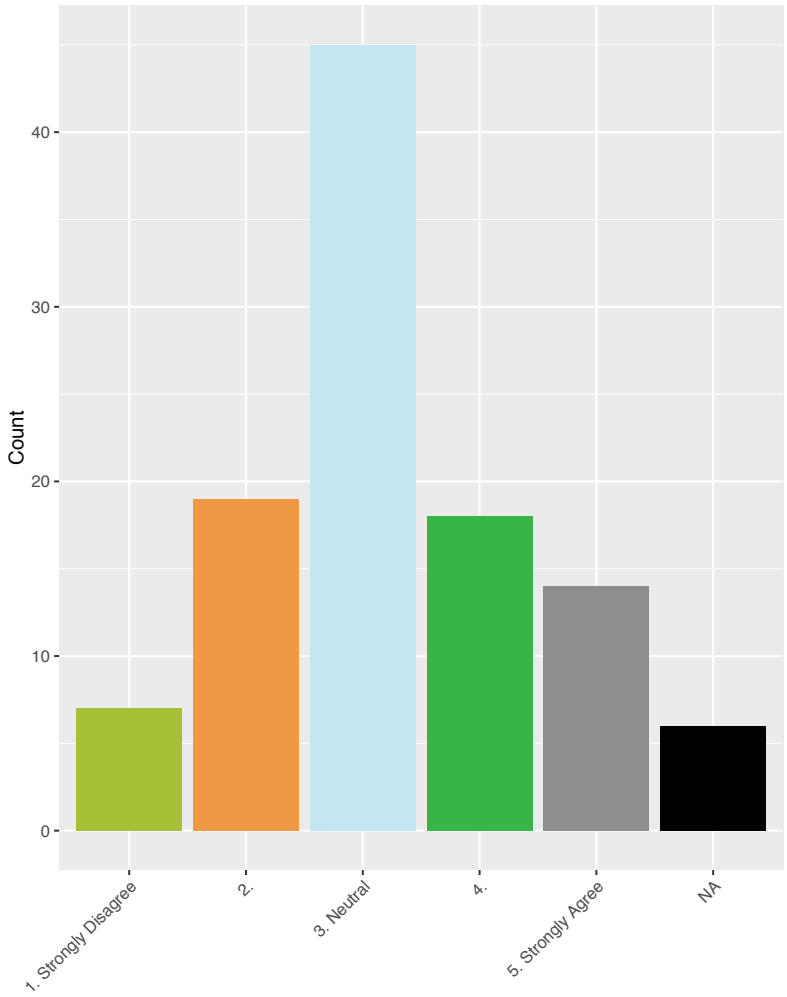
19.-25. To what degree do you agree or disagree with the following statement…



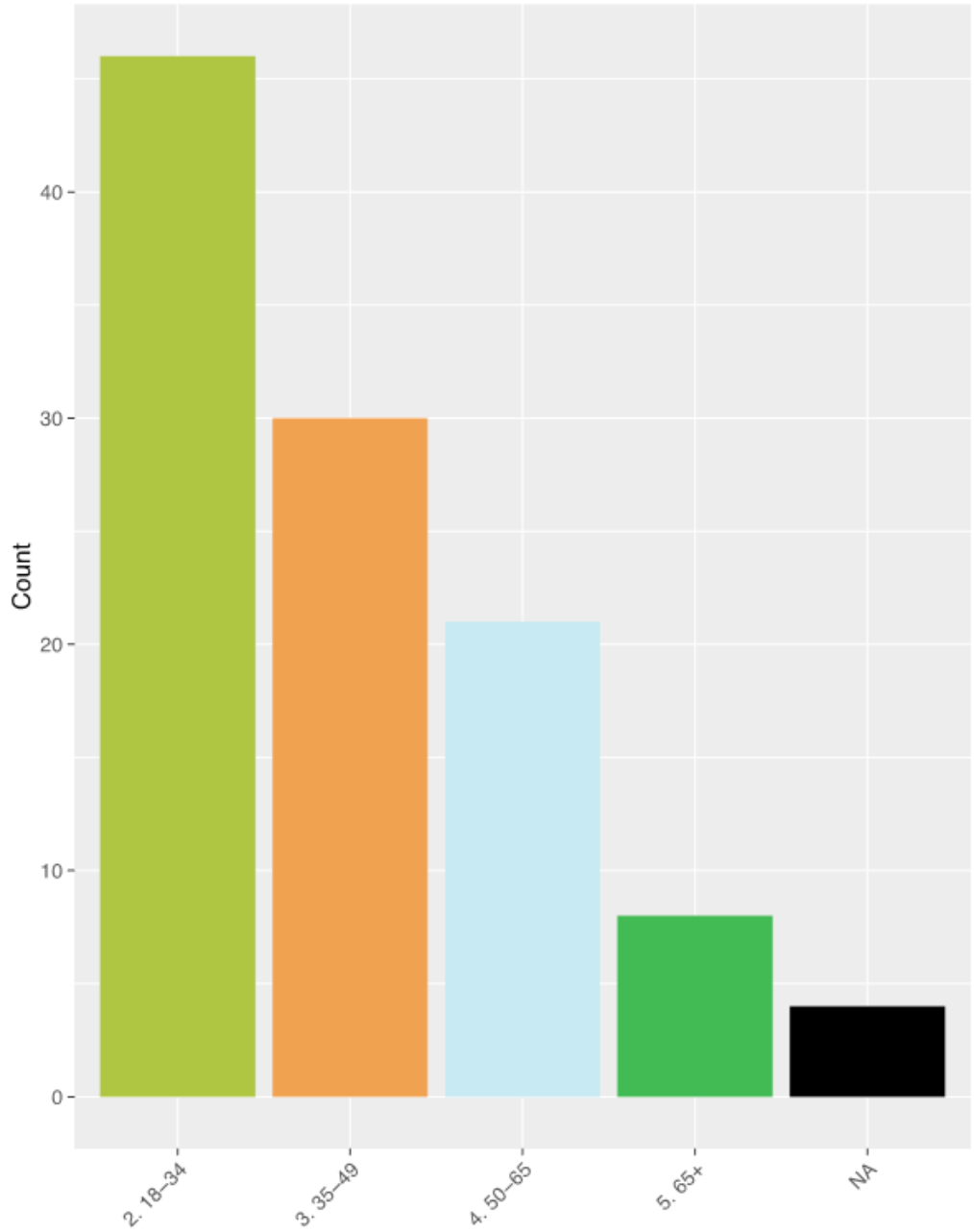
Question	Mean Score (out of 5)
19. “People in this park share the same values.”	3.6
20. “People in this park can be trusted.”	3.4
21. “This park/site is an important part of the neighborhood/community.”	4.5
22. “This section of the park benefits all residents from the surrounding neighborhood.”	4.2
23. “I believe this parks helps put this neighborhood in the right direction.”	4.4
24. “This park is important to me and my family.”	4.1
25. “I feel a very high degree of personal ownership of this park.”	3.1

25a. To what degree do you agree or disagree with the following statement… “I feel a very high degree of personal ownership of this park.” (Amongst West and Southwest Philadelphia Residents only)

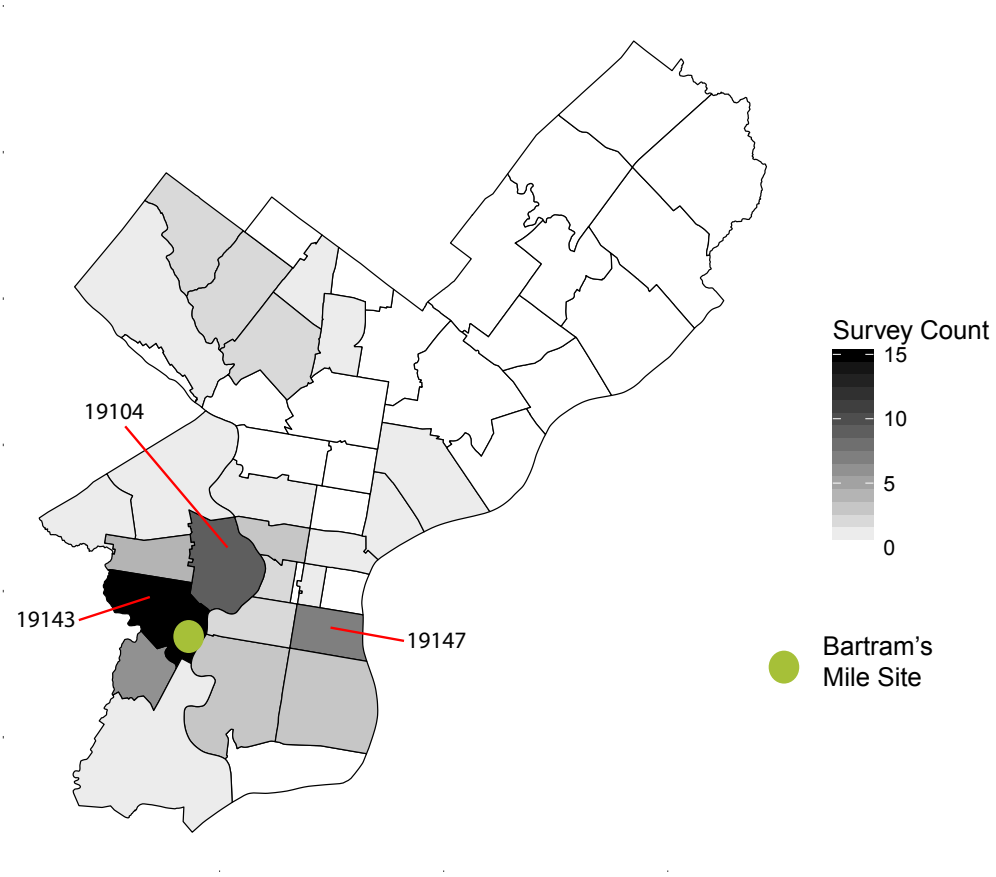
Mean score = 3.4. Mean is 3.1 for all visitors



26. What is your age?

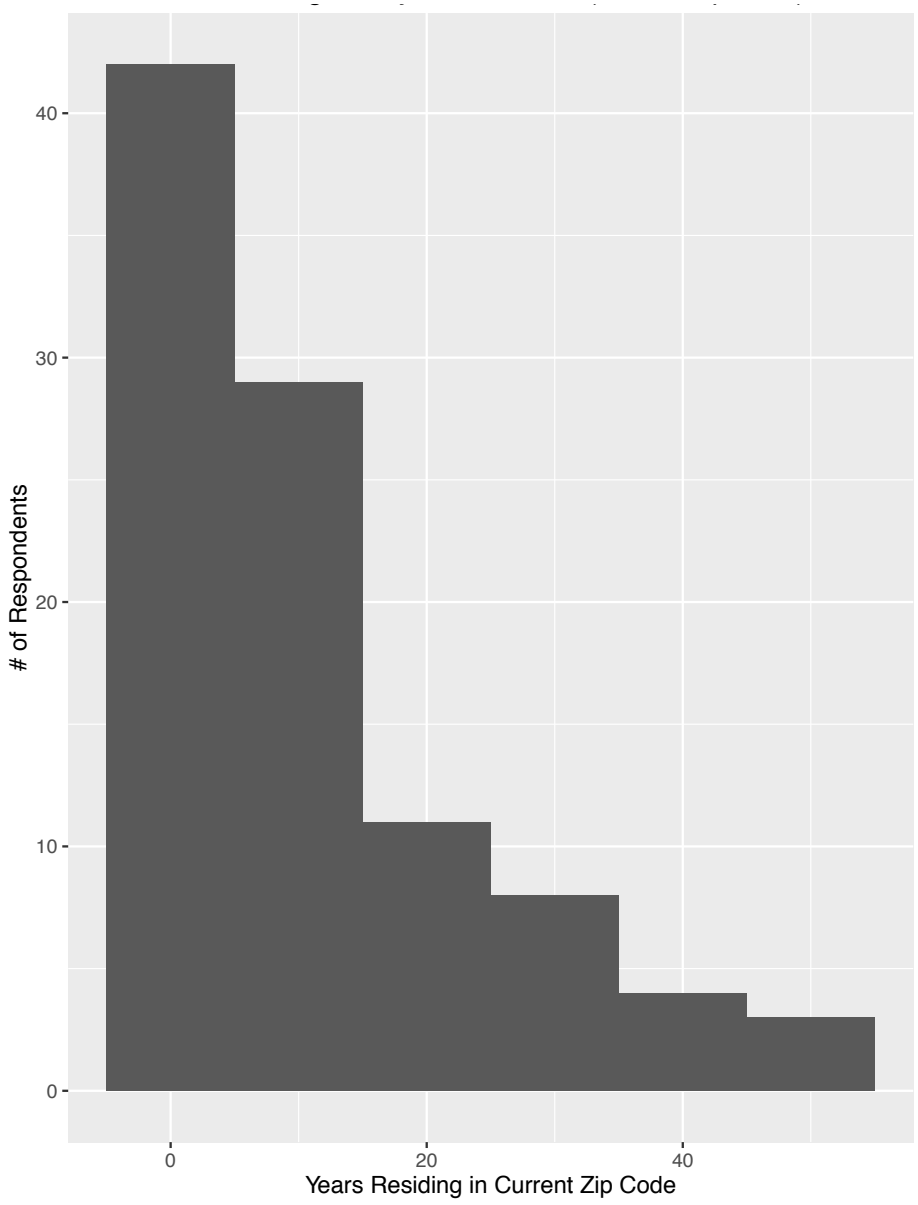


27. In what zip code do you live? (39 have non-Philadelphia zip codes)



28. How long have you lived there?

Mean value = 11.6 years

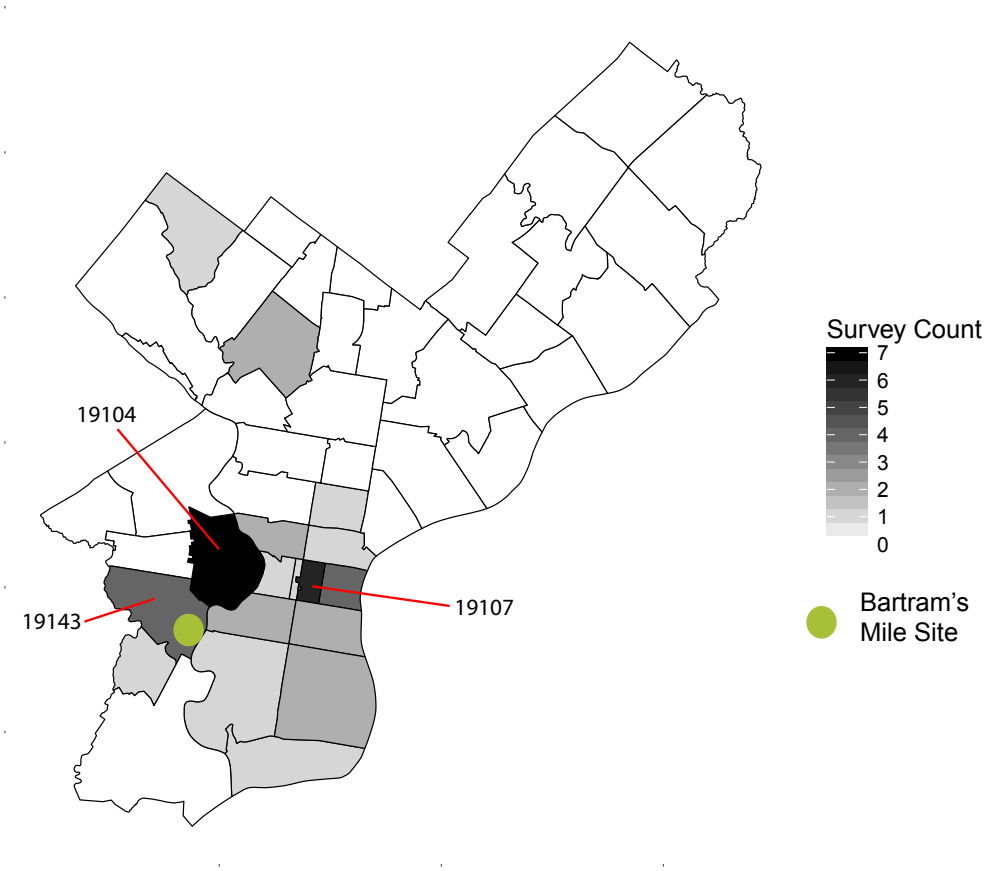


29. How would you describe your employment status?

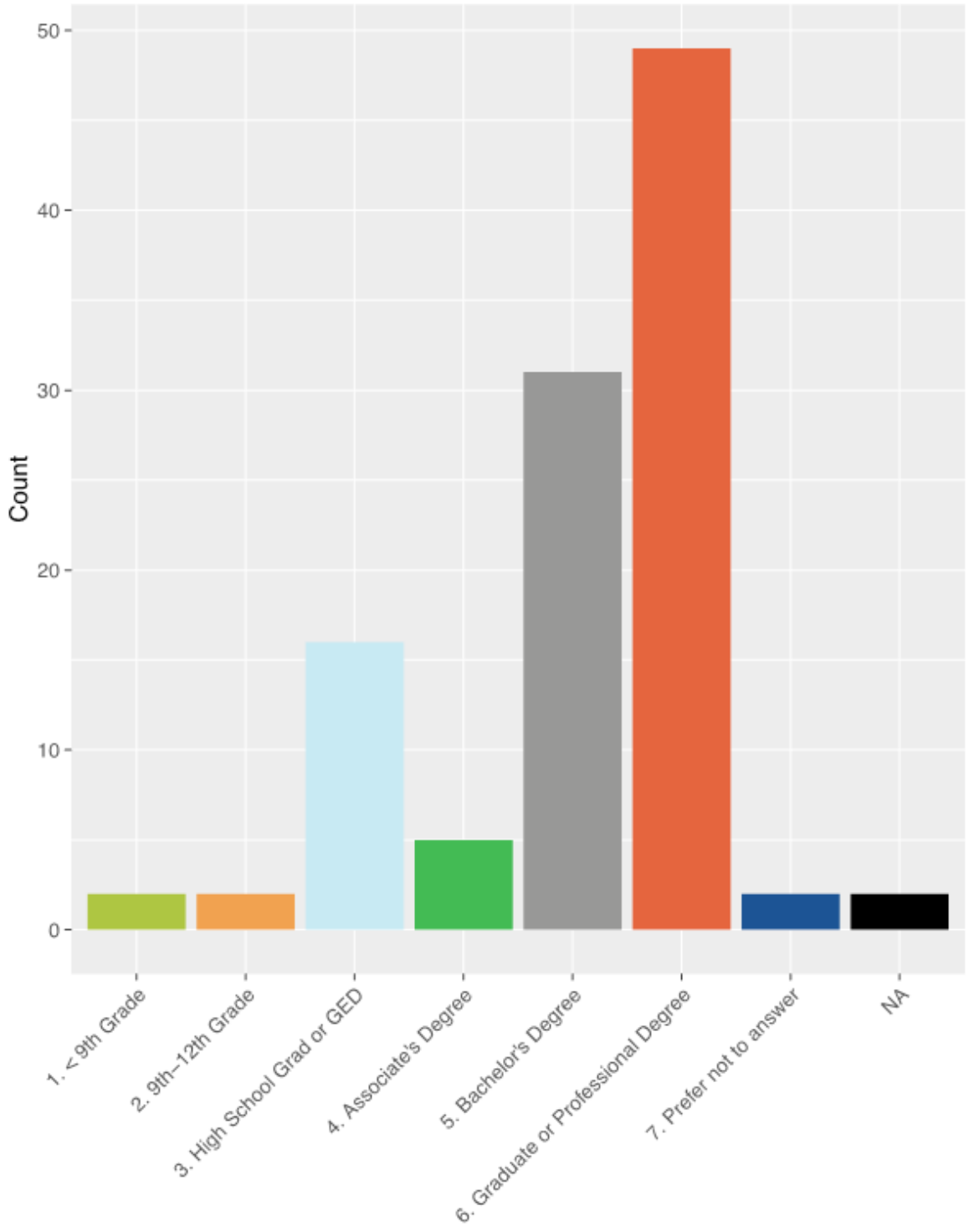
Employed	Unemployed	Retired	Student	Other	Prefer not to answer	NA
76	8	10	6	1	6	2

30. If you are employed, in what zip code do you work?

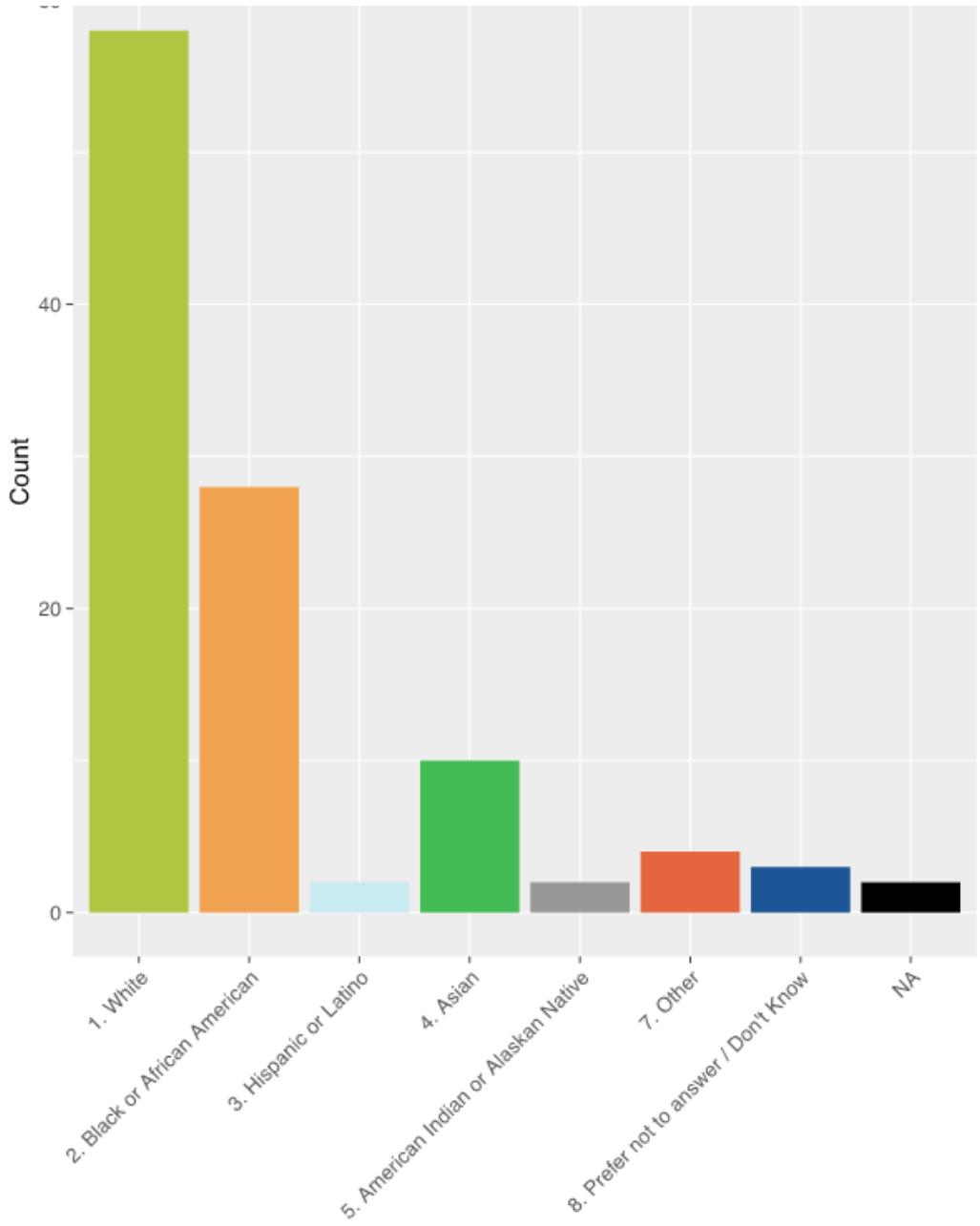
(71 reported either workng outside Philadelphia or declined to answer)



31. What is the highest degree or level of education you have completed?



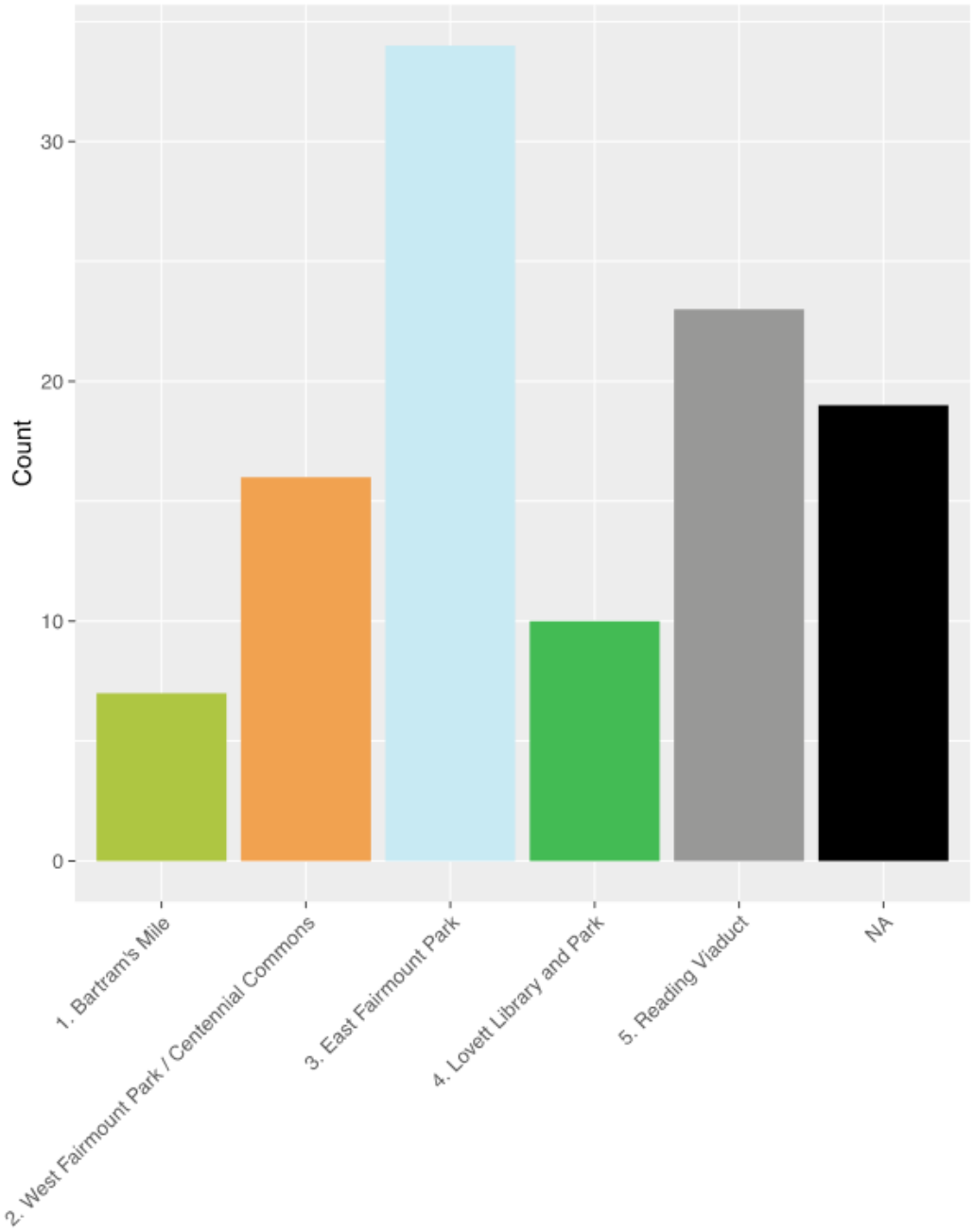
32. Which of the following would you use to describe your race or ethnic background?



33. Please identify your gender.

Male	Female	Other	Prefer not to answer	NA
44	59	2	1	3

34. Have you ever visited any of the following sites?



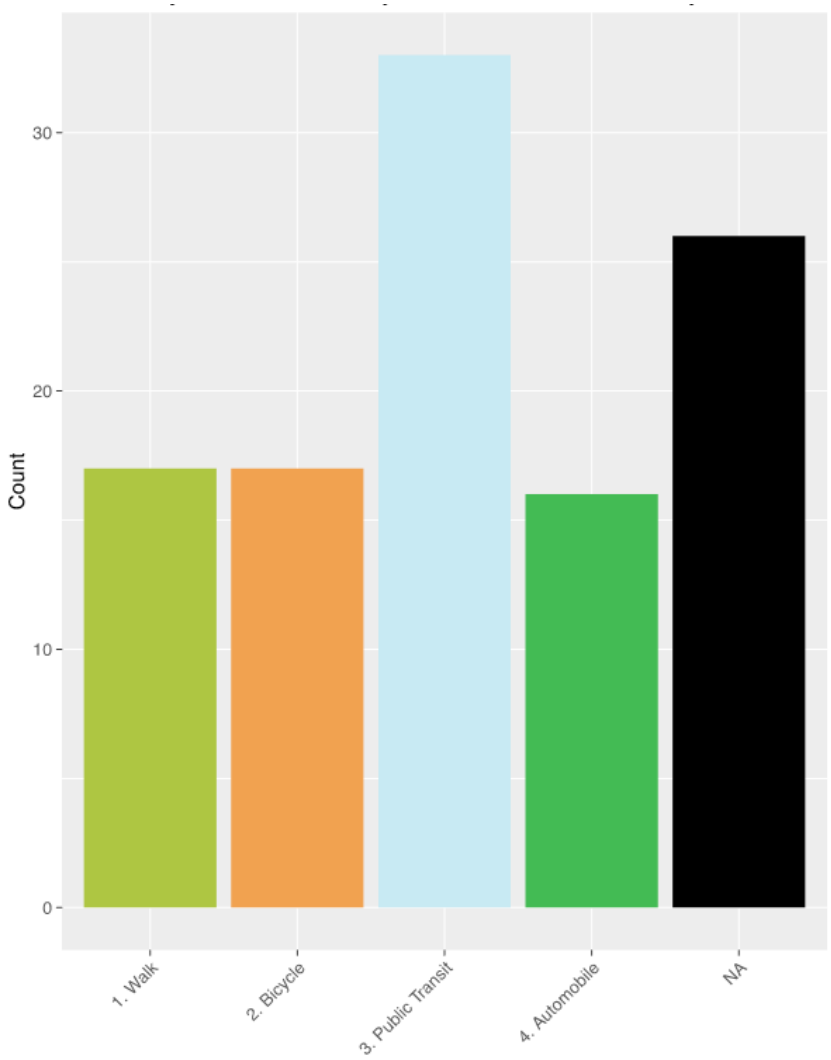
35. Do you use the trails at Bartram's Garden?

Yes	No	Not sure	NA
66	24	12	7

36. Do you travel to Center City for work or errands?

Yes	No	NA
75	27	7

37. (If yes) What mode do you most commonly use to travel to Center City for work or errands?



38. If the Bartram's Mile trail were connected to Center City, would you use it to travel to Center City for work or errands?

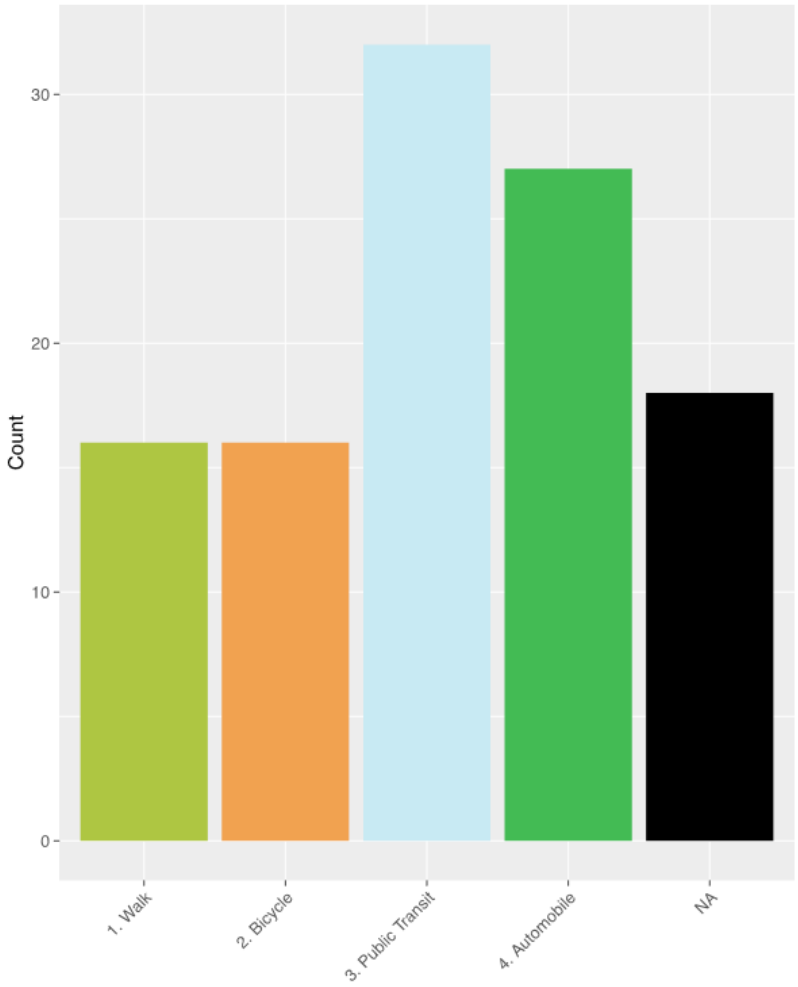
* - West or Southwest Philadelphia residents only

Yes	No	Not sure	NA
54	26	20	9
24*	5*	7*	1*

39. Do you travel to Center City for social or recreational reasons?

Yes	No	NA
75	27	7

40. (If yes) What mode do you most commonly use to travel to Center City for social or recreational reasons?

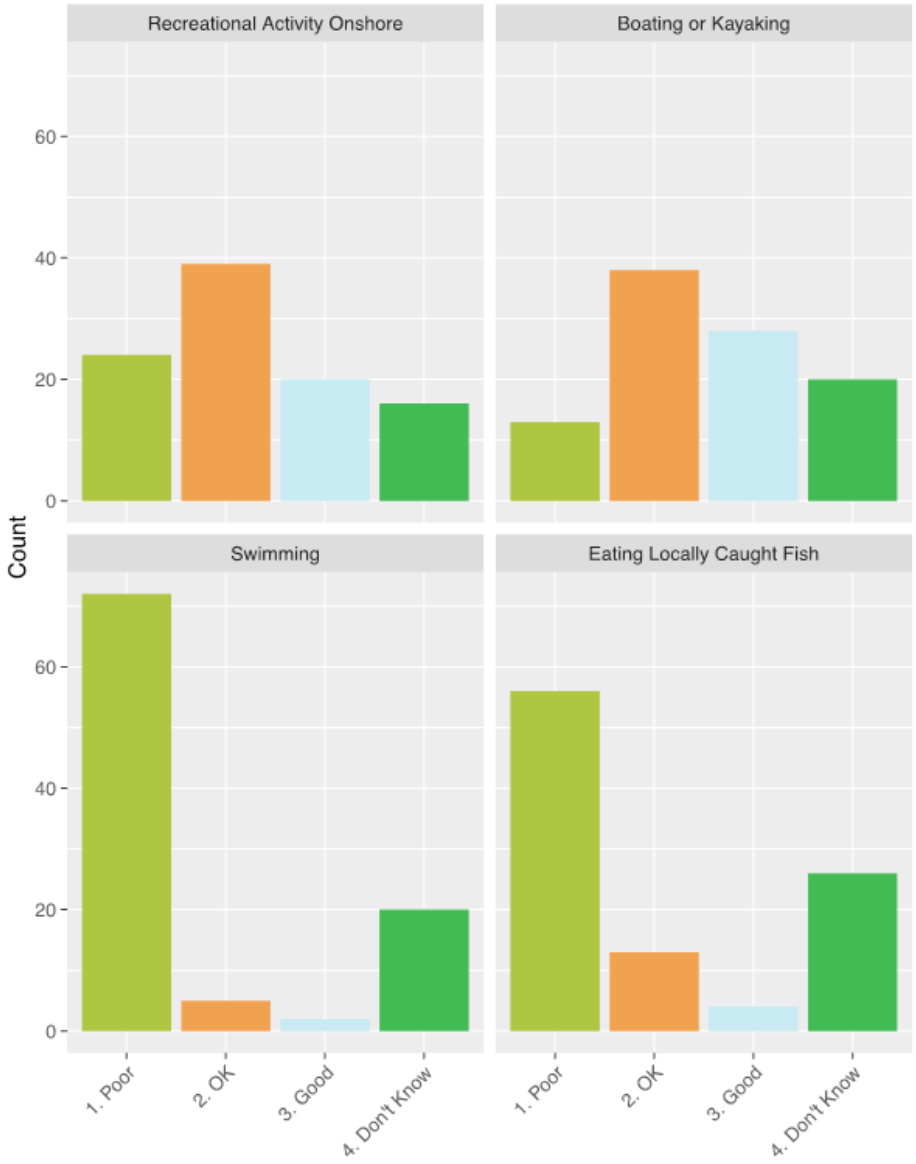


41. If the Bartram's Mile trail were connected to Center City, would you use it to travel to Center City for social or recreational reasons?

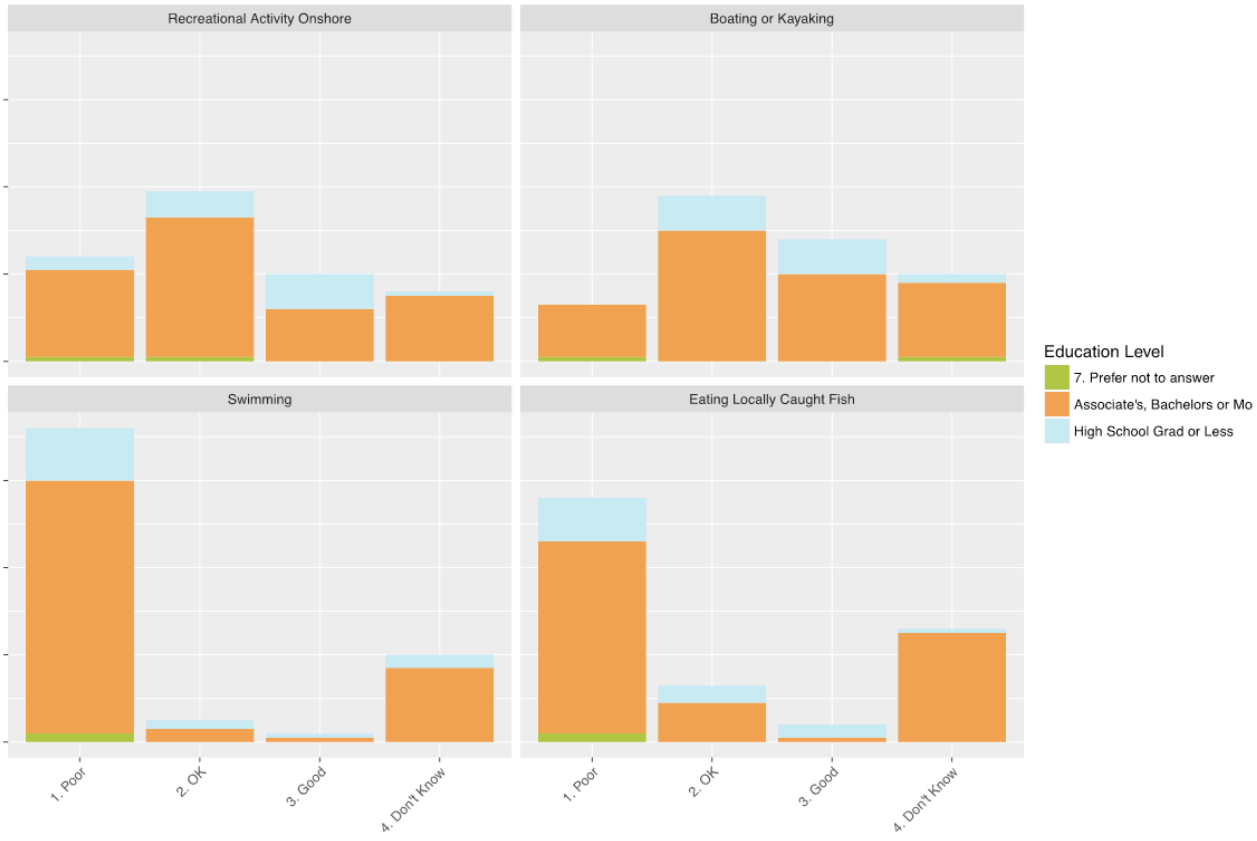
* - West or Southwest Philadelphia residents only

Yes	No	Not sure	NA
66	15	17	11
24*	3*	9*	1*

42.-45. Overall, how would you rate the quality of the water in the Schuylkill River for…



42.-45a. Overall, how would you rate the quality of the water in the Schuylkill River for…(by level of education)



46. How would you rate the physical access to the river from this site?