LANDSCAPE PERFORMANCE SERIES
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Scioto Mile and Greenways
Methods

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The full case study can be found at: https://landscapeperformance.org/case-study-briefs/scioto-mile-and-greenways

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Acknowledgements

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Environmental Benefits

- ***Increased riparian edge habitat by 5.4 acres, the size of 4 football fields and an estimated fourfold (200%) increase over previous conditions. Of the riparian habitat plant species, 25% have special value for pollinators, 50% provide food/habitat for birds, 25% provide food/habitat for small mammals, and 39% are attractive to butterflies and moths with 27% being larval host plants.***

Method: AutoCAD drawings were used to calculate the total area of the new habitat. Evaluation of plant species, specified on drawings and confirmed in the field, were evaluated using the plant databases from USDA PLANTS, Missouri Botanical Garden, and the Lady Bird Johnson Wildflower Center to determine special value for insect and animal habitats. Simple percentages were calculated compared to the total number of species. Species which had multiple varieties were only counted one time. Total number of butterflies and moths was simply counted.

An estimation of the riparian edge habitat conditions were made using historical aerial imaging from Google Earth Pro. Three images were chosen because they had the most clarity – imagery dating from 3/6/2002, 12/31/03, and 5/28/10. Other images were discarded due to poor quality or shadow location which limited ability to see vegetated areas. The 5/28/10 image had one section which had been already disturbed by construction, so an image from 2009 was substituted in that area estimate even though it was of lower quality.

Measurements were made using the Google Earth Pro Ruler tool. Polygons were drawn around riverside vegetation which appeared naturalized on images. Screen shots were taken of the

polygons and measurement of area in acres. These sections were added up for each year. The three years were then averaged to come up with the estimated total habitat acreage of 2.72. Pre-construction site surveys were consulted, but did not provide sufficient information about the location and extent of vegetated areas under evaluation to use as comparison.

For the current habitat cover acreage, construction documents were used to establish the area planted with wildlife supporting vegetation, such as grasses, shrubs, and tree groves along the river edge. AutoCAD was used to measure the area of the site designed with this riverside habitat. Additionally, the same procedure using Google Earth Pro was used to evaluate the vegetated areas currently present on site. These two areas were averaged to come up with the current habitat area of 8.12 acres.

The % difference between these two estimates were then calculated.

Calculations:

Pre-Construction:
3/2002 image: 0.68 + 0.42 + 0.87 + 0.41 + 0.89 = 3.27 acres
12/2003 image: 0.49 + 0.29 + 0.29 + 0.64 + 0.40 = 2.11 acres
5/2010 image: 0.37 + 0.51 + 0.91 + 0.71 + 0.28 = 2.78 acres
Average pre-construction: (3.27 + 2.11 + 2.78)/3 = **2.72 acres**

2021 image: 1.24 + 0.09 + 0.20 + 0.70 + 0.37 + 0.06 + 0.57 + 0.44 + 0.09 + 0.22 + 0.67 +1.04 + 0.89 + 0.44 + 0.31 = 7.33 acres
AutoCad : 8.91 acres
Current Average acres: (7.33 + 8.91)/2 = **8.12 acres**

Difference between: 8.12 - 2.72 = **5.4 acres**
% Difference between: (8.12 - 2.72)/2.72 * 100% = **198.5294117647%**

5.4 acres = 235,224 sq ft
1 football field = 57,600 sq ft.
235,224/57,600 = 4.08
5.4 acres = **4.08 football fields**

% Calculations of plant species:
Total # of identified species = 114 (counts multiple varieties of the same species as 1)
Total # of species with Special Value to Pollinators = 29 (29/114 x 100= 25%)
Total # species that are Larval Hosts: 31 (31/114 x 100 = 27%)
Total # species attractive to Birds: 57 (57/114 x 100 = 50%)
Total # of species attractive to Mammals: 28 (28/114 x 100 = 25%)
Total # of species attractive to Butterflies/Moths: 45 (45/114 x 100 = 39%)

See APPENDIX B for full list of species identified with category designations

Sources:

Google Earth Pro V 7.3.3.7786. (March 6, 2002). Columbus, OH. 39° 57’25.83”N, 83°00’22.30”W, Eye alt 2251 feet. Maxar Technologies 2021. Accessed June 14, 2021

Google Earth Pro V 7.3.3.7786. (December 31, 2003). Columbus, OH. 39° 57’25.83”N, 83°00’22.30”W, Eye alt 1663 feet. Image Landsat Corporation. Accessed June 14, 2021

Google Earth Pro V 7.3.3.7786. (June 4, 2009). Columbus, OH. 39° 57’25.83”N, 83°00’22.30”W, Eye alt 1662 feet. Image USDA Farm Service Agency. Accessed June 14, 2021

Google Earth Pro V 7.3.3.7786. (May 28, 2010). Columbus, OH. 39° 57’25.83”N, 83°00’22.30”W, Eye alt 2302 feet. Image Landsat Corporation. Accessed June 14, 2021

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Boston: Houghton Mifflin Harcourt, 2014.

Henn, Robert L. *Wildflowers of Ohio*. 2nd ed. Bloomington, IN: Quarry Books, 2008.

Howell, Catherine Herbert. *Pocket Guide to the Wildflowers of North America*. Washington, D.C: National Geographic, 2014.

Marrone, Teresa. *Common Backyard Weeds of the Upper Midwest*. Cambridge, Minnesota: Adventure Publications, 2017.

White, Annie S. “From Nursery to Nature: Evaluating Native Herbaceous Flowering Plants versus Native Cultivars for Pollinator Habitat Restoration.” Ph.D., The University of Vermont and State Agricultural College. Accessed June 30, 2021. https://www.proquest.com/docview/1805944753/abstract/CAC129B671459BPQ/1.

Limitations:

- Habitat value is an estimate based on large groupings of plants and is based primarily upon design intention and known plant characteristics. Actual habitat value of the acreage varies depending upon human recreational activities disturbing creatures, maintenance procedures which disrupt life cycles of insects, or removal of certain species that harm plants or detract from human centric focus of the site. Additionally, these calculations do not take into consideration the concentration or number of

individuals of single plant species and are based on a simple inventory.

- Plant species confirmation was completed on a representative sample of the site. Given the large acreage and the local presence of invasive species, other portions of the site could be providing less habitat than intended by the design.
- Pre-construction estimates of habitat area are based on available Google Earth Pro satellite imaging and measurement tools and the accuracy of this tool is unknown. Clarity of imaging as well as user variability in drawing polygon areas for measurement could have impacted accuracy as well. Averaging measured area over three sets of images was used to help provide as accurate a value as is possible.
- According to research completed by A.S. White, cultivars of native plants do not always have the same value for pollinators as those of the straight species. The resources used to determine the value of the plants on site only relate to the straight species, and little study has been made about the individual 'nativar' characteristics that might impact that value. Although for the purposes of this study, nativars were treated as native plants, the actual value of the cultivated varieties could be less or more than intended.
- Plant identification was made by a graduate research assistant who is not a trained botanist. Misidentification of a plant species is possible and could have impacted percentages and value judgements. Additionally, there were, at minimum, 20 plants that remained unidentified. Identification of these could impact values reported as well.

- ***Achieved high ecological integrity of plant communities observed on the site as demonstrated by an Adjusted Floristic Quality Index (FQI) score of 35, which corresponds to a high quality vegetation status.***

Background: Prior to the project being completed, a large portion of this site was under water and the bank of the river was channelized. Bankside conditions were primarily impervious surfaces with minimal plant material. Some areas were covered with turf grass and some shade trees. This reflects a likely condition of poor biodiversity and a low FQI score.

Method: To evaluate the current ecological integrity of the plant communities of the site, the graduate research assistant completed a representative onsite inventory which was compared with the planting list provided by the firm.

The onsite inventory was completed by walking along the no-mow zone and identifying each individual plant species which occurred within this area. Additionally, the general health and presence of trees, shrubs, and grasses in maintained areas were compared to the planting plan provided by the design team. This plant list was input into the Universal Floristic Quality Assessment Calculator as a site inventory assessment using the Indiana 2019 Database. This resulted in a Total FQI of 30.8, a Native FQI of 34.9 and an adjusted FQI of 35.

Adjusted FQI uses introduced or non-native species in its calculations and includes their contributions. This is best used in sites with high levels of human disturbance like Scioto Mile and Greenways. An FQI score of 35 or above indicates "natural area" quality.

Calculations: See Appendix A for a copy of the FQI report.

Sources:

Freyman, William A., Linda A. Masters, and Stephen Packard. “The Universal Floristic Quality Assessment (FQA) Calculator: An Online Tool for Ecological Assessment and Monitoring.” *Methods in Ecology and Evolution* 7, no. 3 (2016): 380–83. https://doi.org/10.1111/2041-210X.12491.

Spyreas, Greg. “Floristic Quality Assessment: A Critique, a Defense, and a Primer.” *Ecosphere* 10, no. 8 (2019): e02825. https://doi.org/10.1002/ecs2.2825.

Limitations:

- Like all measures of this type there is an element of subjectivity inherent in the tool, despite attempts by the creators to minimize these. One specific limitation this particular tool had for this site is that there is not a plant/coefficient inventory designed for Ohio plant communities. The FQI had to be determined using the closest equivalent which was designed for neighboring state Indiana. Therefore, the FQI may have less applicability for this site.
- Plant identification was made by a graduate research assistant who is not a trained botanist. Misidentification of a plant species is possible and could have impacted percentages and value judgements. Additionally, there were, at minimum, 20 plants that remained unidentified. Identification of these could impact values reported as well.
- Some of the plants indicated on the planting schedule provided by the firm are cultivars of native plants, referred to as nativars. These cultivars are not present in the database used to calculate FQI and so were included by adding the straight species to the calculation. This may mean that the higher FQI is less reflective of the site’s biodiversity and habitat value than it may have been otherwise.
- There were 17 identified species which did not exist in the FQA Database and so were not included in this calculation. These species are mostly non-native or highly cultivated cross-species varieties. This affects the FQI validity; however, the relatively small number of these species that were planted along with their inclusion on site in highly maintained areas means that they have less impact on the overall habitat value of the site than were they more widespread.
- A more accurate assessment based on plotted sample and % coverage was attempted as well to gain additional perspective on the habitat quality. However, due to the inability to identify three widespread species an accurate plot assessment was not able to be completed. Some plots showed high coverage of invasive species which suggested that to maintain biodiversity on site increased maintenance and removal should be considered.

- ***Increased macroinvertebrate species from 42 to 66 (sensitive species increased from 2 to 28) and fish species from 23 to 30 (sensitive species increased from 1 to 3), as compared to pre-project conditions, including 5 species considered threatened in the state of Ohio. This led to an improvement in habitat assessment***

by the Ohio Environmental Protection Agency from Very Poor to Very Good for macroinvertebrates and from Fair/Good to Very Good/Exceptional for fish.

Background: Prior to the Greenways project, the Scioto River at this location flowed through a channel which had a modified channel reinforced with concrete, and flood flows were contained by levee construction. Water was also impounded by the Main St. low head dam. It is located in a downtown urban area which receives a high amount of runoff from impervious surfaces carrying high amounts of pollution. It also is the location of two CSO outflow pipes. In 2010 this area was given the Clean Water Act designation MWH-I (Modified Warmwater Habitat-Impounded). The MWH designation is applied to "extensively modified habitats...capable of supporting the semblance of warmwater biological community, but fall short...due to functional and structural deficiencies," (US EPA, 2015).

Method: Reports which document river monitoring, completed by the Ohio EPA, both prior to and after project completion, were reviewed for information on water and habitat quality. Information was directly sourced from these documents.

Macroinvertebrate Assessments:
2009: Total Species: 42 including 2 sensitive species. Narrative Evaluation: Poor. Notes midges predominate
2016: Total Species: 66 including 28 sensitive species
(Note: sensitive species are those that face one or more threats to their populations and/or habitats)

Fish Assessments:
2009: Total Species 23 including 1 intolerant species Narrative Evaluation: Fair
2016: Total Species 30 including 3 intolerant species
(Note: intolerant species are sensitive to small changes in water quality)

Habitat Designation:
2009: MWH-I (Modified Warmwater Habitat-Impounded)
2016: WWH (Warmwater Habitat)

Data from Pre-construction - testing completed in 2009 at river mile 131.8

- Index of Biotic Integrity (IBI): 34
- Invertebrate Community Index (ICI): N/A (due to impoundment)
- Qualitative Habitat Evaluation Index (QHEI): 45 (Fair)
- Narrative Assessment - Fish/Macroinvertebrates: Fair- Good/Very Poor

Data Post-Construction - testing completed in 2016 at river mile 131.4 and 132.1

- IBI: 45
- ICI: 42
- QHEI: 62 (Good)
- Narrative Assessment - Fish/Macroinvertebrates: Very Good- Exceptional/Very Good

Sources:

"Biological and Water Quality Study of the Middle Scioto River and Select Tributaries, 2010 and Appendices." OHIO EPA Technical Report, November 21, 2012. https://www.epa.state.oh.us/Portals/35/documents/MiddleSciotoTSD2010.pdf.

Bolton, Mike. "2016 and 2017 Biological and Habitat Studies of the Rivers and Streams in 33 Section 319(h) and SWIF/GLRI Project Areas in Ohio and Appendices." Ohio EPA Division of Surface Water Ecological Assessment Unit, September 2020. https://www.epa.state.oh.us/Portals/35/documents/DRAFT_2016-2017_319Report.pdf.

US EPA, OW. "Ohio's Tiered Aquatic Life Use Designations Turn 20 Years Old." Collections and Lists, October 28, 2015. https://www.epa.gov/wqc/ohios-tiered-aquatic-life-use-designations-turn-20-years-old.

"USFWS: Endangered and Threatened Species in Ohio." Accessed June 21, 2021. https://www.fws.gov/midwest/endangered/lists/ohio-spp.html.

Limitations:

- There are a multitude of factors which impact the presence and health of fish and macroinvertebrate populations in a river which cannot be wholly ameliorated by improving what amounts to a small portion of river and bank. Other projects, such as new CSO infrastructure completed around the same time, would also impact these communities. Additionally, conditions both up and downstream that limit species migration or impact water quality will limit the effectiveness of this project's impact. More current monitoring is being completed by the Ohio EPA but the data is not yet available for review and could reflect conditions which differ from this assessment.
- This analysis depends on data provided by other researchers and cannot account for variations in collection methods and reporting, or for the skill level of the researcher.

- ***Lowers site surface temperatures by an estimated weighted average of 10 °F compared to previous conditions.***

Method:

Surface testing was completed using a Kintrex Infrared Thermometer IRT0421. The operating temperatures for this device is 32°F to 122°F with a margin of error of +/- 1.8° F. The distance to spot ratio is 12:1.

Temperatures were taken on 7/3/2021 during the period between 1pm-2pm by the graduate assistant. The reported temperature for the area on weather.com started as 77°F. It was partly cloudy, Humidity of 47%, a light wind at 9 mph from the northwest. For this day, solar noon was at 1:36pm. At 2pm when finished, the temp was reported at 78°F, partly cloudy, humidity of 42%, and wind was 11mph.

Temperatures were taken at a total of 29 locations. These occurred on various material types both in and out of shade. All temps were taken at approximately 3 ft off the surface (which

makes target surface measured approx. 3”). Notes were made of the general location within the park, the type of material, if it was in shade or not, and the minimum and maximum temperatures were recorded. Max temperatures were recorded by the device but minimum temps depended upon graduate assistant’s memory and attention. At least 15 point temperatures were taken within each subtype location and in most cases many more than this to get a better average of temperatures. These min/max temps were averaged for each location, sun/shade, and material type. To evaluate the current site conditions, the site was divided into categories by material types and the total acreage of each material was calculated using the AutoCAD files provided by the firm.

Actual values for the pre-construction conditions were not available and the original survey done of the site has been lost, therefore pre-construction conditions were estimated by using Google Earth Pro aerial to generate a material type and acreage amount for each type previously on-site.

Most of the current site was previously underwater, and not considered in this calculation. The pre-construction conditions were considered concrete or turf. The temperatures that were recorded in current conditions were used as a proxy for the pre-construction temperatures. The site as it is now has 8 different material types. A weighted temp was made for each type of material by the % amount of space it takes up on the site. These weighted temps were summed as a weighted average temperature for the entire site.

The weighted average pre-construction was 90.83° and the weighted average post construction was 80.86°. This suggests that the material composition of the current site has a significantly cooler surface temp as a whole than the estimated pre-construction conditions.

Calculations:

MATERIAL TYPE	**% OF ACREAGE**	**AVERAGE TEMP FOR MATERIAL IN SUN**	**WEIGHTED TEMPS**
POST - CONSTRUCTION			
RED BRICK	3%	93.75	2.81 +
CONCRETE	14.20%	101.4333333	14.40 +
BLACK BRICK	0.40%	108.75	0.44 +
TURF	59%	79.86666667	47.12 +
NATIVE RIVER EDGE	22%	68.55	14.81 +
RAISED PLANTER BEDS	1.10%	71	0.78 +
PEBBLE AGGREGATE	0.20%	108.4	0.22 +

BLUESTONE	0.26%	108.6	0.28 +
	100%		**= 80.86**
PRE-CONSTRUCTION			
CONCRETE	51.20%	101.4333333	51.93 +
TURF	49%	79.86666667	38.90 +
			= 90.83

90.83 (pre-construction weighted avg) – 80.86 (post-construction weighted avg) = **9.97° F**

Sources:

Google Earth Pro V 7.3.3.7786. (April 30, 2002). Columbus, OH. 39° 57'21.14"N, 83°00'17.32"W, Eye alt 2505 feet. Image U.S. Geological Survey. Accessed July 5, 2021

Limitations:

- The temperatures taken in current site conditions were used as proxy values for pre-construction calculations by material. These may not accurately reflect the true conditions prior to project completion.
- During this study the interactive play fountains were turned off due to the COVID-19 pandemic. It is well documented that water can further cool the surrounding environment, and so the data related to current temperatures may be less reflective of longer term conditions. The hottest areas on site were those on the fountain plaza, so depending on how much the water would cool that area, the overall weighted temp of the site could be lower than estimated.
- These temperatures do not take into consideration the effects of shade on the materials. Due to the changing nature of shade due to reliance on sun position it was not possible to place an acreage amount on shaded areas with any accuracy within the limitations of this study. Additionally, given that many of the trees on site currently are still relatively young, the potential for higher amounts of shade as they grow is significant. Given that temps of all materials were on average about 20°F cooler in the shade than in the sun, their impact on the temperature of the site will increase as the trees grow and shade more area of the site and this benefit will likely show a more dramatic difference from pre-construction.
- Surface temperatures do not always correspond directly to measures of human comfort.

- ***Sequesters an estimated 5.25 tons of atmospheric carbon annually in 924 newly-planted trees, equivalent to driving a single passenger vehicle approximately 11,790 miles.***

Method: Planting plans provided by the firm were used to determine species of trees and how

many were planted on site. Given the large total number of trees, a full inventory of each tree was not possible and it was determined that a sampling would not be very accurate, as this type of sampling is more suited to a denser planting type not found on this site. Therefore, a single tree of each variety on site was identified and measured. The tree measured was selected because it was noted as being of an average size in comparison to the others on site. These values were entered in the i-Tree Eco software. i-Tree provides a cost and benefit for each tree variety based on measurements. These values were multiplied by the number of each tree variety that was planted on site to provide an estimated total. Some varieties did not exist in the i-Tree Eco database and these were calculated based on the straight species information.

Calculations: See Appendix F for copy of i-Tree summary

Common Name	**Total Planted**	**Gross Carbon Sequestration (lb/yr)**	**Total GCS(lb/yr)**
Red Pointe Red Maple	22	9	198
Sun Valley Red Maple	43	12.9	554.7
Sugar Maple	6	8.4	50.4
Fall Fiesta Sugar Maple	19	19.4	368.6
Green Mountain Sugar Maple	36	19.4	698.4
Autumn Blaze Red Maple	23	19.5	448.5
Marmo Maple	24	25.6	614.4
Ohio Buckeye	19	15.6	296.4
Heritage River Birch	11	10.1	111.1
Whitespire Birch	26	2.8	72.8
Frans Fontaine European Hornbeam	6	15.9	95.4
American Hornbeam	17	7.6	129.2
Northern Catalpa	7	6.3	44.1
Prairie Pride Common Hackberry	31	2.1	65.1
Katsura	6	2.2	13.2
Eastern Redbud	69	4.3	296.7
American Yellowwood	13	3.5	45.5
Winter King Green Hawthorn	25	5.5	137.5
Skyline Honeylocust	9	17.6	158.4
Kentucky Coffeetree	3	1.5	4.5
Espresso Kentucky Coffeetree	7	1.5	10.5
Moraine Sweetgum	12	7.1	85.2

Rotundiloba Sweetgum	31	4.3	133.3
Tuliptree	48	7.6	364.8
Cucumbertree Magnolia	19	6.8	129.2
Sycamore	17	8.2	139.4
London Planetree	66	18.2	1201.2
Bloodgood London Planetree	70	13.9	973
Swamp White Oak	65	14.8	962
Shingle Oak	11	8.1	89.1
Bur Oak	6	6.2	37.2
Chinkapin Oak	4	12	48
Pin Oak	2	10.9	21.8
Northern Red Oak	38	4.6	174.8
Shumard Oak	5	10.5	52.5
Common Bald Cypress	11	4.2	46.2
Princeton American Elm	63	20.2	1272.6
Lacebark Elm	1	19.9	19.9
Frontier Elm	33	10.2	336.6
TOTAL	**924**		**10,500.2 lb/yr = 5.25 U.S.tons/yr**

To calculate the equivalent in miles driven the following information was used:

- The average passenger vehicle emits about 404 grams of CO2 per mile.
- 5.25 U.S. tons = 4.76272 Metric tons = 4762720 grams.

4762720/404 = **11,788.91** miles

Sources:

"Greenhouse Gas Emissions from a Typical Passenger Vehicle Fact Sheet." U.S. Environmental Protection Agency Office of Transportation and Air Quality. Accessed July 21, 2021. https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100U8YT.pdf.

"I-Tree Eco | i-Tree." https://www.itreetools.org/tools/i-tree-eco.

Nowak, David J. "Understanding I-Tree: Summary of Programs and Methods." General Technical Report. USDA Forest Service- Northern Research Station: United States Department of Agriculture, November 2020. https://www.itreetools.org/documents/650/Understanding_i-Tree.gtr_nrs200.pdf.

Limitations:

- Multiple factors impact a tree's effectiveness in sequestering atmospheric carbon such as species, age, size, and health of the specimen, water availability, nitrogen availability, temperature, and concentrations of atmospheric gases. Therefore, this benefit is only an estimate based on assumptions related to these factors.
- Each individual tree was not measured, so the numbers represent general estimate of the overall site benefit. The actual total amount of carbon sequestration is likely to be of a higher/lower value than demonstrated here.
- i-Tree calculations are based on many factors over which the researcher had no control. Accuracy of the numbers provided are unable to be authenticated.
- This benefit does not include any trees which were previously on site and retained, only new tree plantings. Additional carbon sequestration would be expected from shrubs and other plants growing on site.
- This benefit only relates to the current tree conditions. Increased amounts are expected given growth of trees over time. i-Tree Eco has the capability of estimating growth and carbon sequestration over time, but not on an individual tree level so an accurate estimate is not possible without completing a more detailed inventory.

Social Benefits

- ***Attracts an estimated 40,000 people per week in summer months to engage in more than 35 types of recreational activities****.*

Background: Prior to construction this park was primarily under water and so was unusable to people. The former site had limited use due to aging infrastructure and the disconnected nature of various sections that are now connected. Numbers pre-construction therefore could not be compared.

Method: A group of 4 undergraduate and graduate landscape architecture students were given a 15 min training on how to utilize the modified SOPARC observational protocol. Each student, along with the primary researcher and graduate research assistant, was assigned a designated location to observe and document users. These observations occurred for 30 minutes, 3x per day, on two separate days (one weekend, one weekday) occurring on June 16 and June 26, 2021. Observation started at 9:15am, 1:15pm, and 5:15pm each day. Three primary locations were observed which included Bicentennial Park, the Scioto Mile Promenade, and the Greenways Trail. Observational data was then collated into a spreadsheet from which further calculations and lists were created.

Each location observed was completed in a slightly different fashion given the nature of the site and activities it supported. Bicentennial Park was observed from a single vantage point and note was made of each individual that entered the space during the 30 min session. The Scioto Mile Promenade is unable to be fully viewed from a single vantage point, and so the observer would

start at the south end of the promenade, walk to the other end making note of those using the path and seating areas, stand for 10 min at the far end, walking back to the south end and stand in one place for the remaining time of the 30 min session. For the Greenways trail, the graduate assistant completed all sessions of this area using a modified version of the Neighborhood Predictors of Urban Trail Use Survey of Trail Use. A single location was chosen on the side of the trail and every person who crossed in front of the graduate assistant during the 30-minute window was noted. Additionally, any who used the turf hill area on the edge of the trail within visible range were counted.

Although the SOPARC protocol has specific scanning procedures for observation, the limited number of users on the site allowed for individual categorization and notation. SOPARC protocol categorizes activities by exertion level i.e. Sedentary, Walking, or Vigorous. All activities were given one of these designations, but all Vigorous activities were noted more specifically as well, such as running or cycling. Those using scooters were placed under the Walking designation, but note was made of scooter use. Additionally, specifics out of the ordinary were also noted, such as if someone was taking photographs, walking with a pet, or sleeping. This helped capture a wider understanding of the activities taking place on site.

Data was entered into an Excel spreadsheet from which data was collated and analyzed with graphs demonstrating both data specific to observational data only and the extrapolated averages. Extrapolation was based on the posted hours that the park is open, which is 7am to 11pm - or 16 hours per day.

Calculations: Calculations completed in Excel. Straight data counts were completed based on data input.

For # of activities engaged in: Observational data was used to identify 22 activities happening on site. This # was combined with 10 additional reported uses identified during the public survey. (See Appendix D.) Three additional activities were added based on usages observed by the research assistant while on site completing other research data collection (included running a business, plein air painting, and a group playing badminton). (22+10+3 = **35**)

Extrapolated # of visitors were calculated by the following process:

Average # weekday Visitors observed in 30 min: (Visitors at 9am location A 6/16 + Visitors at 9am location B 6/16 + Visitors at 9am location C 6/16) + (Visitors at 1pm location A 6/16 + Visitors at 1pm location B 6/16 + Visitors at 1pm location C 6/16) + (Visitors at 5 pm location A 6/16 + Visitors at 5 pm location B 6/16 + Visitors at 5 pm location C 6/16)/3 = **X (**X was calculated separately for category male and category female)

Average # weekend Visitors observed in 30 min: (Visitors at 9am location A 6/26 + Visitors at 9am location B 6/26 + Visitors at 9am location C 6/26) + (Visitors at 1pm location A 6/26 + Visitors at 1pm location B 6/26 + Visitors at 1pm location C 6/26) + (Visitors at 5 pm location A 6/26 + Visitors at 5 pm location B 6/26 + Visitors at 5 pm location C 6/26) = **Y (**Y was calculated

separately for category male and category female)

Xf = female weekday average 30 min = 72
Xm = male weekday average 30 min = 110
Yf = female weekend average 30 min = 66
Ym= male weekend average 30 min = 98

30 min averages were multiplied by 32 to gain an extrapolated 16 hr day # for each category
32Xf = 32(72) = 2304 = **A**
32Xm = 3520 = **B**
32Yf = 2112 = **C**
32Ym = 3136 = **D**

For a weekly extrapolated #, again calculated by sex
A + A + A + A + A + C + C = weekly female average # users = 15744
B + B + B + B + B + D + D = weekly male average # users = 23872

Total numbers of users = 15744 +23872 = 39616. This is rounded up to **40,000** for ease of reporting.

See Appendix C for averages by other reported categories and accompanying graphs and two day totals table.

Sources:

Byrne, Jason. "Neighborhood Predictors of Urban Trail Use: Survey of Trail Use." University of Southern California, 2004. https://activelivingresearch.org/core-measures-trail-use.

Cohen, MD, MPH, Deborah, and Bing Han, Ph.D. "Measuring the Use of Public Neighborhood Parks." National Recreation and Park Association. Accessed July 1, 2021.https://www.nrpa.org/parks-recreation-magazine/2018/march/measuring-the-use-of-public-neighborhood-parks/.

McKenzie, Ph.D., Thomas L., and Deborah A. Cohen, MD, MPH. "SOPARC: System for Observing Play and Recreation in Communities." Active Living Research, January 2006.https://activelivingresearch.org/soparc-system-observing-play-and-recreation-communities.

Limitations:

- Data collection is subject to many factors which could limit accuracy of information. Data collection was done by minimally trained students, in a limited number of locations on the site, and during a limited number of days/times. Actual usage and recreational activities could differ if a larger sample was conducted during multiple seasons.
- Data collection was completed during summer 2021 with some restrictions of the COVID-19 pandemic still in place. Some features of the park, such as the fountains,

were not in operation due to this which will likely alter how this space is used and the number of users of the site. Historical anecdotal accounts and photos suggest that the fountains alone can see thousands of visitors daily. Further study in the future would improve understanding of this benefit.
- One survey responder reported using the park for rock climbing, which is not an activity this park supports. A nearby park, Scioto Audubon Park, has a rock wall and it is likely that this responder was confused by which park we were referring to. Therefore, this respondents' answers were excluded from all analysis.

- ***Increased navigable riverway for paddle sport recreation by 1.3 miles due to the removal of the dam and addition of water entry points.***

Background: Prior to the low head dam removal this area of the river was dangerous for paddle sports and there were no rental companies operating on this section of the Scioto River.

Method:
Length of riverway increase was measured using Google Earth Pro line measuring tool. Distance was measured from the location of where the Main St. dam used to be to the next portage point at the Scioto Audubon Park. The line was drawn as close to the center of the river as possible.

Boat entry points were gathered from construction documents.

Contact was made with the owners of Olentangy Paddle (https://www.olentangypaddle.com/) and Windrose (https://windroseoutdoor.com/). Olentangy Paddle opened in 2014 and reports approximately 1000 kayak rentals annually. Exact numbers were not available. Windrose Outdoor started business in 2021 and has only been in business for about one month and therefore does not have figures to provide for annual usage.

Sources:

Google Earth Pro V 7.3.3.7786. (2021). Columbus, OH. 39° 57’23.67”N, 83°00’10.28”W, Eye alt 11183 feet. Google 2021. Accessed July 2, 2021

Limitations:
- Length of river section measured using Google Earth Pro satellite imaging and measurement tools and the accuracy of this tool is unknown. Clarity of imaging as well as user variability in drawing lines and estimating starting and end points could impact accuracy as well.

- ***Improves quality of life according to 94% of 69 surveyed users. 100% of 67 surveyed users self-reported an increase of mood and 65% of 69 surveyed users reported an increase in physical activity since the site opened to the public.***

Method: A public survey was conducted to gather individual use and experience of the site. A

14-question online survey was created using a free trial account at Qualtrics.com. The survey included display logic which adjusted question display based on previous responses.
The survey was disseminated in several ways. Signs asking for participation were placed in several locations and businesses near the site. The posters included a QR code that linked to the questionnaire. Additionally, posts were made on Instagram from the Knowlton Landscape and MKSK accounts. These were tagged with other related accounts such as Columbus Recreations and Parks. A survey invitation was also posted on the Events page of the Columbus Underground (a popular online local news and information site).

A total of 102 completed surveys were received with a single responder who declined consent. Qualtrics provides a basic report with all response data, which is included in appendix D. Additional statistical analysis was also completed with the Qualtrics software. These show that although 50% of responders were familiar with the site prior to construction, there were no statistical significant differences in other responses from those who were unfamiliar with the site. This suggests that prior knowledge of the site does not impact usage or perception of the current site.

Calculations:
See Appendix D for full survey questions and response data as well as results from statistical analysis. Numbers are lifted directly from this report. Appendix E has statistical analysis completed in Qualtrics for additional information only and is not reflected specifically in benefits statements.

Reported numbers and percentages are based on respondents who checked the “somewhat agree” or “strongly agree” boxes.

For the statement “Visiting Scioto Mile and Greenways improves my mood” there were 67 responses. Of these 25 (37.31%) answered “somewhat agree” and 42 (62.69%) answered “Strongly agree”. This is a total of **67 (100%)**

For the statements “Scioto Mile and Greenways has increased my physical activity” there were 69 responses. 25 (36.23%) answered “somewhat agree” and 20 (28.99%) answered “Strongly agree. This is a total of **45 (65.22%)**

For the statement “Visiting Scioto Mile and Greenways improves my quality of life/well being” there were 69 responses. 31 (44.93%) answered “somewhat agree” and 34 (49.28%) answered “strongly agree”. This is a total of **65 (94.2%).**

Sources:

Qualtrics. “Qualtrics XM - Experience Management Software.” Accessed July 2, 2021. https://www.qualtrics.com/.

Limitations:

- Given the large number of people who use this space, the respondent value of 102 is a

low sample size which will impact the statistical validity of results. Further study should be made with a significantly larger sample size.
- Respondents were self-selected which can bias data to those who have the time and inclination to answer surveys. This was further limited due to the distanced manner of engaging responses and lack of personal appeal for participation.
- The use of an online survey and the use of QR codes does place a limitation in regards to survey access. It would self-limit users who do not have ready internet or smart phone access. This likely causes an underrepresentation in lower income or more elderly users for whom this technology is less prevalent.
- Restrictions that the Covid-19 pandemic has placed on site usage is not fully captured in respondent numbers, survey questions, or responses. Further study should be completed in a non-pandemic situation to improve accuracy.

- ***Created 36 acres of new park space in the Downtown Columbus and Franklinton neighborhoods, a total increase of 30% and a 2.3-acre increase per 1,000 residents. Of the 15,698 residents in the neighborhoods, approximately 33% are minorities and approximately 15% live in poverty.***

Background: The site is bordered primarily by two neighborhoods, Franklinton and Downtown Columbus. In the recent past, Downtown Columbus has had minimal residential occupancy. The population of Franklinton has been predominantly minorities with high rates of poverty and unemployment and low educational attainment. Since the completion of the 2004 floodwall, demographics have shifted some as new development started.

Method:
See Appendix G for GIS map representations of data.

GIS datasets were downloaded from the National Historical Geographic Information System. Data was from the 2010 U.S. Census. Data on racial makeup was downloaded at the Census block and block group levels. Poverty status was only available at the block group level. Additionally, shape files for Franklin County Ohio Census blocks and block groups were gathered. Additional shape files for surface water came from TIGER/Line file of U.S. Census Bureau. Neighborhood Boundaries and Park Boundaries shapefiles came from Columbus Ohio Open GIS data website.

To determine the park acreage increase, QGIS was used to isolate the parks that are within the two neighborhoods. Using information from the Columbus Recreation and Parks website, it was determined which parks had been present prior to the construction of this site and what the total acreage of those parks were. Additionally, parks which only lay partially within the boundary were modified to include the acreage only within the boundary. This resulted in a finding the pre-construction there was approximately 121 acres of public park space within the two neighborhoods. Some of this acreage was rebuilt during this project, but a total of 36 acres of new parkland was developed during the course of the mile and greenway projects.

To determine the demographics of those living in these neighborhoods QGIS software was used. First, base maps were created at the block and block group levels. A half mile radius was created using the Park Boundaries of the Mile/Greenways park sections. A neighborhood boundary for Franklinton and Downtown was also identified. Using the database information and standard GIS spatial analysis tools, overview maps of racial makeup and poverty levels were created (see appendix G).

Again, using QGIS, a statistical analysis was completed with the data isolated to the neighborhood and half mile radius scales to determine the total % of people which fall into the minority and poverty categories. Analysis was completed at both the neighborhood and ½ mile radius scales, and the results were close to the same in both categories. Therefore, for ease of reporting, the neighborhood scale was retained for benefit.

Calculations:
% Increase in Parkland = [(Post - Pre)/Pre] 100
Pre-construction park acreage= ~121 acres
New acreage = 36 acres, so post acreage = 121 + 36 = 157
[(157-121)/121] 100 = **30%**

Population numbers from Census 2010:
Total in neighborhoods of Franklinton and Downtown: 15698
Total within a ½-mile radius of the Mile/Greenways: 5888

Parkland per 1000 residents: (36 new acres)/(15698 total pop/1000) = 36/15.698 = **2.3 acres per 1000 people**.

Sources:

Bureau, US Census. "TIGER/Line Shapefiles." The United States Census Bureau. Accessed July 21, 2021. https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html.

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Manson, Steven, Schroeder, Jonathan, Van Riper, David, Kugler, Tracy, and Ruggles, Steven. "National Historical Geographic Information System: Version 15.0." Minneapolis, MN: IPUMS, 2020. https://doi.org/10.18128/D050.V15.0.

QGIS.org, 2021. QGIS Geographic Information System. QGIS Association. http://www.qgis.org

QGIS.org, 2021. QGIS 3.16. Geographic Information System User Guide. QGIS Association. Electronic document: https://docs.qgis.org/3.16/en/docs/user_manual/index.html

Limitations:
- This method relies on accuracy of demographic and residency data provided by the

government and is subject to the inaccuracies present within this data. It could be subject to data entry error, methods of data collection errors, or incomplete data that we cannot account for.
- 2020 Census data was not yet available at the time of the study and more current data since 2010 is not available at this scale. Therefore it is unknown how the population and demographics of the area has changed since the additional park space has been created.

Economic Benefits

- ***Supports local businesses, with 78% of 82 survey respondents reporting patronizing local businesses. 48% reported spending $15-20 and 30% reported spending less than $15 per visit.***

Method: A public survey was conducted to gather individual use and experience of the site. A 14-question online survey was created using a free trial account at Qualtrics.com. The survey included display logic which adjusted question display based on previous responses.

The survey was disseminated in several ways. Signs asking for participation were placed in several locations and businesses near the site. The posters included a QR code that linked to the questionnaire. Additionally, posts were made on Instagram from the Knowlton Landscape and MKSK accounts. These were tagged with other related accounts such as Columbus Recreations and Parks. A survey invite was also posted on the Events page of the Columbus Underground (a popular online local news and information site).

A total of 102 completed surveys were received, with a single responder who declined consent. Qualtrics provides a basic report with all response data, which is included in appendix D. Additional statistical analysis was also completed with the Qualtrics software.

Calculations:
See Appendix D for full survey questions and response data as well as results from statistical analysis. Numbers are lifted directly from this report. Appendix E has Statistical analysis completed in Qualtrics for interest only and not reflected specifically in benefits statements.

82 respondents answered the question “When visiting Scioto Mile and Greenways, how frequently do you patronize nearby businesses or restaurants?”. 2 of these answered “First visit” and 18 answered “Never”. Of the remaining, 52 (63.41%) answered “Once in a while”, 9 (10.98%) answered “Regularly”, and 1 (1.22%) answered “Always”.
To calculate % survey respondents who patronize businesses- 2+ 52 + 9 + 1 = 64/82(100) = **78%**

Only respondents who answered in the affirmative were shown the following question and 63

responded to “On average, approximately how much do you spend at nearby businesses or restaurants during a single trip?”. 4 (6.25%) answered “$0”, 19 (30.16%) answered “under $15”, 30 (47.62%) answered “$15-49”, 9 (14.29%) answered “$50-74”, 0 answered “$75-99” and 1 (1.59%) answered 100+.

To come up with average spent, the first thing was each category was given a value that is reflective of an average for that category using the following formula ($X_a + X_e + ….X_n/n$)
This results in averages for each category= 0, 7.5, 32, 62, 87, 150

Using this a weighted average was calculated:
[4(0) + 19 (7.5) + 30 (32) + 9 (62) + 1 (150)]/63 =
(0 + 142.5 + 960 +558 +150) / 63 =
1,810.5 / 63 = **$29 average**

Sources:
Qualtrics. “Qualtrics XM - Experience Management Software.” Accessed July 2, 2021. https://www.qualtrics.com/.

Limitations:

- Given the large number of people who use this space, the respondent value of 102 is a low sample size which will impact the statistical validity of results. Further study should be made with a significantly larger sample size.
- Respondents were self-selected which can bias data to a particular type of person who has the time and inclination to answer surveys. This was further limited due to the distanced manner of engaging responses and lack of personal appeal for participation.
- The use of an online survey and the use of QR codes does place a limitation in regards to survey access. It would self-limit users who do not have ready internet or smart phone access. This likely causes an underrepresentation in lower income or more elderly users for whom this technology is less prevalent.
- Restrictions that the COVID-19 pandemic has placed on site usage is not fully captured in either respondent numbers, survey questions or answers. Further study should be completed in a non-pandemic situation to improve data.

- ***Contributes to the economic development of downtown Columbus and the East Franklinton neighborhood within a half-mile radius of the site, with 584 apartment units constructed and more than 2,200 planned. 214,000 sf of commercial space was added to the area with at least 243,200 sf planned. In total $320 million in investment capital has been injected into the area, with an additional $620 million in planned investments.***

Background: The Scioto Mile and Greenways projects are only one part of a long-term plan for revitalization of the Downtown and East Franklinton neighborhoods. They were some of the first implemented as the city felt that the public greenspace would serve as an anchor for future investment. Until a floodwall was completed in 2004, East Franklinton had limited

developmental potential due to legal status of the land as a floodplain, with very strict development restrictions in place. Developers started buying land speculatively when the floodwall was nearing completion.

Method: Online sources, including development websites, local newspaper articles, and Franklin Co Auditor's parcel search were reviewed to find information about development that has been completed or planned since Scioto Mile/Greenways was completed. This information was compiled and added up to determine a total amount. The developments counted were limited to the radius demonstrated in Figure 1. This radius represents a ½ mile distance from the Scioto Mile and Greenways.

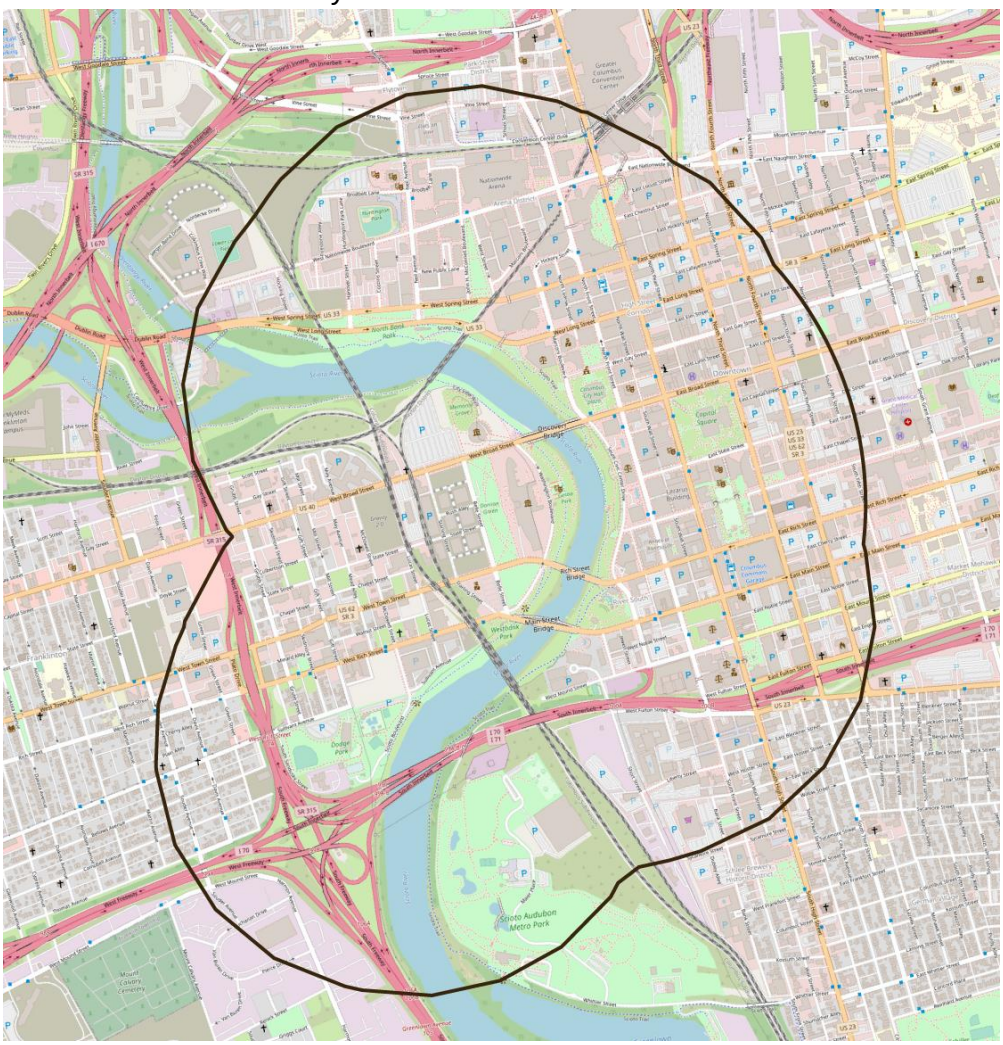

Figure 1. ½ mile radius from Scioto Mile and Greenways.

Calculations:

Development	$ Investment	Housing Units	Office sf	Retail sf	Parking spaces

303 S. Front	$12 mil	89	NA	NA	NA
Millennial Tower	$90 mil	189	150,000	40,000	700
LC Riversouth	$30 mil	106	NA	NA	NA
River & Rich	$65 mil	200	NA	24,000	300
Totals	**$197 mil**	**584**	**150,000 sqft**	**64,000 sqft**	**1000**

Planned Development	**$ Investment Potential**	**Planned Housing Units**	**Planned Office sf**	**Planned Retail sf**	**Planned Parking Spaces**
LC Riversouth Phase II		137			
River & Rich Phase II		180	48,000		288
Gravity Phase II	$120 mil	12 story residential, 5 story townhome/apartment, 5 story "co-living"	195,200 combined office and retail		899
Peninsula (phase 1 construction started)	$500 mil	1800	2,000,000	400 hotel rooms	Not known
Totals	**$620 mil**	**2,117 +**	**2,243,200 + sf**		**1,187 +**

Cultural Amenity Added	**$ Investment**	**Park Size**	**Building sf**	**Parking Spaces**
National Veterans Memorial and Museum	$82 mil	2.5 Acre Memorial Grove	53,000	
American Museum of Natural History Dino Gallery at COSI	$7 mil		22,000 (part of COSI main floor)	
Dorrian Green	$34 mil	6.5 acre atop underground parking structure		600
Totals	**$123 mil**	**9 acres**	**75,000 sf**	**600**

Sources:

5837071. “The Transformation of the Downtown Columbus Riverfront 1998-2020.” Issuu. Accessed July 4, 2021. https://issuu.com/mksk/docs/1998-2020_downtowncolumbusriverfronttransformation.

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Limitations:

- This number focuses on positive economic and building growth provided by development and does not account for negative effects that could be caused by gentrification of the area. Nor does it account for any loss of local small businesses that may occur through this development activity.
- Relies on publicly available information and likely does not account for all planned development or economic activity in the area. Further development of restaurants, art galleries and studio space, and other businesses are not considered here, but are significant for the area.
- The growth of the Downtown and Franklinton neighborhoods cannot be attributed only to the Scioto Mile and Greenways projects. The development is only one part of an overall long-term plan to revitalize this part of the city.

Appendix A: FQI Report

Greenways Banks- Naturalized

5/27/2021

Scioto Mile and Greenwa
Columbus
Franklin
Ohio
USA

FQA DB Region:	Indiana
FQA DB Publication Year:	2019
FQA DB Description:	Update of 2004 Indiana database
Practitioner:	Sarah Sanders
Latitude:	
Longitude:	
Weather Notes:	Sunny, Blue sky, Fluffy Clouds, High 70's
Duration Notes:	
Community Type Notes:	
Other Notes:	
Private/Public:	Private

Conservatism-Based Metrics:		
Total Mean C:	3.1	
Native Mean C:	4	
Total FQI:	30.8	
Native FQI:	34.9	
Adjusted FQI:	35	
% C value 0:	29.3	
% C value 1-3:	31.3	
% C value 4-6:	25.3	
% C value 7-10:	14.1	
Native Tree Mean C:	4.8	
Native Shrub Mean C:	5	
Native Herbaceous Mean C:	3	

Species Richness:		
Total Species:	99	
Native Species:	76	76.80%
Non-native Species:	23	23.20%

Species Wetness:		
Mean Wetness:	0	
Native Mean Wetness:	-0.5	

Physiognomy Metrics:		
Tree:	28	28.30%
Shrub:	15	15.20%
Vine:	4	4%
Forb:	36	36.40%
Grass:	6	6.10%
Sedge:	9	9.10%
Rush:	1	1%
Fern:	0	0%
Bryophyte:	0	0%

Duration Metrics:		
Annual:	3	3%
Perennial:	91	91.90%
Biennial:	5	5.10%
Native Annual:	3	3%
Native Perennial:	72	72.70%
Native Biennial:	1	1%

Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiogno	Duration	Common Name
Acer rubrum (including 2 varieties)	Sapindace	ACERUB	native	5	0	tree	perennial	red maple
Acer saccharum (including 1 variety)	Sapindace	ACESAR	native	4	3	tree	perennial	sugar maple
Achillea millefolium	Asteraceae	ACHMIL	native	0	3	forb	perennial	common milfoil
Aesculus glabra var. glabra	Sapindace	AESGLA	native	5	0	tree	perennial	ohio buckeye
Ambrosia artemisiifolia	Asteraceae	AMBART	native	0	3	forb	annual	common ragweed
Ambrosia trifida	Asteraceae	AMBTRI	native	0	0	forb	annual	giant ragweed
Amorpha canescens	Fabaceae	AMOCAN	native	9	5	shrub	perennial	lead plant
Amorpha fruticosa	Fabaceae	AMOFRU	native	3	-3	shrub	perennial	false indigo bush
Andropogon virginicus var. virginicus	Poaceae	ANDVIR	native	1	3	grass	perennial	broom sedge
Apocynum cannabinum	Apocynace	APOCAN	native	2	0	forb	perennial	dogbane
Arctium minus	Asteraceae	ARCMIN	non-native	0	3	forb	biennial	common burdock
Aronia melanocarpa (=photinia melanocar	Rosaceae	AROMEL	native	8	0	shrub	perennial	black chokeberry
Artemisia vulgaris	Asteraceae	ARTVUL	non-native	0	5	forb	perennial	mugwort
Asclepias syriaca	Apocynace	ASCSYR	native	1	3	forb	perennial	common milkweed
Barbarea vulgaris	Brassicace	BARVUL	non-native	0	0	forb	biennial	yellow rocket
Betula nigra	Betulaceae	BETNIG	native	2	-3	tree	perennial	river birch
Betula populifolia	Betulaceae	BETPOP	native	10	0	tree	perennial	gray birch
Calystegia sepium (including subspecies)	Convolvula	CALSEP	native	1	0	vine	perennial	american bindweed
Carex comosa	Cyperacea	CXCOMO	native	6	-5	sedge	perennial	bristly sedge
Carex cristatella	Cyperacea	CXCRIS	native	3	-3	sedge	perennial	crested oval sedge
Carex emoryi	Cyperacea	CXEMOR	native	7	-5	sedge	perennial	riverbank tussock sedge
Carex frankii	Cyperacea	CXFRAN	native	2	-5	sedge	perennial	bristly cattail sedge
Carex hystericina	Cyperacea	CXHYST	native	5	-5	sedge	perennial	porcupine sedge
Carex lurida	Cyperacea	CXLURI	native	4	-5	sedge	perennial	bottlebrush sedge
Carex tribuloides (including 1 variety)	Cyperacea	CXTRIB	native	5	-5	sedge	perennial	broad-leaved oval sedge
Carex vulpinoidea	Cyperacea	CXVULP	native	2	-5	sedge	perennial	brown fox sedge
Carpinus caroliniana subsp. virginiana	Betulaceae	CARCAR	native	5	0	tree	perennial	blue beech
Catalpa speciosa	Bignoniace	CATSPE	native	0	3	tree	perennial	cigar tree
Celtis occidentalis	Cannabace	CELOCC	native	3	0	tree	perennial	hackberry
Cephalanthus occidentalis	Rubiaceae	CEPOCC	native	5	-5	shrub	perennial	buttonbush
Cercis canadensis var. canadensis	Fabaceae	CERCAN	native	3	3	tree	perennial	eastern redbud
Cirsium arvense	Asteraceae	CIRARV	non-native	0	3	forb	perennial	field thistle
Cladrastis kentukea	Fabaceae	CLAKEN	native	10	5	tree	perennial	yellowwood
Cornus amomum	Cornaceae	CORAMO	native	10	-3	shrub	perennial	silky dogwood
Cornus racemosa	Cornaceae	CORRAC	native	2	0	shrub	perennial	gray dogwood
Cornus stolonifera (=cornus sericea)	Cornaceae	CORSTO	native	4	-3	shrub	perennial	red osier dogwood
Crataegus viridis var. viridis	Rosaceae	CRAVIR	native	7	-3	tree	perennial	green hawthorn
Daucus carota	Apiaceae	DAUCAR	non-native	0	5	forb	biennial	queen annes lace
Deschampsia cespitosa	Poaceae	DESCES	native	10	-3	grass	perennial	tufted hair grass
Dipsacus fullonum	Caprifoliac	DIPFUL	non-native	0	3	forb	perennial	common teasel
Elymus virginicus (including 2 varieties)	Poaceae	ELYVIR	native	3	-3	grass	perennial	virginia wild rye
Erigeron annuus	Asteraceae	ERIANN	native	0	3	forb	biennial	annual fleabane
Erigeron philadelphicus var. philadelphicu	Asteraceae	ERIPHI	native	3	-3	forb	perennial	marsh fleabane
Gleditsia triacanthos	Fabaceae	GLETRI	native	1	3	tree	perennial	honey locust
Glyceria striata	Poaceae	GLYSTR	native	4	-5	grass	perennial	fowl manna grass
Gymnocladus dioicus	Fabaceae	GYMDIO	native	4	3	tree	perennial	kentucky coffee tree
Hedera helix	Araliaceae	HEDHEL	non-native	0	5	vine	perennial	english ivy
Heliopsis helianthoides (including 1 variety	Asteraceae	HELHEL	native	4	3	forb	perennial	false sunflower
Hypericum perforatum	Hypericace	HYPPER	non-native	0	3	forb	perennial	common st. johns wort
Impatiens capensis	Balsamina	IMPCAP	native	2	-3	forb	annual	spotted touch-me-not
Iris pseudacorus	Iridaceae	IRIPSE	non-native	0	-5	forb	perennial	tall yellow iris
Juncus effusus	Juncaceae	JUNEFF	native	3	-5	rush	perennial	common rush
Justicia americana	Acanthace	JUSAME	native	6	-5	forb	perennial	water willow
Leucanthemum vulgare (=chrysanthemum	Asteraceae	LEUVUL	non-native	0	5	forb	perennial	ox-eye daisy
Liquidambar styraciflua	Hamameli	LIQSTY	native	4	-3	tree	perennial	sweet gum
Liriodendron tulipifera	Magnoliac	LIRTUL	native	4	3	tree	perennial	tulip poplar
Lysimachia nummularia	Primulace	LYSNUM	non-native	0	-3	forb	perennial	moneywort
Lythrum salicaria	Lythraceae	LYTSAL	non-native	0	-5	forb	perennial	purple loosestrife
Magnolia acuminata	Magnoliac	MAGACU	native	10	3	tree	perennial	cucumber magnolia
Melilotus officinalis	Fabaceae	MELOFF	non-native	0	3	forb	biennial	yellow sweet clover
Morus alba	Moraceae	MORALB	non-native	0	0	tree	perennial	white mulberry
Nepeta cataria	Lamiaceae	NEPCAT	non-native	0	3	forb	perennial	catnip

Panicum virgatum	Poaceae	PANVIR	native	4	0	grass	perennial	prairie switch grass
Penstemon digitalis	Plantagina	PENDIG	native	4	0	forb	perennial	foxglove beard tongue
Plantago lanceolata	Plantagina	PLALAN	non-native	0	3	forb	perennial	english plantain
Platanus occidentalis	Platanacea	PLAOCC	native	3	-3	tree	perennial	american sycamore
Potentilla simplex	Rosaceae	POTSIM	native	2	3	forb	perennial	common cinquefoil
Quercus bicolor	Fagaceae	QUEBIC	native	7	-3	tree	perennial	swamp white oak
Quercus imbricaria	Fagaceae	QUEIMB	native	3	3	tree	perennial	jack oak
Quercus macrocarpa	Fagaceae	QUEMAC	native	5	0	tree	perennial	burr oak
Quercus muehlenbergii	Fagaceae	QUEMUE	native	4	3	tree	perennial	chinkapin oak
Quercus palustris	Fagaceae	QUEPAL	native	3	-3	tree	perennial	pin oak
Quercus rubra	Fagaceae	QUERUB	native	4	3	tree	perennial	northern red oak
Quercus shumardii (including 1 variety)	Fagaceae	QUESHU	native	7	-3	tree	perennial	shumards oak
Ratibida pinnata	Asteraceae	RATPIN	native	5	5	forb	perennial	yellow coneflower
Rhus aromatica var. aromatica	Anacardia	RHUARO	native	7	5	shrub	perennial	aromatic sumac
Rubus flagellaris	Rosaceae	RUBFLA	native	2	3	shrub	perennial	common dewberry
Rubus occidentalis	Rosaceae	RUBOCC	native	1	5	shrub	perennial	black raspberry
Rudbeckia hirta (including 1 variety)	Asteraceae	RUDHIR	native	2	3	forb	perennial	black-eyed susan
Rumex crispus	Polygonac	RUMCRI	non-native	0	0	forb	perennial	curly dock
Salix discolor	Salicaceae	SALDIS	native	3	-3	shrub	perennial	pussy willow
Salix nigra	Salicaceae	SALNIG	native	3	-5	tree	perennial	black willow
Sambucus canadensis	Adoxaceae	SAMCAN	native	2	0	shrub	perennial	common elderberry
Scirpus atrovirens	Cyperacea	SCIATR	native	4	-5	sedge	perennial	dark-green bulrush
Securigera varia (=coronilla varia)	Fabaceae	SECVAR	non-native	0	5	forb	perennial	crown vetch
Sisyrinchium angustifolium	Iridaceae	SISANG	native	3	0	forb	perennial	stout blue-eyed grass
Solanum carolinense var. carolinense	Solanacea	SOLCAR	native	0	3	forb	perennial	horse nettle
Solanum dulcamara	Solanacea	SOLDUL	non-native	0	0	vine	perennial	bittersweet nightshade
Spartina pectinata	Poaceae	SPAPEC	native	4	-3	grass	perennial	prairie cord grass
Taxodium distichum var. distichum	2-taxodiac	TAXDIS	native	10	-5	tree	perennial	bald cypress
Trifolium hybridum	Fabaceae	TRIHYB	non-native	0	3	forb	perennial	alsike clover
Trifolium repens	Fabaceae	TRIREP	non-native	0	3	forb	perennial	white clover
Ulmus americana	Ulmaceae	ULMAME	native	3	-3	tree	perennial	american elm
Urtica dioica subsp. dioica	Urticaceae	URTDID	non-native	0	-3	forb	perennial	tall nettle
Viburnum acerifolium	Adoxaceae	VIBACE	native	8	5	shrub	perennial	maple-leaved arrowwood
Viburnum dentatum (including 1 variety)	Adoxaceae	VIBDEN	native	6	0	shrub	perennial	southern arrowwood
Vinca minor	Apocynace	VINMIN	non-native	0	5	shrub	perennial	common periwinkle
Viola sororia	Violaceae	VIOSOR	native	1	0	forb	perennial	woolly blue violet
Vitis riparia	Vitaceae	VITRIP	native	1	-3	vine	perennial	riverbank grape

Appendix B: Plant List and Habitat Value Table

PLANTED/FOUND	COMMON NAME	LATIN NAME	NATIVE STATUS	SPECIAL VALUE - POLLINATORS	LARVAL HOST	ATTRACTS BIRDS	ATTRACTS MAMMALS	ATTRACTS BUTTERFLYS/MOTHS
P	Red Pointe Red Maple	Acer rubrum 'Frank Jr.' PP 16769	NATIVAR	NATIVE BEES, HONEYBEES	ROSY MAPLE MOTH, CECROPIA MOTH	YES	YES	YES
P	Sun Valley Red Maple	Acer rubrum 'Sun Valley'	NATIVAR	NATIVE BEES, HONEYBEES	ROSY MAPLE MOTH, CECROPIA MOTH	YES	YES	YES
P	Sugar Maple	Acer saccharum	YES	HONEYBEES		YES		
P	Fall Fiesta Sugar Maple	Acer saccharum 'Bailista'	NATIVAR	HONEYBEES		YES		
P	Green Mountain Sugar Maple	Acer saccharum 'Green Mountain'	NATIVAR	HONEYBEES		YES		
P	Autumn Blaze Red Maple	Acer x. freemanii 'Jeffsred'	NATIVAR					
P	Marmo Maple	Acer x. freemanii 'Marmo'	NATIVAR					
F	Common Yarrow	Achillea millefolium	YES	NATIVE BEES, INSECTS WHICH ATTACK PEST INSECTS				YES
P	Ohio Buckeye	Aesculus glabra	YES			HUMMINGBIRDS	YES	
F	Annual Ragweed	Ambrosia artemisiifolia	BOTH			YES		
F	Giant Ragweed	Ambrosia trifida	YES					YES
F	Desert False Indigo	Amorpha fruticosa	YES	NATIVE BEES	SILVER-SPOTTED SKIPPER, SOUTHERN DOGFACE, GRAY HAIRSTREAK, HOARY EDGE			YES
P	Brromsedge bluestem	Andropogon virginicus	YES	NATIVE BEES	ZABULON SKIPPER	YES	YES	YES
F	Dogbane	Apocynum cannabinum	YES	INSECTS WHICH ATTACK PEST INSECTS				YES
F	Lesser Burdock	Arctium minus	NO					
P	Iroquois Beauty Black Chokeberry	Aronia melanocarpa 'Morton'	NATIVAR			YES		
F	Mugwort	Artemisia vulgaris	NO-NOXIOUS WEED					BUTTERFLIES
F	Common Milkweed	Asclepias syriaca	YES	NATIVE BEES, BUMBLE BEES, HONEY BEES, INSECTS WHICH ATTACK PEST INSECTS	MONARCH			YES
F	Garden Yellowrocket	Barbarea vulgaris	NO					
P	Heritage River Birch	Betula nigra 'Heritage'	NATIVAR			YES	YES	
P	Whitespire Birch	Betula populifolia 'Whitespire'	NATIVAR		EASTERN SWALLOWTAIL AND TULIPTREE SILKMOTH	SONGBIRDS, GROUNDBIRDS	YES	YES
P	Green Velvet Boxwood	Buxus x. 'Green Velvet'	NO					
P	Karl Foerster Reedgrass	Calamagrostis x acutiflora 'Karl Foerster'	NO					
F	Hedge False Bindweed	Calystegia sepium	YES- NOXIOUS WEED					
P	Bristly Sedge	Carex comosa	YES		EYED BROWN BUTTERFLIES AND SEVERAL SKIPPERS	WATERBIRDS		YES
P	Crested Sedge	Carex cristatella	YES			WATERBIRDS		
P	Riverbank Tussock Sedge	Carex emory	YES			YES		
P	Franks's Sedge	Carex frankii	YES			YES		
P	Porcupine Sedge	Carex hystericina	YES			YES		
P	Lurid Sedge	Carex lurida	YES			YES		
P	Pointed Oval Sedge	Carex tribuloides	YES			YES		
P	Fox Sedge	Carex vulpinoidea	YES			YES		
P	Frans Fontaine European	Carpinus betulus 'Frans Fontaine'	NO					
P	American Hornbeam	Carpinus caroliniana	YES		EASTERN TIGER SWALLOWTAIL, STRIPED HAIRSTREAK, RED-SPOTTED PURPLE	YES	YES	
P	Northern Catalpa	Catalpa speciosa	YES	HONEYBEES				
P	Prairie Pride Common Hackberry	Celtis occidentalis 'Prairie Pride'	NATIVAR		QUESTION MARK, MOURNING CLOAK, AMERICAN SNOUT, TAWNY EMPEROR	YES	YES	YES
P	Buttonbush	Cephalanthus occidentalis	YES	BUMBLEBEES, HONEYBEES, NATIVE BEES, TITAN SPINX MOTH, HYDRANGEA SPHINX MOTH		YES		YES
P	Katsura Tree	Cercidiphyllum japonicum (Katsura	NO					
P	Eastern Redbud	Cercis canadensis	YES	BUMBLEBEES				
F	Creeping Thistle	Cirsium arvense	NO- NOXIOUS WEED					
P	American Yellowwood	Cladrastis lutea (Cladrastis kentukea)	YES					
P	Silky Dogwood	Cornus amomum	YES	ATTRACTS INSECETS THAT ATTACK PEST INSECTS		YES		
P	Muskingum Gray Dogwood	Cornus racemosa 'Muskzam'	NATIVAR	ATTRACTS INSECETS THAT ATTACK PEST INSECTS	SPRING AZURE	YES	YES	YES
P	Isanti Redtwig Dogwood	Cornus sericea 'Isanti'	NATIVAR		SPRING AZURE	WATERFOWL, MARSHBIRDS, SHOREBIRDS	YES	YES
P	Winter King Green Hawthorn	Crataegus viridis 'Winter King'	NATIVAR	NATIVE BEES	GRAY HAIRSTREAK, BANDED HAIRSTREAK, RED-BANDED HAIRSTREAK	YES	YES	YES
F	Queen Anne's Lace	Daucus carota	NO					
P	Bronzeschleier Tufted Hairgrass	Deschampsia cespitosa 'Bronzeschleier'	NATIVAR			YES		YES
F	Common Teasel	Dipsacus fullonum	NO					YES
P	Virginia Wild Rye	Elymus virginicus	YES		HOST BRANDED SKIPPERS AND MOST SATYRS	YES	YES	YES
P-NOT CONFIRMED	Scouring Rush	Equisetum hyemale	YES					
F	Eastern Daisy Fleabane	Erigeron annuus	YES	INSECTS WHICH ATTACK PEST INSECTS				
F	Philadelphia Fleabane	Erigeron philadelphicus	YES	NATIVE BEES, INSECTS WHICH ATTACK PEST INSECTS	NORTHERN METALMARK			

P	Skyline Honeylocust	Gleditsia triacanthos var. inermis 'Skyline'	YES		SILVER-SPOTTED SKIPPER	YES	YES	YES
P	Fowl Manna Grass	Glyceria striata	YES					
P	Kentucky Coffeetree	Gymnocladus dioicus	YES		BICOLORED HONEY LOCUST MOTH, BISECTED HONEY LOCUST MOTH			
P	Espresso Kentucky Coffeetree	Gymnocladus dioicus 'Espresso'	NATIVAR		BICOLORED HONEY LOCUST MOTH, BISECTED HONEY LOCUST MOTH			
P	English Ivy	Hedera helix	NO					
F	Smooth Oxeye	Heliopsis helianthoides	YES	INSECTS WHICH ATTACK PEST INSECTS		HUMMINGBIRDS		
P	Night Ember Daylily	Hemerocallis 'Night Ember'	NO					
P	Daylily Purple D'Oro	Hemerocallis 'Purple d'Oro'	NO					
F	Common St. John's Wort	Hypericum perforatum	NO- POSSIBLE INVASIVE					
P	China Boy Holly	Iles x meserveae 'China Boy'	NO					
P	China Girl Holly	Iles x meserveae 'China Girl'	NO					
F	Jewelweed	Impatiens capensis	YES	BUMBLE BEES		HUMMINGBIRDS		YES
F	Yellow Flag Iris	Iris pseudacorus	NO - INVASIVE			YES		
F	Common Rush	Juncus Effusus	YES					
F	American Water-Willow	Justicia americana	YES					YES
F	Ox-eye Daisy	Leucanthemum vulgare	NO					YES
P	Moraine Sweetgum	Liquidambar styraciflua 'Moraine'	NATIVAR			YES	YES	
P	Rotundiloba Sweetgum	Liquidambar styraciflua 'Rotundiloba'	NATIVAR			YES	YES	
P	Tuliptree	Liriodendron tulipifera	YES	HONEYBEES	EASTERN SWALLOWTAIL AND TULIPTREE SILKMOTH	HUMMINGBIRDS		YES
P	Creeping Lilyturf	Liriope spicata	NO					
F	Creeping Jenny	Lysimachia nummularia	NO- POSSIBLE INVASIVE					
F	Purple Loosestrife	Lythrum salicaria	NO - NOXIOUS WEED					
P	Cucumbertree Magnolia	Magnolia acuminata	YES			YES	YES	
F	Yellow Sweet Clover	Melilotus officinalis	NO - INVASIVE					
F	White Mulberry	Morus alba	NO- POSSIBLE INVASIVE					
F	Catnip	Nepeta cataria	NO					YES
P	Black Mondo Grass	Ophiopogon planiscapus 'Nigrescens'	NO					
P	Switchgrass	Panicum virgatum	YES		BANDED SKIPPERS AND SATYRS	SONGBIRDS/GAME BIRDS		YES
P	Heavy Metal Switchgrass	Panicum virgatum 'Heavy Metal'	NATIVAR		BANDED SKIPPERS AND SATYRS	SONGBIRDS/GAME BIRDS		YES
F	Smooth White Beardtongue	Penstemon digitalis	YES	NATIVE BEES, BUMBLE BEES		HUMMINGBIRDS		YES
F	Narrow-leaved Plaintain	Plantago lancelota	NO					
P	Sycamore	Platanus occidentalis	YES			YES		
P	London Planetree	Platanus x. acerfolia	NO					
P	Bloodgood London Planetree	Platanus x. acerfolia 'Bloodgood'	NO					
F	Common Cinquefoil	Potentilla simplex	YES	NATIVE BEES				
P	Swamp White Oak	Quercus bicolor	YES			SONGBIRDS, GROUNDBIRDS, WATER BIRDS	YES	
P	Shingle Oak	Quercus imbricaria	YES			SONGBIRDS, GROUNDBIRDS, WATER BIRDS	YES	
P	Bur Oak	Quercus macrocarpa	YES		EDWARDS' HAIRSTREAK, HORACE'S DUSKYWING	SONGBIRDS, GROUNDBIRDS	YES	YES
P	Chinkapin Oak	Quercus muehlenbergii	YES		GRAY HAIRSTREAK	HUMMINGBIRDS		YES
P	Pin Oak	Quercus palustris	YES		GRAY HAIRSTREAK	HUMMINGBIRDS		YES
P	Northern Red Oak	Quercus rubra	YES		GRAY HAIRSTREAK	SONGBIRDS, GROUNDBIRDS	YES	YES
P	Shumard Oak	Quercus shumardii	YES		HORACE'S DUSKYWING	YES	YES	YES
P	Knockout Rose	RADrazz' Knockout Shrub Rose	NO					
F	Pinnate Prairie Coneflower	Ratibida pinnata	YES	NATIVE BEES		YES		YES
P	Gro-low Fragrant Sumac	Rhus aromatica ' Gro-low'	NATIVAR	NATIVE BEES, HONEY BEES, ATTRACTS INSECTS THAT ATTACK PEST INSECTS	BANDED HAIRSTREAK, RED-BANDED HAIRSTREAK	YES	YES	YES
F	Smooth Blackberry	Rubus canadensis	YES	NATIVE BEES, BUMBLE BEES, INSECTS WHICH ATTACK PEST INSECTS				
F	Northern Dewberry	Rubus flagellaris	YES	NATIVE BEES, BUMBLE BEES		YES	YES	YES
F	Thimbleberry	Rubus occidentalis	YES	NATIVE BEES, BUMBLE BEES, HONEY BEES		SONGBIRDS, GAMEBIRDS	YES	YES
F	Black-Eyed Susan	Rudbeckia hirta	YES		BORDERED PATCH, GORGONE CHECKERSPOT	YES		YES
F	Curly Dock	Rumex crispus	NO					
P	American Willow	Salix discolor	YES	BUMBLEBEES, HONEYBEES	MOURNING CLOAK AND VICEROY	EARLY SEASON FOOD SONGBIRDS, WATERFOWL	YES	YES
P	Black Willow	Salix nigra	YES	BUMBLEBEES, HONEYBEES	ACADIAN HAIRSTREAK, MOURNING CLOAK, AND VICEROY	EARLY SEASON FOOD SONGBIRDS, WATERFOWL	YES	YES
P	Elderberry	Sambucus canadensis	YES	NATIVE BEES		YES		YES
P	Dark Green Bulrush	Scirpus atrovirens	YES			WATERFOWL, SONGBIRDS, SHOREBIRDS	YES	
F	Crown Vetch	Securigera varia	NO					
F	Narrowleaf Blue-eyed Grass	Sisyrinchium angustifolium	YES					

F	Horse-Nettle	Solanum carolinense	YES					
F	Climbing Nightshade	Solanum dulcamara	NO- HIGHLY TOXIC					
P	Prairie Cordgrass	Spartina pectinata	YES			YES		
P	Common Bald Cypress	Taxodium distichum	YES			YES		
P	Ward's Yew	Taxus x media "Wardii"	NO					
F	Alsike Clover	Trifolium hybridum	NO- POSSIBLE INVASIVE					YES
F	White Clover	Trifolium repens	NO- INVASIVE					YES
P	Princeton American Elm	Ulmus americana 'Princeton'	NATIVAR		EASTERN COMMA, MOURNING CLOAK, PAINTED LADY, QUESTION MARK	YES	YES	YES
P	Lacebark Elm	Ulmus parvifolia	NO					
P	Frontier Elm	Ulmus x. 'Frontier'	NO					
F	Stinging Nettle	Urtica dioica	YES		RED ADMIRAL, QUESTION MARK, MILBERT'S TORTOISESHELL			YES
P	Maple Leaf Viburnum	Viburnum acerIfolium	YES		SPRING AZURE	YES		YES
P	Blue Muffin Arrowwood Viburnum	Viburnum dentatum 'Blue Muffin'	NATIVAR	NATIVE BEES, BUMBLEBEES, ATTRACTS INSECTS WHICH ATTACK PEST INSECTS	SPRING AZURE	GAMEBIRDS, SONGBIRDS	YES	YES
P	Bowles Cunningham Vinca	Vinca minor 'Bowles Cunningham'	NO					
F	Riverbank Grape	Vitis riparia	YES - WEEDY			SONGBIRDS, GAMEBIRDS, WATERFOWL	YES	
Total (# includes multiple varieties of same species)		**123**	**61**	**32**	**33**	**62**	**30**	**47**
			21					
			82					
% of Total (Counts species with multiple varieties only once)			67%	25%	27%	50%	25%	39%

P = NOT INCLUDED IN FQI AS WAS NOT IN FQA DATABASE

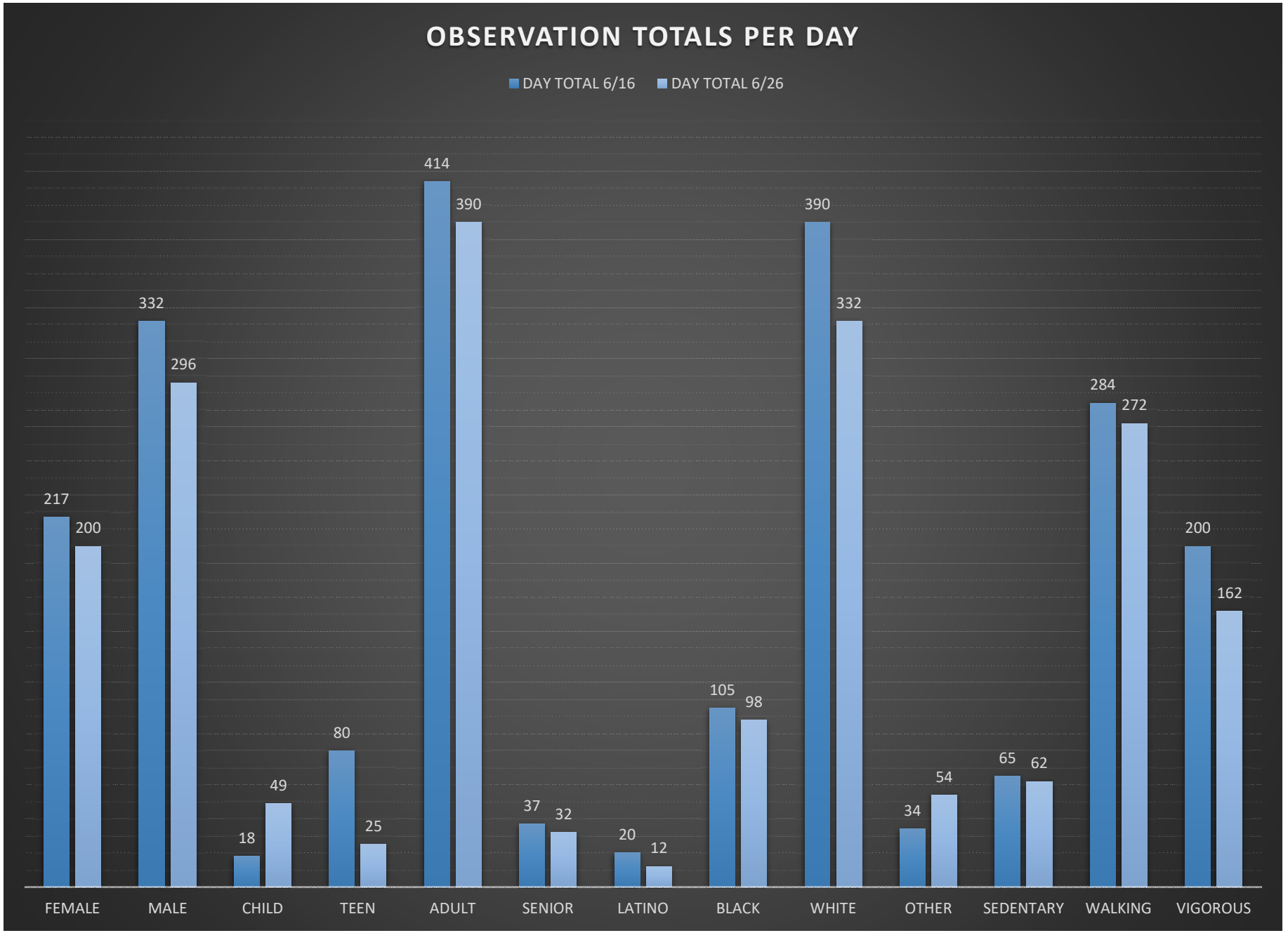
VARIETIES IN BLUE ARE A MULTIPLE OF SPECIES ALREADY COUNTED

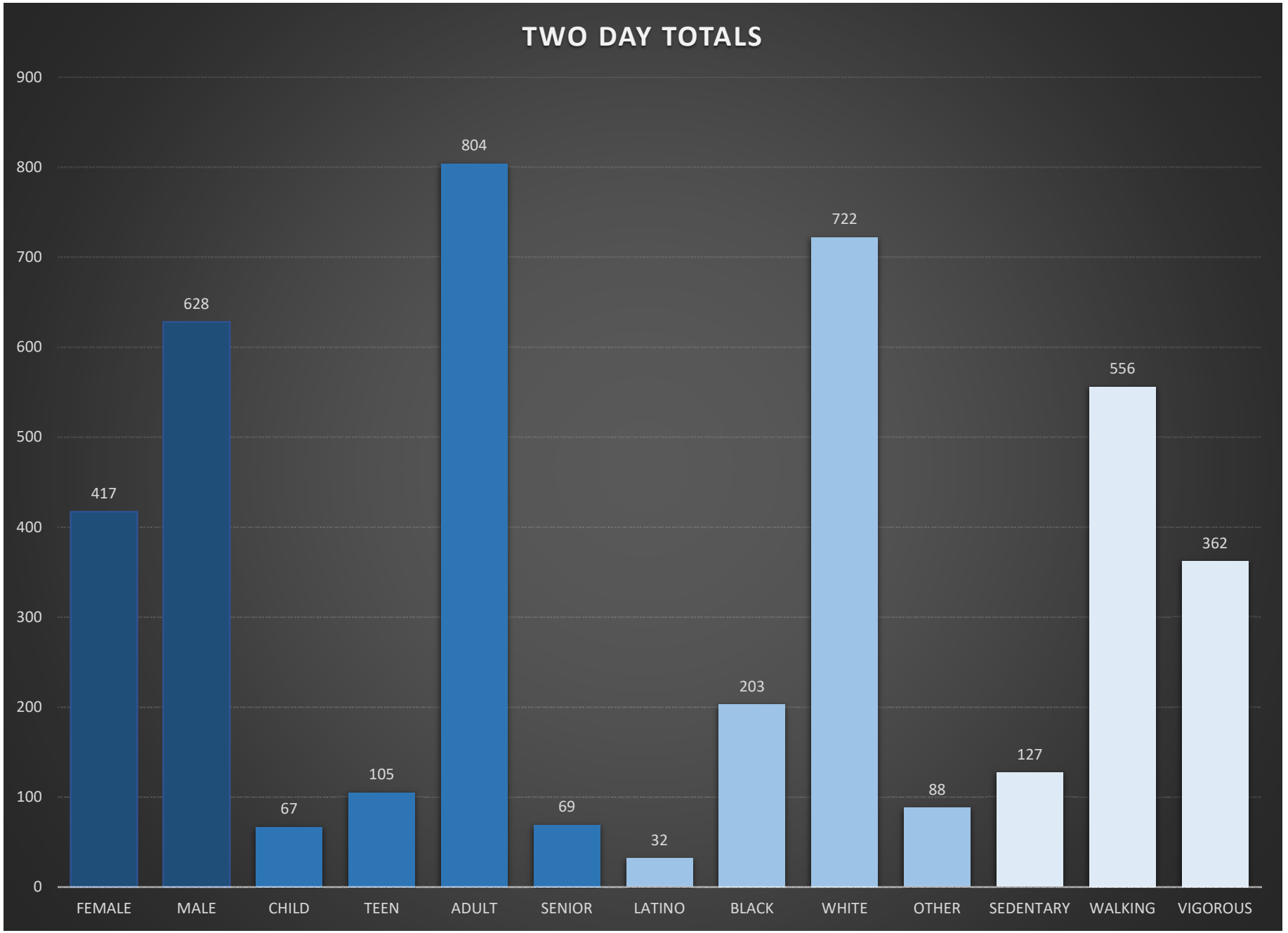
Appendix C: Observational Data Analysis

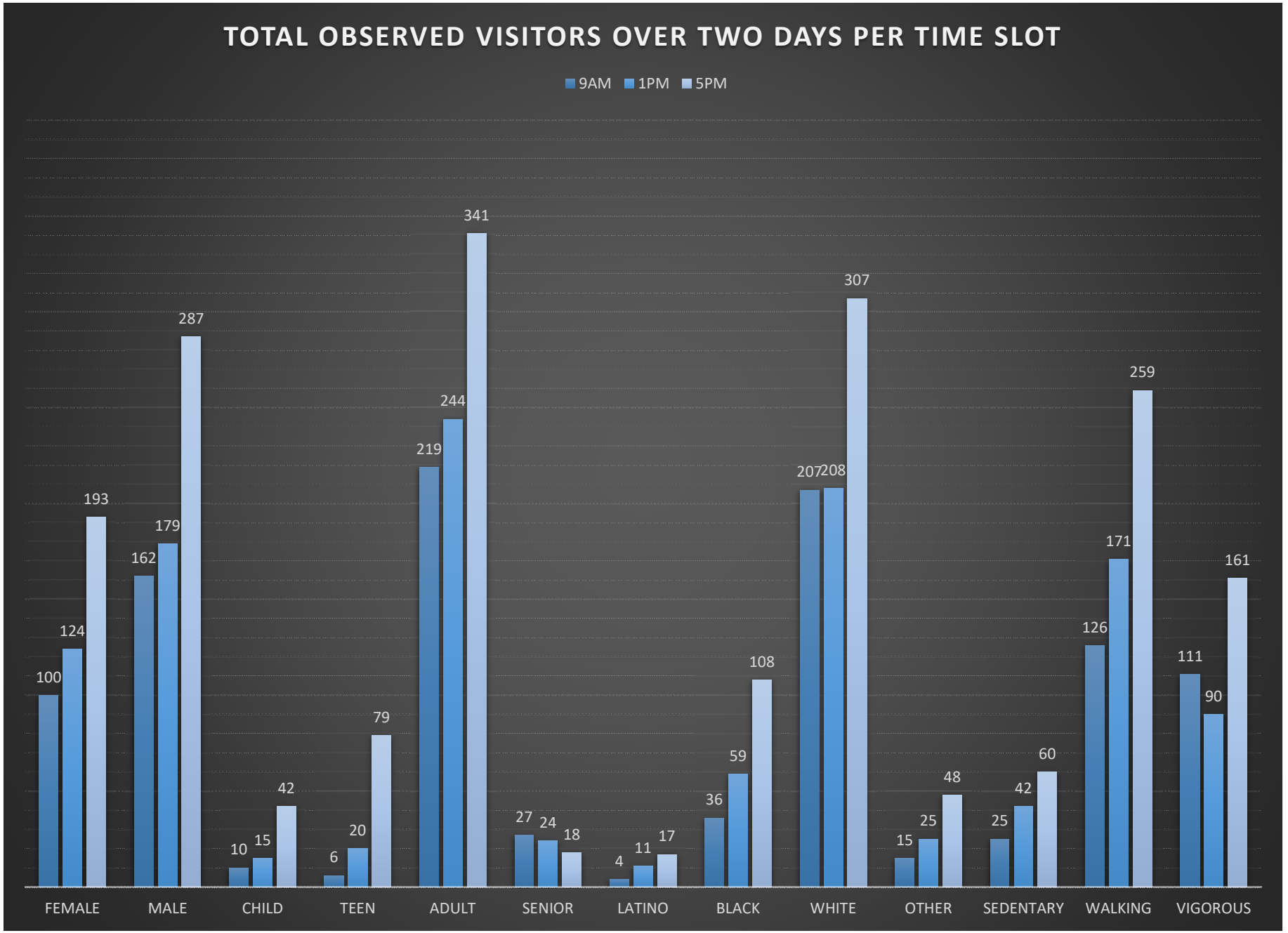
OBSERVATIONAL DATA TWO DAY TOTALS

Count of SEX			SEDENTARY	VIGOROUS	WALKING	Grand Total
FEMALE	BLACK	TEEN	7	1	13	21
		SENIOR	1		1	2
		CHILD	5	1	3	9
		ADULT	17	5	36	58
	BLACK Total		**30**	**7**	**53**	**90**
	LATINO	TEEN			1	1
		CHILD	1		2	3
		ADULT	3	2	11	16
	LATINO Total		**4**	**2**	**14**	**20**
	OTHER	TEEN	2		2	4
		CHILD			5	5
		ADULT	4	4	14	22
	OTHER Total		**6**	**4**	**21**	**31**
	WHITE	TEEN	2	3	12	17
		SENIOR	4	4	19	27
		CHILD	5		6	11
		ADULT	13	69	139	221
	WHITE Total		**24**	**76**	**176**	**276**
FEMALE Count			**64**	**89**	**264**	**417**
MALE	BLACK	TEEN	3	6	8	17
		SENIOR	1		2	3
		CHILD	4	5	5	14
		ADULT	15	20	44	79
	BLACK Total		**23**	**31**	**59**	**113**
	LATINO	TEEN	2	2		4
		CHILD	1		1	2
		ADULT		4	2	6
	LATINO Total		**3**	**6**	**3**	**12**
	OTHER	TEEN	1	7	4	12
		CHILD	2			2
		ADULT	3	21	19	43
	OTHER Total		**6**	**28**	**23**	**57**
	WHITE	TEEN	3	14	12	29
		SENIOR	3	10	24	37
		CHILD	7	1	13	21
		ADULT	18	183	158	359
	WHITE Total		**31**	**208**	**207**	**446**
MALE Count			**63**	**273**	**292**	**628**
Grand Total			**127**	**362**	**556**	**1045**

LOCATION	TIME	GENDER		AGE GROUP				ETHNICITY				ACTIVITY LEVEL		
		FEMALE	MALE	CHILD	TEEN	ADULT	SENIOR	LATINO	BLACK	WHITE	OTHER	SEDENTARY	WALKING	VIGOROUS
	6/16/2021													
TOTAL FOR TIME SLOT	9AM	29	56	3	3	69	10	2	11	69	3	9	40	36
TOTAL FOR TIME SLOT	1PM	79	86	2	19	130	14	8	40	111	6	31	100	34
TOTAL FOR TIME SLOT	5PM	109	190	13	58	215	13	10	54	210	25	25	144	130
DAY TOTAL 6/16		217	332	18	80	414	37	20	105	390	34	65	284	200
CATEGORY TOTAL			549				549				549			549
DAY 6/16 AVERAGE TOTAL		72	110	6	26	138	12	6	35	130	11	21	94	66
	6/26/2021													
TOTAL FOR TIME SLOT	9AM	71	106	7	3	150	17	2	25	138	12	16	86	75
TOTAL FOR TIME SLOT	1PM	45	93	13	1	114	10	3	19	97	19	11	71	56
TOTAL FOR TIME SLOT	5PM	84	97	29	21	126	5	7	54	97	23	35	115	31
DAY TOTAL 6/26		200	296	49	25	390	32	12	98	332	54	62	272	162
CATEGORY TOTAL			496				496				496			496
DAY 6/26 AVERAGE TOTAL		66	98	16	8	130	10	4	32	110	18	20	90	54
TWO DAY TOTAL		417	628	67	105	804	69	32	203	722	88	127	556	362
CATEGORY TOTAL			1045				1045				1045			1045
TWO DAY TOTAL PER TIME SLOT	9AM	100	162	10	6	219	27	4	36	207	15	25	126	111
	combined		262				262				262			262
	1PM	124	179	15	20	244	24	11	59	208	25	42	171	90
	combined		303				303				303			303
	5PM	193	287	42	79	341	18	17	108	307	48	60	259	161
	combined		480				480				480			480
WEEKDAY 16 HOUR EXTRAPOLATED		2304	3520	192	832	4416	384	192	1120	4160	352	672	3008	2112
WEEKEND 16 HOUR EXTRAPOLATED		2112	3136	512	256	4160	320	128	1024	3520	576	640	2880	1728
WEEKLY AVERAGE EXTRAPOLATED		**15744**	**23872**	**1984**	**4672**	**30400**	**2560**	**1216**	**7648**	**27840**	**2912**	**4640**	**20800**	**14016**
TOTAL WEEKLY AVERAGE EXTRAPOLATED			**39616**											


OBSERVATION TOTALS PER DAY
DAY TOTAL 6/16
DAY TOTAL 6/26
217
200
332
296
18
49
80
25
414
390
37
32
20
12
105
98
390
332
34
54
65
62
284
272
200
162
FEMALE
MALE
CHILD
TEEN
ADULT
SENIOR
LATINO
BLACK
WHITE
OTHER
SEDENTARY
WALKING
VIGOROUS


TWO DAY TOTALS
900
800
700
600
500
400
300
200
100
0
417
628
67
105
804
69
32
203
722
88
127
556
362
FEMALE
MALE
CHILD
TEEN
ADULT
SENIOR
LATINO
BLACK
WHITE
OTHER
SEDENTARY
WALKING
VIGOROUS

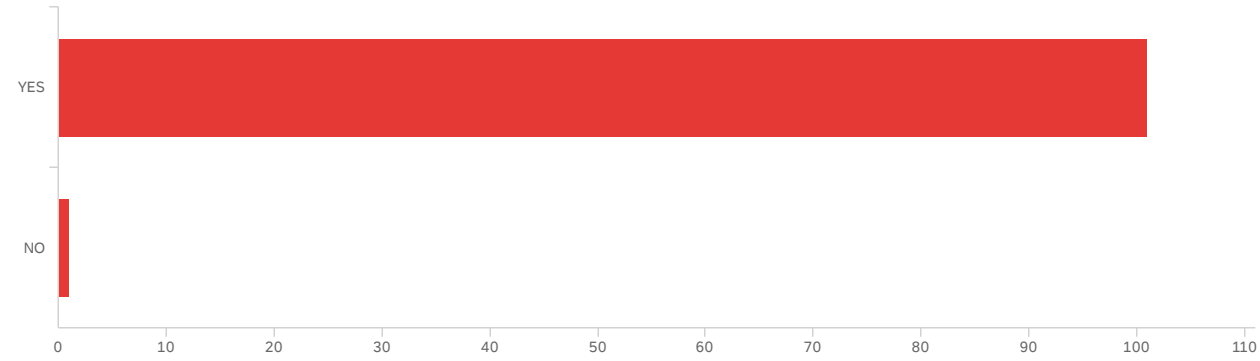

TOTAL OBSERVED VISITORS OVER TWO DAYS PER TIME SLOT
9AM
1PM
5PM
100
124
193
162
179
287
10
15
42
6
20
79
219
244
341
27
24
18
4
11
17
36
59
108
207
208
307
15
25
48
25
42
60
126
171
259
111
90
161
FEMALE
MALE
CHILD
TEEN
ADULT
SENIOR
LATINO
BLACK
WHITE
OTHER
SEDENTARY
WALKING
VIGOROUS

Appendix D: Survey Questions and Data

Default Report

Scioto Mile and Greenways
July 1, 2021 2:07 PM EDT

Consent - This survey will be used by researchers at Ohio State University and the Landscape Architecture Foundation to understand how Scioto Mile and Greenways is used by its visitors. The findings of the survey will be anonymous and published in a report that will be available on the Landscape Architecture Foundations website. Your de-identified information may be used or shared with other researchers without your additional informed consent as it will be included in the report. Survey data will be kept on OSU's OneDrive with access limited to the research team. We will work to make sure that no one sees your survey responses without approval. But, because we are using the Internet, there is a chance that someone could access your online responses without permission. In some cases, this information could be used to identify you. Participation in the survey is voluntary and takes under 5 minutes. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices 1-800-678-6251 or by e-mail at hsconcerns@osu.edu. I grant permission for the data generated in this survey to be used for the researcher's publication on this topic as described above.

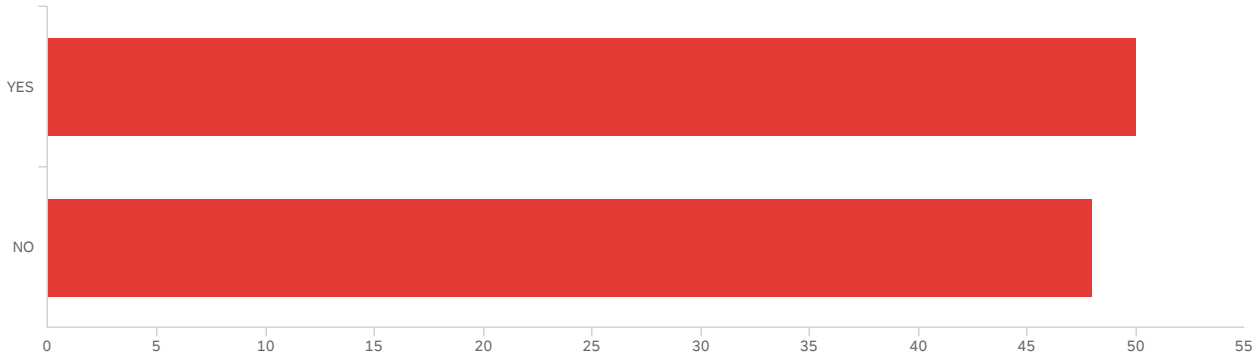


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	This survey will be used by researchers at Ohio State University and the Landscape Architecture Foundation to understand how Scioto Mile and Greenways is used by its visitors. The findings of the survey will be anonymous and published in a report that will be available on the Landscape Architecture Foundations website. Your de-identified information may be used or shared with other researchers without your additional informed consent as it will be included in the report. Survey data will be kept on OSU's OneDrive with access limited to the research team. We will work to make sure that no one sees your survey responses without approval. But, because we are using the Internet, there is a chance that someone could access your online responses without permission. In some cases, this information could be used to identify you. Participation in the survey is voluntary and takes under 5 minutes. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices 1-800-678-6251 or by e-mail at hsconcerns@osu.edu. I grant permission for the data generated in this survey to be used for the researcher's publication on this topic as described above.	1.00	2.00	1.01	0.10	0.01	102

#	Field	Choice Count	
1	YES	99.02%	101
2	NO	0.98%	1
			102

Showing rows 1 - 3 of 3

QID1 - Were you aware of the area prior to the renovation of Bicentennial Park and the creation of the Scioto Mile and Greenways?

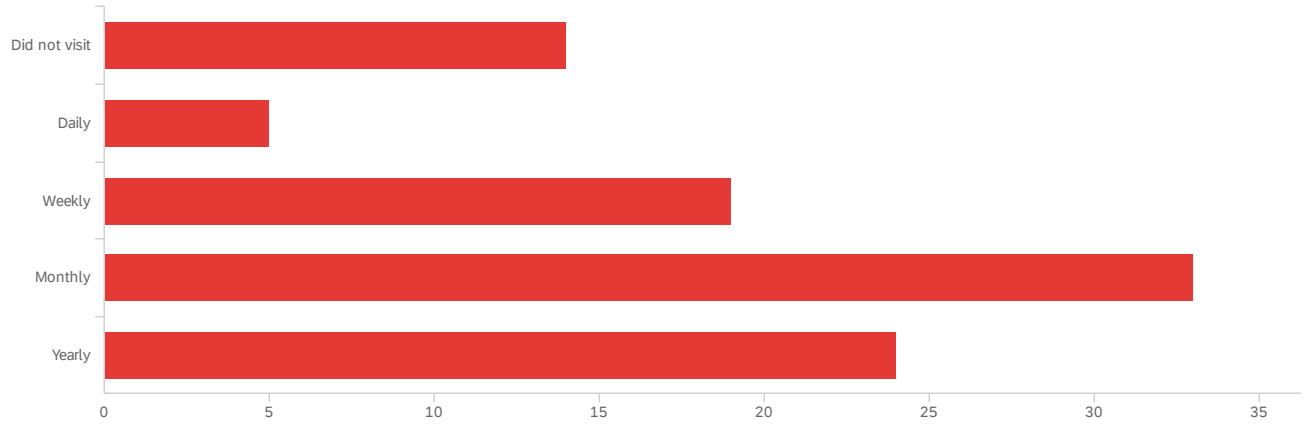


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Were you aware of the area prior to the renovation of Bicentennial Park and the creation of the Scioto Mile and Greenways?	1.00	2.00	1.49	0.50	0.25	98

#	Field		Choice Count
1	YES	51.02%	50
2	NO	48.98%	48
			98

Showing rows 1 - 3 of 3

Q2 - How often did you visit the Scioto Mile and Greenways prior to the onset of the COVID-19 pandemic?

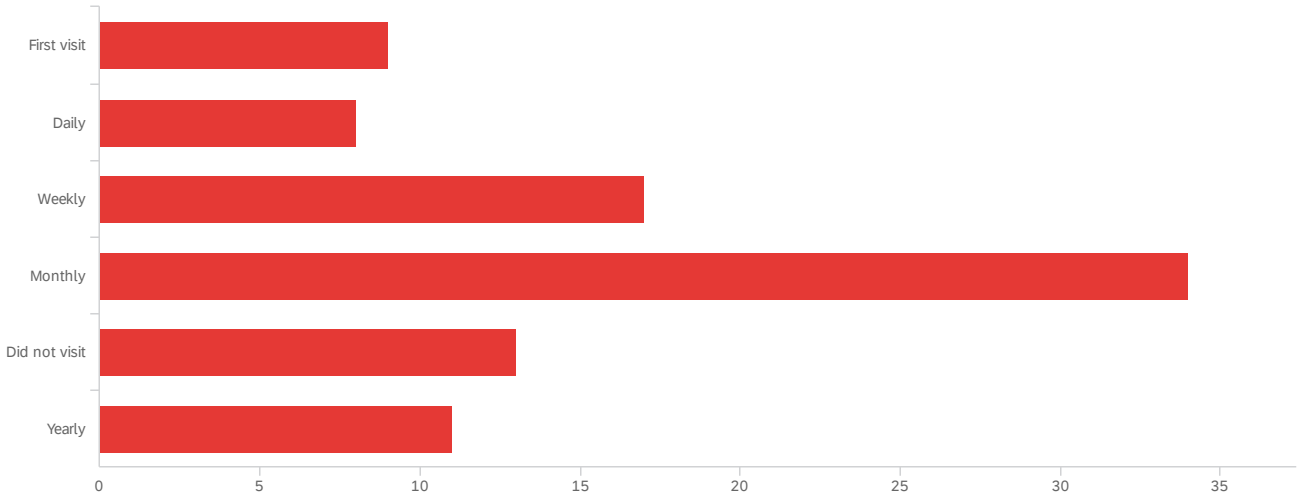


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How often did you visit the Scioto Mile and Greenways prior to the onset of the COVID-19 pandemic?	1.00	5.00	3.51	1.32	1.74	95

#	Field		Choice Count
1	Did not visit	14.74%	14
2	Daily	5.26%	5
3	Weekly	20.00%	19
4	Monthly	34.74%	33
5	Yearly	25.26%	24
			95

Showing rows 1 - 6 of 6

Q3 - How often have you visited the Scioto Mile and Greenways since the onset of the COVID-19 pandemic?

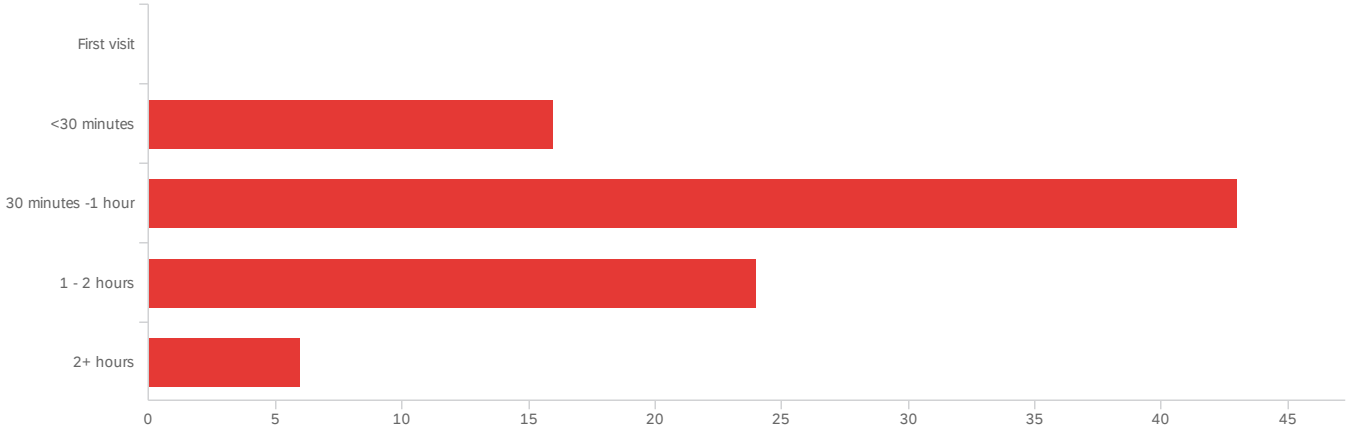


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How often have you visited the Scioto Mile and Greenways since the onset of the COVID-19 pandemic?	1.00	6.00	3.73	1.40	1.96	92

#	Field		Choice Count
1	First visit	9.78%	9
2	Daily	8.70%	8
3	Weekly	18.48%	17
4	Monthly	36.96%	34
5	Did not visit	14.13%	13
6	Yearly	11.96%	11
			92

Showing rows 1 - 7 of 7

Q4 - How much time on average do you spend at the park in a single visit?

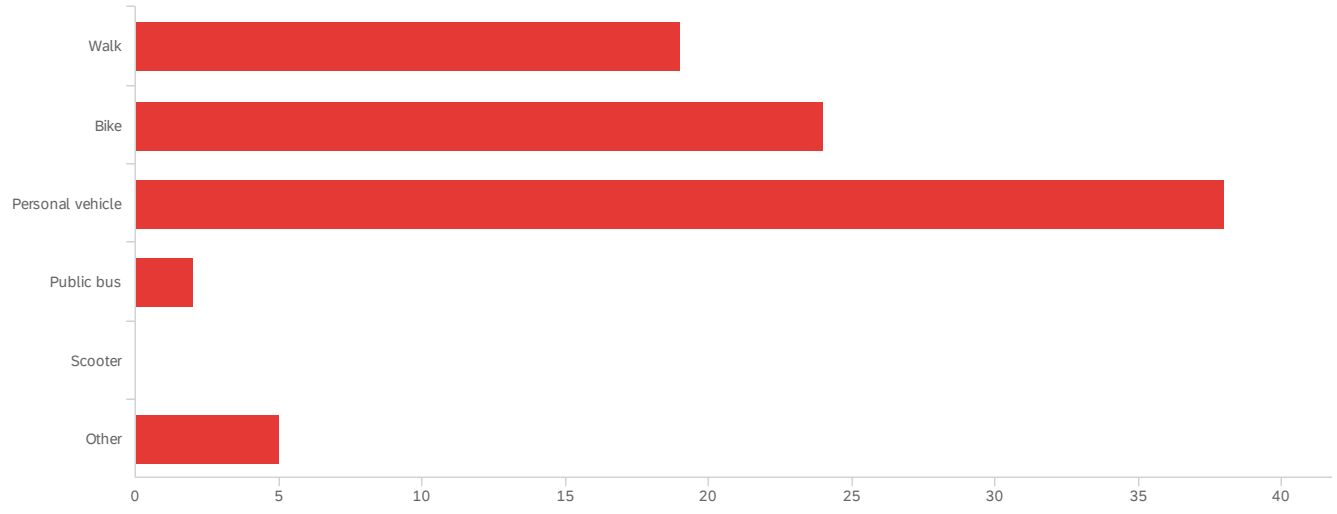


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How much time on average do you spend at the park in a single visit?	2.00	5.00	3.22	0.82	0.67	89

#	Field		Choice Count
1	First visit	0.00%	0
2	<30 minutes	17.98%	16
3	30 minutes -1 hour	48.31%	43
4	1 - 2 hours	26.97%	24
5	2+ hours	6.74%	6
			89

Showing rows 1 - 6 of 6

Q5 - How do you typically travel to the park?

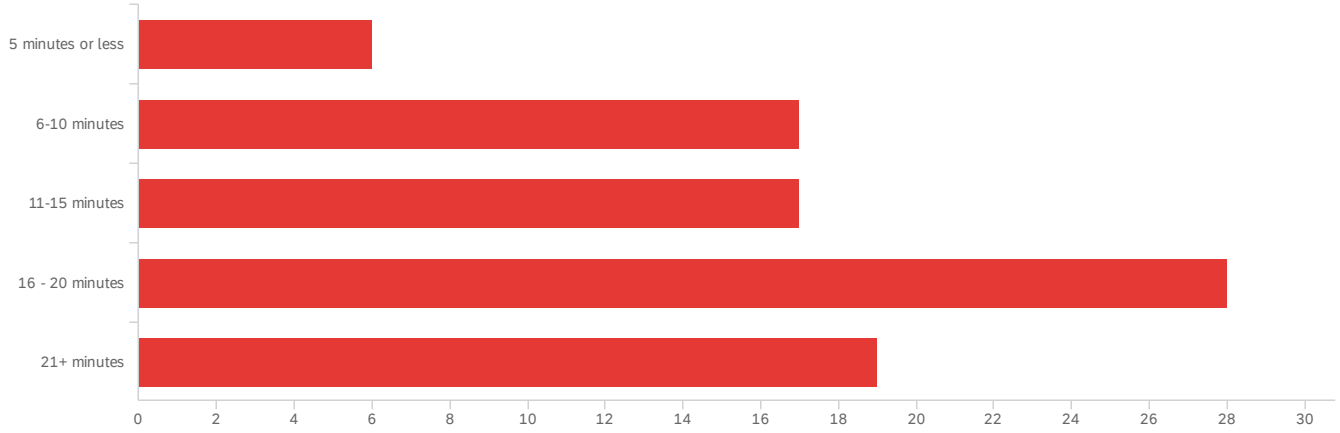


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How do you typically travel to the park?	1.00	6.00	2.49	1.19	1.41	88

#	Field		Choice Count
1	Walk	21.59%	19
2	Bike	27.27%	24
3	Personal vehicle	43.18%	38
4	Public bus	2.27%	2
5	Scooter	0.00%	0
6	Other	5.68%	5
			88

Showing rows 1 - 7 of 7

Q7 - How long does it typically take you to reach the park by this same method?

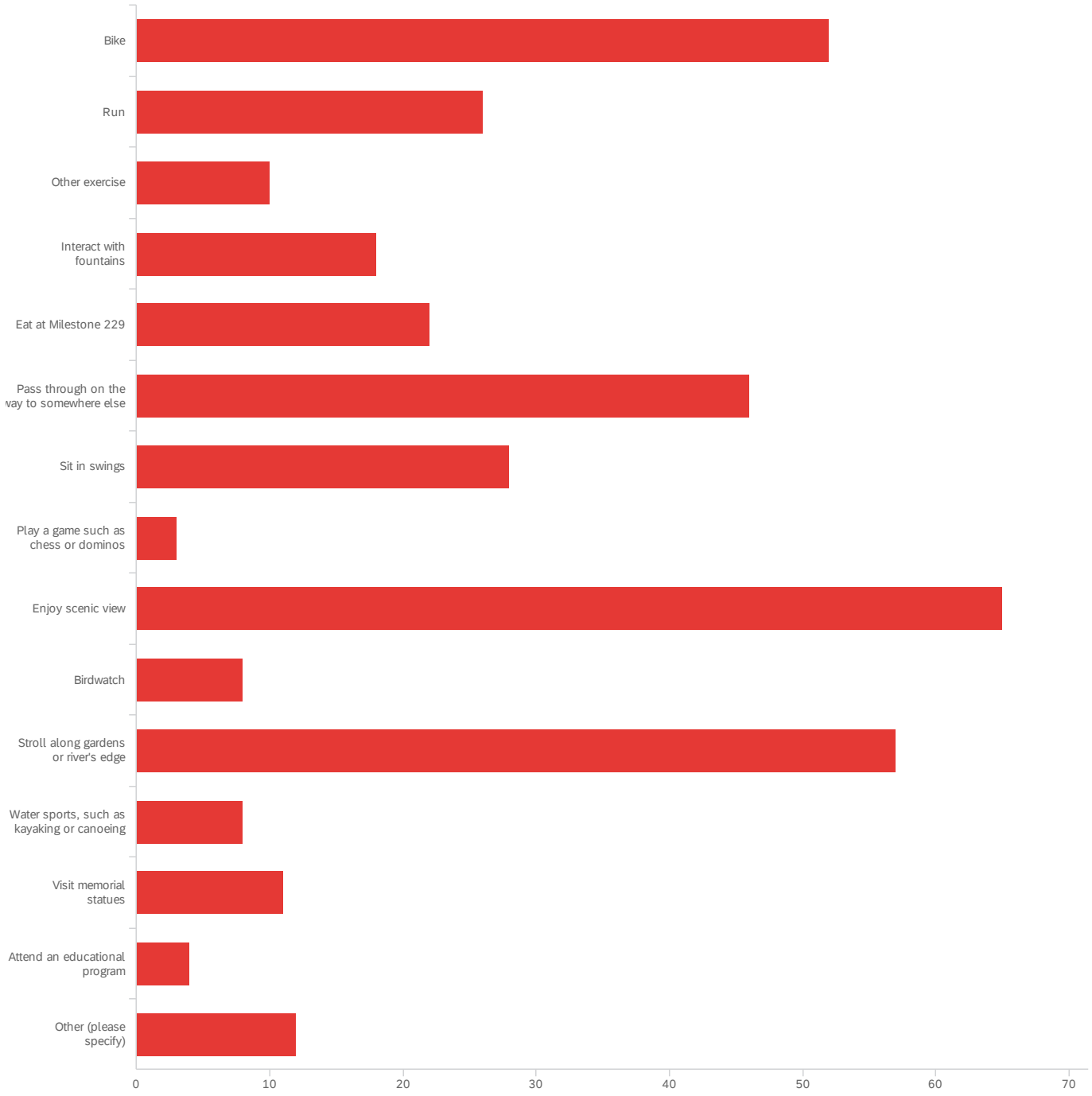


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	How long does it typically take you to reach the park by this same method?	1.00	5.00	3.43	1.22	1.49	87

#	Field		Choice Count
1	5 minutes or less	6.90%	6
2	6-10 minutes	19.54%	17
3	11-15 minutes	19.54%	17
4	16 - 20 minutes	32.18%	28
5	21+ minutes	21.84%	19
			87

Showing rows 1 - 6 of 6

Q8 - What activities do you or your family typically participate in on this site? (Choose all that apply)



#	Field	Choice Count
1	Bike	14.05% 52
2	Run	7.03% 26

#	Field		Choice Count
3	Other exercise	2.70%	10
4	Interact with fountains	4.86%	18
5	Eat at Milestone 229	5.95%	22
6	Pass through on the way to somewhere else	12.43%	46
7	Sit in swings	7.57%	28
8	Play a game such as chess or dominos	0.81%	3
9	Enjoy scenic view	17.57%	65
10	Birdwatch	2.16%	8
11	Stroll along gardens or river's edge	15.41%	57
12	Water sports, such as kayaking or canoeing	2.16%	8
13	Visit memorial statues	2.97%	11
14	Attend an educational program	1.08%	4
15	Other (please specify)	3.24%	12
			370

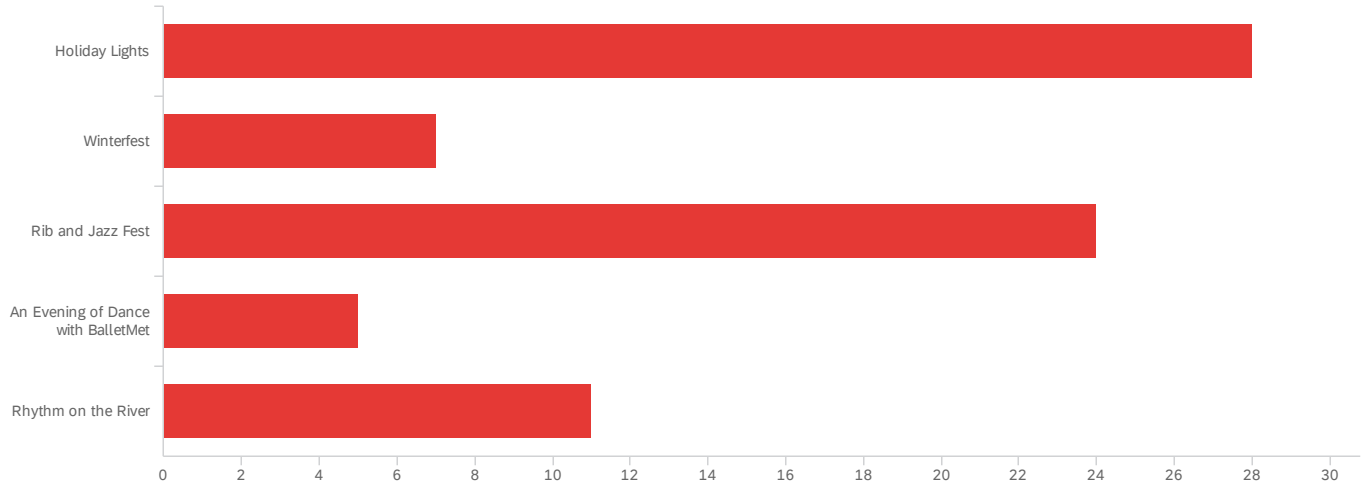
Showing rows 1 - 16 of 16

Q8_15_TEXT - Other (please specify)

Other (please specify)
Picnics
Festivals
art festival
Attend city events/festivals
Skating
Scooters
Eat / picnic
Rock Climbing
Attend Festival

Other (please specify)
picnic
Free concert at Bicentennial Park
Walk

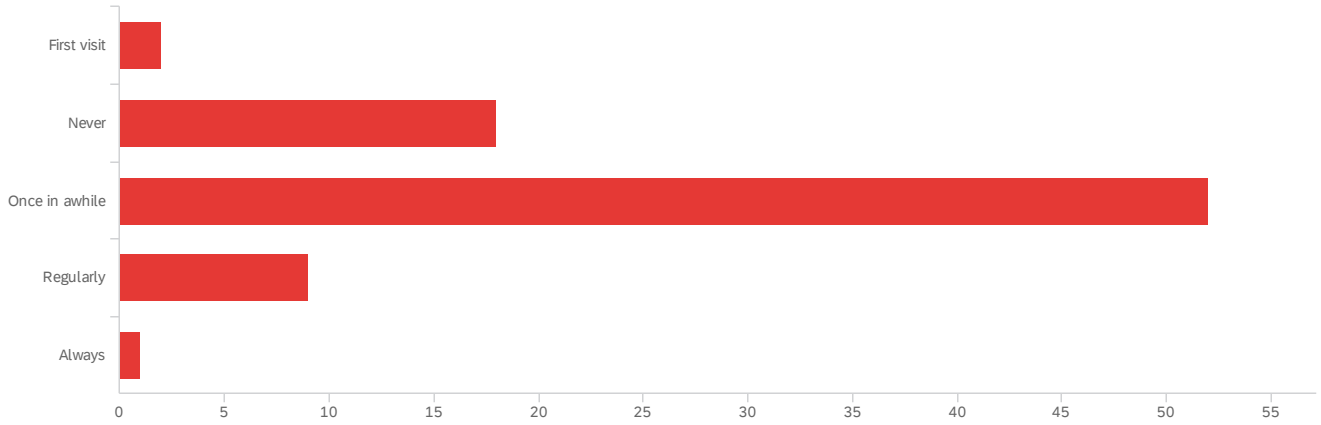
Q9 - What special events have you participated in at the park? (Please mark all that apply)



#	Field		Choice Count
1	Holiday Lights	37.33%	28
2	Winterfest	9.33%	7
3	Rib and Jazz Fest	32.00%	24
4	An Evening of Dance with BalletMet	6.67%	5
5	Rhythm on the River	14.67%	11
			75

Showing rows 1 - 6 of 6

Q10 - When visiting Scioto Mile and Greenways, how frequently do you patronize nearby businesses or restaurants?

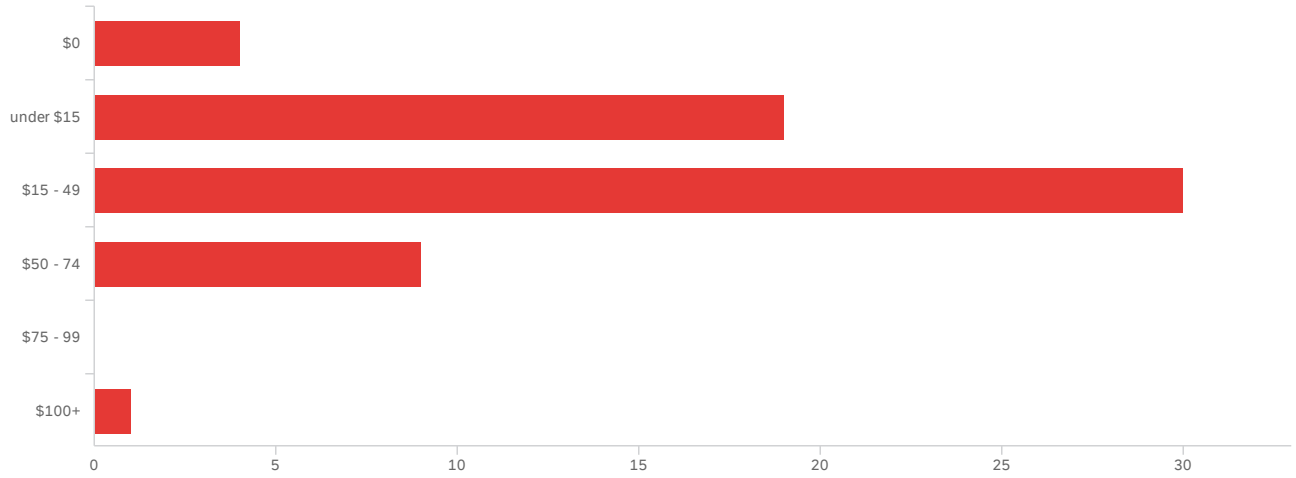


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	When visiting Scioto Mile and Greenways, how frequently do you patronize nearby businesses or restaurants?	1.00	5.00	2.87	0.68	0.46	82

#	Field		Choice Count
1	First visit	2.44%	2
2	Never	21.95%	18
3	Once in awhile	63.41%	52
4	Regularly	10.98%	9
5	Always	1.22%	1
			82

Showing rows 1 - 6 of 6

Q11 - On average, approximately how much do you spend at nearby businesses or restaurants during a single trip?

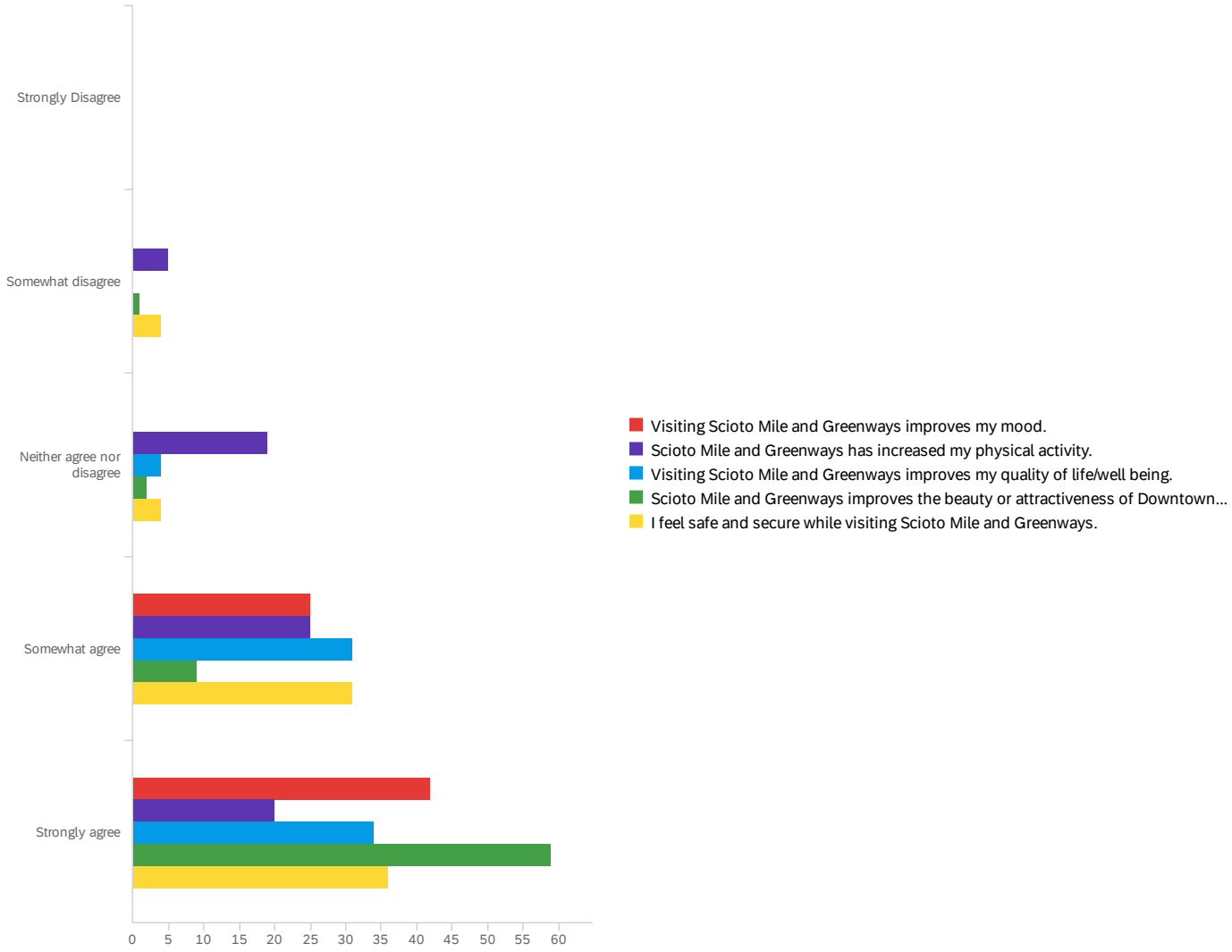


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	On average, approximately how much do you spend at nearby businesses or restaurants during a single trip?	1.00	6.00	2.76	0.89	0.78	63

#	Field		Choice Count
1	$0	6.35%	4
2	under $15	30.16%	19
3	$15 - 49	47.62%	30
4	$50 - 74	14.29%	9
5	$75 - 99	0.00%	0
6	$100+	1.59%	1
			63

Showing rows 1 - 7 of 7

Q12 - Please rate the following statements regarding your experience at Scioto Mile and Greenways.

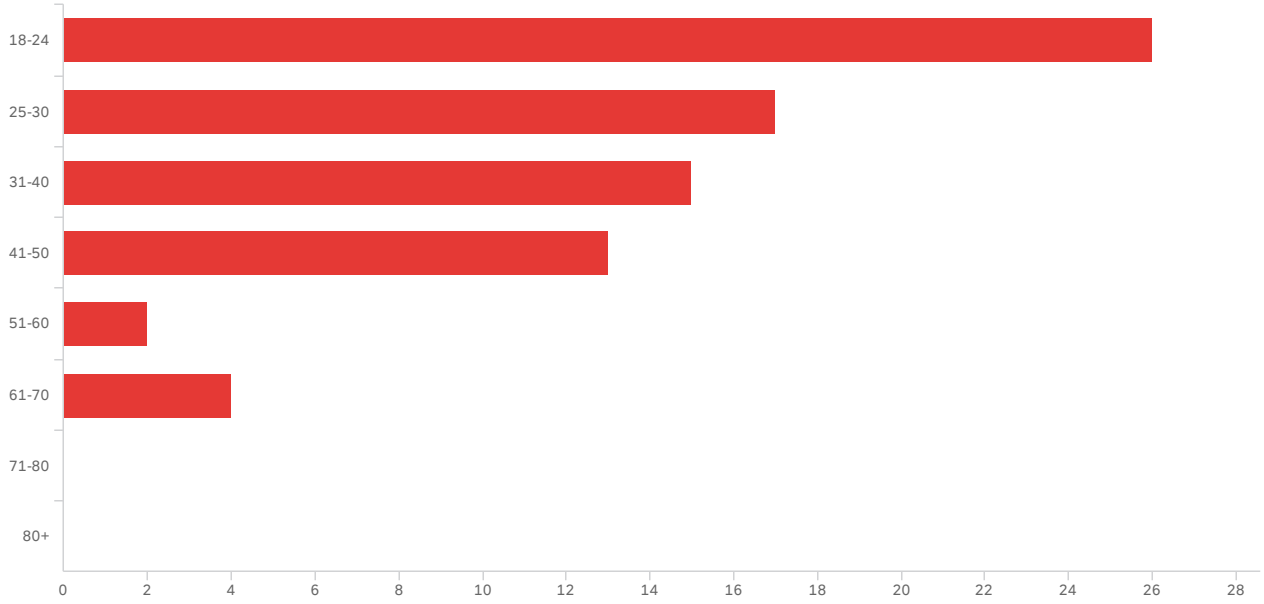


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Visiting Scioto Mile and Greenways improves my mood.	4.00	5.00	4.63	0.48	0.23	67
2	Scioto Mile and Greenways has increased my physical activity.	2.00	5.00	3.87	0.92	0.84	69
3	Visiting Scioto Mile and Greenways improves my quality of life/well being.	3.00	5.00	4.43	0.60	0.36	69
4	Scioto Mile and Greenways improves the beauty or attractiveness of Downtown Columbus.	2.00	5.00	4.77	0.56	0.32	71
5	I feel safe and secure while visiting Scioto Mile and Greenways.	2.00	5.00	4.32	0.80	0.64	75

#	Field	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	Total
1	Visiting Scioto Mile and Greenways improves my mood.	0.00% 0	0.00% 0	0.00% 0	37.31% 25	62.69% 42	67
2	Scioto Mile and Greenways has increased my physical activity.	0.00% 0	7.25% 5	27.54% 19	36.23% 25	28.99% 20	69
3	Visiting Scioto Mile and Greenways improves my quality of life/well being.	0.00% 0	0.00% 0	5.80% 4	44.93% 31	49.28% 34	69
4	Scioto Mile and Greenways improves the beauty or attractiveness of Downtown Columbus.	0.00% 0	1.41% 1	2.82% 2	12.68% 9	83.10% 59	71
5	I feel safe and secure while visiting Scioto Mile and Greenways.	0.00% 0	5.33% 4	5.33% 4	41.33% 31	48.00% 36	75

Showing rows 1 - 5 of 5

Q13 - What is your age? (Optional)

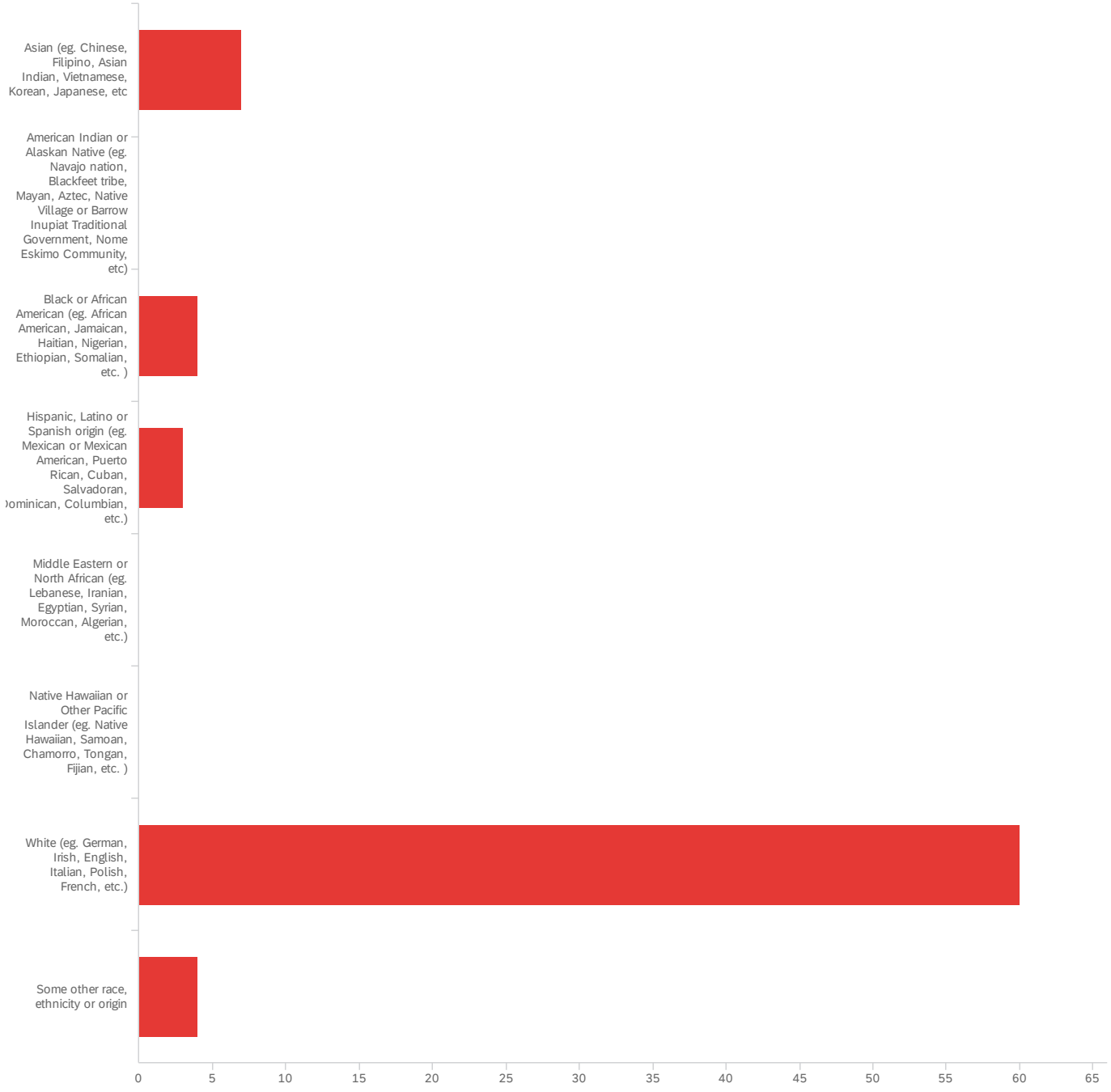


#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	What is your age? (Optional)	1.00	6.00	2.48	1.43	2.04	77

#	Field		Choice Count
1	18-24	33.77%	26
2	25-30	22.08%	17
3	31-40	19.48%	15
4	41-50	16.88%	13
5	51-60	2.60%	2
6	61-70	5.19%	4
7	71-80	0.00%	0
8	80+	0.00%	0
			77

Showing rows 1 - 9 of 9

Q14 - Which category best describes you? (Optional)



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Which category best describes you? (Optional)	1.00	8.00	6.19	1.95	3.80	78

#	Field		Choice Count
1	Asian (eg. Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc	8.97%	7
2	American Indian or Alaskan Native (eg. Navajo nation, Blackfeet tribe, Mayan, Aztec, Native Village or Barrow Inupiat Traditional Government, Nome Eskimo Community, etc)	0.00%	0
3	Black or African American (eg. African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.)	5.13%	4
4	Hispanic, Latino or Spanish origin (eg. Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Columbian, etc.)	3.85%	3
5	Middle Eastern or North African (eg. Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian, etc.)	0.00%	0
6	Native Hawaiian or Other Pacific Islander (eg. Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, etc.)	0.00%	0
7	White (eg. German, Irish, English, Italian, Polish, French, etc.)	76.92%	60
8	Some other race, ethnicity or origin	5.13%	4
			78

Showing rows 1 - 9 of 9

Appendix E: Statistical Analysis of Survey Data

There is no statistically significant relationship between Q10: When visiting Scioto Mile and Greenways, how frequently do you patronize nearby businesses or restaurants? and Q14: Which category best describes you? (Optional)

Chi-Squared Test

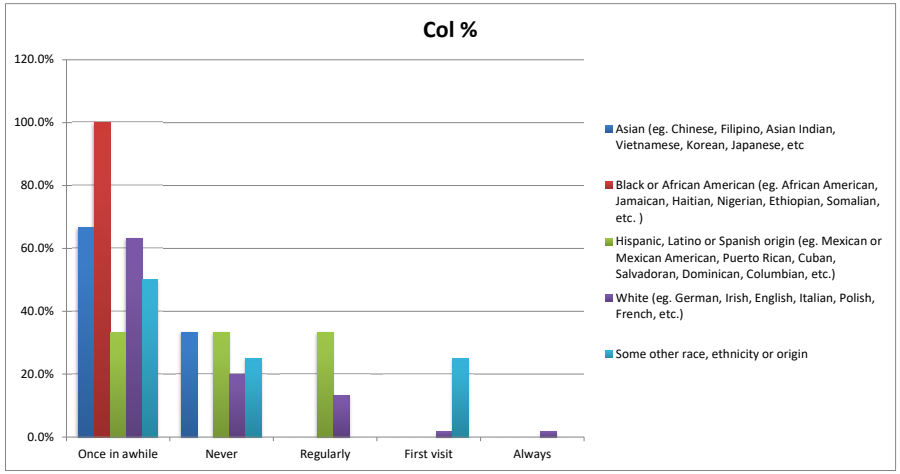
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.56271351
Effect Size (Cramér's V)	Medium	0.216853824
Sample Size		77

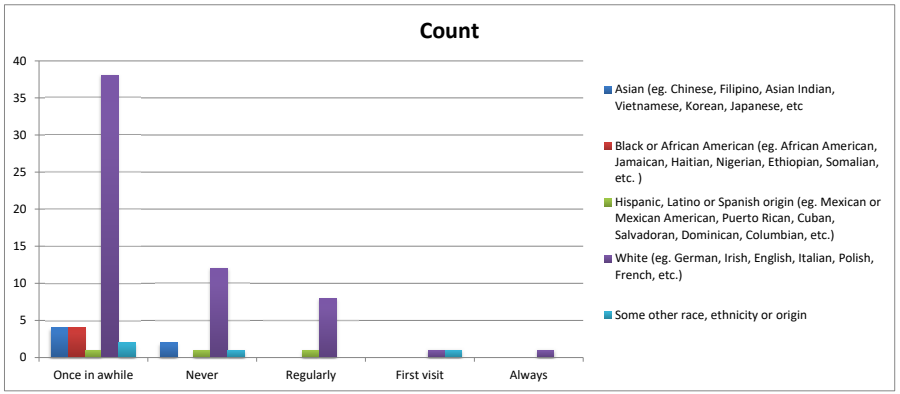
Col %

	Asian (eg. Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc	Black or African American (eg. African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.)	Hispanic, Latino or Spanish origin (eg. Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Columbian, etc.)	White (eg. German, Irish, English, Italian, Polish, French, etc.)	Some other race, ethnicity or origin
Once in awhile	66.7%	100.0%	33.3%	63.3%	50.0%
Never	33.3%	0.0%	33.3%	20.0%	25.0%
Regularly	0.0%	0.0%	33.3%	13.3%	0.0%
First visit	0.0%	0.0%	0.0%	1.7%	25.0%
Always	0.0%	0.0%	0.0%	1.7%	0.0%

Count

	Asian (eg. Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc	Black or African American (eg. African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.)	Hispanic, Latino or Spanish origin (eg. Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Columbian, etc.)	White (eg. German, Irish, English, Italian, Polish, French, etc.)	Some other race, ethnicity or origin
Once in awhile	4	4	1	38	2
Never	2	0	1	12	1
Regularly	0	0	1	8	0
First visit	0	0	0	1	1
Always	0	0	0	1	0





There is no statistically significant relationship between Q10: When visiting Scioto Mile and Greenways, how frequently do you patronize nearby businesses or restaurants? and Q13: What is your age? (Optional)

Chi-Squared Test

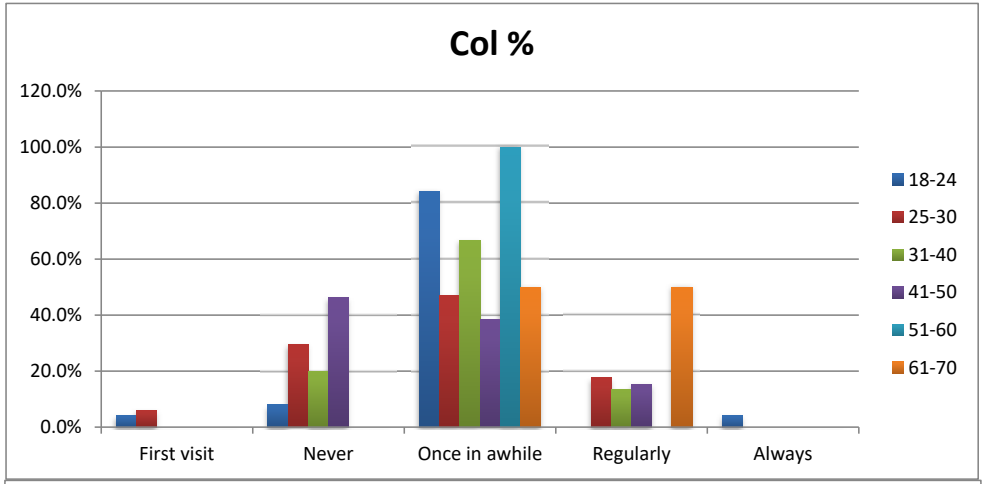
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.219159
Effect Size (Cramér's V)	Medium	0.284182
Sample Size		76

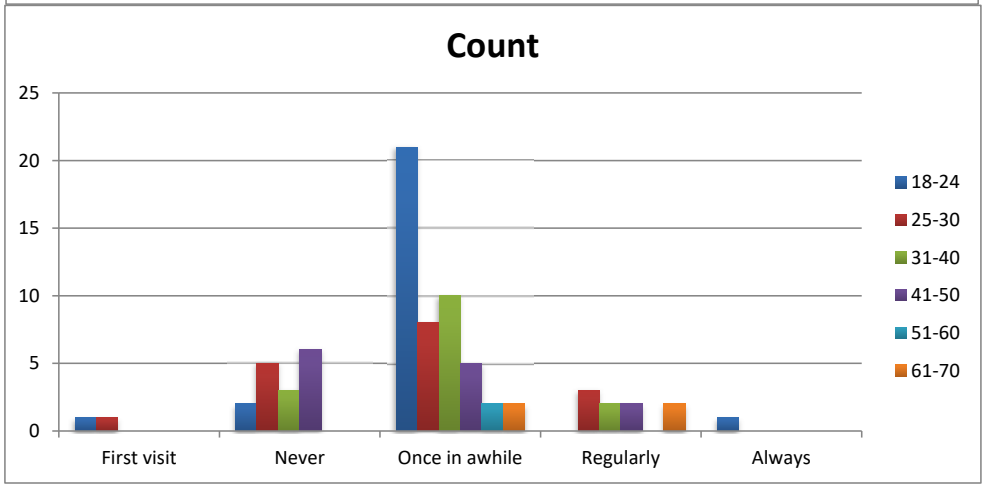
Col %

	18-24	25-30	31-40	41-50	51-60	61-70
First visit		4.0%	5.9%	0.0%	0.0%	0.0%	0.0%
Never		8.0%	29.4%	20.0% ^	46.2%	0.0%	0.0%
Once in awhile	^^	84.0%	47.1%	66.7% v	38.5%	100.0%	50.0%
Regularly	v	0.0%	17.6%	13.3%	15.4%	0.0%	50.0%
Always		4.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Count

	18-24	25-30	31-40	41-50	51-60	61-70
First visit	1	1	0	0	0	0
Never	2	5	3	6	0	0
Once in awhile	21	8	10	5	2	2
Regularly	0	3	2	2	0	2
Always	1	0	0	0	0	0





At least one group from (Categories) Q11: On average, approximately how much do you spend at nearby businesses or restaurants during a single trip? tends to have higher values for (Numbers) Visiting Scioto Mile and Greenways improves my quality of life/well being. than another group

ANOVA Tables

Ranked ANOVA

P-Value	0.104
Effect Size	0.48

Summary

Group	Average	Median	Sum	Sample Size	Confidence Interval of Average	Standard Deviation
$0	4.67	5.0	14	3	3.23 to 6.10	0.58
$100+	5.00	5.0	5	1	5.00 to 5.00	NaN
$15 - 49	4.64	5.0	116	25	4.44 to 4.84	0.49
$50 - 74	4.67	5.0	42	9	4.28 to 5.05	0.50
under $15	4.06	4.0	65	16	3.70 to 4.42	0.68

Ranked Pairwise Tests

Group 1	Group 2	Difference in Averages (1-2)	P-Value	Effect Size (Cohen's d)
$15 - 49	under $15	0.58	0.03	0.97
$15 - 49	$50 - 74	-0.03	0.90	0.06
$50 - 74	under $15	0.60	0.12	1.01

(Numbers) Visiting Scioto Mile and Greenways improves my quality of life/well being.

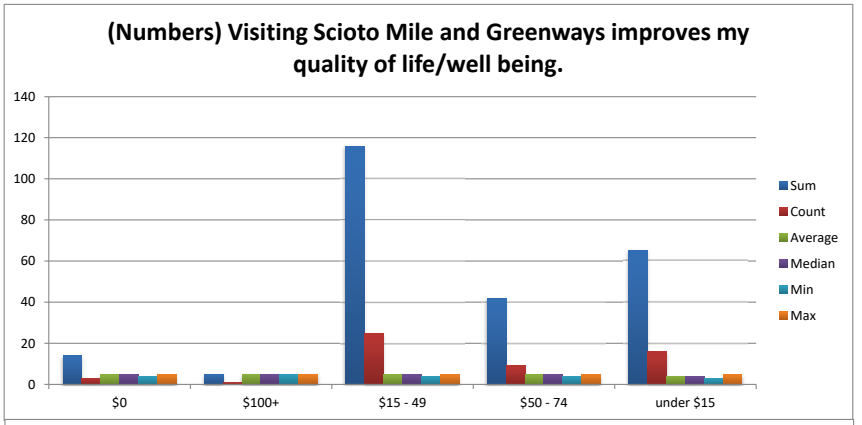
	Sum	Count	Average	Median	Min	Max
$0	14	3	4.67	5.0	4.0	5.0
$100+	5	1	5.00	5.0	5.0	5.0
$15 - 49	116	25	4.64	5.0	4.0	5.0
$50 - 74	42	9	4.67	5.0	4.0	5.0
under $15	65	16	4.06	4.0	3.0	5.0

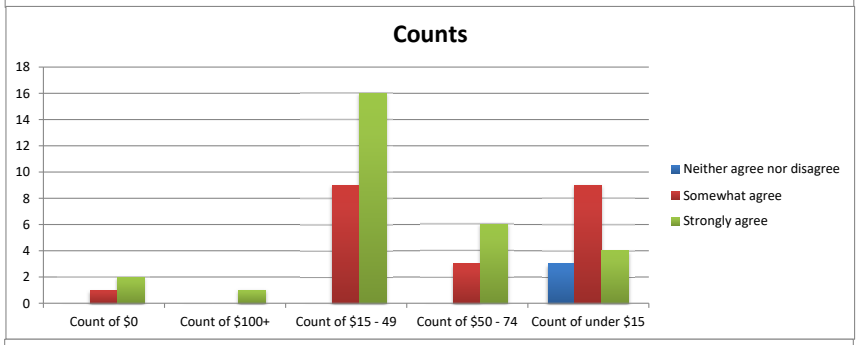
Counts

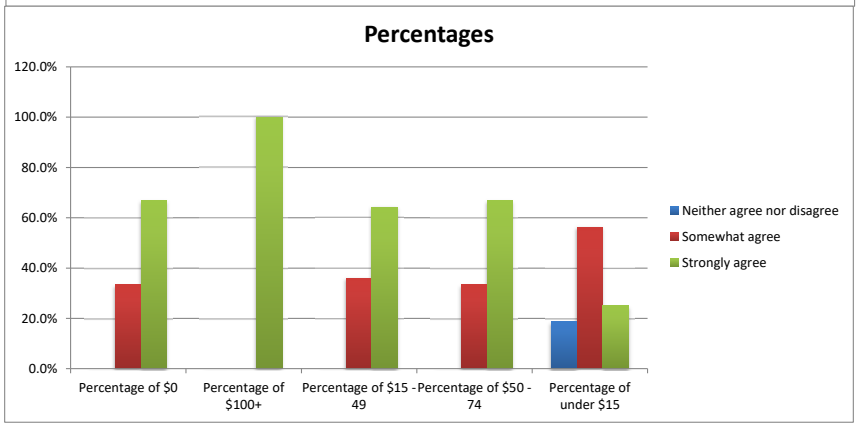
	Count of $0	Count of $100+	Count of $15 - 49	Count of $50 - 74	Count of under $15
Neither ag	0	0	0	0	3
Somewhat	1	0	9	3	9
Strongly ag	2	1	16	6	4

Percentages

	Percentage of $0	Percentage of $100+	Percentage of $15 - 49	Percentage of $50 - 74	Percentage of under $15
Neither ag	0.0%	0.0%	0.0%	0.0%	18.8%
Somewhat	33.3%	0.0%	36.0%	33.3%	56.3%
Strongly ag	66.7%	100.0%	64.0%	66.7%	25.0%







There is no statistically significant relationship between (Categories) Visiting Scioto Mile and Greenways improves my quality of life/well being. and (Categories) Q11: On average, approximately how much do you spend at nearby businesses or restaurants during a single trip?

Chi-Squared Test

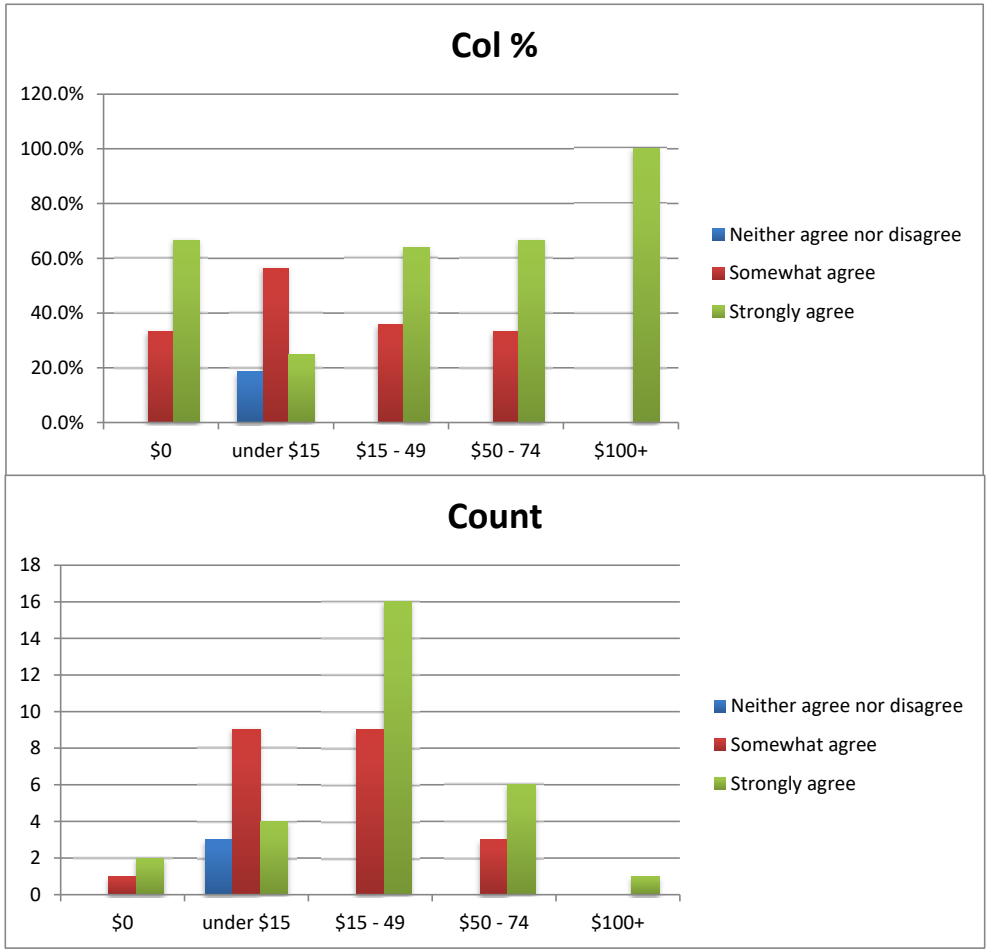
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.130276
Effect Size (Cramér's V)	Medium	0.340198
Sample Size		54

Col %

	$0	under $15	$15 - 49	$50 - 74	$100+
Neither agree nor disagree	0.0%	18.8%	0.0%	0.0%	0.0%
Somewhat agree	33.3%	56.3%	36.0%	33.3%	0.0%
Strongly agree	66.7%	25.0%	64.0%	66.7%	100.0%

Count

	$0	under $15	$15 - 49	$50 - 74	$100+
Neither agree nor disagree	0	3	0	0	0
Somewhat agree	1	9	9	3	0
Strongly agree	2	4	16	6	1



There is no statistically significant relationship between (Categories) Q11: On average, approximately how much do you spend at nearby businesses or restaurants during a single trip? and (Numbers) Scioto Mile and Greenways has increased my physical activity.

ANOVA Tables

ANOVA

P-Value	0.185
Effect Size	0.437

Summary

Group	Average	Median	Sum	Sample Size	Confidence Interval of Average	Standard Deviation
$0	4.33	5.0	13	3	1.46 to 7.20	1.15
$100+	5.00	5.0	5	1	5.00 to 5.00	NaN
$15 - 49	3.92	4.0	102	26	3.60 to 4.24	0.80
$50 - 74	4.22	4.0	38	9	3.71 to 4.73	0.67
under $15	3.40	3.0	51	15	2.90 to 3.90	0.91

Ranked Pairwise Tests

Group 1	Group 2	Difference in Averages (1-2)	P-Value	Effect Size (Cohen's d)
$15 - 49	under $15	0.52	0.31	0.59
$15 - 49	$50 - 74	-0.30	0.66	0.41
$50 - 74	under $15	0.82	0.09	1.05

(Numbers) Scioto Mile and Greenways has increased my physical activity.

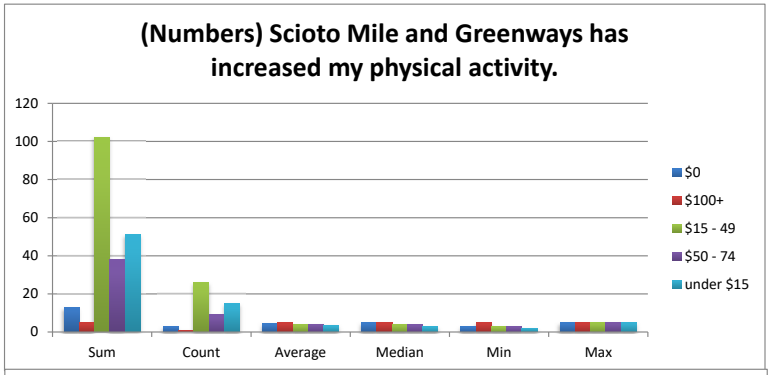
	Sum	Count	Average	Median	Min	Max
$0	13	3	4.33	5.0	3.0	5.0
$100+	5	1	5.00	5.0	5.0	5.0
$15 - 49	102	26	3.92	4.0	3.0	5.0
$50 - 74	38	9	4.22	4.0	3.0	5.0
under $15	51	15	3.40	3.0	2.0	5.0

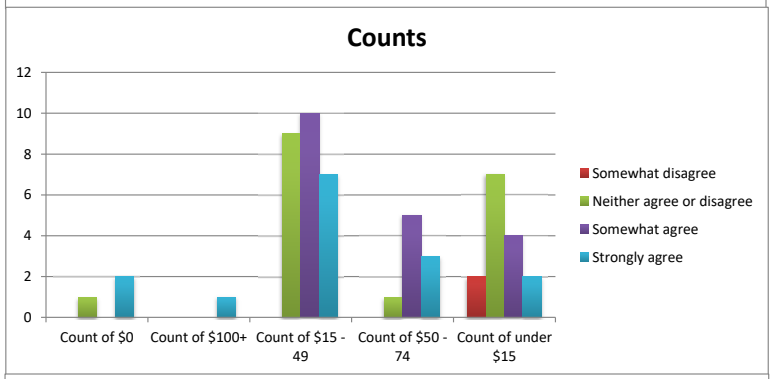
Counts

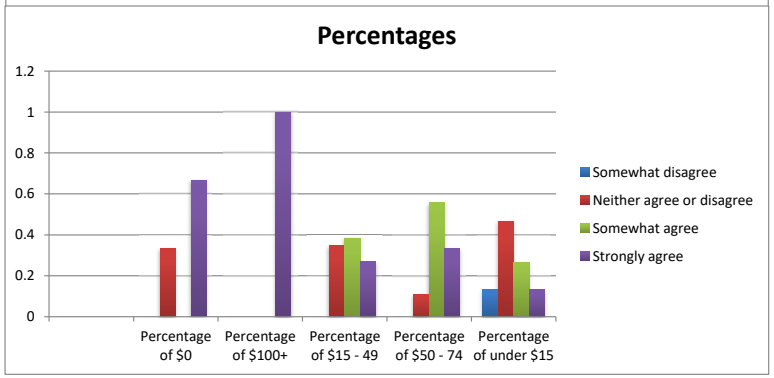
	Count of $0	Count of $100+	Count of $15 - 49	Count of $50 - 74	Count of under $15
Somewhat	0	0	0	0	2
Neither ag	1	0	9	1	7
Somewhat	0	0	10	5	4
Strongly ag	2	1	7	3	2

Percentages

	Percentage of $0	Percentage of $100+	Percentage of $15 - 49	Percentage of $50 - 74	Percentage of under $15
Somewhat	0.0%	0.0%	0.0%	0.0%	13.3%
Neither ag	33.3%	0.0%	34.6%	11.1%	46.7%
Somewhat	0.0%	0.0%	38.5%	55.6%	26.7%
Strongly ag	66.7%	100.0%	26.9%	33.3%	13.3%







There is no statistically significant relationship between (Categories) Scioto Mile and Greenways has increased my physical activity. and (Categories) Q11: On average, approximately how much do you spend at nearby businesses or restaurants during a single trip?

Chi-Squared Test

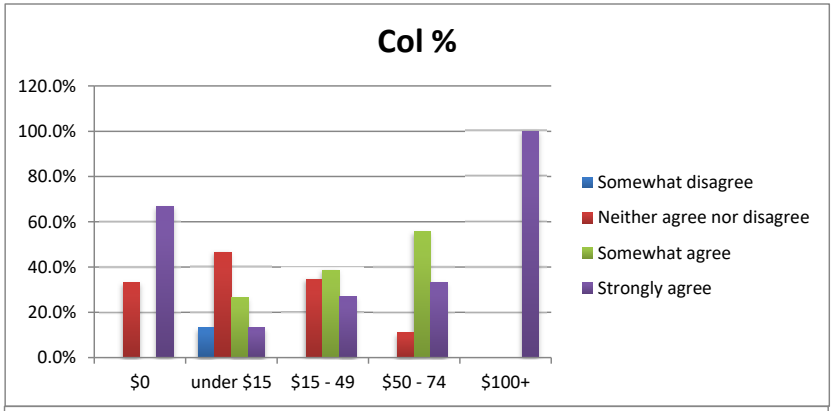
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.226397025
Effect Size (Cramér's V)	Large	0.307133224
Sample Size		54

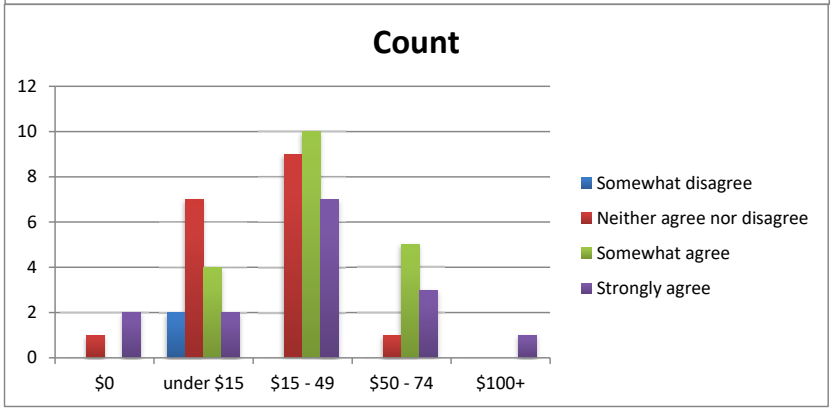
Col %

	$0	under $15	$15 - 49	$50 - 74	$100+
Somewhat disagree	0.0%	13.3%	0.0%	0.0%	0.0%
Neither agree nor disagree	33.3%	46.7%	34.6%	11.1%	0.0%
Somewhat agree	0.0%	26.7%	38.5%	55.6%	0.0%
Strongly agree	66.7%	13.3%	26.9%	33.3%	100.0%

Count

	$0	under $15	$15 - 49	$50 - 74	$100+
Somewhat disagree	0	2	0	0	0
Neither agree nor disagree	1	7	9	1	0
Somewhat agree	0	4	10	5	0
Strongly agree	2	2	7	3	1





There is no statistically significant relationship between (Categories) Q11: On average, approximately how much do you spend at nearby businesses or restaurants during a single trip? and (Numbers) Visiting Scioto Mile and Greenways improves my mood.

ANOVA Tables

Ranked ANOVA

P-Value	0.316
Effect Size (Cohen's f)	0.335

Summary

Group	Average	Median	Sum	Sample Size	Confidence Interval of Average	Standard Deviation
$0	4.67	5.0	14	3	3.23 to 6.10	0.58
$100+	5.00	5.0	5	1	5.00 to 5.00	NaN
$15 - 49	4.79	5.0	115	24	4.62 to 4.97	0.41
$50 - 74	4.56	5.0	41	9	4.15 to 4.96	0.53
under $15	4.47	4.0	67	15	4.18 to 4.75	0.52

Ranked Pairwise Tests

Group 1	Group 2	Difference in Averages (1-2)	P-Value	Effect Size (Cohen's d)
$15 - 49	under $15	0.33	0.20	0.73
$15 - 49	$50 - 74	0.24	0.62	0.55
$50 - 74	under $15	0.09	0.90	0.18

(Numbers) Visiting Scioto Mile and Greenways improves my

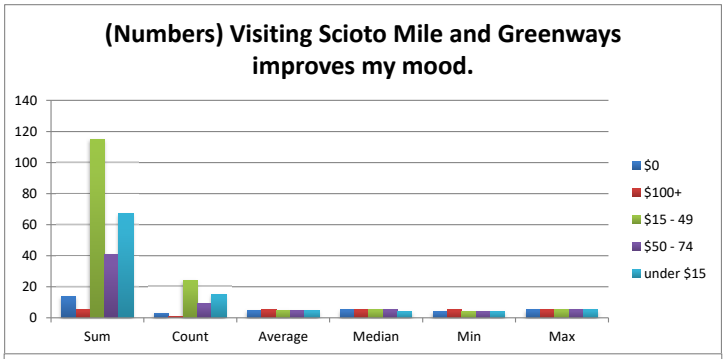
	Sum	Count	Average	Median	Min	Max
$0	14	3	4.67	5.0	4.0	5.0
$100+	5	1	5.00	5.0	5.0	5.0
$15 - 49	115	24	4.79	5.0	4.0	5.0
$50 - 74	41	9	4.56	5.0	4.0	5.0
under $15	67	15	4.47	4.0	4.0	5.0

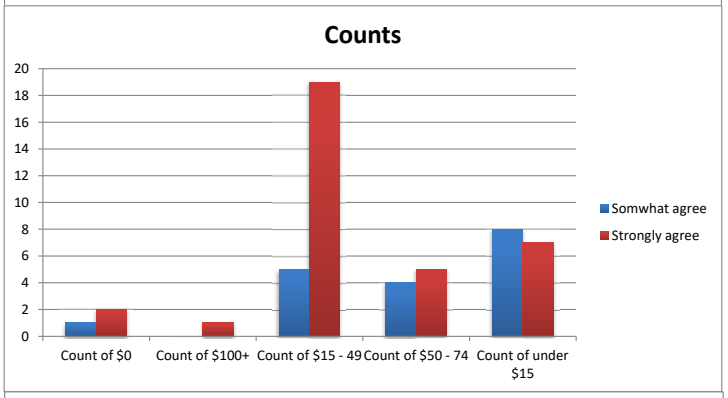
Counts

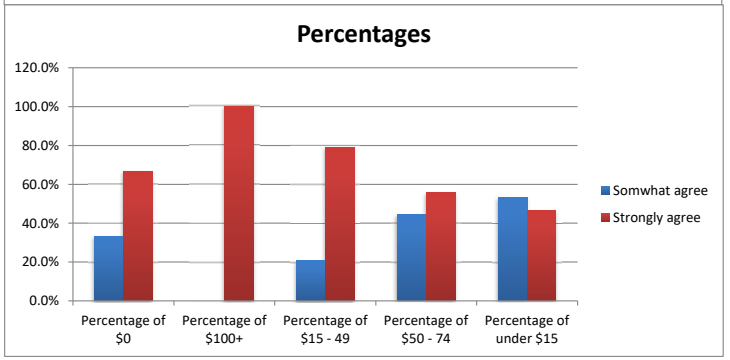
	Count of $0	Count of $100+	Count of $15 - 49	Count of $50 - 74	Count of under $15
Somwhat agree	1	0	5	4	8
Strongly agree	2	1	19	5	7

Percentages

	Percentage of $0	Percentage of $100+	Percentage of $15 - 49	Percentage of $50 - 74	Percentage of under $15
Somwhat agree	33.3%	0.0%	20.8%	44.4%	53.3%
Strongly agree	66.7%	100.0%	79.2%	55.6%	46.7%







There is no statistically significant relationship between (Categories) Visiting Scioto Mile and Greenways improves my mood. and (Categories) Q11: On average, approximately how much do you spend at nearby businesses or restaurants during a single trip?

Chi-Squared Test

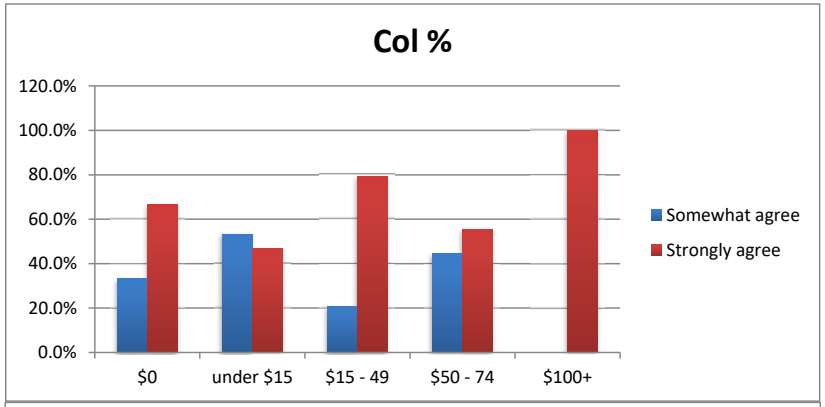
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.2624112
Effect Size (Cramér's V)	Medium	0.317802687
Sample Size		52

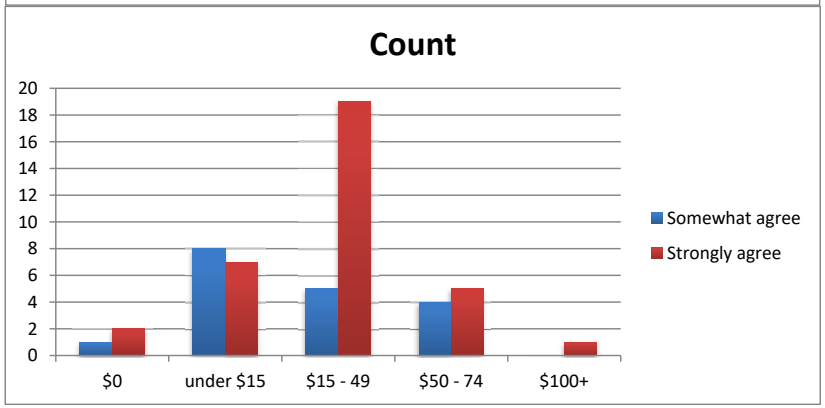
Col %

	$0	under $15	$15 - 49	$50 - 74	$100+
Somewhat agree	33.3%	53.3%	20.8%	44.4%	0.0%
Strongly agree	66.7%	46.7%	79.2%	55.6%	100.0%

Count

	$0	under $15	$15 - 49	$50 - 74	$100+
Somewhat agree	1	8	5	4	0
Strongly agree	2	7	19	5	1





There is no statistically significant relationship between (Categories) Q11: On average, approximately how much do you spend at nearby businesses or restaurants during a single trip? and (Numbers) Scioto Mile and Greenways improves the beauty or attractiveness of Downtown Columbus.

ANOVA Tables

Ranked ANOVA

P-Value	0.199
Effect Size (Cohen's f)	0.31

Summary

Group	Average	Median	Sum	Sample Size	Confidence Interval of Average	Standard Deviation
$0	5.00	5.0	20	4	5.00 to 5.00	0.00
$100+	5.00	5.0	5	1	5.00 to 5.00	NaN
$15 - 49	4.92	5.0	123	25	4.81 to 5.03	0.28
$50 - 74	5.00	5.0	45	9	5.00 to 5.00	0.00
under $15	4.71	5.0	80	17	4.40 to 5.01	0.59

Ranked Pairwise Tests

Group 1	Group 2	Difference in Averages (1-2)	P-Value	Effect Size (Cohen's d)
$15 - 49	under $15	0.21	0.20	0.47

(Numbers) Scioto Mile and Greenways improves the beauty or attractiveness of Downtown Columbus.

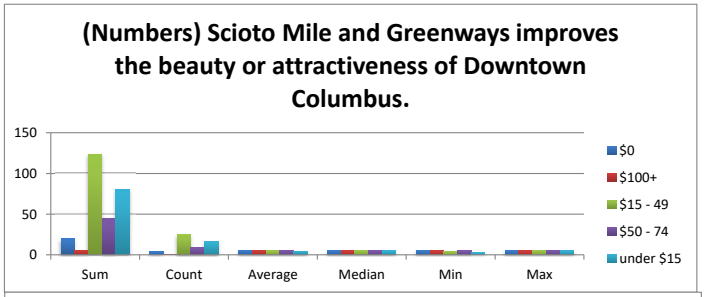
	Sum	Count	Average	Median	Min	Max
$0	20	4	5.00	5.0	5.0	5.0
$100+	5	1	5.00	5.0	5.0	5.0
$15 - 49	123	25	4.92	5.0	4.0	5.0
$50 - 74	45	9	5.00	5.0	5.0	5.0
under $15	80	17	4.71	5.0	3.0	5.0

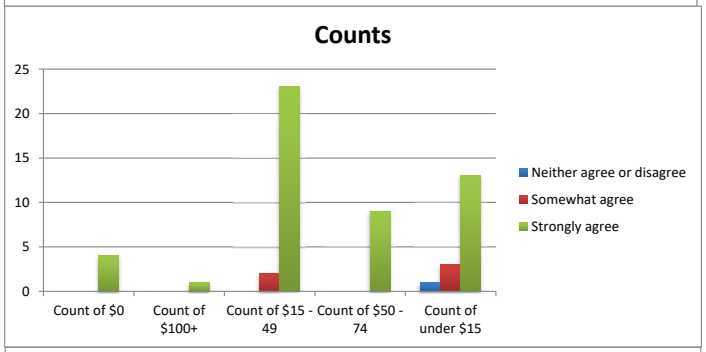
Counts

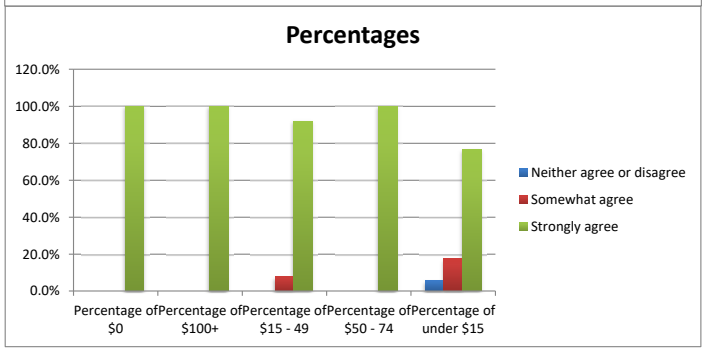
	Count of $0	Count of $100+	Count of $15 - 49	Count of $50 - 74	Count of under $15
Neither agree or disag	0	0	0	0	1
Somewhat agree	0	0	2	0	3
Strongly agree	4	1	23	9	13

Percentages

	Percentage of $0	Percentage of $100+	Percentage of $15 - 49	Percentage of $50 - 74	Percentage of under $15
Neither agree or disag	0.0%	0.0%	0.0%	0.0%	5.9%
Somewhat agree	0.0%	0.0%	8.0%	0.0%	17.6%
Strongly agree	100.0%	100.0%	92.0%	100.0%	76.5%







There is no statistically significant relationship between (Categories) Scioto Mile and Greenways improves the beauty or attractiveness of Downtown Columbus. and (Categories) Q11: On average, approximately how much do you spend at nearby businesses or restaurants during a single trip?

Chi-Squared Test

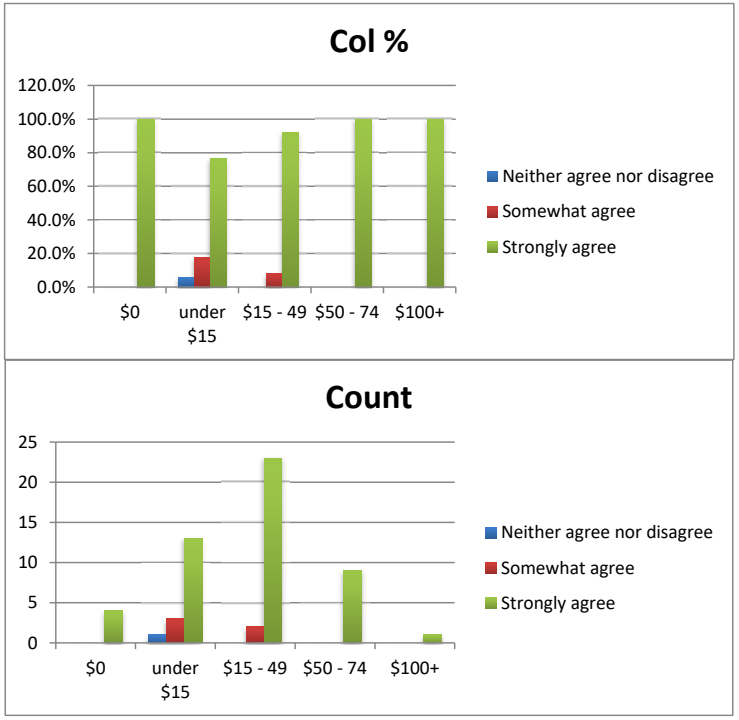
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.699841929
Effect Size (Cramér's V)	Medium	0.222181696
Sample Size		56

Col %

	$0	under $15	$15 - 49	$50 - 74	$100+
Neither agree nor disagree	0.0%	5.9%	0.0%	0.0%	0.0%
Somewhat agree	0.0%	17.6%	8.0%	0.0%	0.0%
Strongly agree	100.0% V	76.5%	92.0%	100.0%	100.0%

Count

	$0	under $15	$15 - 49	$50 - 74	$100+
Neither agree nor disagree	0	1	0	0	0
Somewhat agree	0	3	2	0	0
Strongly agree	4	13	23	9	1



There is no statistically significant relationship between (Categories) Q11: On average, approximately how much do you spend at nearby businesses or restaurants during a single trip? and (Numbers) I feel safe and secure while visiting Scioto Mile and Greenways.

ANOVA Tables

ANOVA

P-Value	0.929
Effect Size (Cohen's f)	0.126

Summary

Group	Average	Median	Sum	Sample Size	Confidence Interval of Average	Standard Deviation
$0	4.50	4.5	18	4	3.58 to 5.42	0.58
$100+	5.00	5.0	5	1	5.00 to 5.00	NaN
$15 - 49	4.36	5.0	122	28	3.99 to 4.73	0.95
$50 - 74	4.33	4.0	39	9	3.79 to 4.88	0.71
under $15	4.26	4.0	81	19	3.87 to 4.65	0.81

Pairwise Tests

Group 1	Group 2	Difference in Averages (1-2)	Confidence Interval of Difference	P-Value	Effect Size (Cohen's d)
$15 - 49	under $15	0.09	-0.60 to 0.78	0.90	0.11
$15 - 49	$50 - 74	0.02	-0.81 to 0.86	0.90	0.03
$50 - 74	under $15	0.07	-0.78 to 0.92	0.90	0.09
$0	$15 - 49	0.14	-1.06 to 1.34	0.90	0.16
$0	under $15	0.24	-0.96 to 1.44	0.89	0.32
$0	$50 - 74	0.17	-1.06 to 1.39	0.90	0.27

(Numbers) I feel safe and secure while visiting Scioto Mile and Greenways.

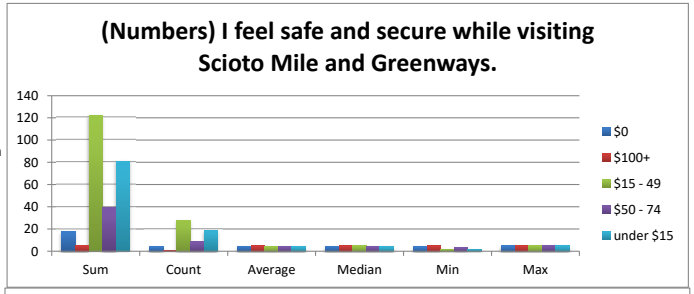
	Sum	Count	Average	Median	Min	Max
$0	18	4	4.50	4.5	4.0	5.0
$100+	5	1	5.00	5.0	5.0	5.0
$15 - 49	122	28	4.36	5.0	2.0	5.0
$50 - 74	39	9	4.33	4.0	3.0	5.0
under $15	81	19	4.26	4.0	2.0	5.0

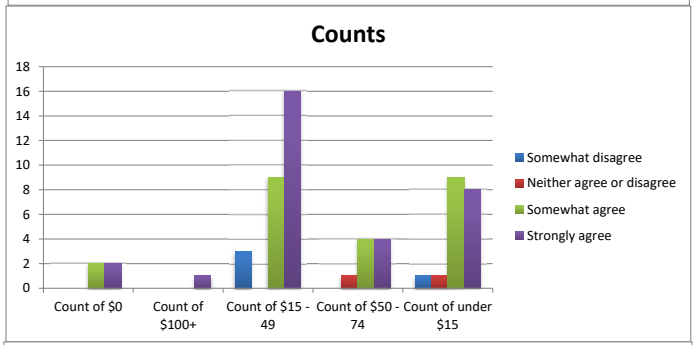
Counts

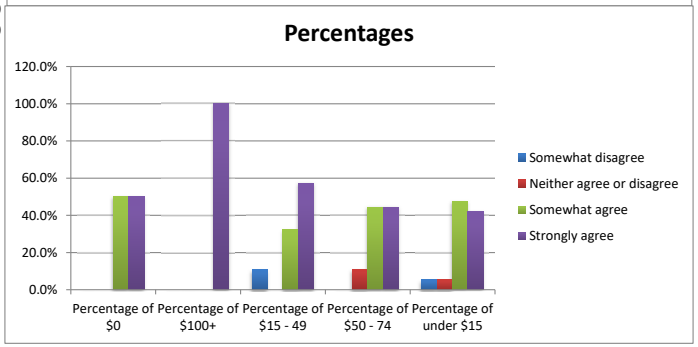
	Count of $0	Count of $100+	Count of $15 - 49	Count of $50 - 74	Count of under $15
Somewhat disagree	0	0	3	0	1
Neither agree or disagree	0	0	0	1	1
Somewhat agree	2	0	9	4	9
Strongly agree	2	1	16	4	8

Percentages

	Percentage of $0	Percentage of $100+	Percentage of $15 - 49	Percentage of $50 - 74	Percentage of under $15
Somewhat disagree	0.0%	0.0%	10.7%	0.0%	5.3%
Neither agree or disagree	0.0%	0.0%	0.0%	11.1%	5.3%
Somewhat agree	50.0%	0.0%	32.1%	44.4%	47.4%
Strongly agree	50.0%	100.0%	57.1%	44.4%	42.1%







There is no statistically significant relationship between (Categories) I feel safe and secure while visiting Scioto Mile and Greenways. and (Categories) Q11: On average, approximately how much do you spend at nearby businesses or restaurants during a single trip?

Chi-Squared Test

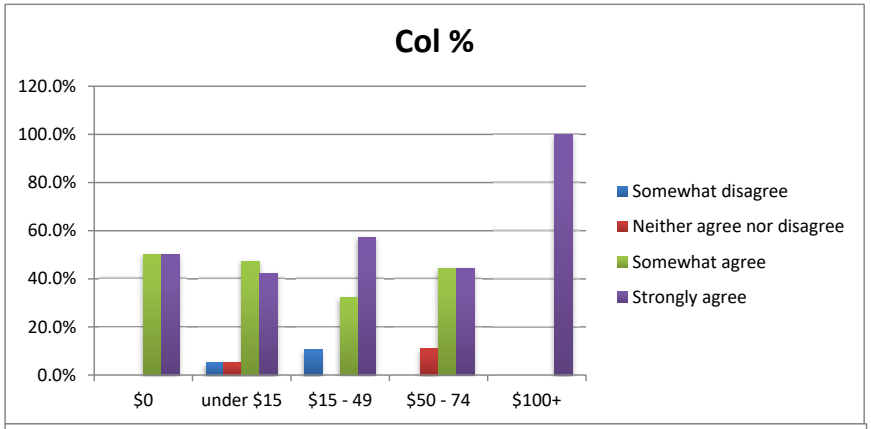
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.8576388
Effect Size (Cramér's V)	Medium	0.195574227
Sample Size		61

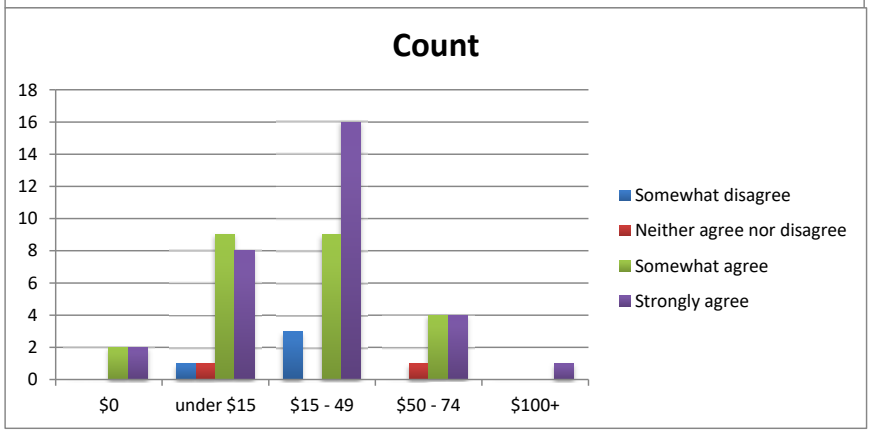
Col %

	$0	under $15	$15 - 49	$50 - 74	$100+
Somewhat disagree	0.0%	5.3%	10.7%	0.0%	0.0%
Neither agree nor disagree	0.0%	5.3%	0.0%	11.1%	0.0%
Somewhat agree	50.0%	47.4%	32.1%	44.4%	0.0%
Strongly agree	50.0%	42.1%	57.1%	44.4%	100.0%

Count

	$0	under $15	$15 - 49	$50 - 74	$100+
Somewhat disagree	0	1	3	0	0
Neither agree nor disagree	0	1	0	1	0
Somewhat agree	2	9	9	4	0
Strongly agree	2	8	16	4	1





There is a statistically significant relationship between Q5: How do you typically travel to the park? and Q7: How long does it typically take you to reach the park by this same method?

Chi-Squared Test

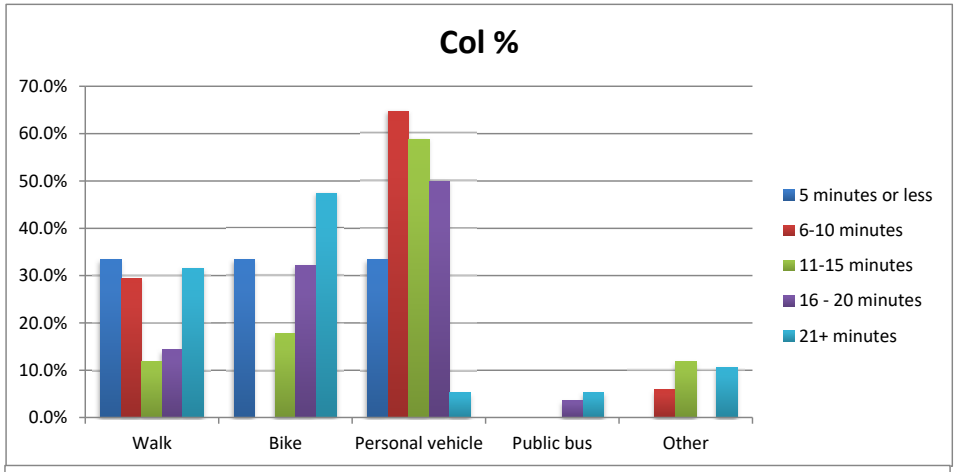
	Basic	Advanced
Statistical Significance (P-Value)	Significant	0.043654831
Effect Size (Cramér's V)	Medium	0.277556343
Sample Size		87

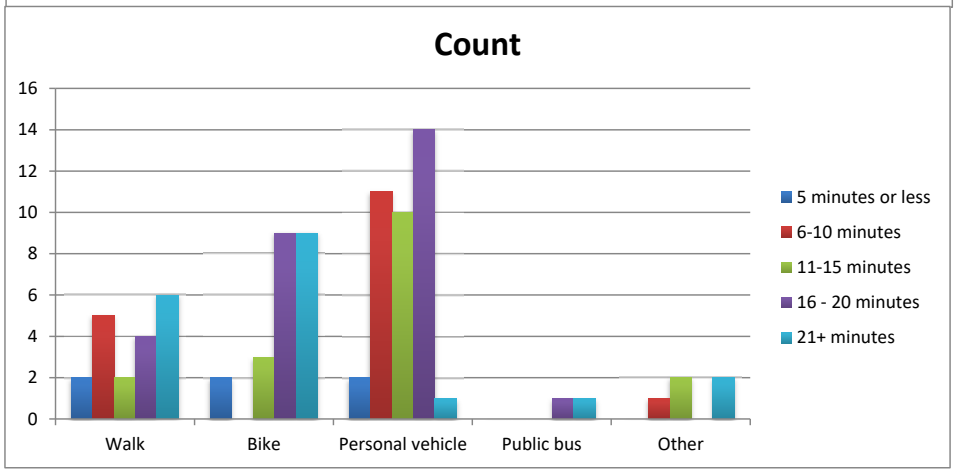
Col %

	5 minutes or less	6-10 minutes	11-15 minutes	16 - 20 minutes	21+ minutes
Walk	33.3%	29.4%	11.8%	14.3%	31.6%
Bike	33.3% VV	0.0%	17.6%	32.1% Λ	47.4%
Personal vehicle	33.3%	64.7%	58.8%	50.0% VVV	5.3%
Public bus	0.0%	0.0%	0.0%	3.6%	5.3%
Other	0.0%	5.9%	11.8%	0.0%	10.5%

Count

	5 minutes or less	6-10 minutes	11-15 minutes	16 - 20 minutes	21+ minutes
Walk	2	5	2	4	6
Bike	2	0	3	9	9
Personal vehicle	2	11	10	14	1
Public bus	0	0	0	1	1
Other	0	1	2	0	2





There is no statistically significant relationship between Q5: How do you typically travel to the park? and Q13: What is your age? (Optional)

Chi-Squared Test

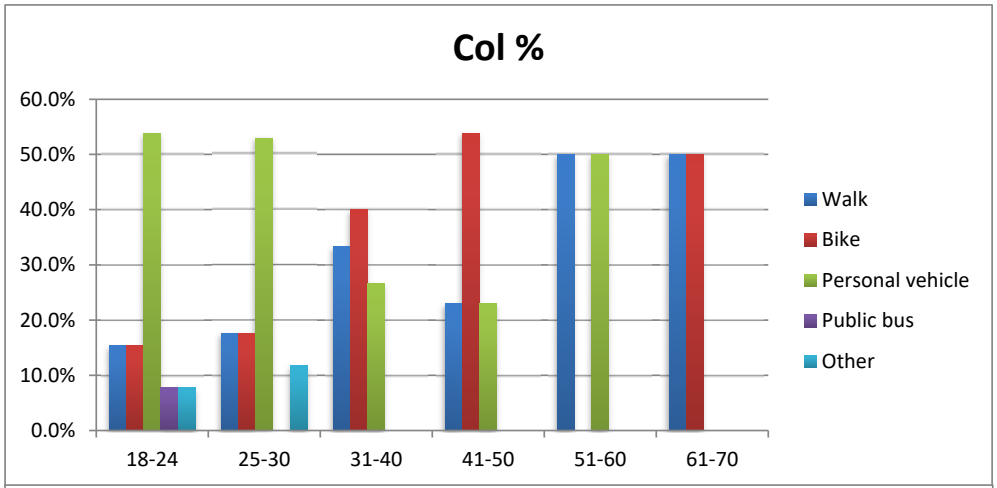
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.284463961
Effect Size (Cramér's V)	Medium	0.273793828
Sample Size		77

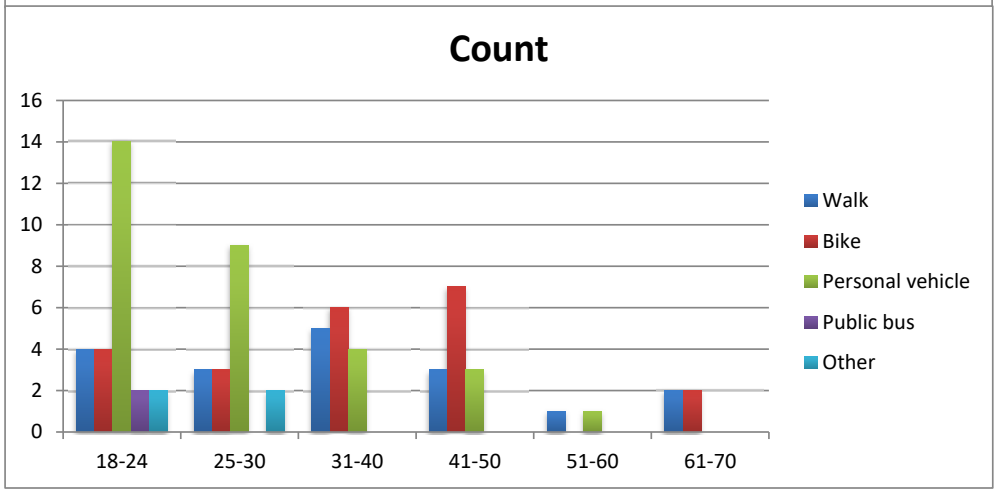
Col %

	18-24	25-30	31-40	41-50	51-60	61-70
Walk	15.4%	17.6%	33.3%	23.1%	50.0%	50.0%
Bike	15.4%	17.6%	40.0%	^53.8%	0.0%	50.0%
Personal vehicle	53.8%	52.9%	26.7%	23.1%	50.0%	0.0%
Public bus	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Other	7.7%	11.8%	0.0%	0.0%	0.0%	0.0%

Count

	18-24	25-30	31-40	41-50	51-60	61-70
Walk	4	3	5	3	1	2
Bike	4	3	6	7	0	2
Personal vehicle	14	9	4	3	1	0
Public bus	2	0	0	0	0	0
Other	2	2	0	0	0	0





There is a strong statistically significant relationship between Q14: Which category best describes you? (Optional) and Q4: How much time on average do you spend at the park in a single visit?

Chi-Squared Test

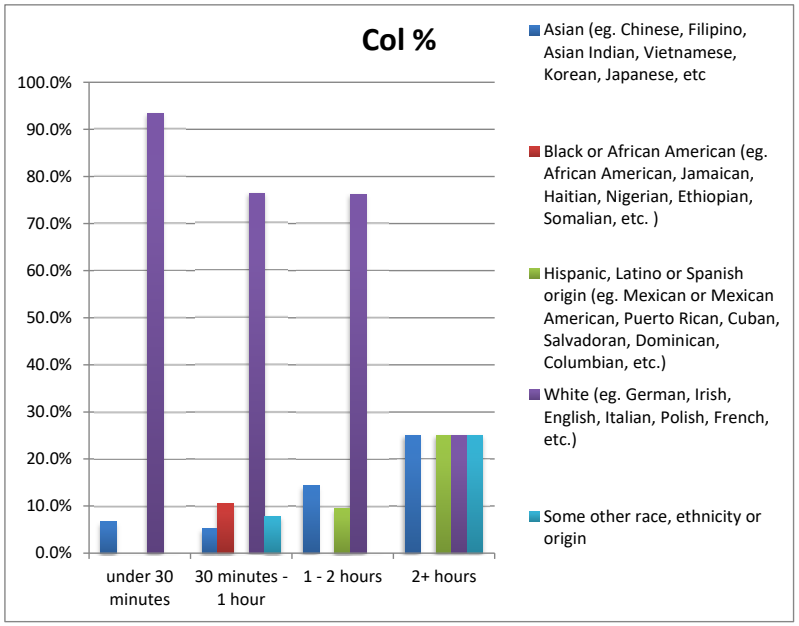
	Basic	Advanced
Statistical Significance (P-Value)	Clearly significant	0.031666987
Effect Size (Cramér's V)	Large	0.310525338
Sample Size		78

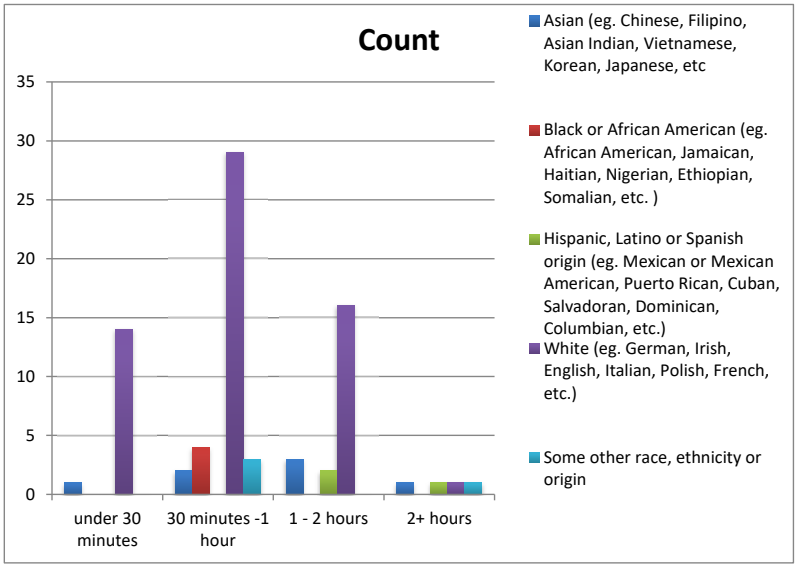
Col %

	under 30 minutes	30 minutes -1 hour	1 - 2 hours	2+ hours
Asian (eg. Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc	6.7%	5.3%	14.3%	25.0%
Black or African American (eg. African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.)	0.0%	10.5%	0.0%	0.0%
Hispanic, Latino or Spanish origin (eg. Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Columbian, etc.)	0.0%	0.0%	9.5%	25.0%
White (eg. German, Irish, English, Italian, Polish, French, etc.)	93.3%	76.3%	76.2%	25.0%
Some other race, ethnicity or origin	0.0%	7.9%	0.0%	25.0%

Count

	under 30 minutes	30 minutes -1 hour	1 - 2 hours	2+ hours
Asian (eg. Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc	1	2	3	1
Black or African American (eg. African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.)	0	4	0	0
Hispanic, Latino or Spanish origin (eg. Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Columbian, etc.)	0	0	2	1
White (eg. German, Irish, English, Italian, Polish, French, etc.)	14	29	16	1
Some other race, ethnicity or origin	0	3	0	1





There is no statistically significant relationship between Q13: What is your age? (Optional) and Q4: How much time on average do you spend at the park in a single visit?

Chi-Squared Test

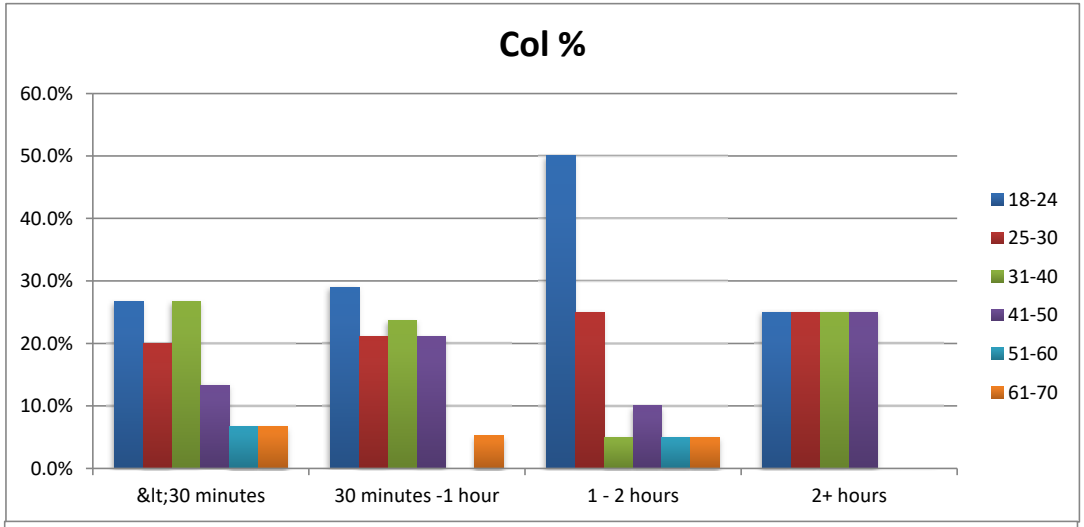
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.865762545
Effect Size (Cramér's V)	Medium	0.199778208
Sample Size		77

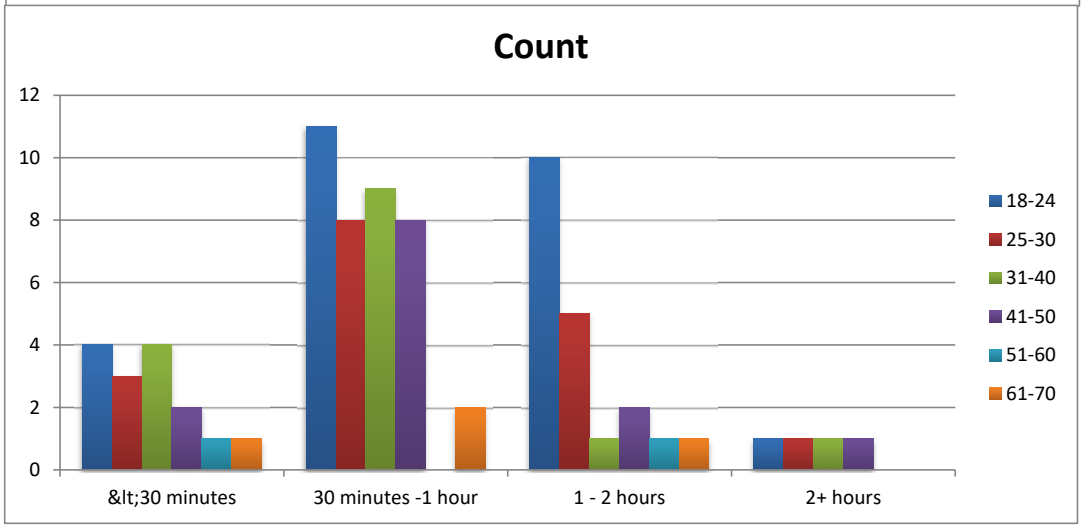
Col %

	<30 minutes	30 minutes -1 hour	1 - 2 hours	2+ hours
18-24	26.7%	28.9%	50.0%	25.0%
25-30	20.0%	21.1%	25.0%	25.0%
31-40	26.7%	23.7%	5.0%	25.0%
41-50	13.3%	21.1%	10.0%	25.0%
51-60	6.7%	0.0%	5.0%	0.0%
61-70	6.7%	5.3%	5.0%	0.0%

Count

	<30 minutes	30 minutes -1 hour	1 - 2 hours	2+ hours
18-24	4	11	10	1
25-30	3	8	5	1
31-40	4	9	1	1
41-50	2	8	2	1
51-60	1	0	1	0
61-70	1	2	1	0





There is a strong statistically significant relationship between Q4: How much time on average do you spend at the park in a single visit? and Q5: How do you typically travel to the park?

Chi-Squared Test

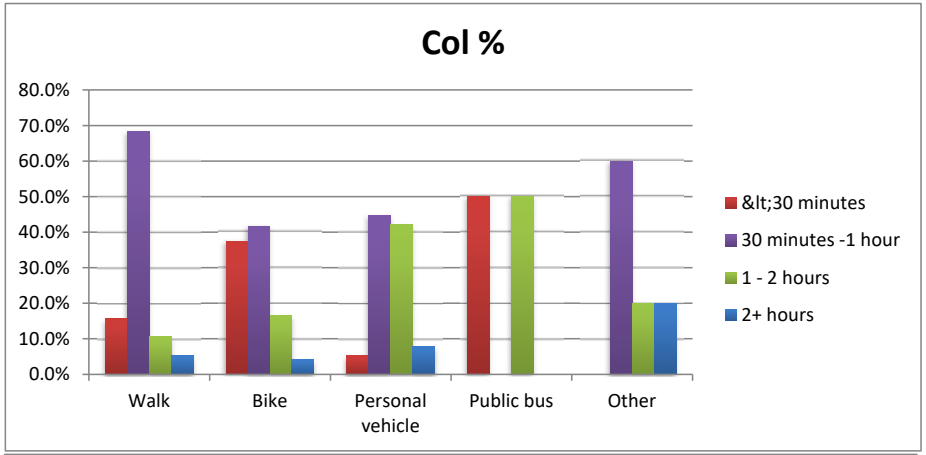
	Basic	Advanced
Statistical Significance (P-Value)	Clearly significant	0.033445148
Effect Size (Cramér's V)	Large	0.291176902
Sample Size		88

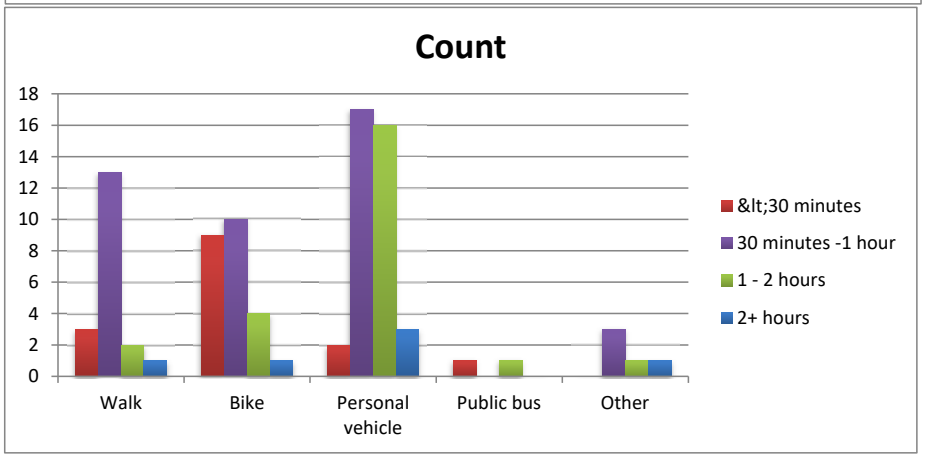
Col %

	Walk	Bike	Personal vehicle	Public bus	Other
2+ hours	5.3%	4.2%	7.9%	0.0%	20.0%
<30 minutes	15.8% ^^	37.5% v	5.3%	50.0%	0.0%
1 - 2 hours	10.5%	16.7% ^^	42.1%	50.0%	20.0%
30 minutes -1 hour	68.4%	41.7%	44.7%	0.0%	60.0%

Count

	Walk	Bike	Personal vehicle	Public bus	Other
2+ hours	1	1	3	0	1
<30 minutes	3	9	2	1	0
1 - 2 hours	2	4	16	1	1
30 minutes -1 hour	13	10	17	0	3





There is no statistically significant relationship between Q4: How much time on average do you spend at the park in a single visit? and Q10: When visiting Scioto Mile and Greenways, how frequently do you patronize nearby businesses or restaurants?

Chi-Squared Test

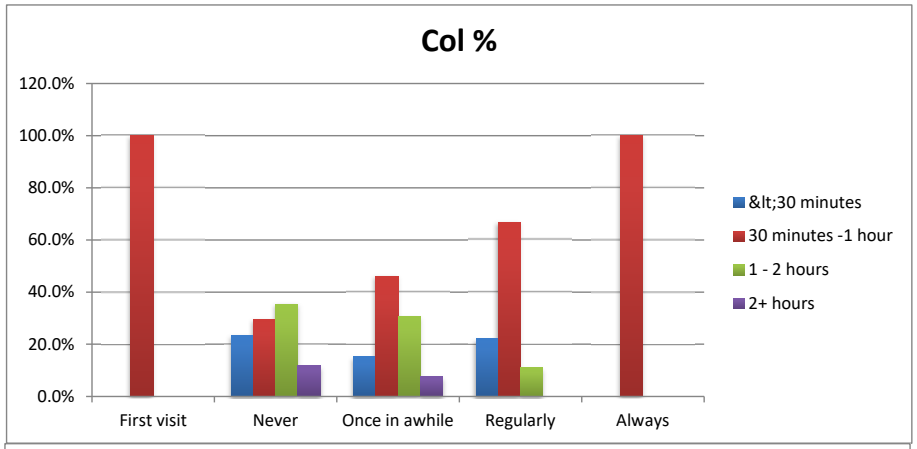
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.759491095
Effect Size (Cramér's V)	Medium	0.185058813
Sample Size		81

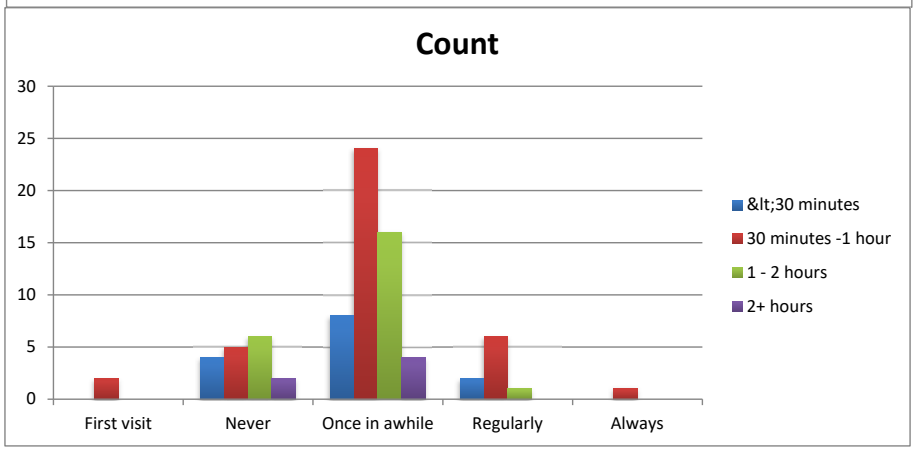
Col %

	First visit	Never	Once in awhile	Regularly	Always
<30 minutes	0.0%	23.5%	15.4%	22.2%	0.0%
30 minutes -1 hour	100.0%	29.4%	46.2%	66.7%	100.0%
1 - 2 hours	0.0%	35.3%	30.8%	11.1%	0.0%
2+ hours	0.0%	11.8%	7.7%	0.0%	0.0%

Count

	First visit	Never	Once in awhile	Regularly	Always
<30 minutes	0	4	8	2	0
30 minutes -1 hour	2	5	24	6	1
1 - 2 hours	0	6	16	1	0
2+ hours	0	2	4	0	0





There is no statistically significant relationship between (Categories) Q4: How much time on average do you spend at the park in a single visit? and (Numbers) Scioto Mile and Greenways improves the beauty or attractiveness of Downtown Columbus.

ANOVA Tables

Ranked ANOVA

P-Value	0.333
Effect Size (Cohen's f)	0.297

Summary

Group	Average	Median	Sum	Sample Size	Confidence Interval of Average	Standard Deviation
<30 minutes	4.62	5.0	60	13	4.22 to 5.01	0.65
30 minutes -1 hour	4.91	5.0	167	34	4.81 to 5.01	0.29
1 - 2 hours	4.79	5.0	91	19	4.53 to 5.05	0.54
2+ hours	4.20	5.0	21	5	2.58 to 5.82	1.30

Ranked Pairwise Tests

Group 1	Group 2	Difference in Averages (1-2)	P-Value	Effect Size (Cohen's d)
1 - 2 hours	30 minutes -1 hour	-0.12	0.86	0.24
1 - 2 hours	2+ hours	0.59	0.76	0.65
<30 minutes	30 minutes -1 hour	-0.30	0.42	0.66
<30 minutes	1 - 2 hours	-0.17	0.77	0.36
<30 minutes	2+ hours	0.42	0.90	0.24
2+ hours	30 minutes -1 hour	-0.71	0.62	1.07

(Categories) Q4: How much time on average do you spend at the park in a single visit?

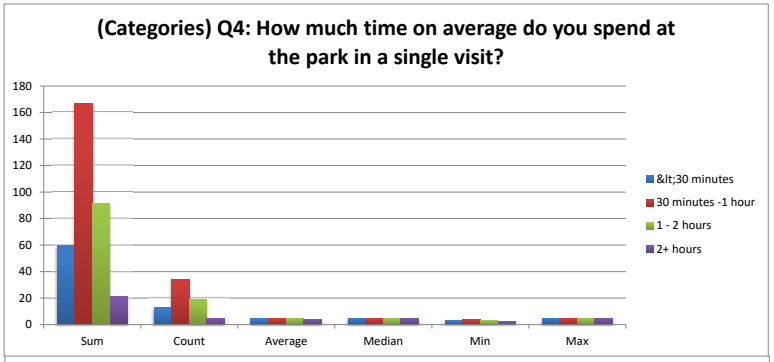
	Sum	Count	Average	Median	Min	Max
<30 minutes	60	13	4.62	5.0	3.0	5.0
30 minutes -1 hour	167	34	4.91	5.0	4.0	5.0
1 - 2 hours	91	19	4.79	5.0	3.0	5.0
2+ hours	21	5	4.20	5.0	2.0	5.0

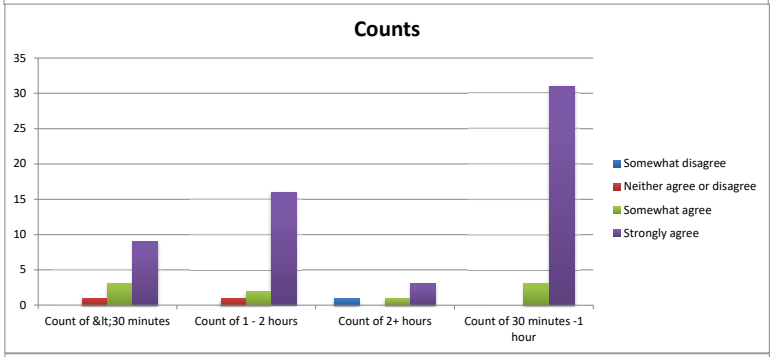
Counts

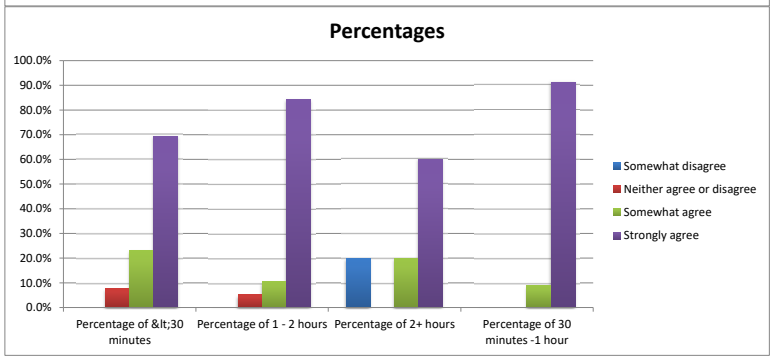
	Count of <30 minutes	Count of 1 - 2 hours	Count of 2+ hours	Count of 30 minutes -1 hour
Somewhat disagree	0	0	1	0
Neither agree or disagree	1	1	0	0
Somewhat agree	3	2	1	3
Strongly agree	9	16	3	31

Percentages

	Percentage of <30 minutes	Percentage of 1 - 2 hours	Percentage of 2+ hours	Percentage of 30 minutes -1 hour
Somewhat disagree	0.0%	0.0%	20.0%	0.0%
Neither agree or disagree	7.7%	5.3%	0.0%	0.0%
Somewhat agree	23.1%	10.5%	20.0%	8.8%
Strongly agree	69.2%	84.2%	60.0%	91.2%







There is a strong statistically significant relationship between (Categories) Q4: How much time on average do you spend at the park in a single visit? and (Categories) Scioto Mile and Greenways improves the beauty or attractiveness of Downtown Columbus.

Chi-Squared Test

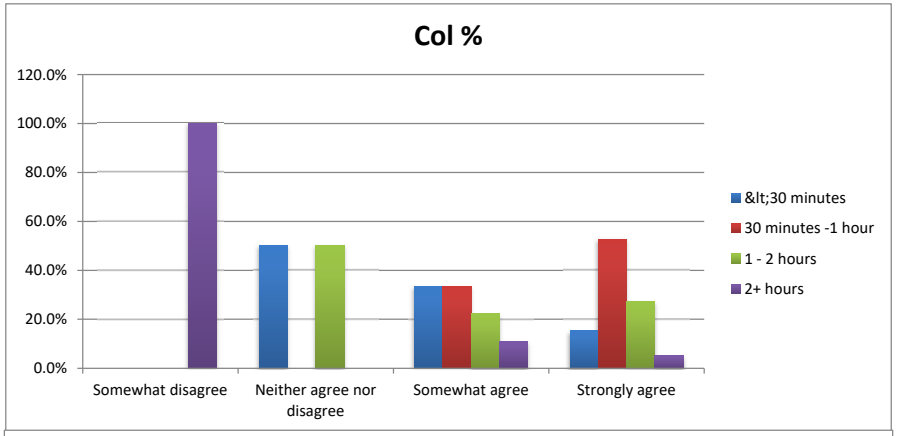
	Basic	Advanced
Statistical Significance (P-Value)	Clearly significant	0.03000326
Effect Size (Cramér's V)	Large	0.29454557
Sample Size		71

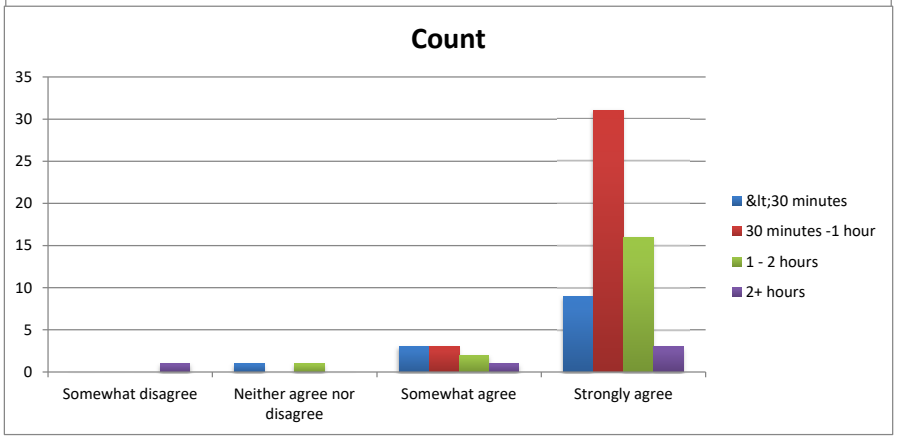
Col %

	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<30 minutes	0.0%	50.0%	33.3%	15.3%
30 minutes -1 hour	0.0%	0.0%	33.3%	52.5%
1 - 2 hours	0.0%	50.0%	22.2%	27.1%
2+ hours	100.0%	0.0%	11.1%	5.1%

Count

	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<30 minutes	0	1	3	9
30 minutes -1 hour	0	0	3	31
1 - 2 hours	0	1	2	16
2+ hours	1	0	1	3





There is no statistically significant relationship between (Categories) Q4: How much time on average do you spend at the park in a single visit? and (Numbers) Visiting Scioto Mile and Greenways improves my mood.

ANOVA Tables

ANOVA

P-Value	0.479
Effect Size (Cohen's f)	0.238

Summary

Group	Average	Median	Sum	Sample Size	Confidence Interval of Average	Standard Deviation
<30 minutes	4.46	4.0	58	13	4.15 to 4.78	0.52
30 minutes -1 hour	4.71	5.0	146	31	4.54 to 4.88	0.46
1 - 2 hours	4.65	5.0	93	20	4.42 to 4.88	0.49
2+ hours	4.33	4.0	13	3	2.90 to 5.77	0.58

Pairwise Tests

Group 1	Group 2	Difference in Averages (1-2)	Confidence Interval of Difference	P-Value	Effect Size (Cohen's d)
1 - 2 hours	30 minutes -1 hour	-0.06	-0.43 to 0.31	0.90	0.13
<30 minutes	30 minutes -1 hour	-0.25	-0.71 to 0.22	0.46	0.53
<30 minutes	1 - 2 hours	-0.19	-0.69 to 0.31	0.71	0.39

(Categories) Q4: How much time on average do you spend at the park in a single visit?

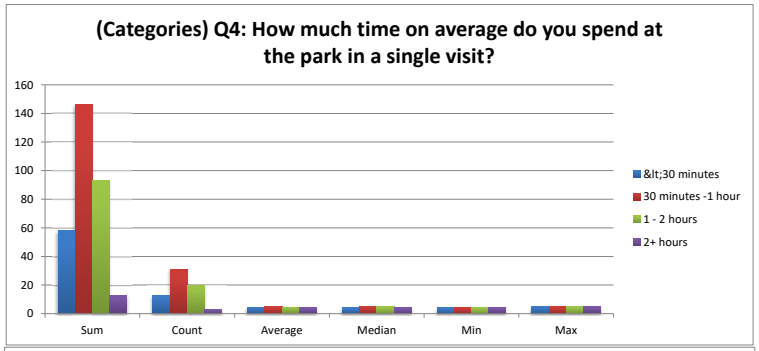
	Sum	Count	Average	Median	Min	Max
<30 minutes	58	13	4.46	4.0	4.0	5.0
30 minutes -1 hour	146	31	4.71	5.0	4.0	5.0
1 - 2 hours	93	20	4.65	5.0	4.0	5.0
2+ hours	13	3	4.33	4.0	4.0	5.0

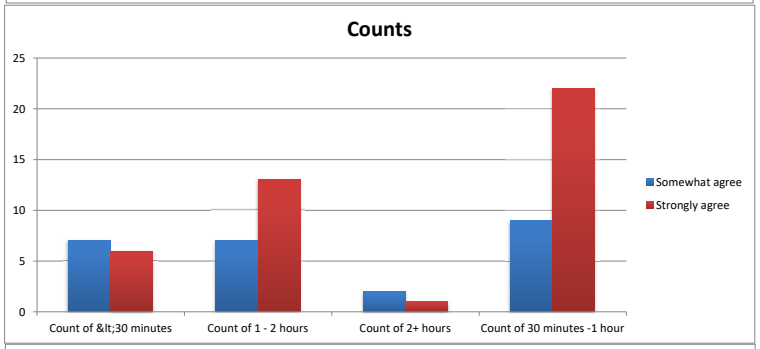
Counts

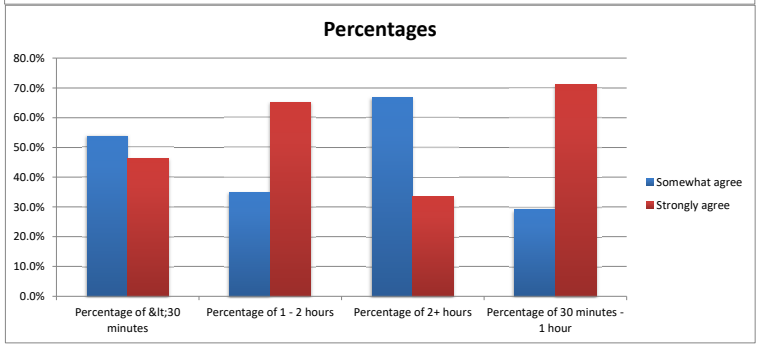
	Count of <30 minutes	Count of 1 - 2 hours	Count of 2+ hours	Count of 30 minutes -1 hour
Somewhat agree	7	7	2	9
Strongly agree	6	13	1	22

Percentages

	Percentage of <30 minutes	Percentage of 1 - 2 hours	Percentage of 2+ hours	Percentage of 30 minutes -1 hour
Somewhat agree	53.8%	35.0%	66.7%	29.0%
Strongly agree	46.2%	65.0%	33.3%	71.0%







There is no statistically significant relationship between (Categories) Q4: How much time on average do you spend at the park in a single visit? and (Categories) Visiting Scioto Mile and Greenways improves my mood.

Chi-Squared Test

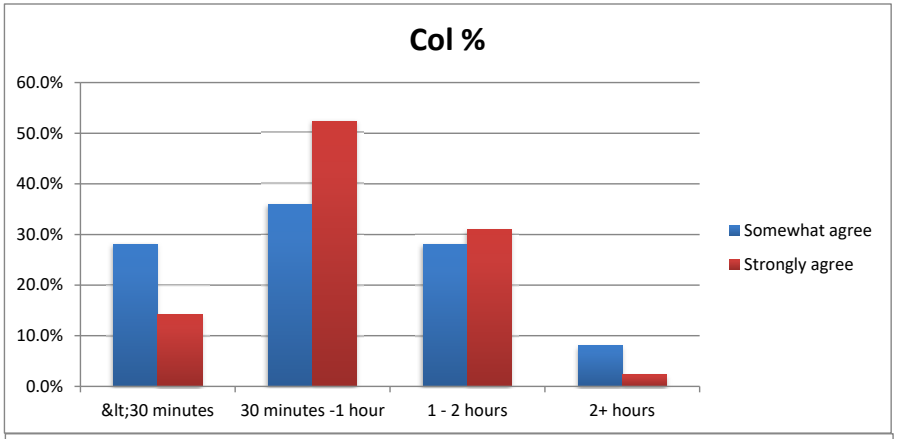
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.310679771
Effect Size (Cramér's V)	Small	0.231118009
Sample Size		67

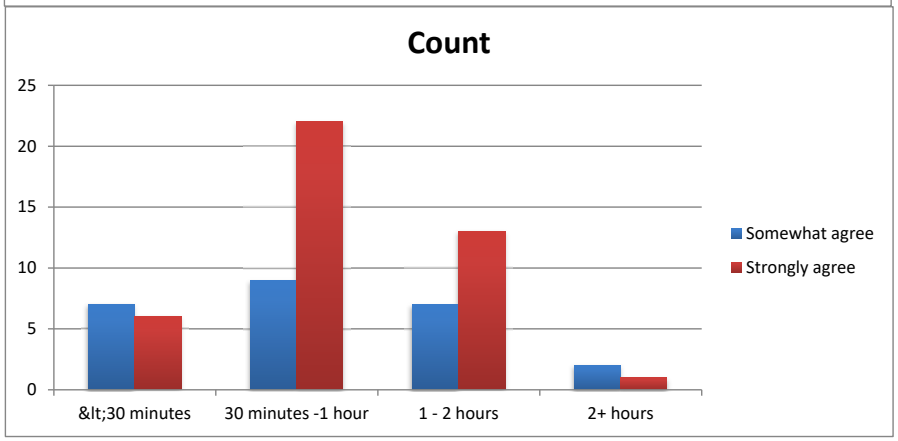
Col %

	Somewhat agree	Strongly agree
<30 minutes	28.0%	14.3%
30 minutes -1 hour	36.0%	52.4%
1 - 2 hours	28.0%	31.0%
2+ hours	8.0%	2.4%

Count

	Somewhat agree	Strongly agree
<30 minutes	7	6
30 minutes -1 hour	9	22
1 - 2 hours	7	13
2+ hours	2	1





There is no statistically significant relationship between (Categories) Q4: How much time on average do you spend at the park in a single visit? and (Numbers) Scioto Mile and Greenways has increased my physical activity.

ANOVA Tables

ANOVA

P-Value	0.731
Effect Size (Cohen's f)	0.149

Summary

Group	Average	Median	Sum	Sample Size	Confidence Interval of Average	Standard Deviation
<30 minutes	3.62	4.0	47	13	2.98 to 4.25	1.04
30 minutes -1 hour	3.94	4.0	130	33	3.62 to 4.26	0.90
1 - 2 hours	3.95	4.0	79	20	3.51 to 4.39	0.94
2+ hours	3.67	4.0	11	3	2.23 to 5.10	0.58

Pairwise Tests

Group 1	Group 2	Difference in Averages (1-2)	Confidence Interval of Difference	P-Value	Effect Size (Cohen's d)
1 - 2 hours	30 minutes -1 hour	0.01	-0.70 to 0.72	0.90	0.01
<30 minutes	30 minutes -1 hour	-0.32	-1.25 to 0.60	0.74	0.35
<30 minutes	1 - 2 hours	-0.33	-1.32 to 0.65	0.77	0.35

(Categories) Q4: How much time on average do you spend at the park in a single visit?

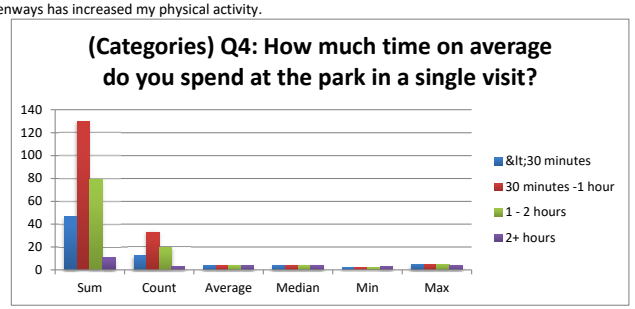
	Sum	Count	Average	Median	Min	Max
<30 minutes	47	13	3.62	4.0	2.0	5.0
30 minutes -1 hour	130	33	3.94	4.0	2.0	5.0
1 - 2 hours	79	20	3.95	4.0	2.0	5.0
2+ hours	11	3	3.67	4.0	3.0	4.0

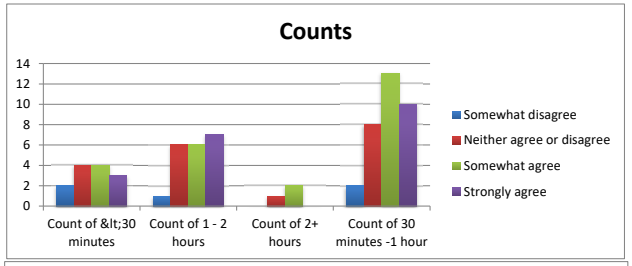
Counts

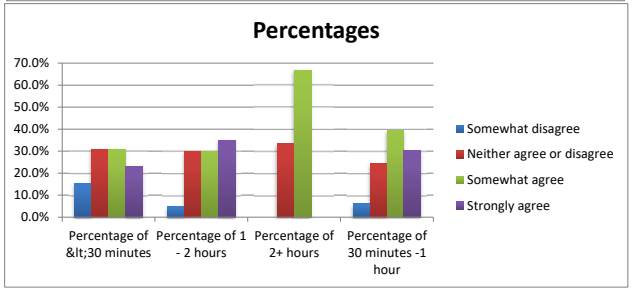
	Count of <30 minutes	Count of 1 - 2 hours	Count of 2+ hours	Count of 30 minutes -1 hour
Somewhat disagree	2	1	0	2
Neither agree or disagree	4	6	1	8
Somewhat agree	4	6	2	13
Strongly agree	3	7	0	10

Percentages

	Percentage of <30 minutes	Percentage of 1 - 2 hours	Percentage of 2+ hours	Percentage of 30 minutes -1 hour
Somewhat disagree	15.4%	5.0%	0.0%	6.1%
Neither agree or disagree	30.8%	30.0%	33.3%	24.2%
Somewhat agree	30.8%	30.0%	66.7%	39.4%
Strongly agree	23.1%	35.0%	0.0%	30.3%







There is no statistically significant relationship between (Categories) Q4: How much time on average do you spend at the park in a single visit? and (Categories) Scioto Mile and Greenways has increased my physical activity.

Chi-Squared Test

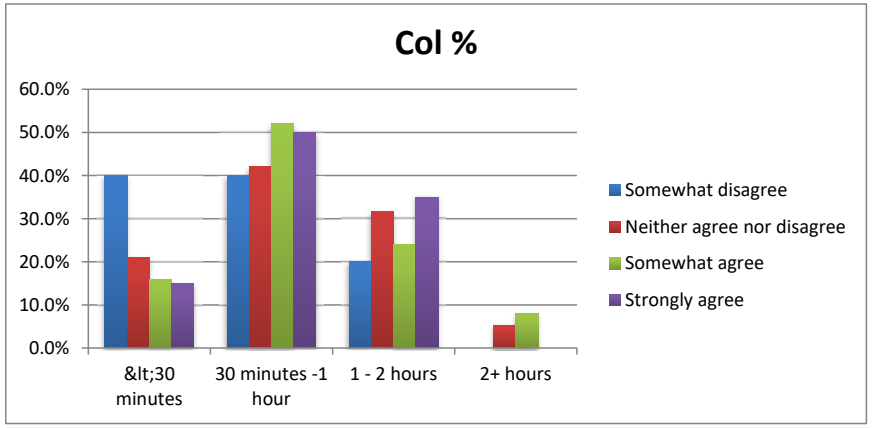
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.887354581
Effect Size (Cramér's V)	Small	0.144862468
Sample Size		69

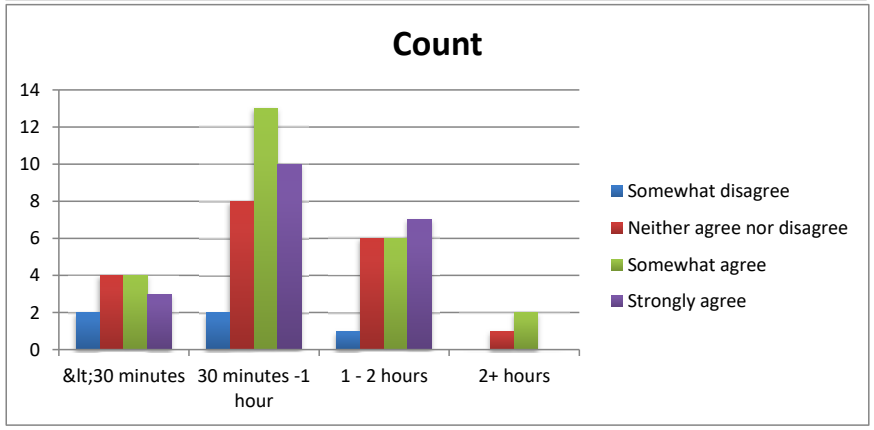
Col %

	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<30 minutes	40.0%	21.1%	16.0%	15.0%
30 minutes -1 hour	40.0%	42.1%	52.0%	50.0%
1 - 2 hours	20.0%	31.6%	24.0%	35.0%
2+ hours	0.0%	5.3%	8.0%	0.0%

Count

	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<30 minutes	2	4	4	3
30 minutes -1 hour	2	8	13	10
1 - 2 hours	1	6	6	7
2+ hours	0	1	2	0





There is no statistically significant relationship between (Categories) Q4: How much time on average do you spend at the park in a single visit? and (Numbers) Visiting Scioto Mile and Greenways improves my quality of life/well being.

ANOVA Tables

ANOVA

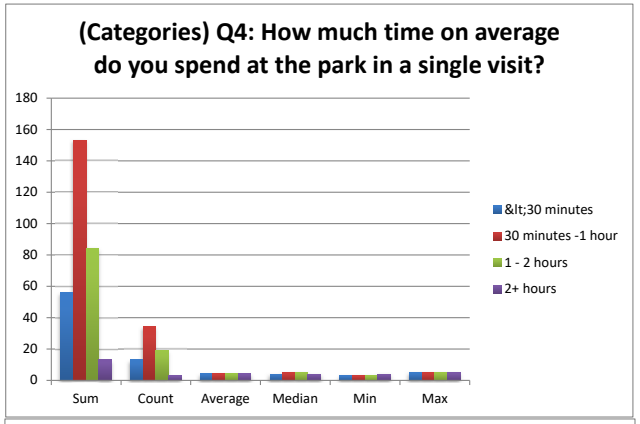
P-Value	0.816
Effect Size (Cohen's f)	0.126

Summary

Group	Average	Median	Sum	Sample Size	Confidence Interval of Average	Standard Deviation
<30 minutes	4.31	4.0	56	13	3.93 to 4.69	0.63
30 minutes -1 hour	4.50	5.0	153	34	4.30 to 4.70	0.56
1 - 2 hours	4.42	5.0	84	19	4.09 to 4.75	0.69
2+ hours	4.33	4.0	13	3	2.90 to 5.77	0.58

Pairwise Tests

Group 1	Group 2	Difference in Averages (1	Confidence Interval of Difference	P-Value	Effect Size (Cohen's d)
1 - 2 hours	30 minutes -1 hour	-0.08	-0.58 to 0.43	0.90	0.13
<30 minutes	30 minutes -1 hour	-0.19	-0.75 to 0.37	0.75	0.34
<30 minutes	1 - 2 hours	-0.11	-0.76 to 0.53	0.90	0.18

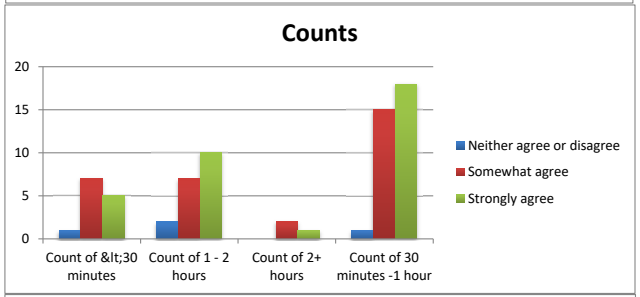


(Categories) Q4: How much time on average do you spend at the park in a single visit?

	Sum	Count	Average	Median	Min	Max
<30 minutes	56	13	4.31	4.0	3.0	5.0
30 minutes -1 hour	153	34	4.50	5.0	3.0	5.0
1 - 2 hours	84	19	4.42	5.0	3.0	5.0
2+ hours	13	3	4.33	4.0	4.0	5.0

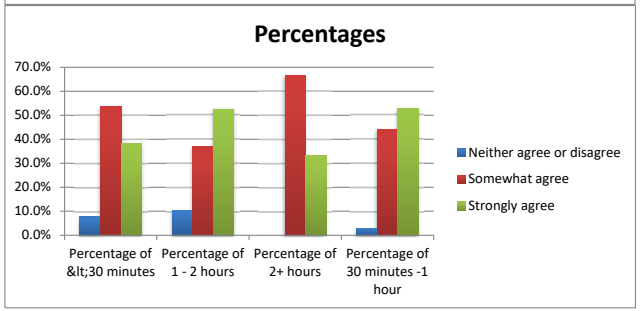
Counts

	Count of <30 minutes	Count of 1 - 2 hours	Count of 2+ hours	Count of 30 minutes -1 hour
Neither agree or disagree	1	2	0	1
Somewhat agree	7	7	2	15
Strongly agree	5	10	1	18



Percentages

	Percentage of <30 minutes	Percentage of 1 - 2 hours	Percentage of 2+ hours	Percentage of 30 minutes -1 hour
Neither agree or disagree	7.7%	10.5%	0.0%	2.9%
Somewhat agree	53.8%	36.8%	66.7%	44.1%
Strongly agree	38.5%	52.6%	33.3%	52.9%



There is no statistically significant relationship between (Categories) Q4: How much time on average do you spend at the park in a single visit? and (Categories) Visiting Scioto Mile and Greenways improves my quality of life/well being.

Chi-Squared Test

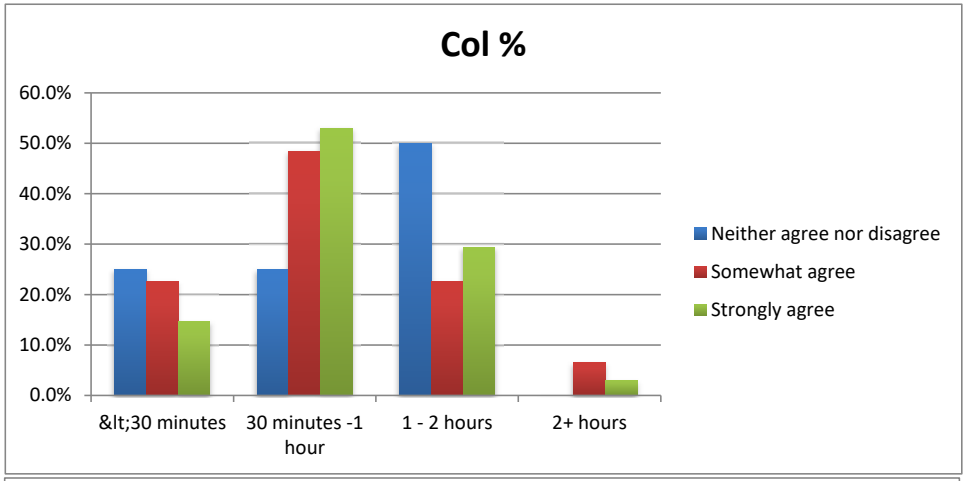
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.822223785
Effect Size (Cramér's V)	Small	0.144774054
Sample Size		69

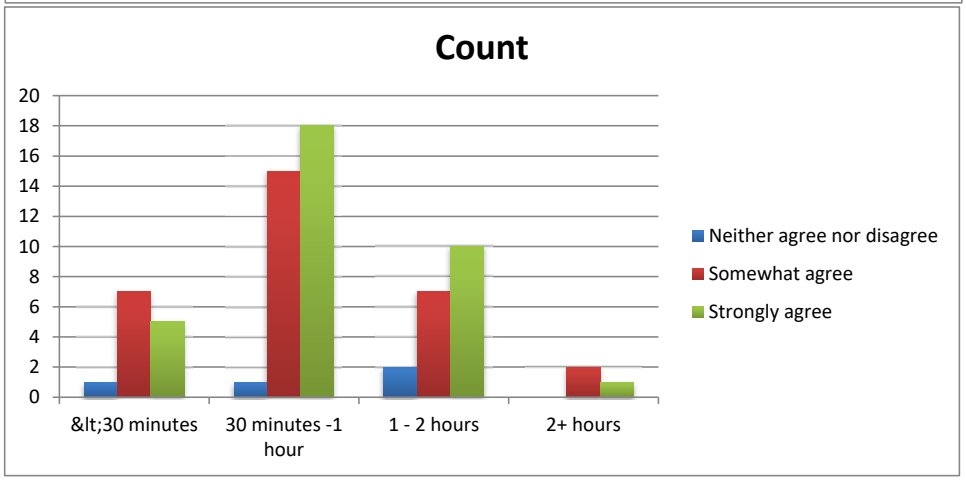
Col %

	Neither agree nor disagree	Somewhat agree	Strongly agree
<30 minutes	25.0%	22.6%	14.7%
30 minutes -1 hour	25.0%	48.4%	52.9%
1 - 2 hours	50.0%	22.6%	29.4%
2+ hours	0.0%	6.5%	2.9%

Count

	Neither agree nor disagree	Somewhat agree	Strongly agree
<30 minutes	1	7	5
30 minutes -1 hour	1	15	18
1 - 2 hours	2	7	10
2+ hours	0	2	1





There is no statistically significant relationship between (Categories) Q4: How much time on average do you spend at the park in a single visit? and (Numbers) I feel safe and secure while visiting Scioto Mile and Greenways.

ANOVA Tables

ANOVA

P-Value	0.89
Effect Size (Cohen's f)	0.097

Summary

Group	Average	Median	Sum	Sample Size	Confidence Interval of Average	Standard Deviation
<30 minutes	4.36	5.0	61	14	3.82 to 4.89	0.93
30 minutes -1 hour	4.38	5.0	162	37	4.13 to 4.63	0.76
1 - 2 hours	4.20	4.0	84	20	3.78 to 4.62	0.89
2+ hours	4.25	4.0	17	4	3.45 to 5.05	0.50

Pairwise Tests

Group 1	Group 2	Difference in Averages (1-2)	Confidence Interval of Difference	P-Value	Effect Size (Cohen's d)
1 - 2 hours	30 minutes -1 hour	-0.18	-0.81 to 0.46	0.86	0.22
1 - 2 hours	2+ hours	-0.05	-1.09 to 0.99	0.90	0.06
<30 minutes	30 minutes -1 hour	-0.02	-0.80 to 0.76	0.90	0.03
<30 minutes	1 - 2 hours	0.16	-0.71 to 1.03	0.90	0.18
<30 minutes	2+ hours	0.11	-0.98 to 1.19	0.90	0.13
2+ hours	30 minutes -1 hour	-0.13	-1.19 to 0.93	0.90	0.18

(Categories) Q4: How much time on average do you spend at the park in a single visit?

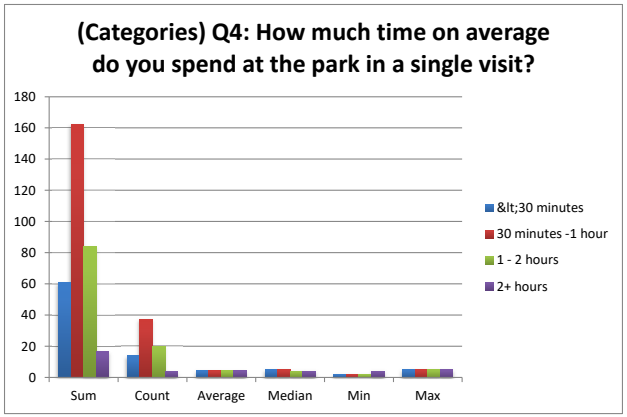
	Sum	Count	Average	Median	Min	Max
<30 minutes	61	14	4.36	5.0	2.0	5.0
30 minutes -1 hour	162	37	4.38	5.0	2.0	5.0
1 - 2 hours	84	20	4.20	4.0	2.0	5.0
2+ hours	17	4	4.25	4.0	4.0	5.0

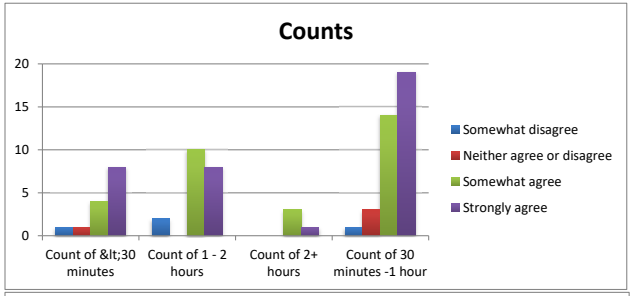
Counts

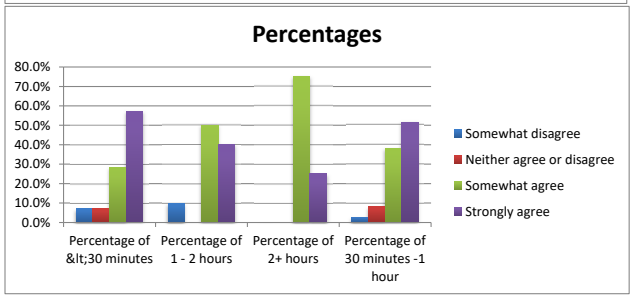
	Count of <30 minutes	Count of 1 - 2 hours	Count of 2+ hours	Count of 30 minutes -1 hour
Somewhat disagree	1	2	0	1
Neither agree or disagree	1	0	0	3
Somewhat agree	4	10	3	14
Strongly agree	8	8	1	19

Percentages

	Percentage of <30 minutes	Percentage of 1 - 2 hours	Percentage of 2+ hours	Percentage of 30 minutes -1 hour
Somewhat disagree	7.1%	10.0%	0.0%	2.7%
Neither agree or disagree	7.1%	0.0%	0.0%	8.1%
Somewhat agree	28.6%	50.0%	75.0%	37.8%
Strongly agree	57.1%	40.0%	25.0%	51.4%







There is no statistically significant relationship between (Categories) Q4: How much time on average do you spend at the park in a single visit? and (Categories) I feel safe and secure while visiting Scioto Mile and Greenways.

Chi-Squared Test

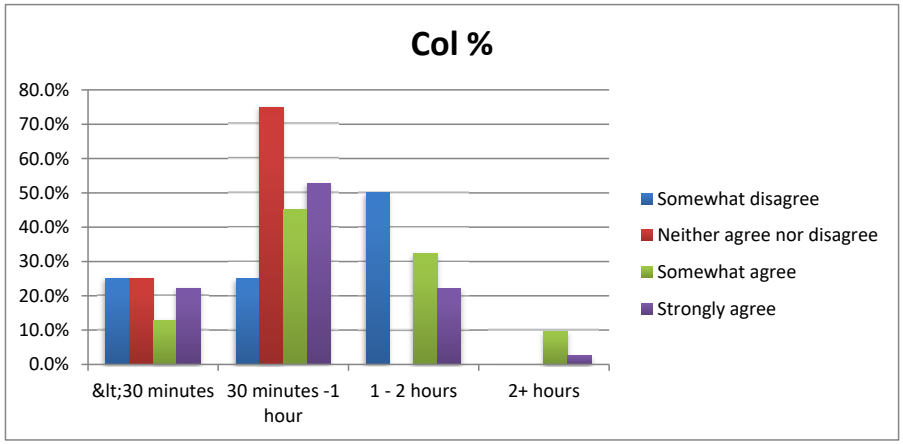
	Basic	Advanced
Statistical Significance (P-Value)	Not significant	0.672950615
Effect Size (Cramér's V)	Medium	0.171986647
Sample Size		75

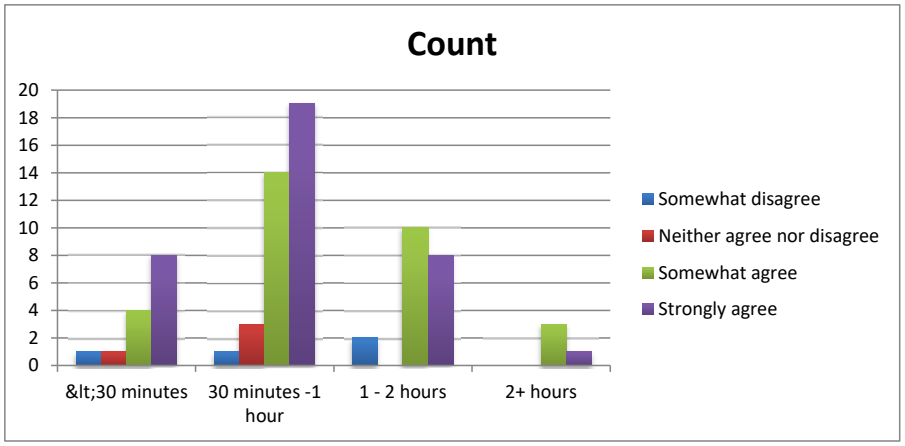
Col %

	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<30 minutes	25.0%	25.0%	12.9%	22.2%
30 minutes -1 hour	25.0%	75.0%	45.2%	52.8%
1 - 2 hours	50.0%	0.0%	32.3%	22.2%
2+ hours	0.0%	0.0%	9.7%	2.8%

Count

	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
<30 minutes	1	1	4	8
30 minutes -1 hour	1	3	14	19
1 - 2 hours	2	0	10	8
2+ hours	0	0	3	1





There is a strong statistically significant relationship between Q2: How often did you visit the Scioto Mile and Greenways prior to the onset of the COVID-19 pandemic? and Q3: How often have you visited the Scioto Mile and Greenways since the onset of the COVID-19 pandemic?

Chi-Squared Test

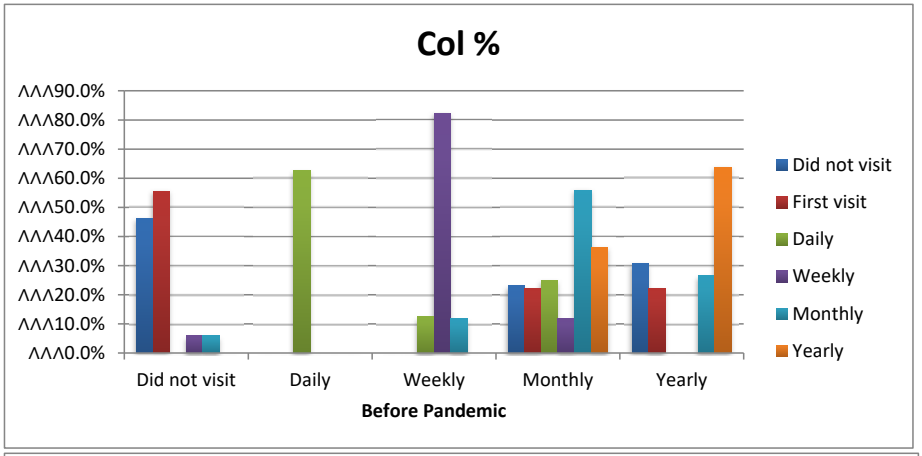
	Basic	Advanced
Statistical Significance (P-Value)	Very clearly significant	1.50093E-19
Effect Size (Cramér's V)	Large	0.61127929
Sample Size		92

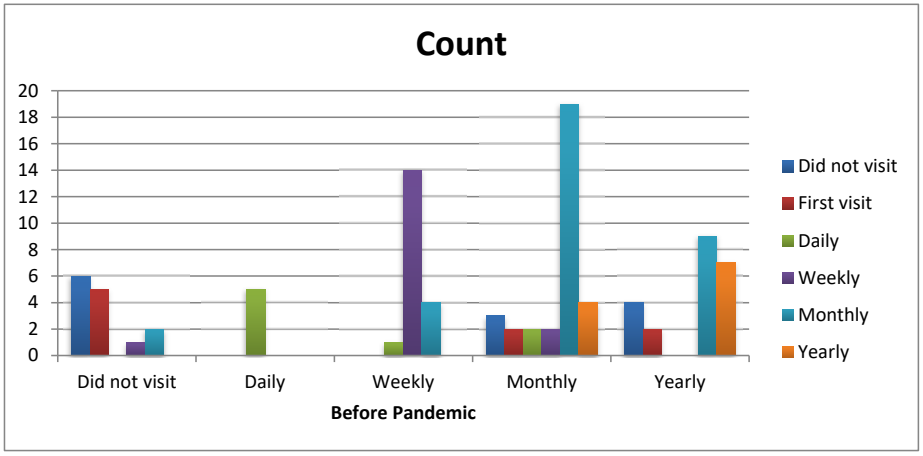
Col %

	Did not visit	First visit	Daily	Weekly	Monthly	Yearly
Did not visit	^^^ 46.2%	^^^ 55.6%	0.0%	5.9%	5.9%	0.0%
Daily	0.0%	0.0%	62.5%	0.0%	0.0%	0.0%
Weekly	v 0.0%	0.0%	12.5%	^^^ 82.4%	11.8%	0.0%
Monthly	23.1%	22.2%	25.0%	v 11.8%	^^ 55.9%	36.4%
Yearly	30.8%	22.2%	0.0%	v 0.0%	26.5%	^^^ 63.6%

Count

	Did not visit	First visit	Daily	Weekly	Monthly	Yearly
Did not visit	6	5	0	1	2	0
Daily	0	0	5	0	0	0
Weekly	0	0	1	14	4	0
Monthly	3	2	2	2	19	4
Yearly	4	2	0	0	9	7





Appendix F: i-Tree Summary

Benefits and Costs Summary of Individual Trees

Location: Columbus city, Franklin, Ohio, United States of America
Project: Scioto Mile and Greenways, Series: LAF, Year: 2021
Generated: 7/21/2021

i-Tree Eco

						Annual benefits									
Tree ID	Species Name	DBH (in)	Structural Value ($)	Carbon Storage (lb)	Carbon Storage ($)	Gross Carbon Sequestration (lb/yr)	Gross Carbon Sequestration ($/yr)	Avoided Runoff (ft³/yr)	Avoided Runoff ($/yr)	Carbon Avoided (lb/yr)	Carbon Avoided ($/yr)	Pollution Removal (oz/yr)	Pollution Removal ($/yr)	Energy Savings ($/yr)	Total Annual Benefits ($/yr)
2	Red maple	5.0	307.62	77.5	6.61	9.0	0.77	5.4	0.36	N/A	N/A	2.5	0.57	N/A	1.70
3	Sun Valley Red Maple	5.0	251.22	155.5	13.26	12.9	1.10	5.6	0.38	N/A	N/A	2.6	0.60	N/A	2.07
4	Sugar maple	7.0	602.93	194.2	16.56	8.4	0.71	6.5	0.44	N/A	N/A	3.0	0.69	N/A	1.84
5	Fall fiesta sugar maple	7.0	492.39	325.1	27.72	19.4	1.65	6.3	0.42	N/A	N/A	2.9	0.67	N/A	2.75
6	Green mountain sugar maple	7.0	492.39	325.1	27.72	19.4	1.65	6.3	0.42	N/A	N/A	2.9	0.67	N/A	2.75
7	Autumn blaze	7.0	492.39	329.4	28.09	19.5	1.67	8.5	0.57	N/A	N/A	3.9	0.90	N/A	3.13
8	Freeman maple	7.0	492.39	329.4	28.09	25.6	2.18	8.5	0.57	N/A	N/A	3.9	0.90	N/A	3.65
9	Ohio buckeye	5.0	164.06	133.5	11.39	15.6	1.33	2.8	0.19	N/A	N/A	1.3	0.30	N/A	1.82
10	River birch	5.8	446.25	97.5	8.31	10.1	0.86	4.7	0.32	N/A	N/A	2.2	0.50	N/A	1.67
11	Gray birch	6.2	374.06	102.7	8.76	2.8	0.24	6.3	0.42	N/A	N/A	2.9	0.67	N/A	1.33
12	European hornbeam	10.0	1,415.34	432.6	36.89	15.9	1.36	14.3	0.96	N/A	N/A	6.5	1.52	N/A	3.84
13	American hornbeam	10.0	1,415.34	363.6	31.01	7.6	0.65	14.3	0.96	N/A	N/A	6.5	1.52	N/A	3.13
14	catalpa spp	4.0	105.00	62.2	5.30	6.3	0.54	2.5	0.17	N/A	N/A	1.2	0.27	N/A	0.98
15	Northern hackberry	5.0	287.11	25.9	2.21	2.1	0.18	4.1	0.27	N/A	N/A	1.9	0.43	N/A	0.89
16	Katsura tree	4.0	157.50	19.9	1.70	2.2	0.19	0.6	0.04	N/A	N/A	0.3	0.07	N/A	0.30
17	Eastern redbud	5.4	292.75	55.1	4.70	4.3	0.37	1.4	0.09	N/A	N/A	0.6	0.15	N/A	0.61
18	American yellowwood	3.0	90.85	26.0	2.21	3.5	0.30	1.6	0.11	N/A	N/A	0.7	0.17	N/A	0.57
19	Green hawthorn	4.8	232.18	58.1	4.95	5.5	0.47	1.8	0.12	N/A	N/A	0.8	0.19	N/A	0.78
20	Thornless honeylocust	10.0	1,525.01	399.4	34.06	17.6	1.50	18.6	1.24	N/A	N/A	8.5	1.97	N/A	4.71
21	Kentucky coffeetree	3.5	160.78	19.1	1.63	1.5	0.13	2.1	0.14	N/A	N/A	1.0	0.22	N/A	0.50
22	Moraine Sweetgum	5.0	307.62	79.0	6.74	7.1	0.61	1.9	0.13	N/A	N/A	0.9	0.20	N/A	0.93
23	Sweetgum	5.0	307.62	36.3	3.10	4.3	0.37	1.9	0.13	N/A	N/A	0.9	0.20	N/A	0.69
24	Tulip tree	5.5	248.14	71.0	6.06	7.6	0.65	8.9	0.60	N/A	N/A	4.1	0.94	N/A	2.19
25	Cucumber tree	4.5	249.17	51.4	4.38	6.8	0.58	3.2	0.22	N/A	N/A	1.5	0.34	N/A	1.14
26	American sycamore	8.0	735.00	111.2	9.48	8.2	0.70	26.7	1.78	N/A	N/A	12.2	2.83	N/A	5.31
27	London planetree	8.0	682.50	247.0	21.06	18.2	1.56	28.6	1.91	N/A	N/A	13.0	3.03	N/A	6.50
28	London planetree Bloodgood	8.0	682.50	247.0	21.06	13.9	1.19	29.5	1.97	N/A	N/A	13.4	3.12	N/A	6.28
29	Swamp white oak	6.0	531.56	189.6	16.17	14.8	1.26	3.3	0.22	N/A	N/A	1.5	0.35	N/A	1.83
30	Shingle oak	4.0	210.00	92.7	7.91	8.1	0.69	1.4	0.09	N/A	N/A	0.6	0.15	N/A	0.93
31	Bur oak	7.0	723.52	136.6	11.65	6.2	0.53	4.1	0.28	N/A	N/A	1.9	0.44	N/A	1.25
32	Chinkapin oak	6.0	502.03	201.1	17.15	12.0	1.02	4.7	0.31	N/A	N/A	2.1	0.49	N/A	1.83
33	Pin oak	5.0	328.13	117.2	10.00	10.9	0.93	3.3	0.22	N/A	N/A	1.5	0.35	N/A	1.50

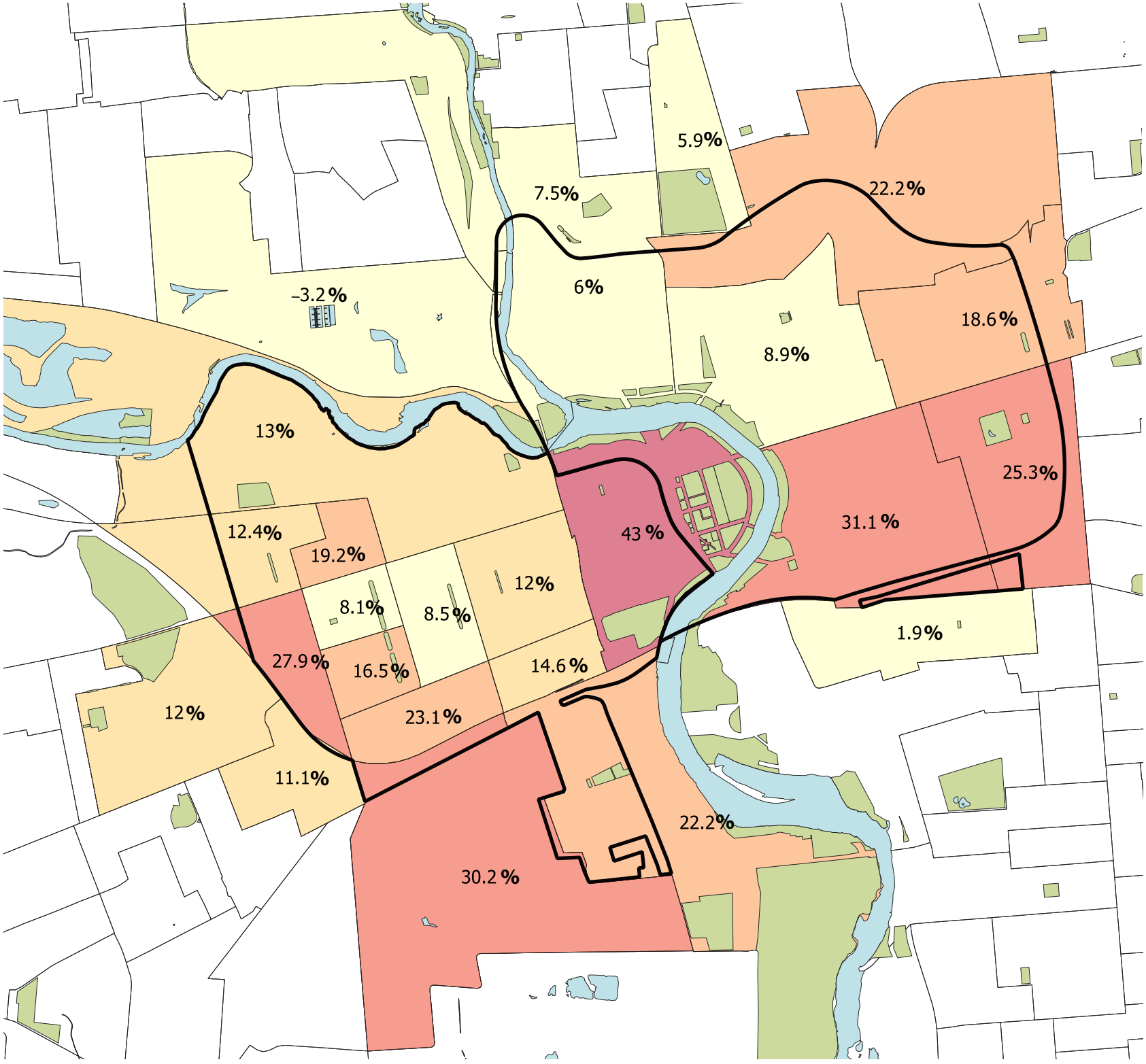
Benefits and Costs Summary of Individual Trees

Location: Columbus city, Franklin, Ohio, United States of America
Project: Scioto Mile and Greenways, Series: LAF, Year: 2021
Generated: 7/21/2021

						Annual benefits									
Tree ID	Species Name	DBH (in)	Structural Value ($)	Carbon Storage (lb)	Carbon Storage ($)	Gross Carbon Sequestration (lb/yr)	Gross Carbon Sequestration ($/yr)	Avoided Runoff (ft³/yr)	Avoided Runoff ($/yr)	Carbon Avoided (lb/yr)	Carbon Avoided ($/yr)	Pollution Removal (oz/yr)	Pollution Removal ($/yr)	Energy Savings ($/yr)	Total Annual Benefits ($/yr)
34	Northern red oak	4.0	236.25	40.2	3.43	4.6	0.39	2.6	0.17	N/A	N/A	1.2	0.27	N/A	0.84
35	Shumard oak	6.0	519.75	176.7	15.07	10.5	0.90	6.2	0.41	N/A	N/A	2.8	0.66	N/A	1.97
36	Princeton elm	8.0	539.32	365.2	31.14	20.2	1.72	13.0	0.87	N/A	N/A	5.9	1.37	N/A	3.96
37	Chinese elm	8.0	840.00	273.9	23.35	19.9	1.69	6.1	0.41	N/A	N/A	2.8	0.65	N/A	2.75
38	Frontier elm	4.0	134.83	69.2	5.91	10.2	0.87	1.7	0.11	N/A	N/A	0.8	0.18	N/A	1.16
39	Baldcypress	4.0	210.00	31.9	2.72	4.2	0.35	5.2	0.35	N/A	N/A	2.4	0.55	N/A	1.25
	Total		**17,786**	**6,069**	**518**	**397**	**34**	**275**	**18**	**N/A**	**N/A**	**125**	**29**	**N/A**	**81**

Carbon storage and gross carbon sequestration value is calculated based on the price of $0.08528 per pound.
Due to limits of available models, i-Tree Eco will limit carbon storage to a maximum of 7,500 kg (16,534.7 lbs) and not estimate additional storage for any tree beyond a diameter of 254 cm (100 in). Whichever limit results in lower carbon storage is used.
Avoided runoff value is calculated by the price $0.067/ft³. The user-designated weather station reported 40.3 inches of total annual precipitation. Eco will always use the hourly measurements that have the greatest total rainfall or user-submitted rainfall if provided.
Energy saving value is calculated based on the prices of $122.50 per MWH and $9.47 per MBTU. Trees less than or equal to 10ft/3m tall or further than 60ft/18m away from buildings do not provide energy benefits to nearby buildings.
Pollution removal value is calculated based on the prices of $0.66 per pound (CO), $1.90 per pound (O3), $0.35 per pound (NO2), $0.25 per pound (SO2), $69.41 per pound (PM2.5).
Structural value is the estimated local cost of having to replace a tree with a similar tree.
A value of zero may indicate that ancillary data (pollution, weather, energy, etc.) is not available for this location or that the reported amounts are too small to be shown.

Appendix G: Maps of Race and Poverty



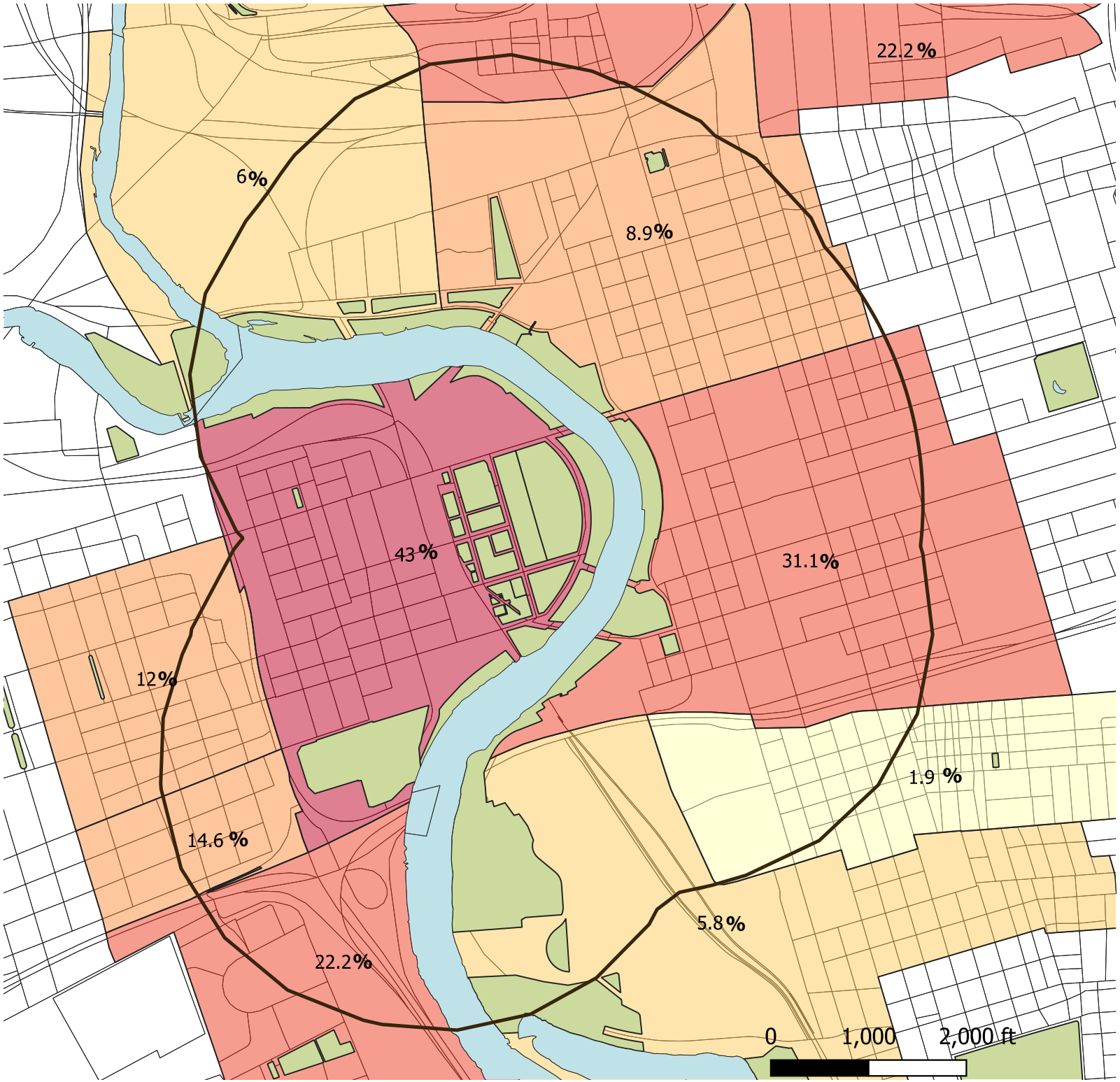
% of Population Living in Poverty by Block Group Census 2010

POVERTY %_NEIGHBORHOODS
- 1.9 - 8.9%
- 8.9 - 14.6%
- 14.6 - 23.1%
- 23.1 - 31.1%
- 31.1 - 43%

= Actual % of Population Living in Poverty

- neighborhoods
- tl_2020_39049_areawater
- Park_Property_Boundaries
- Franklin Co Block Group

0 0.25 0.5 mi

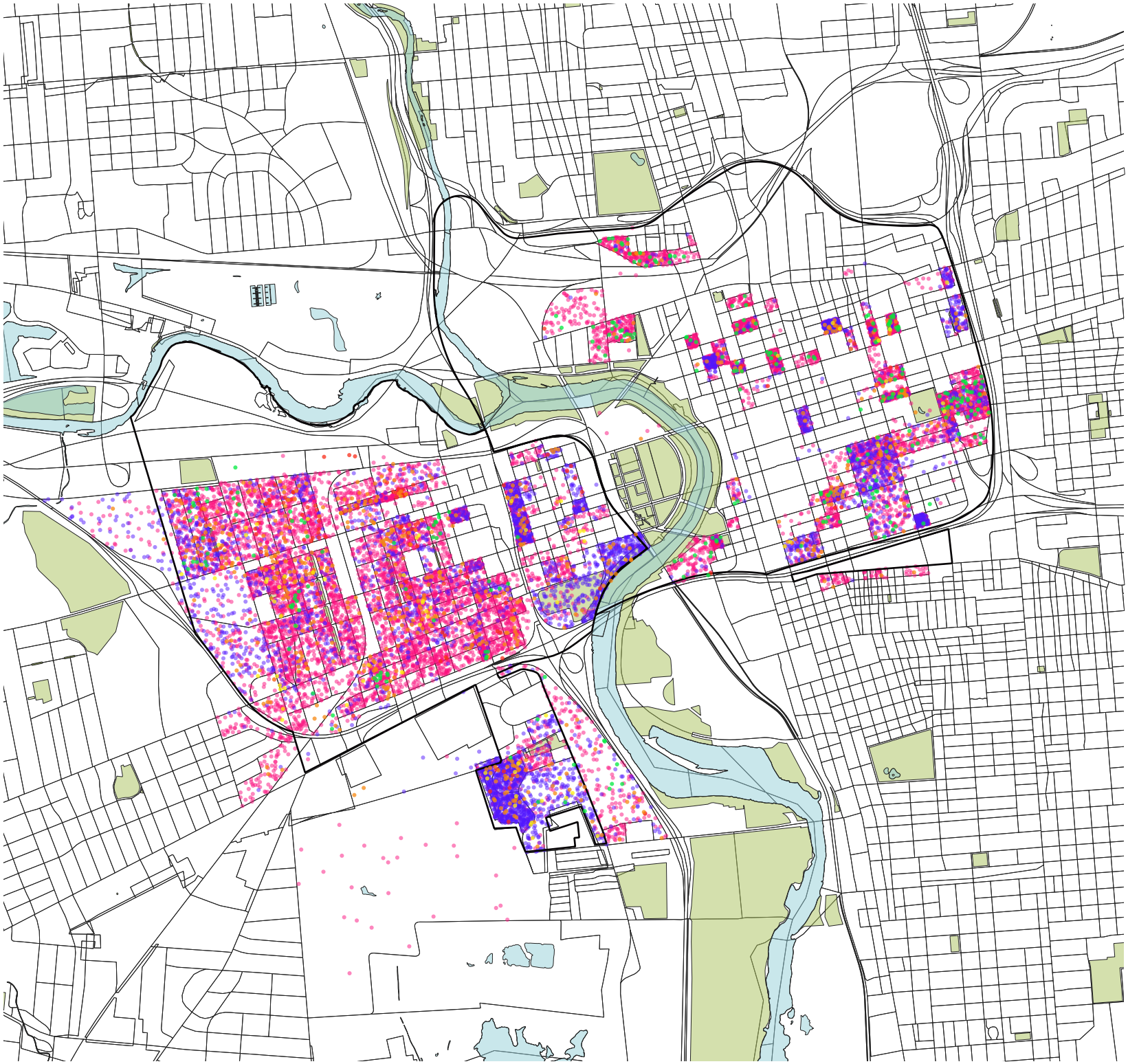


% of Population Living in Poverty by Block Group in 2010

- 1.9 - 1.9%
- 1.9 - 6%
- 6 - 14.6%
- 14.6 - 31.1%
- 31.1 - 43%

= Actual % of Population Living in Poverty

- 1/2 mile Radius from Site
- Surface Water
- Park Boundaries



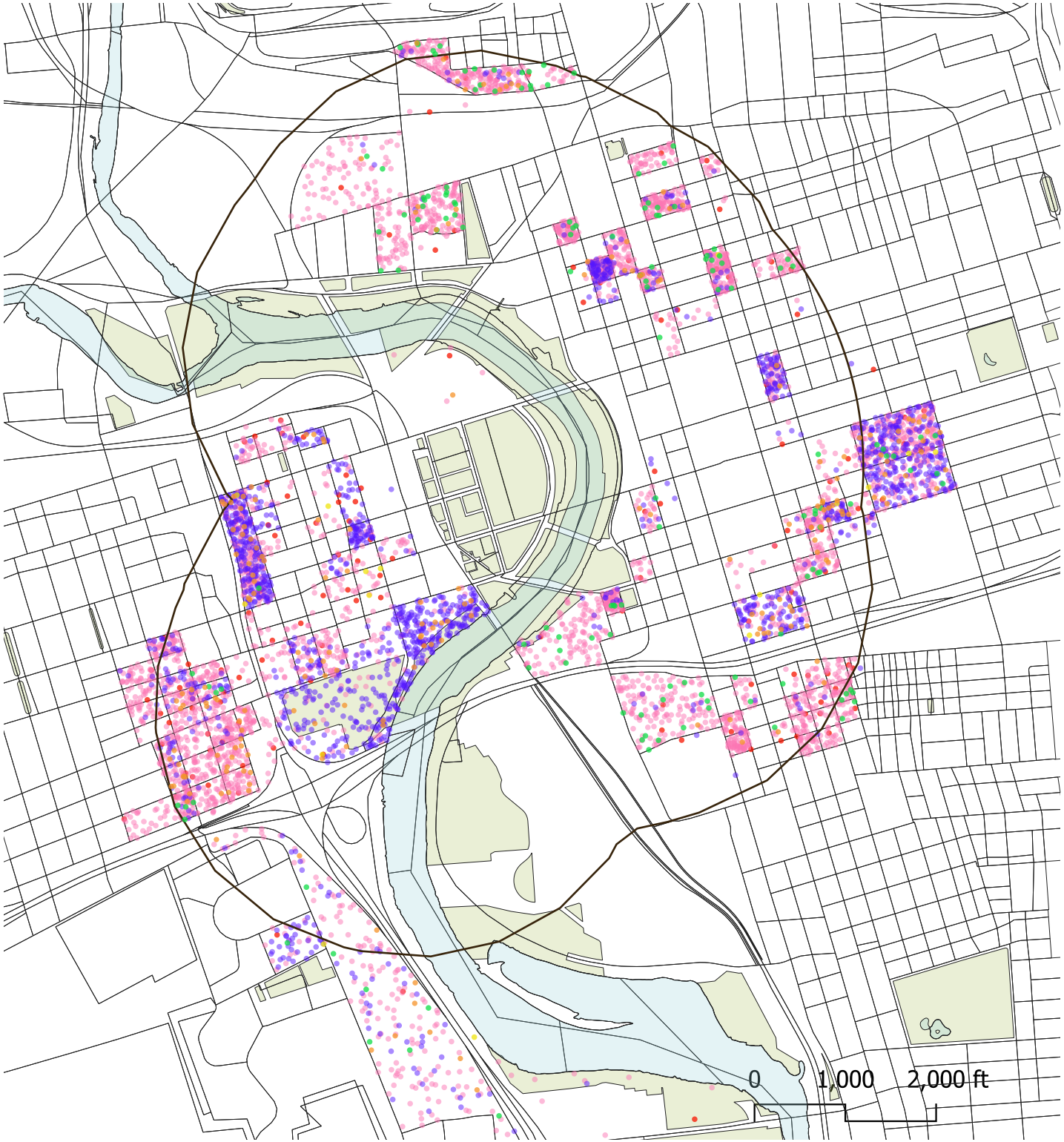
Racial Makeup of Franklinton and Downtown Columbus

- ASIAN
- BLACK
- MIXED
- NATIVEAM/HI
- OTHER
- WHITE

1 DOT = 1 PERSON

- Franklinton and Downtown Neighborhoods Outline
- Surface Water
- Park Boundaries
- Franklin Co. Census Blocks

TOTAL POPULATION	15698	% OF TOTAL
ASIAN	290	1.8%
BLACK	4183	26.6%
MIXED	657	4.2%
NATIVE AM/HI	79	0.5%
OTHER	173	1.1%
WHITE	10316	65.7%



1/2 mile radius from Site
2010 Census Block
Water
Park Boundaries

1 Dot = 1 Person

Race - ASIAN
Race - BLACK
Race - MIXED
Race - NATIVE AM/HI
Race - OTHER
Race - WHITE

TOTAL POPULATION	5888	% OF TOTAL
ASIAN	147	2.5%
BLACK	1585	27%
MIXED	203	3.5%
NATIVE AM/HI	16	0.3%
OTHER	37	0.7%
WHITE	3900	66%