

**Economic Impact of Prospective UNESCO World Heritage Site Designation:
Hopewell Ceremonial Earthworks**

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Executive Summary

Ohio University's Voinovich School of Leadership and Public Affairs was contracted by The Ohio History Connection to provide an economic impact assessment of the prospective designation of the Hopewell Ceremonial Earthworks as a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site (WHS). E. Brent Lane, a Professor of Heritage Economics at the University of North Carolina at Chapel Hill, was engaged as a consultant to assist with the project.

Hopewell Ceremonial Earthworks is comprised of seven monumental earthworks that were constructed by the Ohio Hopewell culture during the Middle Woodland Period (100 B.C. to A.D. 500).¹ These earthworks are located at three sites:

1. Newark Earthworks State Memorial (Licking County, Ohio)
2. Fort Ancient State Memorial (Warren County, Ohio)
3. Hopewell Cultural National Historical Park (Ross County, Ohio)

Research from other World Heritage Sites has shown that the economic benefits of inscription begins even before a site's formal listing as the galvanization of effort required in support of inscription raises regional public awareness and visitor interest. Formal inscription contributes significant further benefits as awareness is gradually generated among additional national and international markets. Similarly, this study predicts that a 75-100% increase over 2016 visitation to these sites is likely to occur within 3 years post designation. We estimate that 75% of these new visitors will be day visitors and 25% will be overnight visitors. A 100% increase in visitors will yield 181 new jobs in the economy and an annual total of \$12.5 million in economic output to the three counties where the sites are located, as shown in table 1.

Table 1. Total Across All Sites: 75% Increase in Day Visitors and 25% Increase in Overnight Visitors

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	150.2	\$3,432,484	\$4,801,338	\$8,618,520
Indirect Effect	13.3	\$507,967	\$877,019	\$1,683,627
Induced Effect	17.9	\$649,441	\$1,294,689	\$2,219,266
Total Effect	180.9	\$4,589,890	\$6,973,045	\$12,521,411

The experience of recently inscribed World Heritage Sites has demonstrated the importance of strategically incorporating site inscription efforts within regional economic landscapes and development planning. With a concerted effort to follow through on the recommendations in this report, brand and market the sites, and develop tourism assets to attract high impact, cultural heritage visitors, an increase of

¹ Lepper, Brad. *Ohio Archaeology*. Voyageur Media Group, 2005, p. 109.

150-200% in annual visitation is within reason post designation. Such strategies recognize that the number of visitors to the site can be less important than the quality of the visitor stream. Tourism studies often use visitor segmentation to differentiate visitors by purpose, in-state/out-of-state, day/overnight, and income. Studies have shown that higher income and out-of-state visitors (e.g. a quality visitor for economic impact purposes) spend more per day.² Therefore, Ohio History Connection, regional stakeholders, and other partners are encouraged to utilize the brand value generated from World Heritage Designation to target high value, heritage tourists to maximize the economic benefits of current and projected site visitation.

The study identified the key characteristics of such high value visitors to be addressed by communities hoping to capitalize on the economic potential of World Heritage Site designation. Overnight visitors generate three times the economic impact of day visitors. Heritage tourists bring more disposable income in pursuit of an authentic visitor experience than an average overnight visitor³.

World Heritage Designation empowers communities near these sites to capture even greater economic value, but this can only occur through self-determination to develop a tourism industry cluster sufficient to capture heritage visitors and offer them a unique, authentic experience. As such, efforts must be made to support entrepreneurial tourism efforts such as bed and breakfast start-ups, local restaurants catering to heritage tourists, and complementary tourism experiences for these visitors.

² For example: Cannon, T. F., & Ford, J. (2002). Relationship of demographic and trip characteristics to visitor spending: an analysis of sports travel visitors across time. *Tourism economics*, 8(3), 263-271.

³ For example: Taylor, D. T., Fletcher, R. R., & Clabaugh, T. (1993). A comparison of characteristics, regional expenditures, and economic impact of visitors to historical sites with other recreational visitors. *Journal of Travel Research*, 32(1), 30-35.

1. INTRODUCTION

Ohio University's Voinovich School of Leadership and Public Affairs was contracted by The Ohio History Connection to provide an economic impact assessment of the prospective designation of the Hopewell Ceremonial Earthworks as a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site (WHS). E. Brent Lane, a Professor of Heritage Economics at the University of North Carolina at Chapel Hill, was engaged as a consultant to assist with the project.

Hopewell Ceremonial Earthworks is comprised of seven monumental earthworks that were constructed by the Ohio Hopewell culture during the Middle Woodland Period (100 B.C. – A.D. 500).⁴ These earthworks are located at three sites:

1. Newark Earthworks State Memorial (Licking County, Ohio)
2. Fort Ancient State Memorial (Warren County, Ohio)
3. Hopewell Cultural National Historical Park (Ross County, Ohio)

To accomplish this task, the research team collected visitation and sales data from the three Hopewell Ceremonial Earthworks sites. A web survey of visitors was used to collect data on spending patterns among visitors to the sites. These data, coupled with visitation data, were used to establish a baseline economic impact analysis for the sites. Additionally, hypothetical impact scenarios were generated using day trip and overnight visitor spending averages provided by Tourism Ohio. Pre-and post-visitor impacts for comparable UNESCO World Heritage Sites, a tourism industry cluster analysis, and comparable visitor indices were used to examine prospective impact. Lastly, recommendations to maximize the economic impact of visitors, enhance the tourism cluster, and capture visitors and visitor spending are provided.

Throughout the report, mapping software and data were utilized to produce maps and conduct analysis of the Hopewell sites. ESRI GIS software, an online mapping platform, was used to gather data, create maps, and conduct analysis. Applications used include ArcGIS Desktop, ArcGIS Pro, and ArcGIS Online. Basemaps were used for each of the maps included in the report. These maps include various GIS data layers such as transportation networks, city, county, and state boundaries, elevation, waterbodies, greenspaces, among other data. Basemaps used for the maps included in this report are compiled and provided by ESRI. We utilized the ESRI topographic and streets basemaps in maps for this report.

GIS data layers included in maps in this report are from a number of sources, many of them authoritative. Business and amenity data were provided by ESRI and Infogroup through the ESRI Business Analyst GIS package. Drive time data results were calculated using ESRI transportation network data. Additional data layers were acquired from Ohio State Departments of Education, Natural Resources, and Transportation.

⁴ Hopewell Ceremonial Earthworks. UNESCO Tentative Lists. <http://whc.unesco.org/en/tentativelists/5243/>

This report is composed of eight sections.

1. Introduction
2. Visitation and Sales Overview
3. Survey of Visitors
4. Baseline Economic Impact Analysis
5. World Heritage Visitor Portfolio and Tourism Cluster Analysis
6. Review of Comparable UNESCO World Heritage Sites
7. Economic Impact of World Heritage Designation of the Hopewell Ceremonial Earthworks
8. Recommendations

2. VISITATION AND SALES OVERVIEW

This section of the report provides visitation and, where available, gift shop sales for the three Hopewell sites: Newark Earthworks State, Fort Ancient, and the Hopewell Culture NHP. Annual visitation data for all three sites from 2013 to 2016 are presented in table 2.

Table 2. Annual Visitation by Site

	2013	2014	2015	2016
Newark Earthworks	7,012	8,775	8,807	9,580
Fort Ancient	17,567	18,706	18,505	14,880
Hopewell	32,206	36,432	43,587	58,058
Total	56,785	63,913	70,899	82,518

Newark Earthworks State Memorial - Licking County

Since 2013, Newark Earthworks visitation numbers have fluctuated slightly. Over the past four years, there have been 34,174 cumulative visits to the park. Figure 1 indicates that visits increased 36.6% from 2013 (7,012 visitors) to 2016 (9,580 visitors).

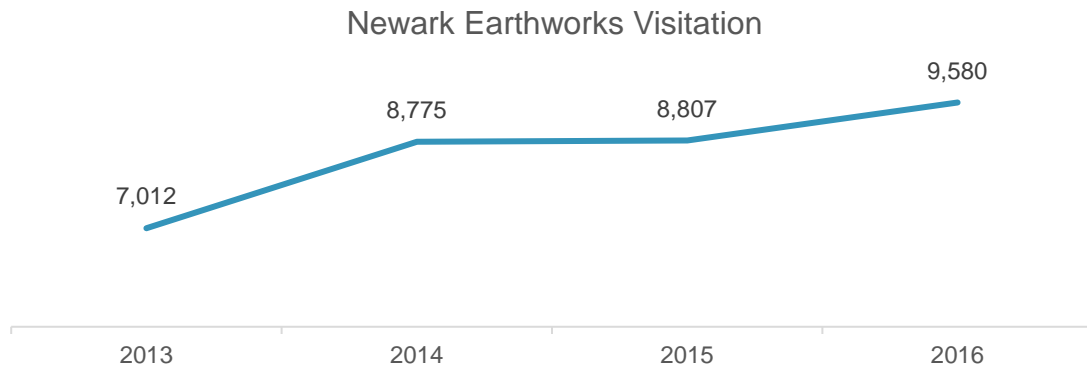


Figure 1. Total number of visitors to the Newark Earthworks State Memorial from 2013 to 2016.

Data from the corresponding gift shops sales reported in Figure 2 indicates that sales varied considerably over this same period. Newark Earthworks gift shop sales have seen changes in the past six years as well. The gift shop saw its largest annual sales totals in 2011 (\$12,505.87) and 2014 (\$12,227.21). Sales from the interim years dropped, as seen in Figure 2. From 2011 to 2016, Newark Earthworks gift shop sales totaled \$65,862.28.



Figure 2. Annual gift shop sales at Newark Earthworks State Memorial from 2011 to 2016.

Fort Ancient State Memorial - Warren County

Until the last two years, Fort Ancient visitation numbers have remained relatively stable (Figure 3). However, in 2016, annual park visitors decreased by 4,000 individuals. From 2012 to 2015, an annual education event based around Native American culture was held. The last year of the event was 2015, accounting for the drop in 2016 attendance. From 2012 to 2016, total visitation was 87,354.

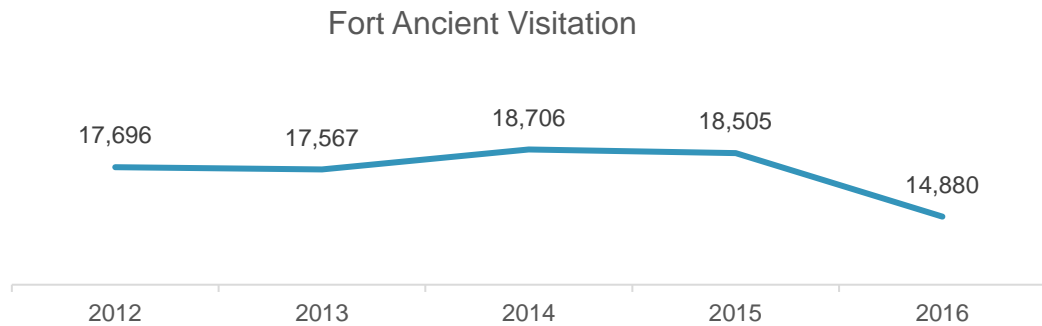


Figure 3. Total number of visitors to Fort Ancient State Memorial between 2012 and 2016.

From 2012-2016, Fort Ancient annual gift shop sales consistently ranged between \$33,000 and \$38,000 (Figure 4). In the past year these numbers have grown; in 2016, annual sales were \$33,242.78 and in 2017⁵, annual sales increased to \$46,068.71.

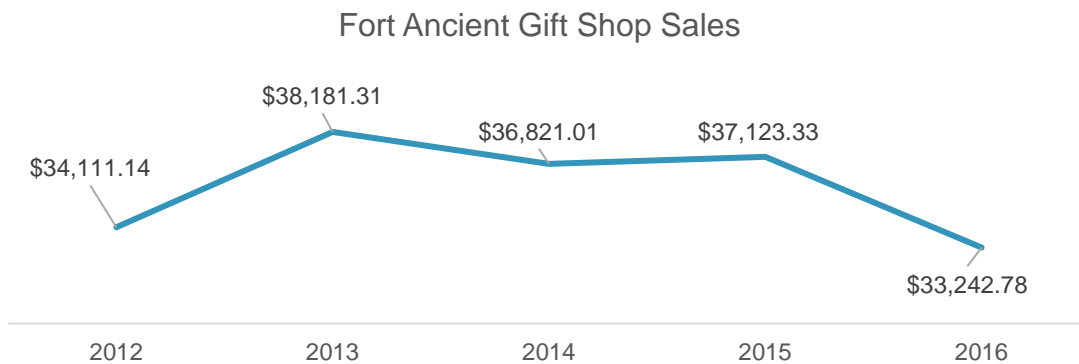


Figure 4. Annual gift shop sales at Fort Ancient State Memorial from 2012 to 2016.

In addition to tracking overall annual visitation and gift shop sales, Fort Ancient also tracks educational groups that visit the park (Figure 5). In the past five years, students who have visited the site with an educational group have generally totaled between 7,000 and 7,700. In 2016, this number dropped slightly, but in 2017, numbers have been growing. As of November 26, 2017, the total students equaled 8,080.

⁵ 2017 numbers account for data through 11/26/17.

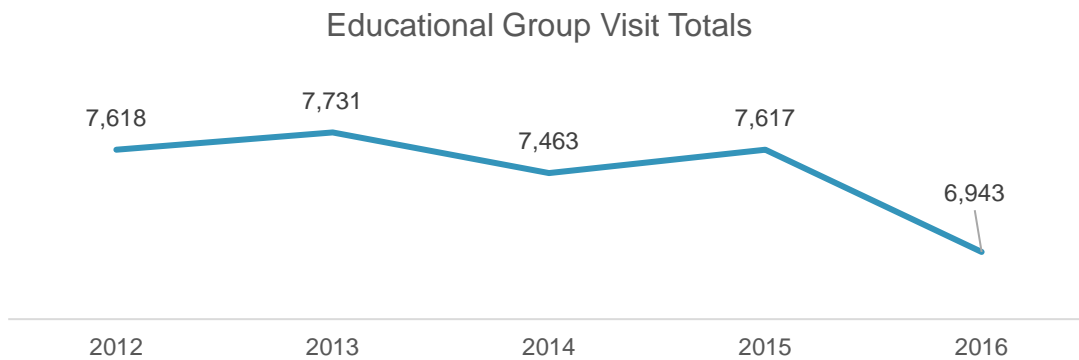


Figure 5. Visitation Totals for Educational Groups at Fort Ancient State Memorial from 2012 to 2016.

Fort Ancient data also included zip code information for visitors to the site from 2012-2016. As demonstrated in Figure 6, zip codes with the largest number of total visits were concentrated in relative close geographic proximity to the site and considerably concentration of visitors from Ohio. However, there was a diverse array of visitors from across the country.

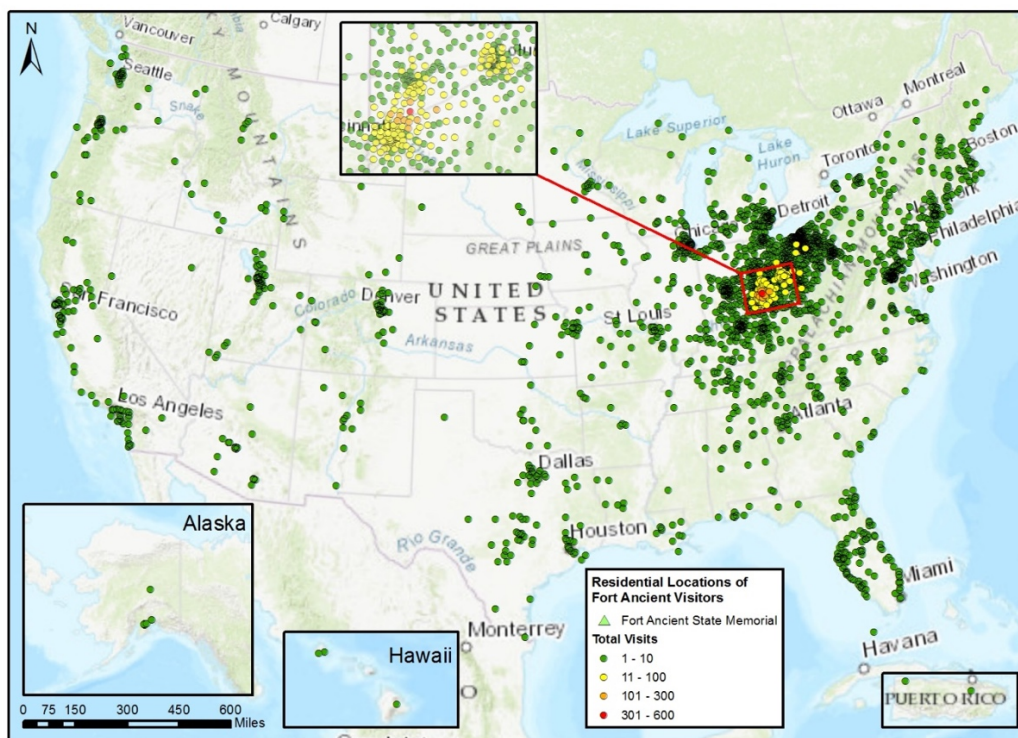


Figure 6. Map showing residential locations of Fort Ancient State Memorial visitors from 2012 to 2016.⁶

⁶ Note that approximately 135 zip codes provided did not match the current zip code database. Those results were excluded from the map.

Hopewell Culture National Historical Park - Ross County

Since 2013, Hopewell Culture NHP's visitation numbers have been increasing (Figure 7). From 2013 to 2016, annual visitation increased by over 25,000 individuals⁷. Over the past 6 years, there have been 243,579 visits to the park.

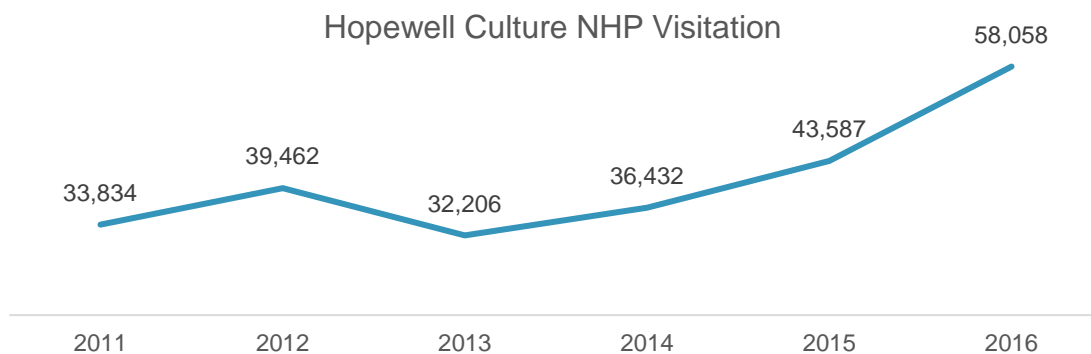


Figure 7. Total number of visitors to the Hopewell Culture National Historical Park from 2011 to 2016.

Hopewell Culture NHP's gift shop sales have also increased since 2013. From 2013 to 2016, annual sales have increased by nearly \$20,000 dollars. As shown in Figure 8, these grew from \$49,760 in 2012 to \$66,317 in 2016.

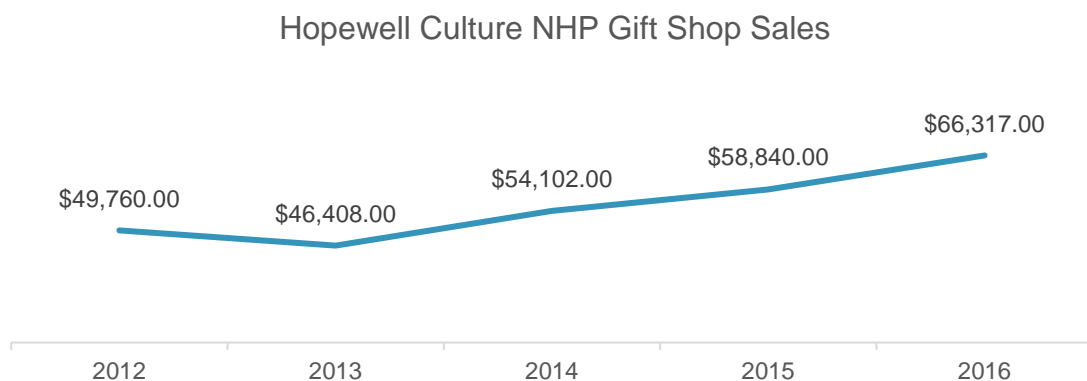


Figure 8. Annual gift shop sales at Hopewell Culture National Historical Park from 2012 to 2016.

⁷ National Park Service. (2016). Annual Park Recreation Visitation: 1904-Last Calendar Year. US Department of the Interior.

3. SURVEY OF VISITORS

Survey Development

To provide a firsthand snapshot of visitation to Newark Earthworks, Fort Ancient, and the Hopewell Culture NHP, a survey instrument was developed with guidance from several resources. The survey was designed to gather visitor spending inputs needed to run economic impact assessment models within IMPLAN. Furthermore, the research team compared the survey questions with past projects that also assessed community level economic impacts. Past experience of members of the research team was also taken into consideration and used in order to finalize the survey instrument. The survey was then uploaded into Qualtrics, an online survey tool, in order to disseminate the survey using a web-based strategy.

The survey was open (i.e. live) from October 30th, 2017 to November 30th, 2017. The survey link was shared at Fort Ancient and Newark Earthworks, shared on social media (e.g. Ohio History Connection's Twitter feed and World Heritage Ohio Facebook page), and included in newsletters. During this 32-day period, 105 surveys were started, of which only 94 were completed (90%). Surveys were completed in an average time of 4.5 minutes. The 11 surveys that were not finished all ended in less than two minutes and after answering approximately one-third of the questions (completion = 35%). The 94-completed survey were utilized in the subsequent analysis.

Survey Results Summary

The survey was used to establish an estimate of the economic impact of visitation to the sites based on visitor spending. As the visitation included a variety of party sizes, the data is reported out based on an average party size of four individuals. The average party size of four individuals spent \$15.87 on fast food (\$3.97 per person), \$51.00 on full service restaurants (\$12.75 per person) and \$39.15 on retail items (\$9.79 per person). These averages were calculated across all visitors; yet, it is important to note that not all visitors spent money in these areas. For example, 69% of visitors purchased fast food, 75% of visitors purchased full service restaurant meals, and 45% of visitors made retail purchases. It is important to note that the visitors indicating prospective World Heritage Site designation as being extremely influential in their decision to visit the site spent considerably more. An extremely influential overnight party of four spent \$368 compared to \$173 per average overnight party of four. The full survey results, along with a discussion of limitations, can be found in the appendix.

4. IMPLAN

Methodology

This study utilizes Impact Analysis for Planning (IMPLAN), an econometric modeling program created by IMPLAN to calculate economic impacts in each of the three counties based on 2016 data (the most recently available).⁸ IMPLAN models the ripple effect of change in one industry or activity through detailed accounting matrices and multiplier models.

The IMPLAN software estimates three types of impacts associated with spending patterns.

1. Direct impacts - effects of actual jobs creates, wages, and other spending by an industry.
2. Indirect impacts - effects of purchases made by businesses with a direct supplier relationship with the industry.
3. Induced impacts - the ripple effect of increased household expenditures due to employees of direct and supplier businesses.

The total economic impact is the sum of the direct, indirect, and induced effects.

IMPLAN provides direct, indirect and induced calculations of impacts on

- employment (i.e. number of jobs gained/lost)⁹,
- labor income (i.e. employee compensation gained/lost),
- value added (i.e. increase/decrease in the study area's gross domestic product), and
- total output (total economic value of the tourism industry).

The total effect of the tourism and travel spending on the economy is calculated through an economic concept known as a "multiplier." The multiplier expresses the number of additional jobs or amount of additional income created by each new job and extra dollar earned or spent as a result of the increase in tourism and travel. The IMPLAN model generates the multipliers that are used to calculate direct, indirect, and induced effects.

The primary piece of information for the economic impact analysis is visitation data from each site. From this base, the primary survey data is used to predict the spending behavior of these visitors. Respondents are asked how many adults and children were in their party when they visited a site, including themselves. The average respondent traveled in a party of four. Therefore, the total visitation numbers are divided by four as a first step, making them "parties" rather than individuals.

⁸ IMPLAN Group LLC, IMPLAN System (data and software), 16905 Northcross Dr., Suite 120, Huntersville, NC 28078 www.IMPLAN.com

⁹ IMPLAN calculates both jobs as full and part-time. Jobs are not FTE (full-time equivalent). As such, job numbers in areas such as retail/tourism industries with seasonal and/or part-time employment often have larger job numbers due to these seasonal/part-time workers.

From there, survey responses are used to estimate what an average party would spend on food, lodging, and retail while visiting the site. The percent of respondents reporting spending money in a given area is found, and the total number of parties is reduced to reflect that number. Finally, the number of parties spending money is multiplied by the average amount survey respondents report spending. The result is the industry change in that sector.

The following IMPLAN sectors are used in this study:

- Full and Limited Service Restaurants (spending is allocated based on survey responses)
- Miscellaneous Store Retailers (used for gift shop spending and other spending in the region)
- Hotels and Motels
- Museums, Historical Sites, Zoos, and Parks (this sector is only utilized in Warren County, as Fort Ancient is the only site with admission charges)
- Gift Shop data was provided by each site and applied as-is to the IMPLAN model. Visitation numbers, gift shop sales, and IMPLAN data is all from 2016.

Following are the estimated 2016 economic impacts of the Earthworks sites by county.

Newark Earthworks State Memorial – Licking County

The total economic value of Newark Earthworks in Licking County, Ohio is \$324,277, as shown in table 3. The site directly or indirectly supports approximately five full or part time jobs. Table 4 breaks down the top ten industries most affected by the site in Licking County.

Table 3. Estimated Impacts of Newark Earthworks

<i>Impact Type</i>	<i>Employment</i>	<i>Labor Income</i>	<i>Value Added</i>	<i>Output</i>
Direct Effect	4.5	\$85,859	\$113,413	\$217,423
Indirect Effect	0.4	\$14,521	\$25,773	\$49,794
Induced Effect	0.5	\$16,812	\$33,180	\$57,059
Total Effect	5.3	\$117,192	\$172,367	\$324,277
Employment multiplier = 1.2				

Table 4. Top Ten Industries Affected in Licking County

<i>Description</i>	<i>Employment</i>	<i>Labor Income</i>	<i>Value Added</i>	<i>Output</i>
Full-service restaurants	2.6	\$48,634	\$53,312	\$114,912

Retail - Miscellaneous store retailers	1.2	\$23,830	\$29,671	\$47,719
Limited-service restaurants	0.5	\$8,683	\$20,232	\$38,253
Hotels and motels, including casino hotels	0.2	\$6,216	\$12,717	\$21,388
Real estate	0.1	\$918	\$5,490	\$10,860
Employment services	0	\$911	\$1,456	\$2,131
Services to buildings	0	\$485	\$578	\$1,050
Management of companies and enterprises	0	\$2,126	\$2,715	\$5,562
Wholesale trade	0	\$1,478	\$2,870	\$4,920
Warehousing and storage	0	\$666	\$816	\$1,482

Hopewell Culture National Historical Park – Ross County

Hopewell Culture NHP, located in Ross County, Ohio, supports approximately 33 full or part time jobs. The total economic value of this site is two million dollars, as shown in table 5. Hopewell Culture NHP shows the highest visitation numbers of the three sites, and therefore the highest economic impacts. Higher visitation could be attributed to the National Park designation of this site. Table 6 breaks down the top ten industries most affected by the site in Ross County.

Table 5. Estimated Impacts of Hopewell Culture NHP

<i>Impact Type</i>	<i>Employment</i>	<i>Labor Income</i>	<i>Value Added</i>	<i>Output</i>
Direct Effect	27.8	\$606,001	\$760,690	\$1,414,367
Indirect Effect	1.7	\$59,345	\$106,955	\$217,000
Induced Effect	3.1	\$109,237	\$215,502	\$372,475
Total Effect	32.6	\$774,583	\$1,083,147	\$2,003,842
Employment multiplier = 1.2				

Table 6. Top Ten Industries Affected in Ross County

<i>Description</i>	<i>Employment</i>	<i>Labor Income</i>	<i>Value Added</i>	<i>Output</i>
Full-service restaurants	16.2	\$344,574	\$373,211	\$753,445
Retail - Miscellaneous store retailers	7.5	\$167,793	\$197,563	\$308,119
Limited-service restaurants	3.3	\$60,150	\$131,462	\$251,568
Hotels and motels, including casino hotels	1.4	\$46,638	\$78,548	\$139,547
Real estate	0.4	\$2,802	\$18,674	\$41,314
Hospitals	0.3	\$24,218	\$27,873	\$46,837

Employment services	0.2	\$5,942	\$9,476	\$13,553
Retail - General merchandise stores	0.2	\$3,857	\$6,997	\$11,244
All other food and drinking places	0.1	\$3,975	\$3,104	\$5,505
Services to buildings	0.1	\$1,606	\$1,922	\$3,753

Fort Ancient State Memorial – Warren County

The total economic value of tourism associated with Fort Ancient is \$686,064, as shown in table 7. The site directly or indirectly supports 10 full or part time jobs. Fort Ancient is the only site with impacts in the *museums, historical sites, zoos, and parks* sector, as admission is charged. In 2016, Fort Ancient collected \$68,413 in admissions. Table 8 breaks down the top ten industries most affected by the site in Warren County.

Table 7. Estimated Impacts of Fort Ancient

<i>Impact Type</i>	<i>Employment</i>	<i>Labor Income</i>	<i>Value Added</i>	<i>Output</i>
Direct Effect	8.2	\$193,069	\$241,864	\$438,707
Indirect Effect	0.8	\$39,390	\$68,631	\$114,049
Induced Effect	1	\$38,351	\$79,903	\$133,307
Total Effect	10	\$270,809	\$390,398	\$686,064
Employment multiplier = 1.2				

Table 8. Top Ten Industries Affected in Warren County

<i>Description</i>	<i>Employment</i>	<i>Labor Income</i>	<i>Value Added</i>	<i>Output</i>
Full-service restaurants	4.3	\$86,615	\$94,035	\$193,753
Retail - Miscellaneous store retailers	2.5	\$37,620	\$49,741	\$86,659
Limited-service restaurants	0.8	\$14,979	\$34,879	\$65,238
Museums, historical sites, zoos, and parks	0.4	\$47,725	\$48,723	\$68,416
Hotels and motels, including casino hotels	0.4	\$9,771	\$20,357	\$35,919
Real estate	0.2	\$2,302	\$17,681	\$29,600
Management of companies and enterprises	0.1	\$10,691	\$13,286	\$20,029
Employment services	0.1	\$2,562	\$4,063	\$5,333
Wholesale trade	0.1	\$5,399	\$9,619	\$14,074
Services to buildings	0.1	\$1,000	\$1,175	\$1,981

5. World Heritage Visitor Portfolio and Tourism Cluster Analysis

Heritage Site Economic Impact Determinants

Economic impact assessments of World Heritage Sites, as with other economic assets that attract visitors and tourism-related activities, necessarily begin with estimations of the number of visitors to the site and their spending behaviors and amounts. However, visitors - and especially cultural heritage tourists - are far from a monolith population. Instead they exhibit widely varying characteristics that affect their prospective financial contributions to the host economies of the sites being visited. As noted in the survey results, those cultural heritage visitors or visitors who found prospective World Heritage Site designation to be *extremely influential* in visiting the Hopewell Ceremonial Earthworks sites tend to be higher impact visitors.

Day vs. Overnight Visitors

Tourism-related economic impact assessments typically differentiate between the spending of single day and overnight visitors. This is appropriate as the overnight visitor incurs significant additional costs for lodging and food and thereby spend significantly larger amounts in the sites' host economies. For example, the State of Ohio recently reported that the number of tourism visits to and within Ohio increased from 207 million in 2015 to 212 million visits in 2016:

“Of those 212 million visits last year, nearly 42 million were overnight trips. Research shows that overnight visitors spend, on average, more than three times the amount spent by daytrip visitors (\$111 for daytrips vs. \$360 for overnight trips).”¹⁰

These Ohio figures are consistent with the experience of tourism in the U.S. and internationally. That experience clearly demonstrates the importance of emphasizing overnight visitors to increasing economic benefits from World Heritage Sites. Management strategies that successfully increase overnight visitors can significantly increase economic outcomes even in situations where total visitors numbers are stagnant or decreasing. This can be a critical strategic option for those sites where increasing total visitation is either impractical due to market obstacles or undesirable due to the fragility or vulnerability of the site to heavy visitation-induced damage.

World Heritage Site Visitor Composition

The visitor stream to a World Heritage Site can be further differentiated to distinguish economic contributions by demographic segments. Visitor spending can be characterized as varying by factors, such as age and travel status, to provide information useful to site managers in program development and infrastructure design. These parameters can be used to develop a World Heritage Site Visitor

¹⁰ <http://www.ohio.org/about-tourism-ohio>

Segment Economic Impact Index (Table 9) that illustrates the varying ratios of visitor spending by demographic categories:

- Child – less than 18 years old
- Young Adult – 18 to 25 years old
- Young Family – 2 adults and 2 children
- Mature Adult – 25 to 55 years old
- Retired Adult – 55+ years old

The values are indexed against the estimate spending of a single mature (25-55) adult. These categories were further modified by their visitor status as either individual, couple or group. Couple and group travelers exhibit discounted spending effects due to cost sharing economies that are reflected in their index values. These values apply to both day-trip and overnight visitor patterns.

Table 9. World Heritage Site Visitor Segment Economic Impact Index.

WHS Visitor Segment Economic Impact Index	
<i>WHS Visitor Segment</i>	<i>Spend Index</i>
Child	0.20
Child - Group	0.15
Young Adult	0.80
Young Adult-Group	0.60
Young Adult Couple	1.40
Young Adult Couple-Group	1.05
Young Family (2+2)	1.80
Mature Adult	1.00
Mature Adult-Group	0.75
Mature Couple	1.75
Mature Couple-Group	1.31
Retired Adult	0.80
Retired Adult-Group	0.64
Retired Adult Couple	1.40
Retired Adult Couple-Group	1.05

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The index can be used to examine the economic impacts of different visitor stream compositions. The scenario examples shown in Table 10 illustrate the varying estimates of the economic impact for three sets of 100 visitors – Generic, Child Oriented, and Adult Oriented – that vary primarily by the age of the visitor cohorts. The estimated economic impacts varied from a low of \$11,160 for a Child Oriented scenario to a high of \$23,786 for an Adult Oriented scenario when the average Ohio tourists spending of \$111 for daytrips vs. \$360 for overnight trips was applied to the data. For example: the total visitor impact for Child Oriented scenario (i.e. children will spend less than the average) yields an index spend total of 31. This yields \$3,441 (31 x \$111) for day visitors and \$11,160 (31 x \$360) for overnight visitors. When the much higher Adult Oriented index (66.1 spend total) was applied, the results were much larger. Similar economic impact variability would be exhibited by scenarios based on other differentiated spending behaviors such as group versus individual travelers.

Table 10. Scenario examples of the economic impact from different visitor streams by composition

WHS Visitor Segment	Scenario 1: Generic				Scenario 2: Child Oriented				Scenario 3: Adult Oriented		
	#Segment	#Spend	#Visitor		#Segment	#Spend	#Visitor		#Segment	#Spend	#Visitor
Child	4	0.8	4		10	2.0	10		0	0.0	0
Child - Group	8	1.2	8		60	9.0	60		0	0.0	0
Young Adult	4	3.2	4		0	0.0	0		5	4.0	5
Young Adult-Group	4	2.4	4		0	0.0	0		5	3.0	5
Young Adult Couple	4	5.6	8		0	0.0	0		5	7.0	10
Young Adult Couple-Group	4	4.2	8		0	0.0	0		5	5.3	10
Young Family (2+2)	4	7.2	16		4	7.2	16		4	7.2	16
Mature Adult	4	4.0	4		8	8.0	8		5	5.0	5
Mature Adult-Group	4	3.0	4		0	0.0	0		5	3.8	5
Mature Couple	4	7.0	8		0	0.0	0		5	8.8	10
Mature Couple-Group	4	5.3	8		0	0.0	0		5	6.6	10
Retired Adult	4	3.2	4		6	4.8	6		4	3.2	4
Retired Adult-Group	4	2.6	4		0	0.0	0		4	2.6	4
Retired Adult Couple	4	5.6	8		0	0.0	0		4	5.6	8
Retired Adult Couple-Group	4	4.2	8		0	0.0	0		4	4.2	8
Totals	64	59.4	100		88	31.0	100		60	66.1	100
	Day	\$ 6,595			Day	\$ 3,441			Day	\$ 7,334	
	Overnight	\$ 21,388			Overnight	\$ 11,160			Overnight	\$ 23,786	

The difference in day trip vs. overnight visitors was also modeled in IMPLAN for each site using Tourism Ohio data. Tourism Ohio reports that the average day trip visitor spends \$111 per day and the average overnight visitor spends \$360. Tourism Ohio was unable to provide a breakdown of this spending pattern. Using a spending pattern similar to the survey results, we created an estimated day trip and overnight visitor spending pattern outlined in Table 11. This spending pattern assumes an average day trip visitor spends \$80 (\$31 less than the Tourism Ohio average) and an average overnight visitor spends \$295 (\$65 less than the Tourism Ohio average). We presume that the Tourism Ohio total numbers include admission fees (for example tickets to sporting events), fuel purchases, and other items not included in our model. Additionally, some of these dollars would likely be spend outside of our study area.

Table 11. Spending Breakdown for Day Trip vs. Overnight Visitors

Spending Breakdown for Day Trip vs. Overnight Visitors		
	Day trip	Overnight
Fast food	\$10.00	\$15.00
Full service	\$25.00	\$40.00
Lodging	\$ -	\$150.00
Other Retail	\$25.00	\$50.00
Gift shop	\$20.00	\$40.00
Total	\$80.00	\$295.00
Excluded	\$31.00	\$65.00
Tourism Ohio Average	\$111.00	\$360.00

Table 12 demonstrates that magnitude of difference between day trip and overnight visitors. As overnight visitors have three times as much spending, they generate three times the impact on the economy.

Table 12. Economic Impact of 10,000 visitors: Day Trip vs. Overnight Visitors

Newark Earthworks Licking County Day Trip 2017: 10,000 visitors				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	12.5	\$236,592	\$303,438	\$566,000
Indirect Effect	1	\$37,724	\$68,020	\$131,515
Induced Effect	1.2	\$45,944	\$90,708	\$155,854
Total Effect	14.7	\$320,260	\$462,166	\$853,368
Newark Earthworks Licking County Overnight Trip 2017: 10,000 visitors				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	36.2	\$855,068	\$1,425,057	\$2,482,000
Indirect Effect	4.7	\$176,649	\$300,156	\$582,126
Induced Effect	4.6	\$172,793	\$341,027	\$586,088
Total Effect	45.5	\$1,204,510	\$2,066,240	\$3,650,214
Hopewell Culture National Historical Park Ross County Day Trip 2017: 10,000 visitors				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	11.9	\$256,108	\$314,854	\$566,000
Indirect Effect	0.7	\$22,810	\$42,008	\$85,574
Induced Effect	1.3	\$45,797	\$90,316	\$155,918
Total Effect	13.8	\$324,715	\$447,178	\$807,492

Hopewell Culture National Historical Park Ross County Overnight Trip 2017: 10,000 visitors				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	36	\$955,415	\$1,397,316	\$2,480,759
Indirect Effect	3.7	\$128,896	\$219,780	\$448,746
Induced Effect	5	\$177,952	\$351,597	\$606,805
Total Effect	44.7	\$1,262,262	\$1,968,693	\$3,536,309
Fort Ancient State Memorial Warren County Day Trip 2017: 10,000 visitors				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	12.9	\$230,103	\$300,900	\$568,873
Indirect Effect	1.1	\$54,634	\$95,419	\$158,568
Induced Effect	1.2	\$47,157	\$98,174	\$163,609
Total Effect	15.1	\$331,894	\$494,493	\$891,050
Fort Ancient State Memorial Warren County Overnight 2017: 10,000 visitors				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	37.9	\$803,730	\$1,363,154	\$2,465,829
Indirect Effect	4.9	\$245,094	\$397,457	\$668,819
Induced Effect	4.5	\$173,963	\$362,053	\$603,925
Total Effect	47.3	\$1,222,787	\$2,122,665	\$3,738,573

World Heritage Site Tourism Industry Cluster Analysis

Regardless of the number of visitors attracted to a World Heritage Site, the host community and its citizens will not benefit from the presence of those visitors unless the local economy is sufficiently and appropriately structured to capture economic spillovers from visitor spending. Where the local economy lacks sufficient tourism businesses – lodging, entertainment, and food services – the potential economic benefits of World Heritage Site will be under-realized as visitor spending benefit is undermined by a scarcity of spending capture opportunities. Concurrently, an insufficiency of tourism businesses lessens the visitor experience to the detriment of the expected growth in visitation objective of the World Heritage Site inscription. It is therefore essential that World Heritage Sites plan with an intended economic benefit objective that addresses the requisite economic development landscape required to achieve that goal.

Industry cluster analysis provides a useful tool for assessing the status of a host economy to benefit from a prospective World Heritage Site. Industry clusters – such as the tourism industry serving a World Heritage Site - describe the diverse matrix of

businesses that supply each other, as well as consumers, within prescribed sets of common industry groupings and markets. Such clusters often arise as companies develop around geographic proximity to desired resources and provide a variety of goods and services that draw on those resources to meet the market needs of customers. The economic “health” of an industry cluster can be assessed by the extent to which the maximum spectrum of desired goods and services – from low end commodity to high end specialty - are satisfied by the constituent resident population of businesses.

Economists have defined the tourism industry cluster through classifications of businesses that directly serve tourists. As described by the North American Industry Classification System (NAICS), used by business and government to classify business establishments according to type of economic activity, the categories of activities in the tourism industry cluster include, but are not always limited to:

- Air transportation and services
- Sea, coastal transportation
- Taxi and limousine services
- Charter and ground passenger transportation
- Scenic and sightseeing water transportation
- Automotive rental
- Travel arrangement and reservation services
- Performing arts companies
- Spectator sports
- Promoters of performing arts and sports
- Museums, historical sites, zoos, and parks
- Amusement parks and arcades
- Traveler accommodations
- RV parks and recreational camps
- Rooming and boarding houses
- Drinking places
- Restaurants and other eating places

World Heritage Ohio Hopewell Area Tourism Industry Cluster

The businesses in a tourism industry cluster serve not only tourists directly, but also constitute a network of “buyers and suppliers” that trade goods and services among each other. A healthy, dynamic industry cluster can be thought of a wide-ranging interwoven “net” of firms that serve a target market. The representative sectors of a World Heritage Site tourism industry cluster are illustrated in Figure 9.

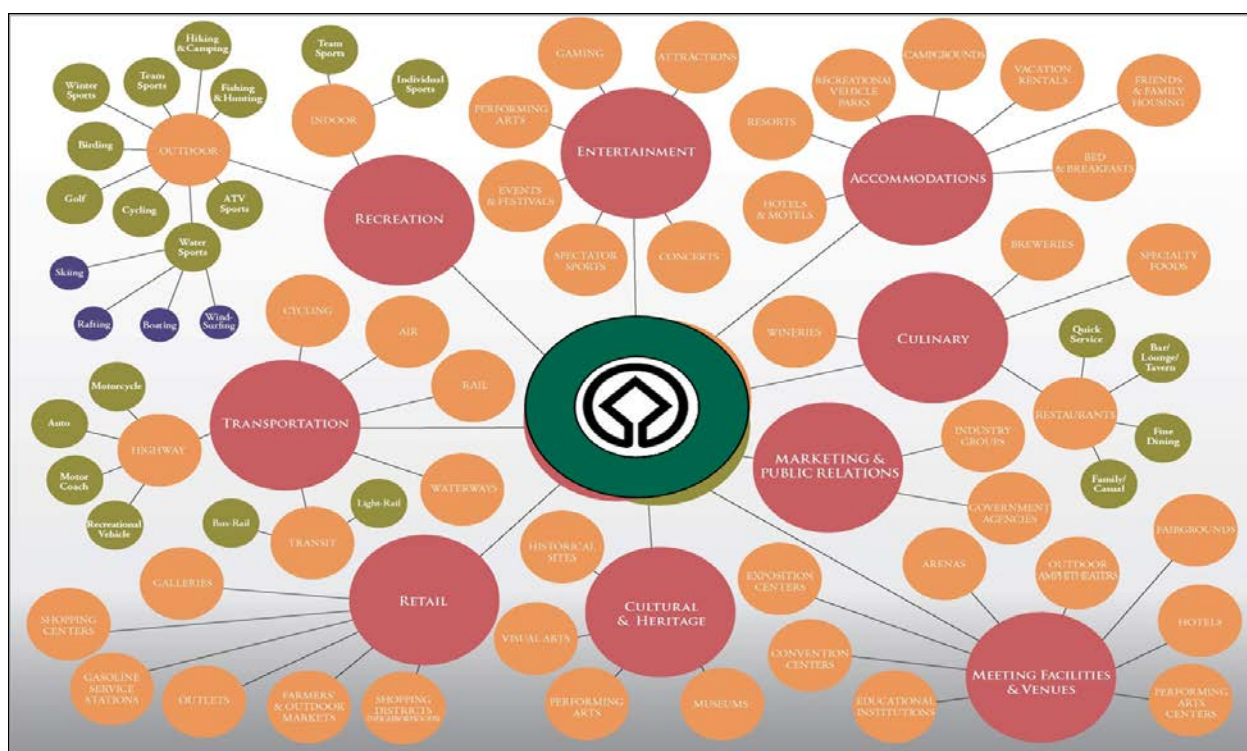


Figure 9. Illustration of representative sectors of a World Heritage Site tourism industry cluster.

The three Ohio counties constituting the prospective Hopewell Culture World Heritage Sites - Warren, Licking, and Ross – have an aggregate population of 884 firms in the Tourism Industry Cluster (Figure 9). While the sufficiency of this population has yet to been fully assessed, it is highly likely that that several important sectors of that cluster would be found to be underpopulated. Gaps in an industry cluster may represent examples of unfulfilled market opportunities where potential or demonstrated customer/tourists demand is going unsatisfied. When that is the case, not only may the visitor experience have been lessened, but the “opportunity gap” also represents lost revenue and employment benefits for the regional economy.

Examining the cluster at the company level can also discern potential areas of either over-population where too many businesses may be trying to serve the same customers, or cluster categories where a paucity of resident businesses may suggest areas of potential new growth. Additional evidence for these “cluster gaps” may be discerned from research, such as “visitor satisfaction” surveys, which describe (as the survey conducted for this study does) unmet visitor demands. In such instances, combining tourism market data with cluster analysis can be useful in guiding economic development efforts toward these “targets of opportunity”.

Figures 10-12 shows the existing amenities around each site.

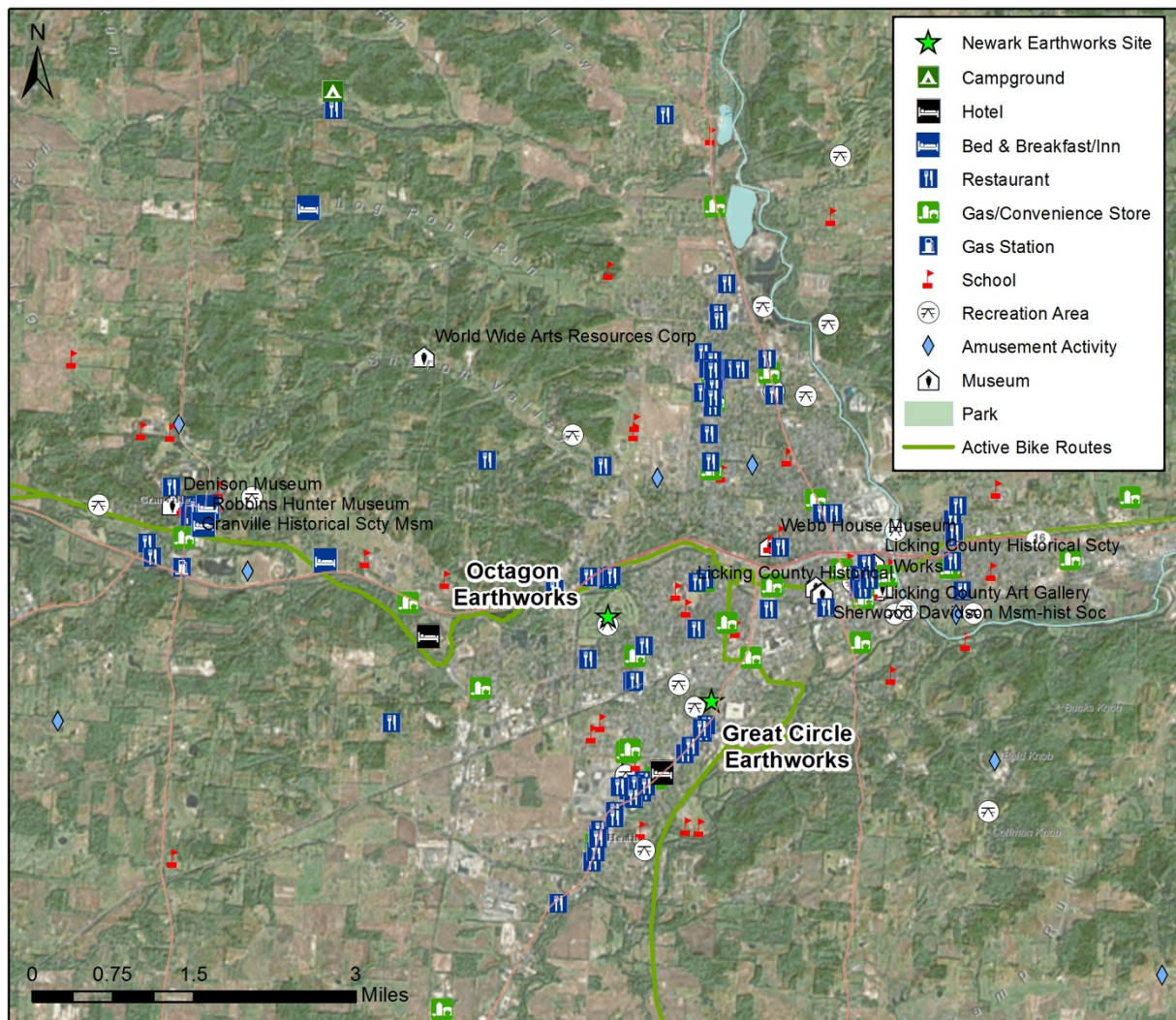


Figure 10. Local amenities near the Newark Earthworks State Memorial.



Figure 11. Local amenities near the Fort Ancient State Memorial.

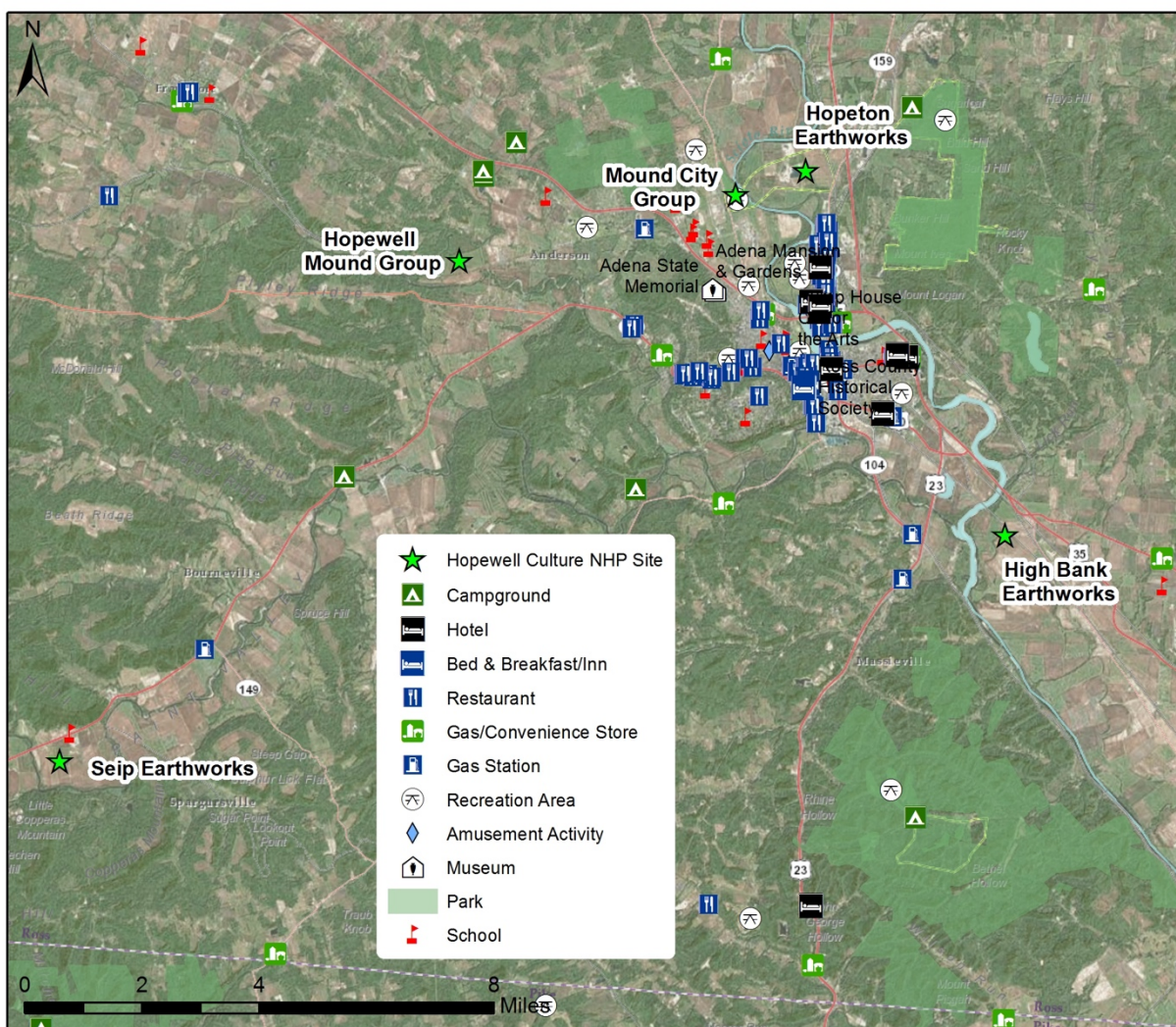


Figure 12. Local amenities near Hopewell Culture National Historical Park.

Overnight accommodations

Availability and diversity of overnight accommodations vary by site location. There are several hotels in the direct vicinity of both of the proposed sites in the City of Newark (Figure 13). Near Fort Ancient, there are a number of campgrounds, and a couple of bed and breakfast inns in the nearby town of Lebanon (Figure 14). Hotels in the area are further away, and the closest one is located in the outer suburbs of Cincinnati. While many of the recreational facilities located near the Hopewell Culture NHP sites are golf courses, there are also five state parks, and a state forest area that support recreational activities that might be compatible with those who would be interested in visiting the Hopewell Ceremonial sites (Figure 15).



Figure 13. Map of lodging and camping facilities near the Newark Earthworks State Memorial. The category includes hotels, motels, bed and breakfast, inns, and campgrounds.

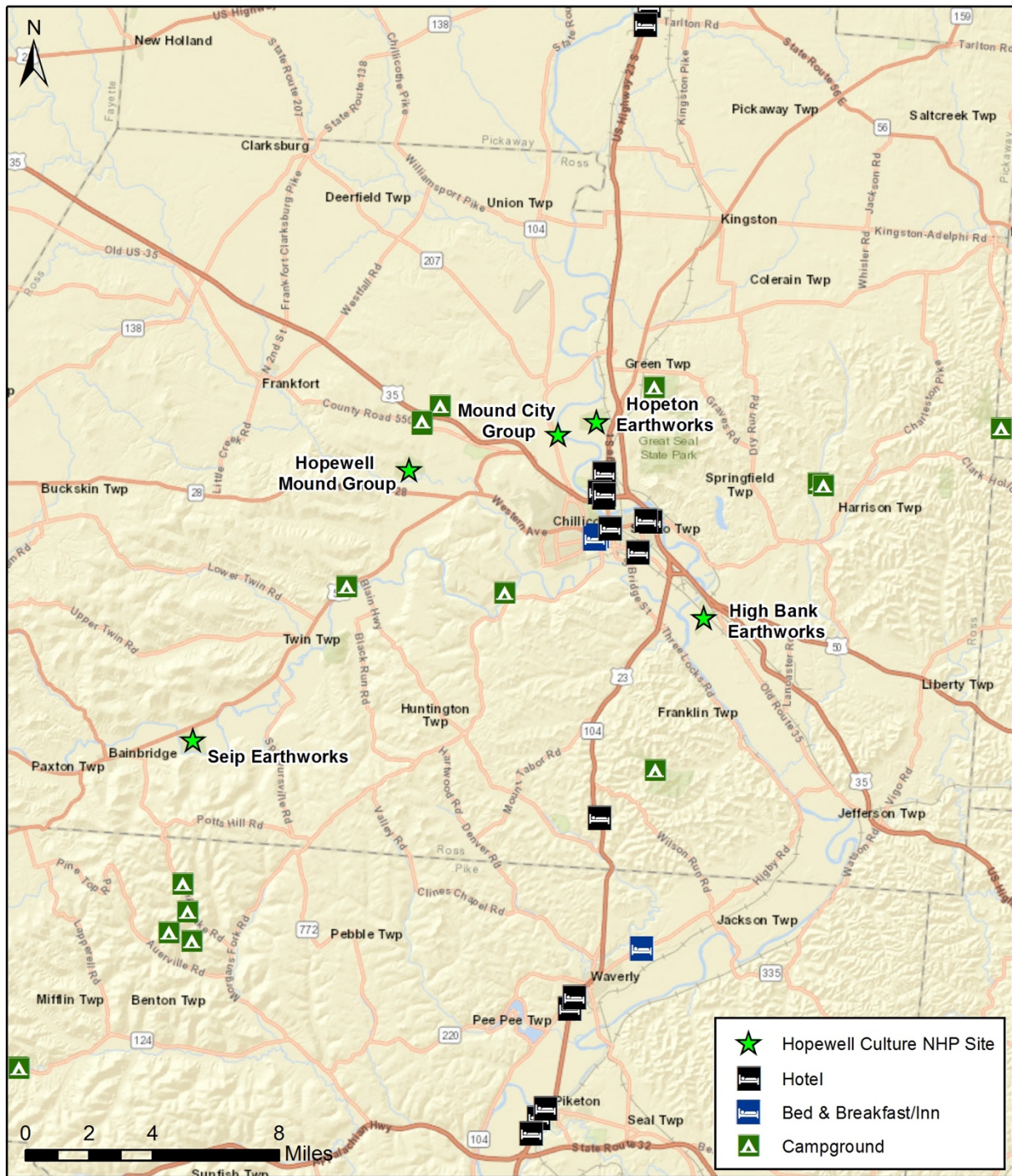


Figure 14. Map of lodging and camping facilities near the Hopewell Culture National Historical Park. The category includes hotels, motels, bed and breakfast, inns, and campgrounds.



Figure 15. Map of lodging and camping facilities near the Fort Ancient State Memorial. The category includes hotels, motels, bed and breakfast, inns, and campgrounds.

For the Newark Earthworks, Columbus and Dayton major metropolitan areas are located within two hours of Newark (Figure 16). Additionally, major metropolitan areas within three hours include Cincinnati, Cleveland, Toledo, and Pittsburgh, PA.

Drive times and distances between Hopewell Ceremonial Earthworks proposed sites are included in table 13.

Table 13. Major metropolitan areas within a 3-hour drive time of the Hopewell Ceremonial Earthworks sites.

	Hopewell Culture National Historical Park	Fort Ancient State Memorial	Newark Earthworks State Memorial
Hopewell Culture National Historical Park	5 Sites Range 9 min – 5 miles to 24 mins – 16.5 miles	1:08 hours – 72.5 miles 1:28 hours – 69.5 miles*	1:24 hours – 79 miles 1:30 hours – 63 miles*
Fort Ancient State Memorial	1:08 hours – 72.5 miles 1:28 hours – 69.5 miles*	1 Site n/a	1:44 Hours – 110 miles 2:34 hours – 112 miles*
Newark Earthworks State Memorial	1:24 hours – 79 miles 1:30 hours – 63 miles*	1:44 Hours – 110 miles 2:34 hours – 112 miles*	2 Sites 6 minutes - 2.1 miles

* - Time and distance if highways and freeways are avoided.

Results include 2016 metropolitan population estimates and less than two, or two to three-hour drive times from the sites. Table 14 and table 15 are a partial depiction of the data presented in maps for drive time distances from each of the sites (Figures 16-18 (reference service area maps)).

Table 14. Population Center Drive Time

		Major Population Centers < 3 Hour Drive								
		Columbus, OH	Cincinnati, OH-KY-IN	Dayton, OH	Cleveland-Elyria, OH	Toledo, OH	Pittsburgh, PA	Indianapolis-Carmel-Anderson, IN	Louisville-Jefferson County, KY	Lexington-Fayette, KY
Population (2016 estimate)*		2,041,520	2,165,139	800,683	2,055,612	605,221	2,342,299	2,004,230	1,283,430	506,751
Hopewell Culture National Historical Park	< 2-hour Drive	X	X	X						
	2-3 hour Drive									
Fort Ancient State Memorial	< 2-hour Drive	X	X	X						X
	2-3 hour Drive							X	X	
Newark Earthworks State Memorial	< 2-hour Drive	X		X						
	2-3 hour Drive		X		X	X	X			

* - population estimates from US Census American Community Survey 2016 data.

Major population centers within a two to three-hour drive should be considered as targets for future advertising campaigns. This result is based in part on mapping home locations of visitors for Fort Ancient (Figure 6 (Fort Ancient Visitor Locations map)). Out of 9,643 visits mapped, 7,265 (75%) were of visitors who live within a 2-hour drive of the site, and 7,737 (80%) were of visitors within a 3-hour drive.

Table 15. Drive times to Hopewell Ceremonial Earthworks proposed sites from major population centers in the region

	Major Population Centers		
	Columbus	Cincinnati	Dayton
Hopewell Culture National Historical Park	< 1 hour	< 1 hour 40 minutes	< 1 hour 15 minutes
Fort Ancient State Memorial	< 1 hour 15 minutes	< 40 minutes	< 50 minutes
Newark Earthworks State Memorial	< 40 minutes	< 2 hours 15 minutes	< 1 hour 45 minutes

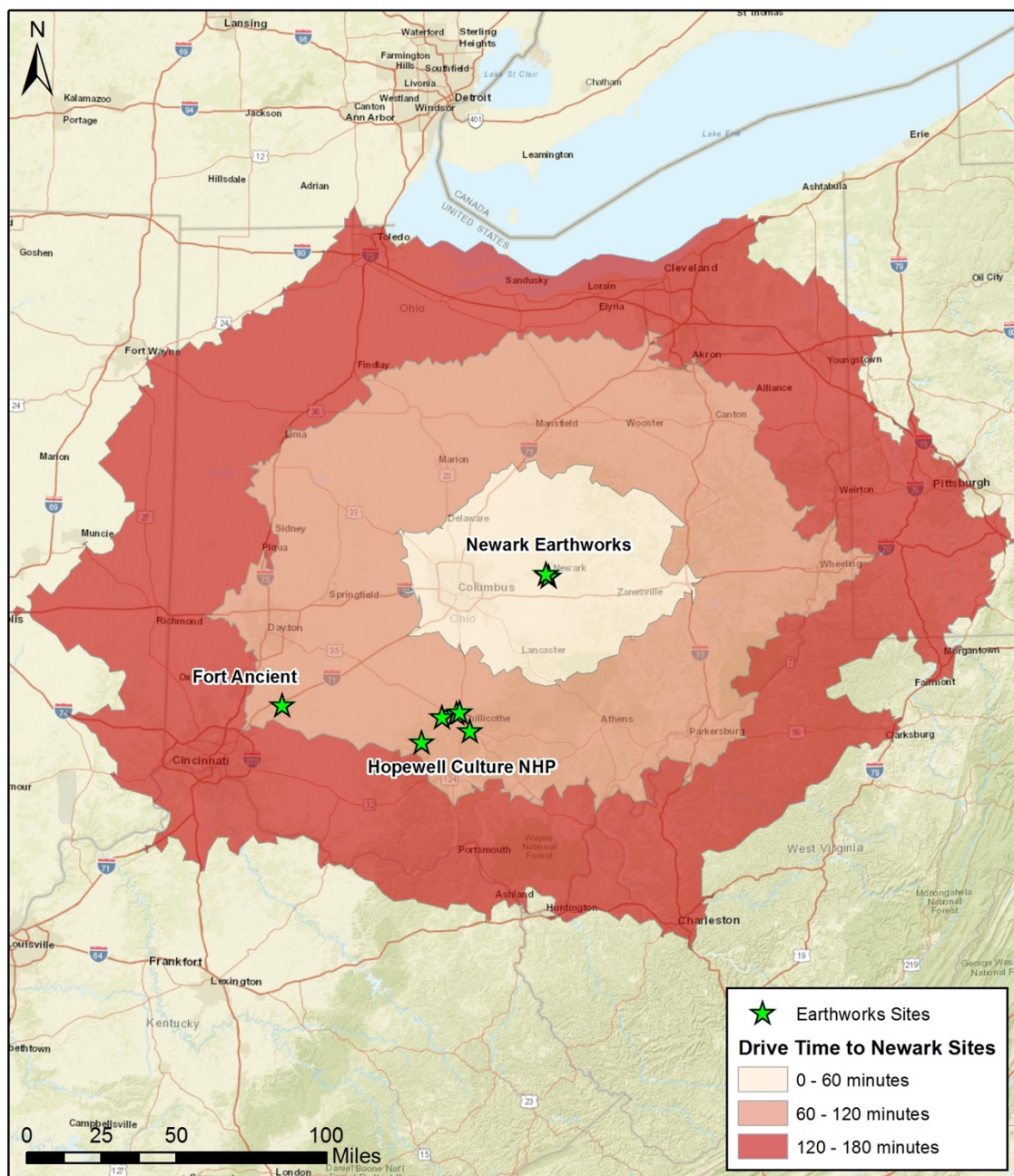


Figure 16. Map of the drive time to the Newark Earthworks sites. Time frames displayed are less than one hour (0-60 minutes), one to two hours (60-120 minutes), and two to three hours (120-180 minutes).

Cincinnati, Columbus, Dayton, and Lexington, KY major metropolitan areas are located within two hours of Fort Ancient (Figure 17). Additionally, major metropolitan areas within three hours include Indianapolis, IN and Louisville, KY.

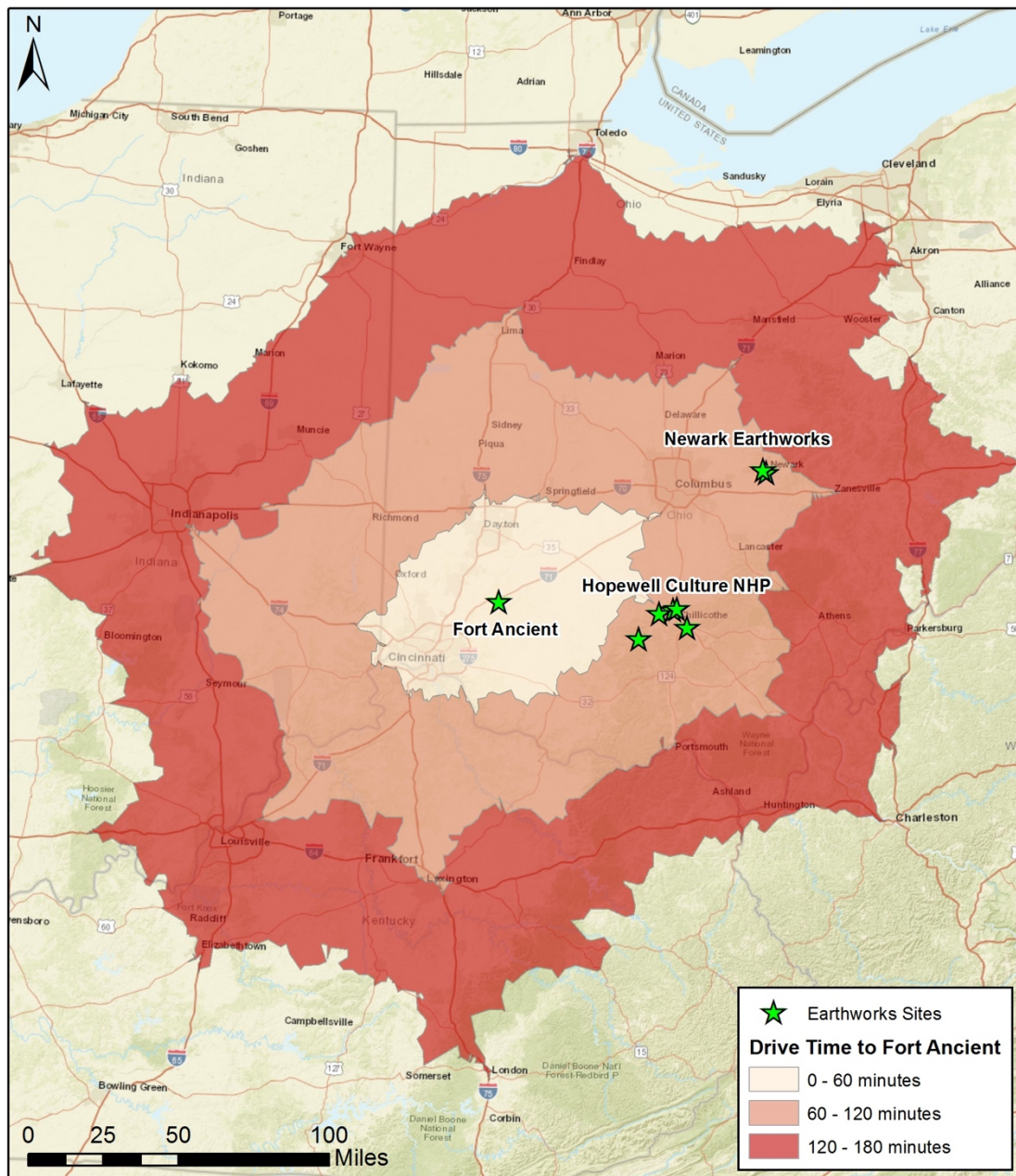


Figure 17. Map of the drive time to the Fort Ancient. Time frames displayed are less than one hour (0-60 minutes), one to two hours (60-120 minutes), and two to three hours (120-180 minutes).

Columbus, Cincinnati, and Dayton major metropolitan areas are located within two hours of Hopewell Culture NHP (Figure 18). No additional major metropolitan areas are within two to three hours' drive.

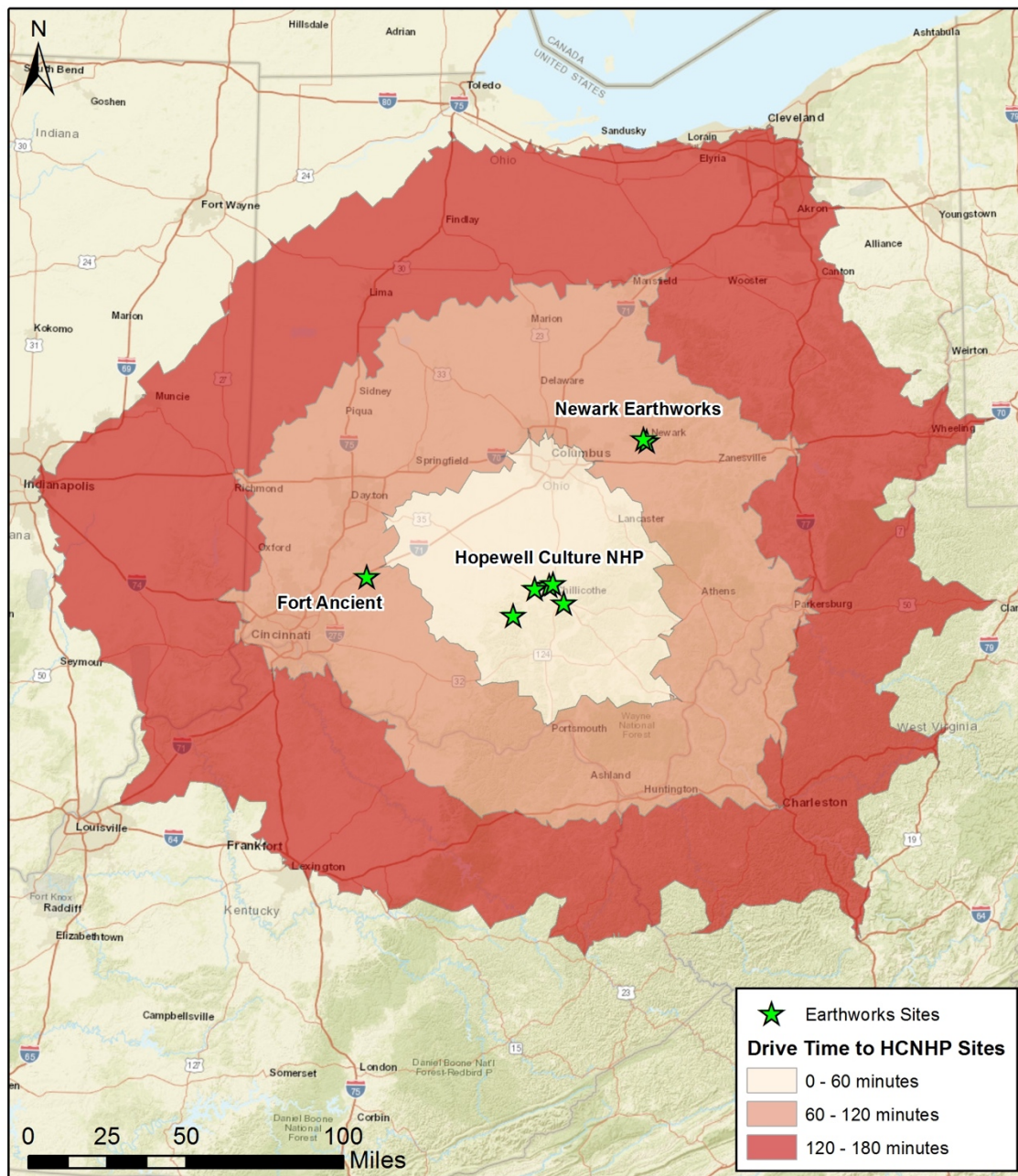


Figure 18. Map of the drive time to the Hopewell Culture NHP sites. Time frames displayed are less than one hour (0-60 minutes), one to two hours (60-120 minutes), and two to three hours (120-180 minutes).

Airport access and relatively close proximity to the sites offers another comparative advantage for the Hopewell Earthworks Sites, as shown in Figure 19.

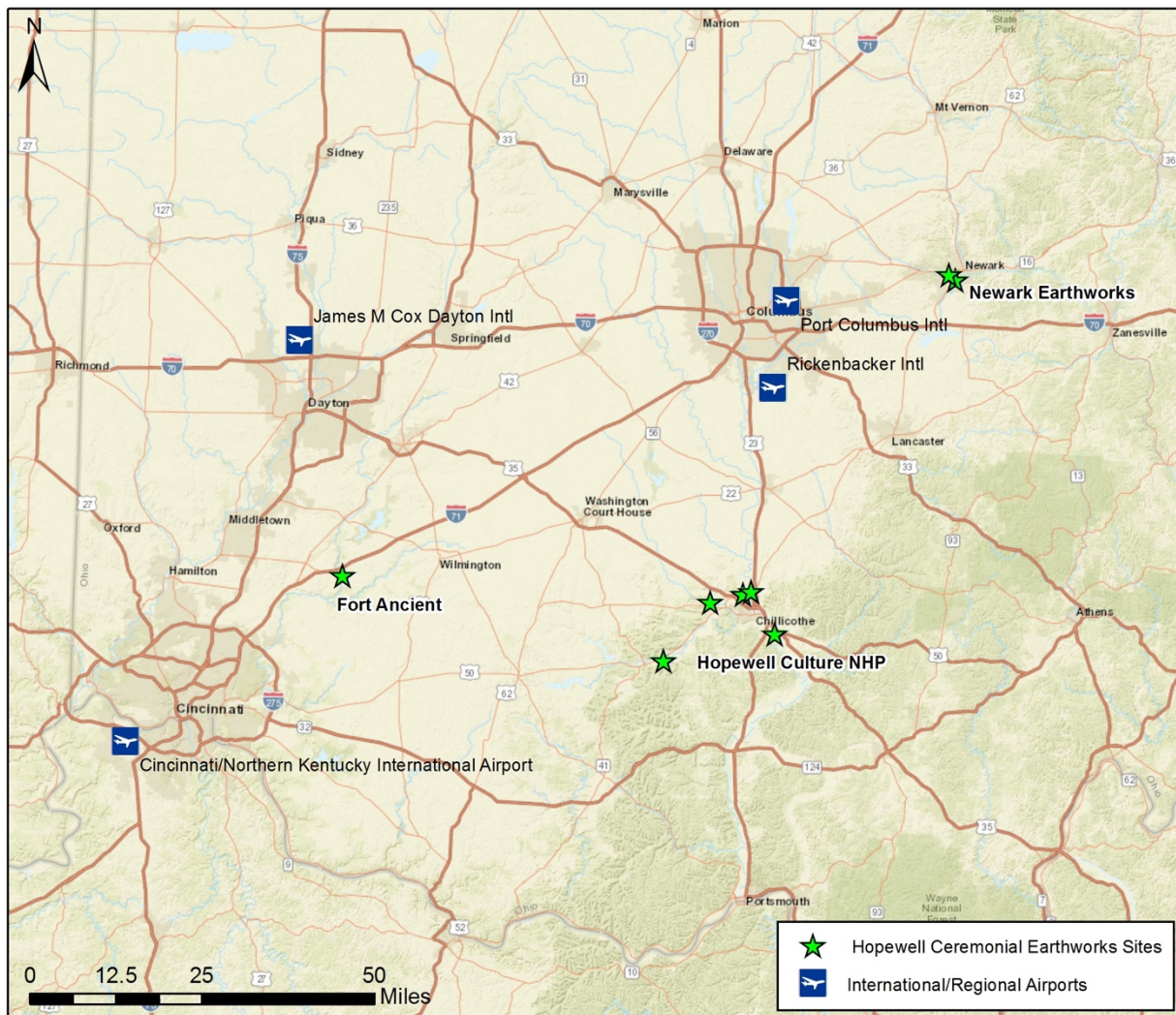


Figure 19. International and Regional airports within the vicinity of the Hopewell Ceremonial proposed sites. Newark Earthworks is a 40 minute drive from John Glenn Columbus International Airport and Hopewell Culture NHP is a 1-hour drive. Drive time from Cincinnati/Northern Kentucky International Airport, and just less than a 2-hour drive to Hopewell Culture NHP.

Outdoor Recreation

Since the Earthworks sites at Newark are located inside the developed city area, there are potentially fewer cross-over opportunities with outdoor recreation than at Fort Ancient or Hopewell Culture NHP, but one example around Newark that seems to have potential visitor cross-over is Dawes Arboretum, just a few miles south of town. Figure 20 maps recreation facilities near the sites.

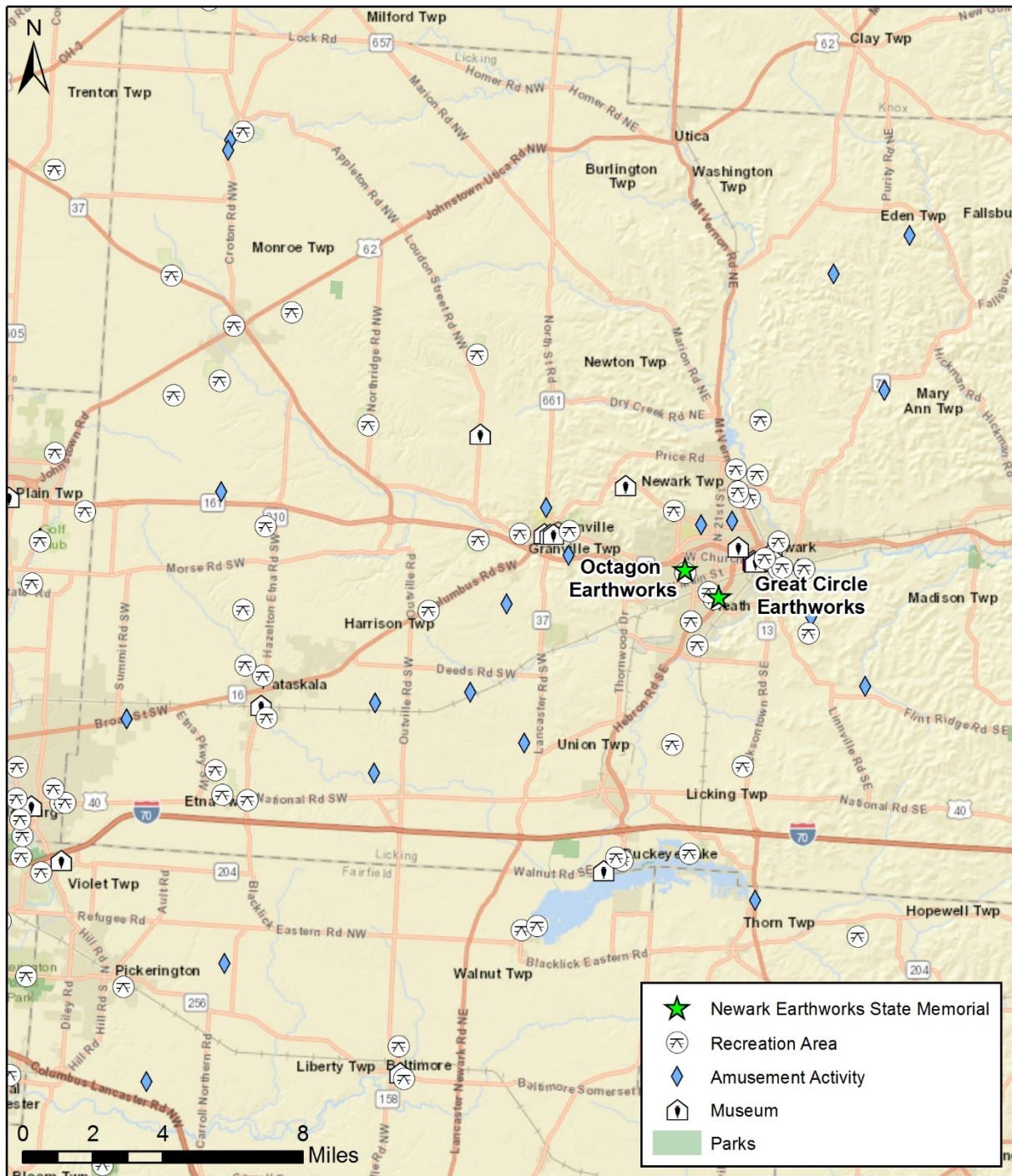


Figure 20. Map of recreation facilities and sites near the Newark Earthworks sites. This category includes picnic areas, local parks, State Parks and Forest Areas, museums and visitor centers, zoos and botanical gardens, and other amusement venues such as amusement parks, horse stables, and outfitters.

Fort Ancient has facilities to support outdoor recreation activities on site such as picnicking and hiking. Other outdoor activities in the area could provide cross-over activities that might draw additional visitors to the area, providing potential additional visitors to Fort Ancient. Figure 21 maps recreation facilities near the sites.

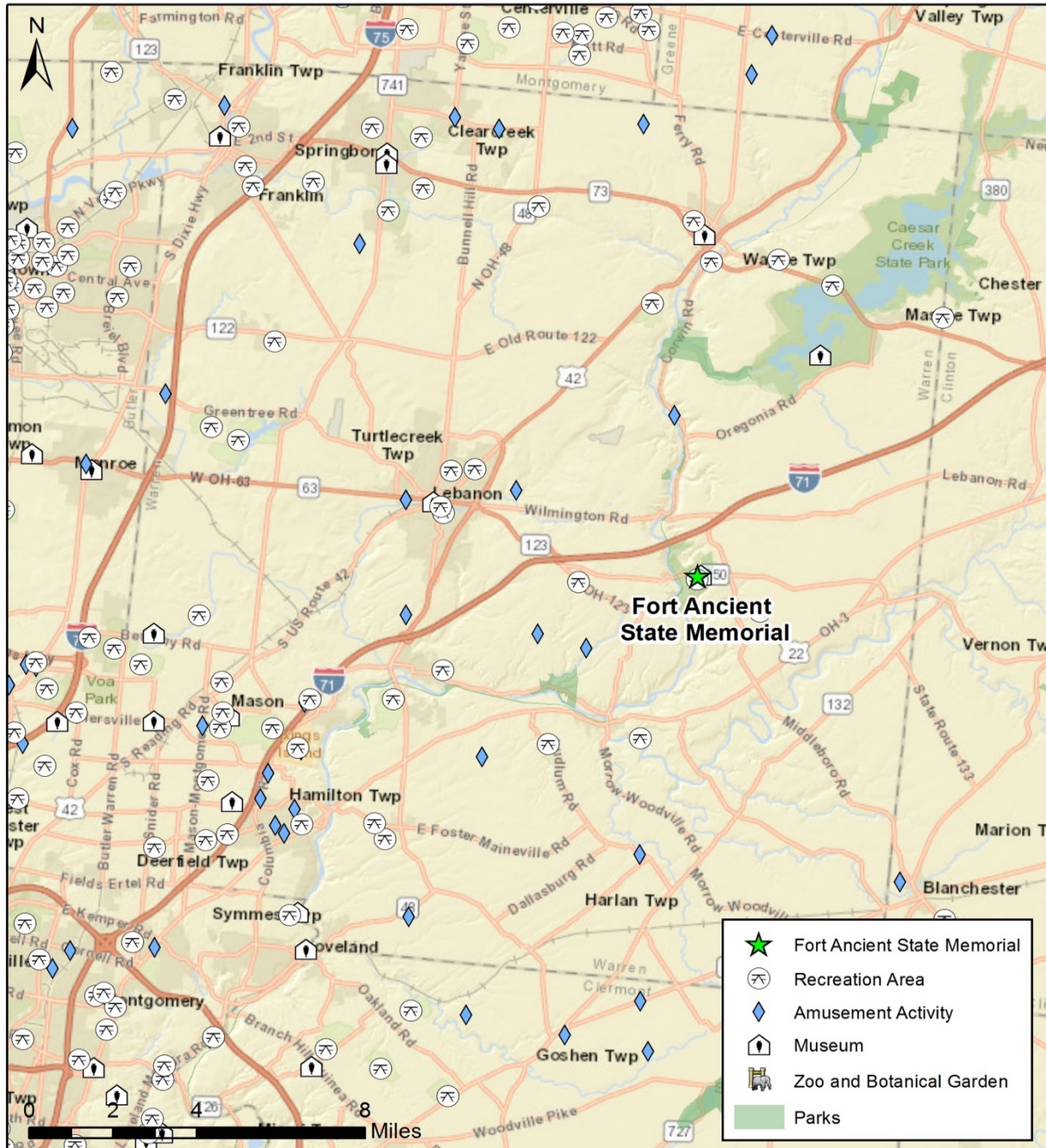


Figure 21. Map of recreation facilities and sites near the Fort Ancient. This category includes picnic areas, local parks, State Parks and Forest Areas, museums and visitor centers, zoos and botanical gardens, and other amusement venues such as amusement parks, horse stables, and outfitters.

The Chillicothe area is surrounded by natural areas that attract participants in a number of outdoor recreation activities, including: horseback riding, mountain biking, bicycling, hiking, picnicking, kayaking, and canoeing. Figure 22 maps recreation facilities near the sites.



Figure 22. Map of recreation facilities and sites near the Hopewell Culture NHP sites. This category includes picnic areas, local parks, State Parks and Forest Areas, museums and visitor centers, zoos and botanical gardens, and other amusement venues such as amusement parks, horse stables, and outfitters.

Bicycle Tourism

All three of the clusters of proposed Hopewell Ceremonial sites have State Bicycle Routes within short biking distances of most of the specific sites included in the UNESCO proposal (Figure 23). Bicycle tourism is thriving in many place across the US, and is bringing people that want to recreate while finding desirable destinations along the way. The Outdoor Industry Association released a study in 2017, *The Outdoor Recreation Economy*, which found that bicycling participants spend \$83 billion on 'trip-related' sales (bicycle tourism), and generate \$97 billion in retail spending. Bicycle recreation spending also contributes to the creation of 848,000 job across the country.

For a current example in Ohio, the recently branded "Brewed on the Bikeway" advertising campaign in Athens, Ohio is leveraging a renowned bicycle path, the Hockhocking Adena Bikeway, and the proximity of five breweries, a cider house, and a craft beer hall, to bring in bicycle tourists from other areas of the state.

There are conceptual plans to create connected bike routes and off-road bikeways between a number of earthwork sites around Chillicothe, including the five earthwork sites in the UNESCO proposal. A Ross County trails council recently met to strategize and plan for potential bicycle trail linkages and enhancements throughout the area. Creating a branded, connected bicycle route and path system, establishing official stops on the route, with signage, and partnering with local visitors bureau, business associations, and bicycle organizations is a good strategy to leverage the potential synergies at the Hopewell Culture NHP sites in particular. In addition, there is a very active mountain bike community connected with Great Seal State Park, which is located close to two of the Hopewell Culture NHP sites.

Newark with its multiple earthworks sites, a nearby thriving downtown, and existing bicycle trails could also benefit from improved trail connections, branding, and advertising. The Newark sites are located close to an established paved bicycling trail system; the TJ Evans & Panhandle (TJE&P) Trail connects Newark with nearby Granville and the City of Columbus. Additionally, on-road Active Bike Route 25 passes through Newark very close to the Great Circle Earthwork in Heath and connects to the TJE&P Trail. The Buckeye Trail passes near the Great Circle Earthwork, as well. In order to better encourage use of these bicycle recreation and transportation networks to access the Newark mound sites, some connections may need to be improved, tourist information enhanced, and additional amenities such as bicycle parking and fix-it stations added. It is interesting to note that the Ohio Dept. of Transportation website information about the TJE&P Trails (see graphic "ODOT Newark Bike Trail from web.JPG") already mentions the Great Circle Earthworks, so some of the potential for bike access to these Newark sites has already been recognized.

In recent years, Newark has invested in significant infrastructure upgrades to its downtown area, which is only 2 to 2.5 miles from the Great Circle Earthworks site. The improvements make downtown Newark a potential destination that could help

draw tourists to the city to eat, drink, shop, and potentially to visit the earthworks for which the city is known for. Connecting and directing both motorist and bicycling visitors between these sites will certainly enhance the potential for drawing additional tourists to Newark.

Specific recommendations to enhance bicycle access and tourism at the sites in Newark include establishing a more direct connection between the Octagon Earthworks site and the TJE&P Trails, and establishing bicycle boulevards as enhanced on-street bike routes through relatively quiet residential neighborhoods to connect between sites, trails, and downtown Newark.

If the Octagon Earthworks site is converted to a park, then a bike/pedestrian bridge across Raccoon Creek to connect to the trails would be an ideal option. Additionally, a connection to the trail between the Octagon site and the trails could be facilitated from W. Church St. This location also has the benefit of bringing bicyclists and other trail users that want to connect to the Octagon site through a commercial district that currently includes five restaurants and two hotels. The only current connection to the trail in this area is hidden behind one of the hotels.

Establishing bicycle boulevards through neighborhoods as bicycle routes connecting the sites, trails, and downtown looks to be a viable option in Newark. The approach to designate neighborhood streets as bike boulevards, adding street design and infrastructure to help calm traffic can create pleasant bicycle friendly routes with less cost than building new trails or on-road cycle paths. Arterial roadways and freeways in Newark may create barriers to average bicyclists getting between sites and downtown. In particular, Route 79 poses a potential barrier with bridge crossings that may need to be improved to create connections to downtown. On-road/bridge bike lanes or cycle paths should be added at key locations to enable comfortable riding conditions for typical bicyclists, not just experienced cyclists. Another option to creating bicycling connections across the Route 79 freeway could include an extension of the TJE&P Trail along Raccoon Creek to create a comfortable route between the Earthworks sites and downtown.

According to the Ohio Department of Transportation, Designated Scenic Byways heighten awareness of historical and intrinsic resources: cultural, historical, archaeological, recreational, natural and scenic — which collectively enhance the overall traveling experience. Ohio Scenic Byway program participation provides subsequent benefits to the community as well, such as resource preservation, enhancement and protection.

The Granville Scenic Byway is the closest State designated scenic roadway to any of the sites. Its closest point is located approximately 4.5 miles from the Newark Mounds complex. While proposed Hopewell Ceremonial sites in Newark and Ross County are mostly in urban or suburban environments and therefore may not qualify for scenic byway designation, Fort Ancient might be on a route that could be considered for designation as part of the State Scenic Byways program.

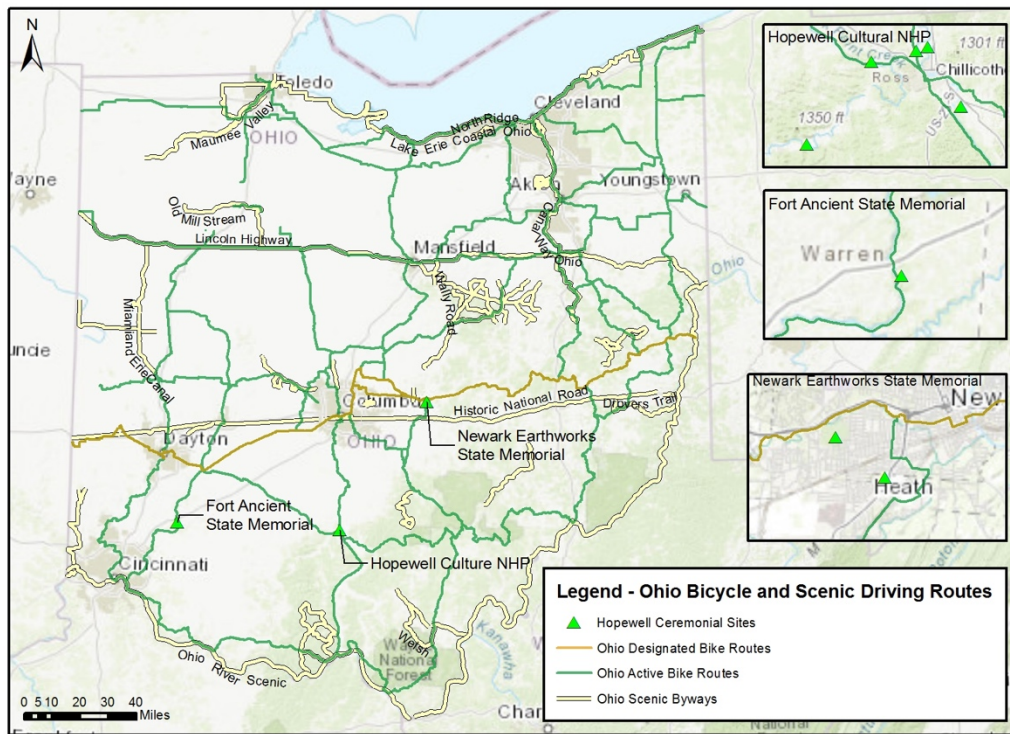


Figure 23. Map depicting Ohio's Designated and Actively Used (but not yet designated) State Bicycle Routes, and designated Scenic Byways, and proximity to the three Hopewell Ceremonial sites.

Figures 24-26 show the large number of schools within a day trip of each site. While school visitation is a relatively low economic impact, these visitors are part of a healthy visitor mix and support the educational mission of World Heritage Site Designation.

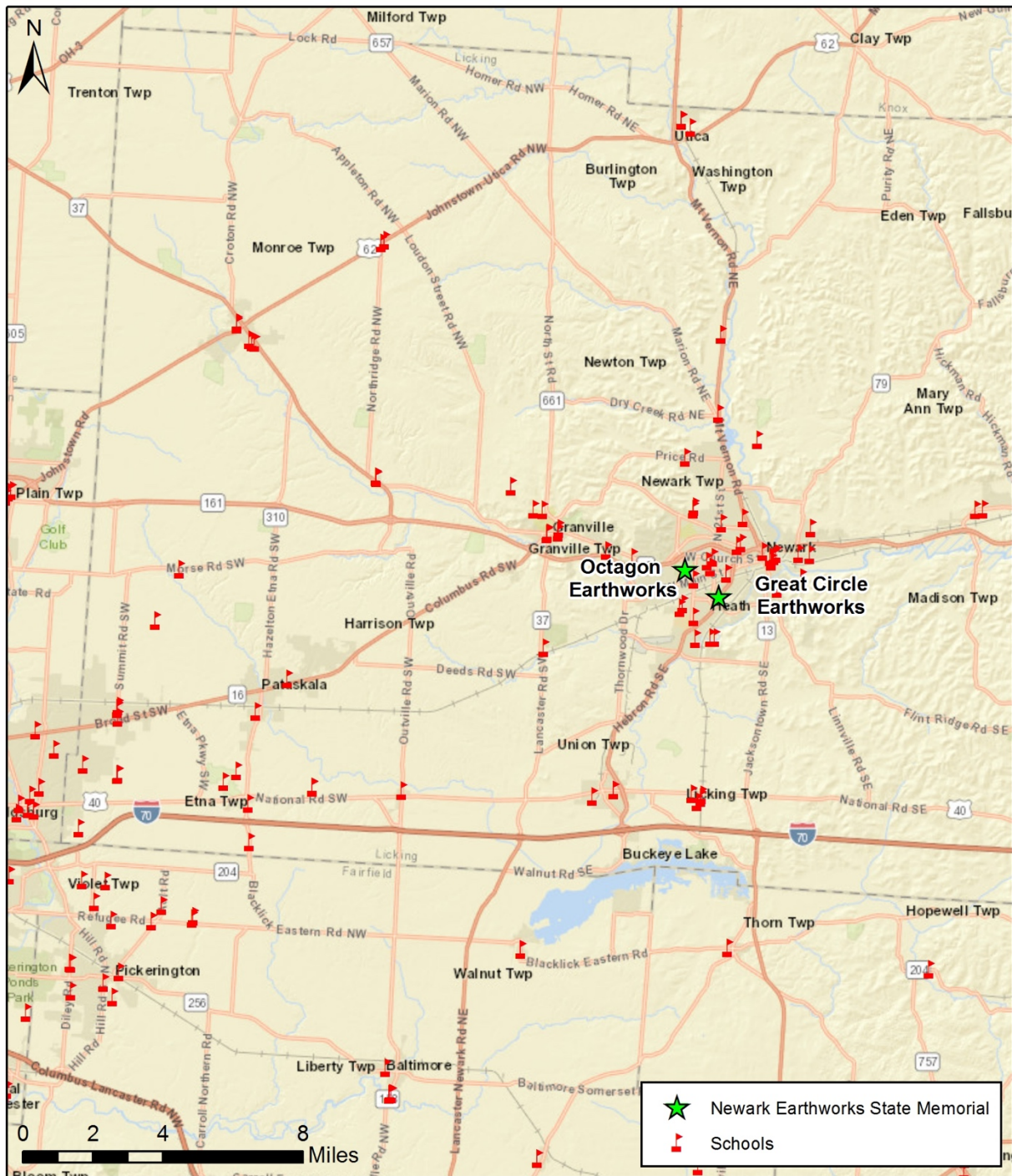


Figure 24. Schools near Newark Earthworks State Memorial

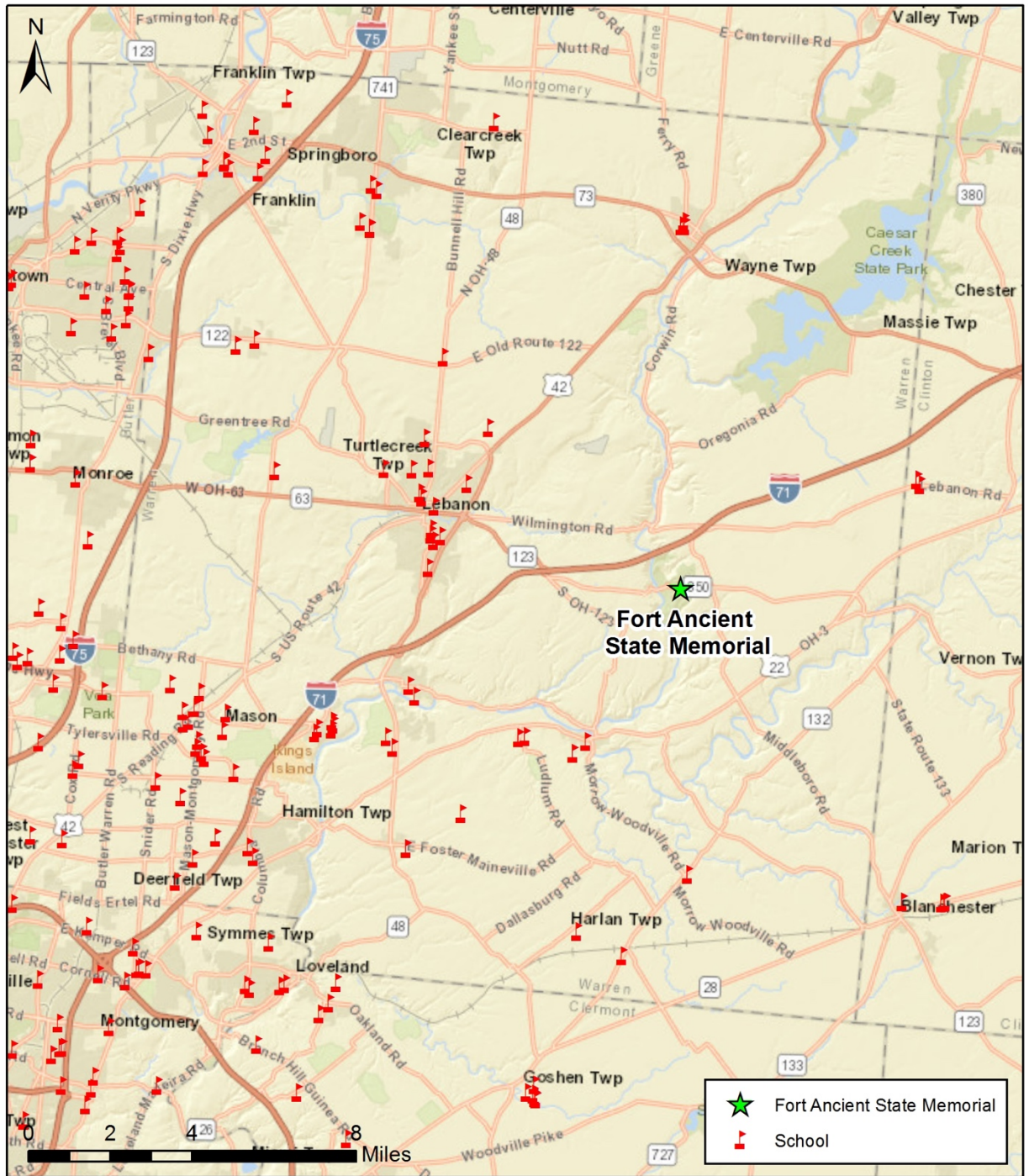


Figure 25. Schools near Fort Ancient State Memorial



Figure 26. Schools near Hopewell Culture National Historical Park

6. REVIEW OF COMPARABLE UNESCO WORLD HERITAGE SITES

Two World Heritage Sites with similar archaeological features were selected for comparable visitor analysis post designation.

1. Cahokia Mounds, near E. St. Louis, Illinois – designated in 1982
2. Monumental Earthworks of Poverty Point, West Carroll Parish, Louisiana – designated in 2014

Cahokia Mounds has been extremely successful at attracting visitors, particularly educational visitors from the greater St. Louis area. Cahokia reported in a 2013 UNESCO article that: "Cahokia Mounds was inscribed on the World Heritage List in 1982 in recognition of its unique role in history. The site once served as the civil and religious center of the sprawling Mississippian Culture. Thousands of people fished, farmed, worshipped and traded with other cultures. The site is dotted with mounds including 10-story Monks Mound that Native Americans built for burials, religious ceremonies and other activities. After its inscription on the World Heritage List, it took Cahokia Mounds five years to reach its one millionth visitor. It hit five million after 16 years and 10 million after 31 years."¹¹ While Cahokia reports large cumulative visitor numbers, a 2013 report to UNESCO reported that annual visitation was largely static in 2012 and 2010, decreased in 2011 and 2008, and saw a minor increase in 2009 (relative to 2008).¹² Data provided by Dr. Mark Esarey, Site Superintendent for the Cahokia Mounds State Historic Site reveals a similar pattern. Dr. Esarey noted that site visitation prior to World Heritage Designation in 1982 was approximately 40,000 visitors per year. After World Heritage Designation, visitation increased to an average of 75,000 visitors per year. The Cahokia visitation increased substantially after the investment in a new Interpretive Center Museum, which opened in fall 1989. In the first three years after the Interpretive Center Museum, Cahokia averaged 500,000 annual visitors with a peak visitation of 520,875 in 1991. Since that time, annual visitation has declined. Dr. Esarey noted that since 2002 state budget reductions have reduced the number open days, which has impacted visitor numbers. However, prior to 2002, Cahokia had a visitor average of 350,000 per year from the mid-1990s to 2001. Figure 27 tracks visitation to Cahokia Mounds over time.

¹¹ <http://whc.unesco.org/en/news/1065>

¹² UNESCO Periodic Report-Second Cycle. Cahokia Mounds State Historic Site. 2013.

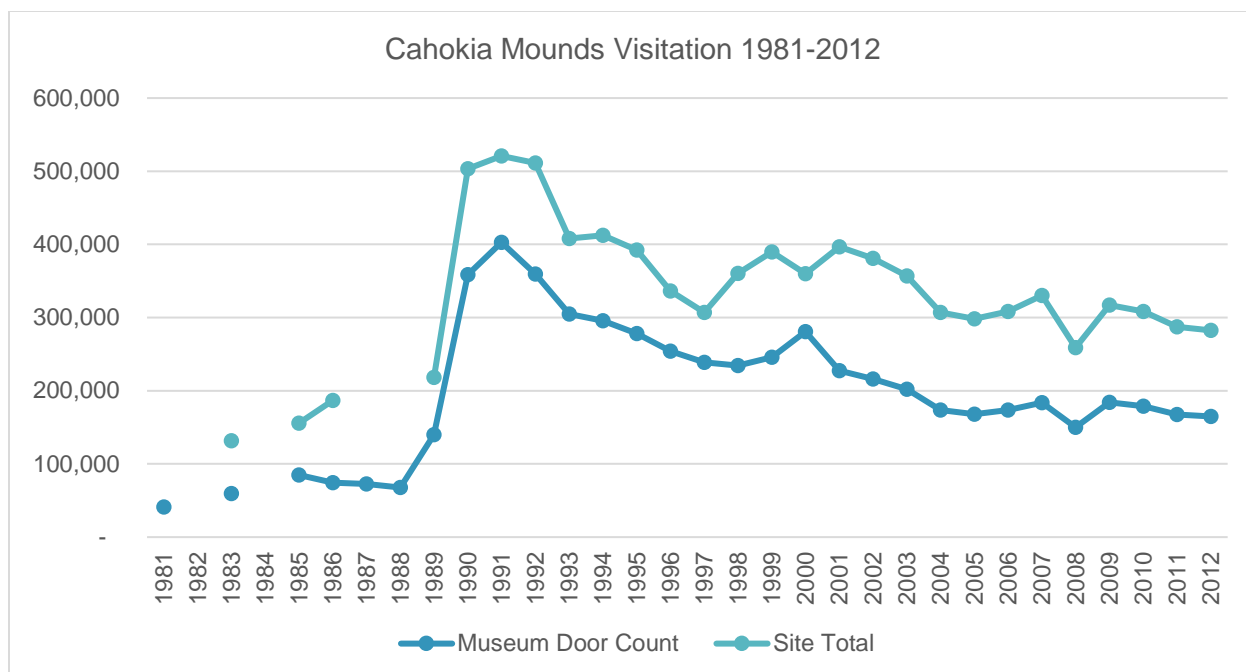


Figure 27. Cahokia Mound Visitation

Additionally, our team's visitation to Cahokia found that while the site has a large number of visitors, there is little corresponding economic development benefit in the immediate East St. Louis area.

Monumental Earthworks of Poverty Point in West Carroll Parish, Louisiana was designated in 2014. This site has seen far more modest visitor numbers, as shown in table 16.

Table 16. Annual visitation to Poverty Point ¹³

Poverty Point Visitation		
Fiscal Year	Total Visitors	International Visitors
FY2012-13	10,660	--
FY2013-14*	11,178	86
FY2014-15**	13,167	81
FY2015-16	13,957	199
FY2016-17	15,734	218
FY2017-18	6,982 (through 11/17)	229 (through 12/19/17)
*includes month of June, the date of announcement of designation		
**includes month of October, the data of inscription ceremony		

From FY 2013-14 to FY2014-15, Poverty Point saw an increase from 11,178 annual visitors to 13,167 annual visitors, an increase of 1,989 visitors or 17.8%. From FY2013-

¹³ Data provided by Poverty Point to Ohio History Connection

14 to FY2016-17, Poverty Point saw an increase from 11,178 annual visitors to 15,734 annual visitors, an increase of 4,556 visitors or 40.7%. Like Cahokia, our team's visit to Poverty Point revealed very limited economic development benefits in the immediate site vicinity as a result of the designation. The location is marked by limited tourism cluster attributes, such as bed and breakfast or other lodging, shopping, and dining.

Cahokia and Poverty Point offer important lessons. Both experienced modest visitor gains immediately following designation. Cahokia only saw a substantial increase in visitation after investing in the Interpretive Center Museum.

Prior studies of the potential economic impact of World Heritage Site designation for Hopewell Ceremonial Earthworks have used Cahokia as a benchmark. A 2013 study, *Economic Impact of the Potential Inscription of the Hopewell Ceremonial Earthworks as World Heritage Sites*, by BaxStarr Consulting Group estimated a 200% increase in tourists (growth from 100,000 to 300,000) as a result of World Heritage Site designation. It is difficult to understand BaxStarr's 100,000 baseline for current visitors when data provided to our team demonstrates 56,785 total visitors in 2013 and 82,518 visitors in 2016.

BaxStarr further noted this estimate was "very conservative" and cited the "sustained 10-fold increase in visitors" at the Cahokia site. The data provided by Cahokia does not support this claim. The study also relies on a 2009 study of cultural heritage visitors and applies these national averages to Ohio and the Hopewell Ceremonial Earthworks sites without respect to whether or not the national spending patterns will be the same and/or the Hopewell sites have the tourism related businesses to absorb these dollars.¹⁴

7. Economic Impact of World Heritage Designation of the Hopewell Ceremonial Earthworks

World Heritage Site designation is not an "if you build it they will come" Field of Dreams scenario. Even if the BaxStarr report is correct in terms of a two-fold visitor increase, the tourism cluster is not fully developed or robust enough to capture the economic value of this visitor stream.

We estimate that post World Heritage Site designation, Hopewell Ceremonial Earthworks will see a modest, 75-100% increase in annual visitors over the first 2-3 years post designation. This estimate is no doubt conservative, but provides a more realistic estimate given the current tourism assets in the three counties where the mounds are located. This estimate closely resembles the initial increase seen in Cahokia post designation, but before substantial investment in the Interpretive Center Museum. Table 17 apportions this 100% increase and assumes that a 75% increase in day trip visitors and a 25% in overnight visitors relative to 2016 visitation at each site.

¹⁴ See McCormick, Rosemary. 2009. *The Cultural & Heritage Travel Study*. <https://theculturaltraveler.com/images/Pressreleases/Whitepapers/Cultural%20&%20Heritage%20Traveler%20Research%20White%20Paper%20MSA-WP7.pdf>

Under these assumptions, designation will lead to 180 new jobs and \$12.5 million in economic output.

Table 17. Economic Impact of 100% Increase in Visitation Due to World Heritage Designation

Newark Earthworks Licking County: 75% Increase in New Day Trip Visitors: 7,185				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	9.0	\$169,991	\$218,020	\$406,671
Indirect Effect	0.7	\$27,105	\$48,872	\$94,494
Induced Effect	0.9	\$33,011	\$65,174	\$111,981
Total Effect	10.6	\$230,107	\$332,066	\$613,145
Newark Earthworks Licking County: 25% Increase in New Overnight Visitors: 2,395				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	8.7	\$204,789	\$341,301	\$594,439
Indirect Effect	1.1	\$42,307	\$71,887	\$139,419
Induced Effect	1.1	\$41,384	\$81,676	\$140,368
Total Effect	10.9	\$288,480	\$494,864	\$874,226
Hopewell Culture National Historical Park Ross County: 75% Increase in New Day Trip Visitors: 43,544				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	51.8	\$1,115,184	\$1,370,985	\$2,464,562
Indirect Effect	3.0	\$99,323	\$182,918	\$372,619
Induced Effect	5.7	\$199,416	\$393,267	\$678,922
Total Effect	60.1	\$1,413,923	\$1,947,170	\$3,516,103
Hopewell Culture National Historical Park Ross County: 25% Increase in New Overnight Visitors: 14,515				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	52.3	\$1,386,737	\$2,028,134	\$3,600,698
Indirect Effect	5.4	\$187,086	\$319,000	\$651,332
Induced Effect	7.3	\$258,288	\$510,325	\$880,747
Total Effect	64.9	\$1,832,110	\$2,857,459	\$5,132,776
Fort Ancient State Memorial Warren County: 75% Increase in New Day Visitors: 11,160				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	14.4	\$256,795	\$335,804	\$634,862
Indirect Effect	1.2	\$60,972	\$106,488	\$176,962
Induced Effect	1.3	\$52,627	\$109,562	\$182,588

Total Effect	16.9	\$370,394	\$551,854	\$994,412
Fort Ancient State Memorial Warren County: 25% Increase in Overnight Visitors: 3,720				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	14.1	\$298,988	\$507,093	\$917,288
Indirect Effect	1.8	\$91,175	\$147,854	\$248,801
Induced Effect	1.7	\$64,714	\$134,684	\$224,660
Total Effect	17.6	\$454,877	\$789,631	\$1,390,749
Total Across All Sites: 75% Increase in Day Visitors and 25% Increase in Overnight Visitors				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	150.2	\$3,432,484	\$4,801,338	\$8,618,520
Indirect Effect	13.3	\$507,967	\$877,019	\$1,683,627
Induced Effect	17.9	\$649,441	\$1,294,689	\$2,219,266
Total Effect	180.9	\$4,589,890	\$6,973,045	\$12,521,411

With a concerted effort to follow through on the recommendations in this report, brand and market the sites, and develop tourism assets to attract high impact, cultural heritage visitors, an increase of 150-200% in annual visitation is within reason post designation.

8. Recommendations

The experience of recently inscribed World Heritage Sites has demonstrated the importance of strategically incorporating site inscription efforts within regional economic landscapes and development planning. With a concerted effort to follow through on the recommendations in this report, brand and market the sites, and develop tourism assets to attract high impact, cultural heritage visitors, an increase of 150-200% in annual visitation is within reason post designation. Such strategies recognize that the number of visitors to the site can be less important than the quality of the visitor stream. Therefore, Ohio History Connection, regional stakeholders, and other partners are encouraged to utilize the brand value generated from World Heritage Designation to target high value, heritage tourists to maximize the economic benefits of current and projected site visitation.

World Heritage Designation empowers communities near these sites to capture even greater economic value, but this can only occur through self-determination to develop a tourism industry cluster sufficient to capture heritage visitors and offer them a unique, authentic experience. As such, efforts must be made to support entrepreneurial tourism efforts such as bed and breakfast start-ups, local restaurants

catering to heritage tourists, and complementary tourism experiences for these visitors. Specifically, stakeholders are encouraged to

1. Examine current visitor demographics to identify and characterize segment development precedents and priorities for enhancement under World Heritage Site designation.
2. Perform marketing and programming conceptual design prototyping for high priority prospective World Heritage Site visitor segments to distinguish current and needed campaign resources.
3. Inventory existing tourism industry cluster businesses in prospective World Heritage Site host counties to identify cluster gaps to be addressed in concurrent economic development efforts.
4. Forecast workforce requirements of preferred World Heritage Site economic development scenarios and compare to current workforce inventory to identify scale and nature of workforce development requirements.

Additionally, Cahokia's visitor increase came in conjunction with the development of the Interpretive Center Museum. Substantial on-site improvements to maximize the visitor experience, increase the length of the visit, and provide additional on-site spending opportunities are needed.

Open feedback from respondents on the survey confirmed many of these needs including improving and enhancing the communication of the earthworks. Fifty-four percent of respondents said that improving the exhibits, integrating more technology, increasing signage, and having more interpreters would enhance their visit (n = 50). Fifteen percent of the comments (n = 14) related more indirectly to the visitor's experience with requests for an increase in the number of amenities, such as restrooms, parking space, and trails. Amenities desired also included food offerings. Some respondents wanted more shopping options (n = 7) and three percent of respondents (n = 2) wanted more special events (e.g. festivals, speakers). Almost a fifth of the respondents (n = 16) said that they had a great experience and would not make any modifications.

Fort Ancient is a more isolated site than Newark Earthworks, which is situated within the city, and the Hopewell Culture NHP locations located in and around Chillicothe. Due to its isolation, there are not many amenities located in close proximity to the site. In order to meet the needs of visitors and draw more visitors, adding a convenience store/camp store and restaurant or deli would provide needed amenities at the site, which would likely increase the site's attractiveness as a destination, and increase the length of stays on-site.

Lastly, the study identified the key characteristics of such high value visitors to be addressed by communities hoping to capitalize on the economic potential of World Heritage Site designation. Overnight visitors generate three times the economic impact of day visitors. Heritage tourists bring more disposable income than an average overnight visitor. While large visitor numbers in the form of educational visits by school-aged children, visits from local residents, and day trip visitors are important

to the educational mission of World Heritage Sites, they offer more limited economic value to the community. Concerted effort will be required an authentic visitor experience to the high impact heritage tourist.

APPENDIX

Survey Results

Respondents were most likely over the age of 35 and either employed or retired (Figures A.1 and A.2). Five percent of respondents identified themselves as students and only one respondent was under the age of eighteen¹⁵. The greatest number of respondents was in the age range of "45-54" (n = 31). Employed individuals comprised the largest group of respondents (~65%).

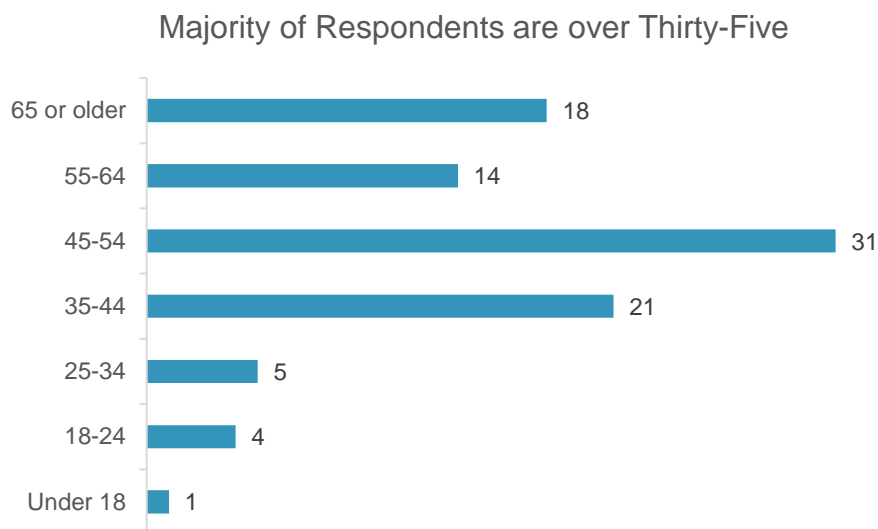


Figure A1. Age of respondents by age range.

¹⁵ The survey was designed for respondents over the age of 18. The response from the minor was removed from the survey.

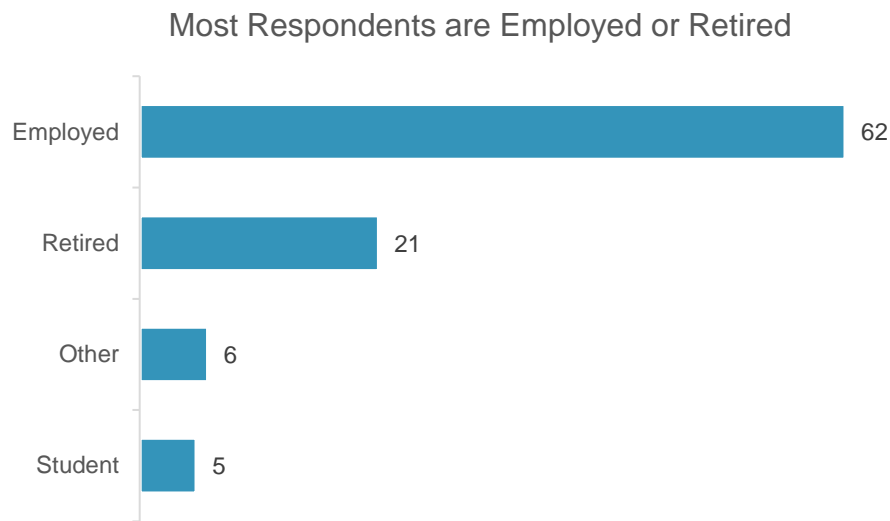


Figure A2. Breakdown of employment status of respondents.

The majority of survey respondents (83%) recorded that they have visited at least two of the sites in the past five years. Over half of these respondents have also visited all three earthworks locations. The total number of recorded visits to an individual site ranged from 73 to 83 (Figure A.3). A relatively similar number of respondents visited all three sites over the past one to five years, with the greatest number of visits happening in the last year. Of those who have not been to an individual location, most recorded that they have never visited the Hopewell Culture National Historical Park ($n = 35$). A comparable number of respondents said they have not visited Fort Ancient nor Newark Earthworks.

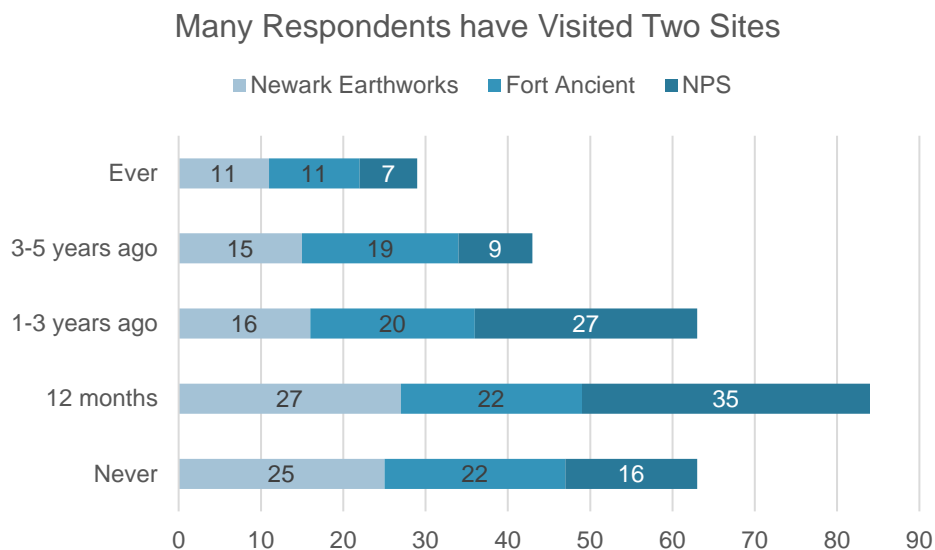


Figure A3. Summary of the total number of recorded visits to each Ohio earthwork location over five time periods.

Of the 94 completed surveys, one respondent was unable to be included in the geospatial analysis due to an illegible zip code (Figure A.4). For the remaining 93 respondents, 80 were from the state of Ohio and represented 55 unique zip codes. All 13 out-of-state respondents were from distinct zip codes.

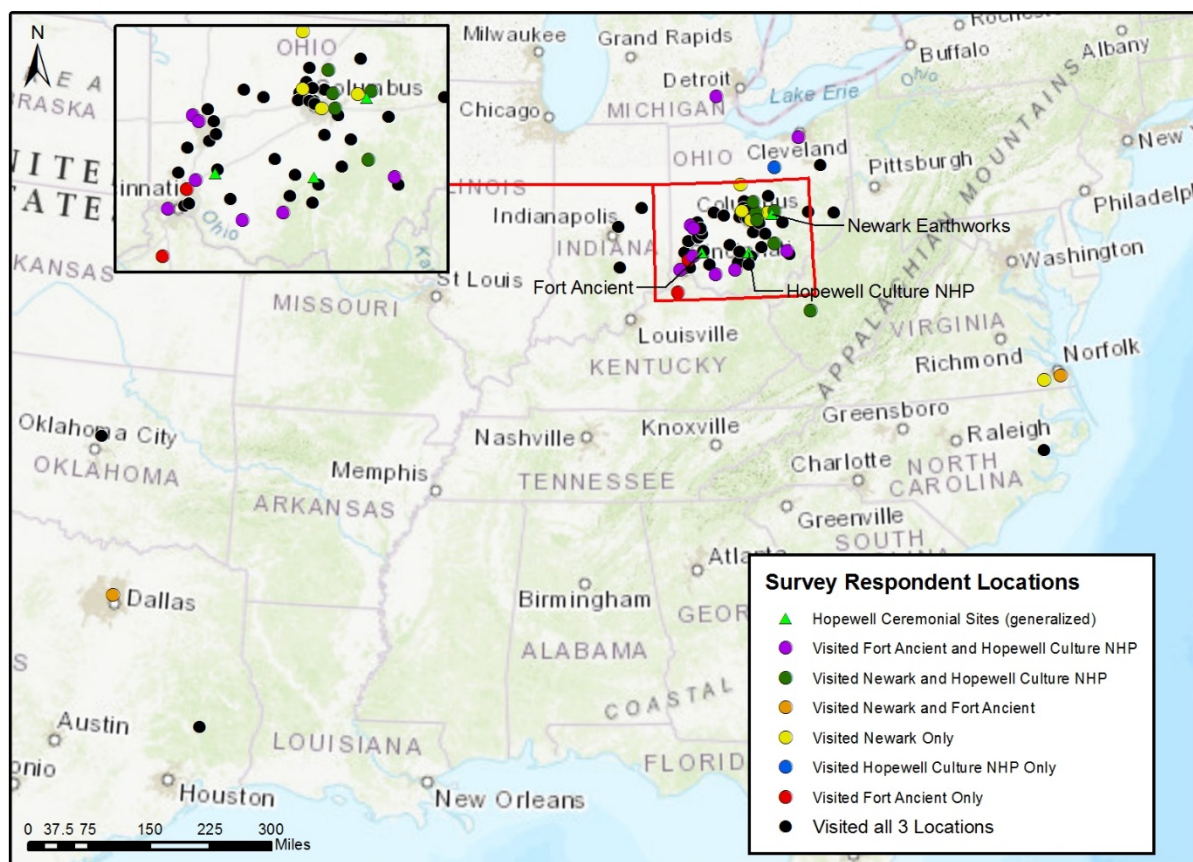


Figure A4. Map of survey respondent residential locations based on provided zip codes.

Based on survey results, the average visitor came as part of a small group (Figure A.5). These small groups consisted of roughly two children and two adults; rounding up for children and down for adults. Approximately 60% of visitors were 18 years of age or older ($n = 223$) and almost 40% were under the age of 18 ($n = 145$). The largest groups of visitors ranged from 13 to about 25.

Visitation Typically Occurred in Small Groups

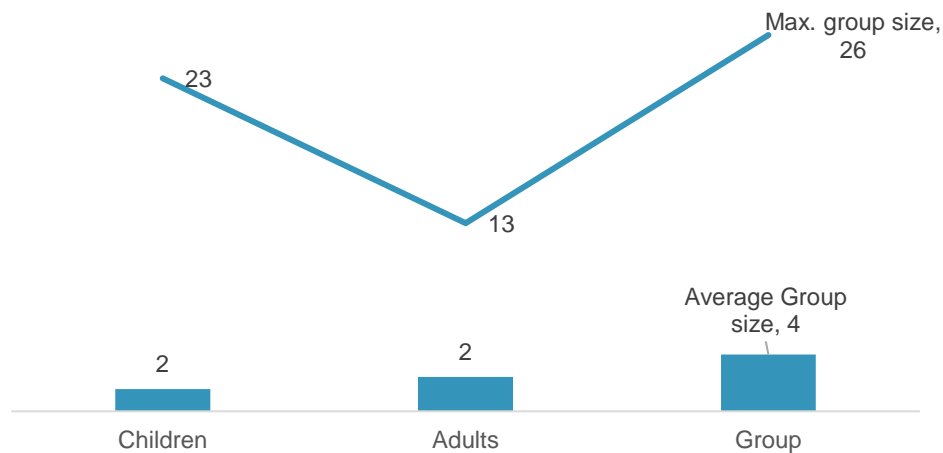


Figure A5. The average (bars) and maximum (points) composition of visitor groups across all locations.

Respondents more often left their county of residence to visit an earthwork location (Figure A.6). The majority of those who traveled greater distances, only seven were part of a tour group or event. Thirty-five percent live close enough to visit regularly. This compares to the 63% who did travel. Most respondents took day-trips to the earthworks (93%). Of those who had a longer visit ($n = 7$), the average overnight stay was one to two days. Respondents most often (>85%) stayed in a hotel or motel during extended visits.

Over Half of Visitors Traveled Outside of their Counties

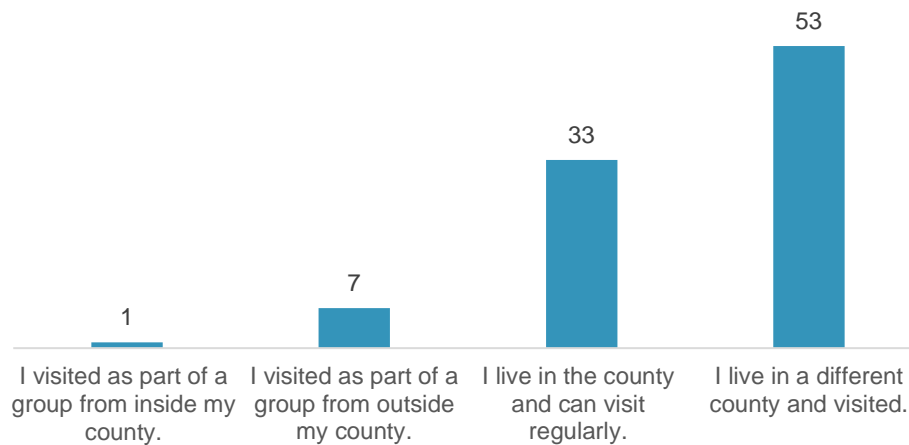


Figure A6. A summary of the number of visits based on distance traveled and type of visit.

Respondents recorded spending between \$11 and \$75 on individual meals, lodging, and shopping during their visits (Figure A.7). About three times the amount of money spent on meals was to purchase full service dining. Generally, the least amount of money was spent on fast food. The average total expended buying gifts, souvenirs, memorabilia, or other shopping while visiting an earthwork site was \$50. The average recorded amount by a respondent spent during a day-trip was \$25. For the 7% of respondents who stayed overnight, the average spent on staying in a hotel or motel was \$75 and an average of \$181 dollars spent throughout their extended visit.

Average Expenditures per Visit

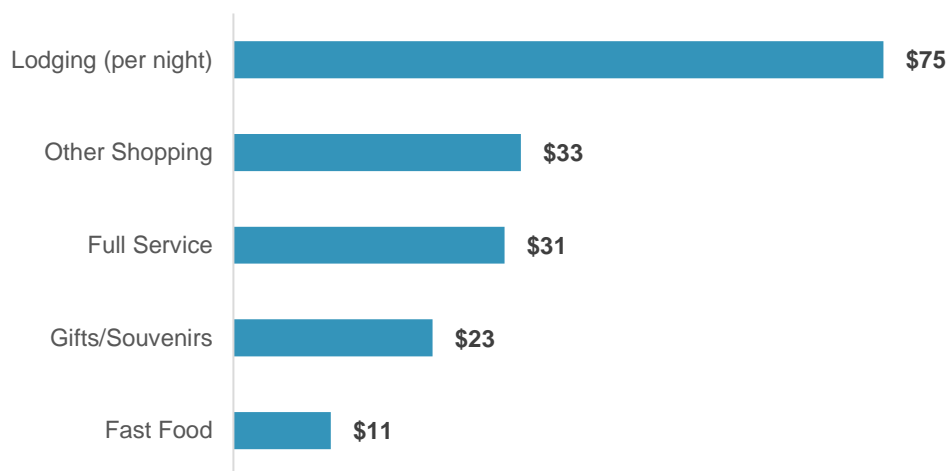


Figure A7. Average amount of money survey respondents spent on meals, lodging, and shopping during their visit.

According to respondents, the designation of UNESCO World Heritage was said to be influential to almost 80% of respondents (n = 72) on their decision to visit Newark Earthworks, Fort Ancient, and the Hopewell Culture NHP (Figure A.8). Almost 20% of respondents said that designation did not factor into their decision to visit (n = 17). Five percent (n = 5) do not know what UNESCO World Heritage means.

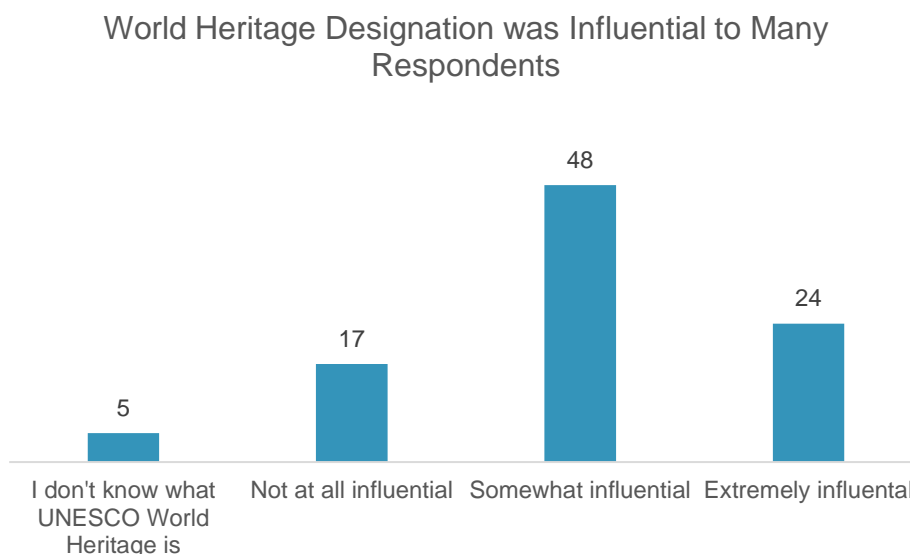


Figure A8. The number of respondents who consider the UNESCO World Heritage designation as influential to their decision to visit one or more of the sites.

The survey contained one open response question that requested feedback on enhancements that would improve the visitor experience. The 60 responses surrounding improvement needs were aggregated into eight categories for a total of 92 comments (Figure A.9) as some responses contained more than one recommendation. The categories include: *Nothing/Great*, *Exhibits/Technology*, *Signage*, *Interpreters*, *Gifts/Literature*, *Site Degradation*, *Special Events*, and *Amenities*. The *Nothing/Great* category denotes comments that were complimentary to the sites and did not elicit any improvements, such as “I had a great experience while I was there and wish more people knew about them” and “It was very enjoyable and I cannot think of anything that I would change”. The *Amenities* category consisted of comments suggesting improvement of the infrastructure or increases in the availability of restrooms, food, parking, and trails. A complete listing of responses can be found in the Appendix.

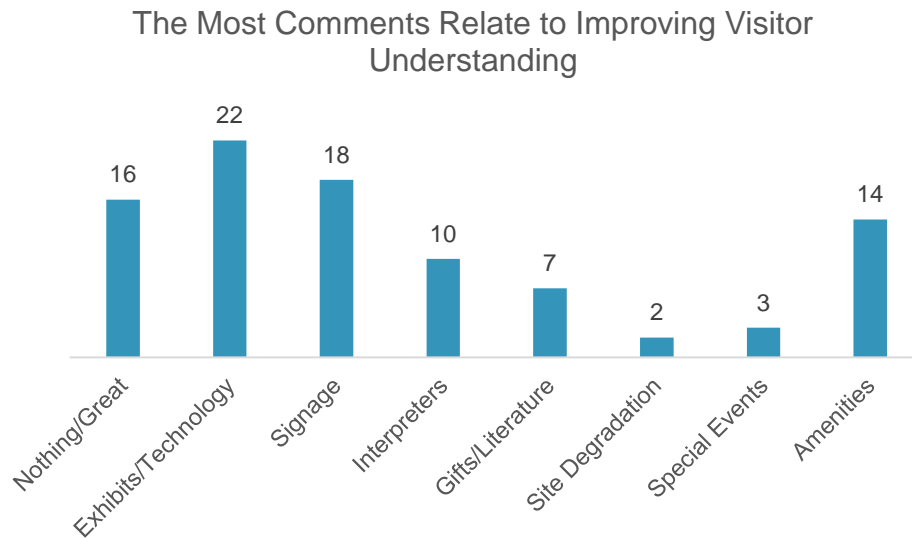


Figure A9. Improvements or additions that respondents noted would enhance their experience at the earthworks. All responses were aggregated into eight categories. Some responses included more than one recommendation, which accounts for the difference between the actual number of respondents who gave feedback (N = 60) and the number of counted enhancements (n = 92).

Based on open feedback from respondents, there is a need to improve and enhance the communication of the earthworks. Fifty-four percent of respondents said that improving the exhibits, integrating more technology, increasing signage, and having more interpreters would enhance their visit (n = 50). Fifteen percent of the comments (n = 14) related more indirectly to the visitor's experience with requests for an increase in the number of amenities, such as restrooms, parking space, and trails. Amenities desired also included food offerings. Some respondents wanted more shopping options (n = 7) and 3% of respondents (n = 2) wanted more special events (e.g. festivals, speakers). Almost one-fifth of the respondents (n = 16) said that they had a great experience and would not make any modifications.

World Heritage Target Visitors

Of the survey respondents, 24 visitors (25.5%) indicated that prospective World Heritage Site designation was *extremely influential* in their decision to visit one or more of the sites. The research team propositions that these visitors exhibit a high impact visitor profile similar to the post designation visitors. For example, a cultural heritage visitor study in Vermont found cultural heritage visitors spent twice as much per trip than other non-cultural heritage visitors (\$644 vs. \$340)¹⁶. While caution

¹⁶ Martin, B. S., Bridges W. C., & Valliere, W. (2004). Research Note: Are Cultural Heritage Visitors Really Different From Other Visitor? *Tourism Analysis*, 9(1-2), 129-134.

must be used given the small sample size of this subgroup, these *extremely influential* visitors skewed older (Figure A.10), had a higher percentage of retirees (Figure A.12), and spent more (Figure A.11) than the visitors not indicating that prospective World Heritage Site designation was *extremely influential* in their decision to visit. These *extremely influential* respondents spent \$368 on average, including \$220 on lodging (for overnight visitors), compared to \$173 on average, including \$75 on lodging (for overnight visitors) from the overall survey. It is important remember that this average represents spending for a party and not an individual.

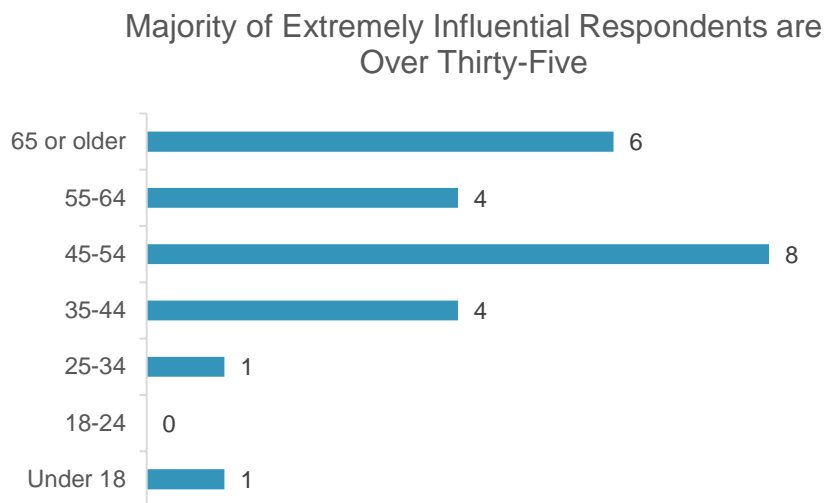


Figure A10: Age of extremely influential respondents by age range.

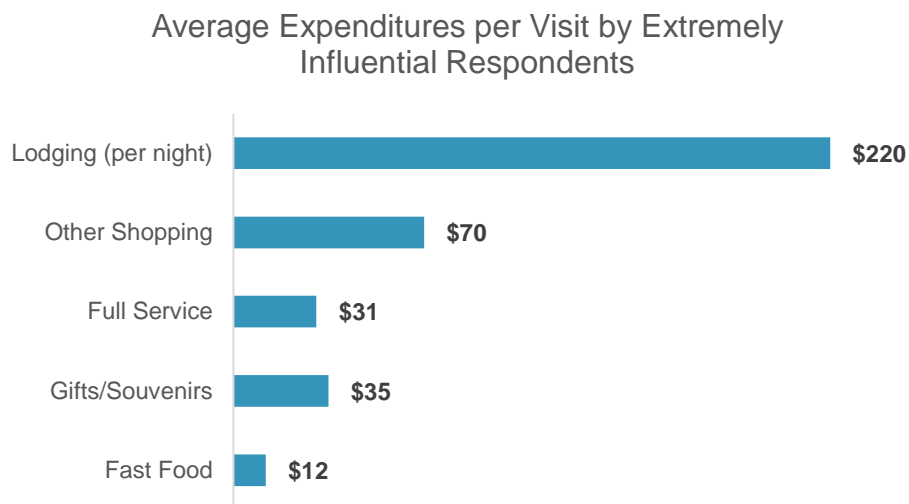


Figure A11. Average amount of money extremely influential survey respondents spent on meals, lodging, and shopping during their visit.

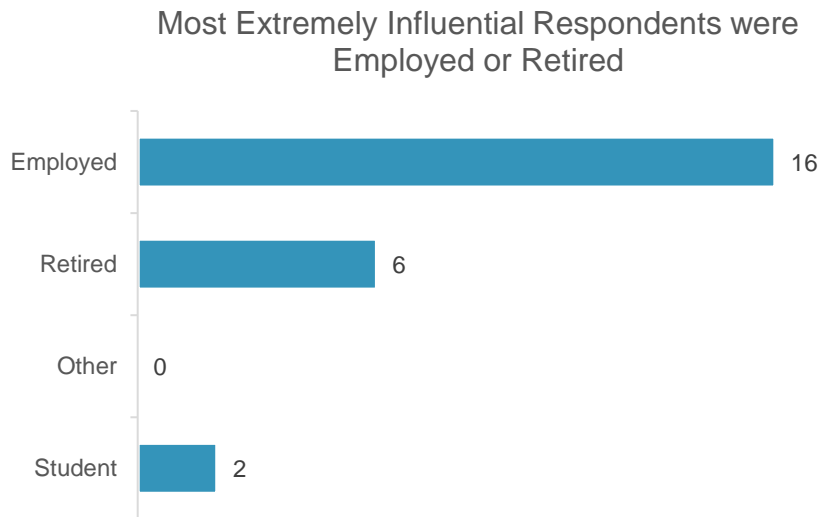


Figure A12: Breakdown of employment status of extremely influential respondents.

Survey Limitations

There are multiple limitations to the survey that need to be recognized. These limitations impact the external validity (e.g. generalizability) of the survey. These limitations include:

1) Survey occurred outside of prime visitation season

Ideally, a survey of prime visitor season and off-season visitors would have been conducted on site at each location. This would have allowed for distinctions in visitor spending and visitor type.

2) Survey is retrospective

The survey is retrospective. As such, we are relying on the ability of visitors to recall spending patterns up to five years after visiting the site.

3) Limited modes of dissemination and skewed sample

The survey was disseminated via web, which potentially skewed the responses to younger visitors and to those most interested or aware of the Hopewell Ceremonial Earthworks pending UNESCO World Heritage Site designation. Additionally, the exclusion of minors from the survey and lack of on-site surveys, excluded school age groups from the survey data.¹⁷ Educational visits from school children are a high volume, but low economic impact visitor segment. Lastly, the survey may be skewed

¹⁷ The survey was designed and marketed for respondents ages 18 and over. One respondent under the age of 18 completed the survey.

to daytime visitors given the large response from those within easy driving distance to the sites.

4) Small sample size for analysis

Lastly, the survey sample is small, yet it is being used to draw generalizability to the entire visitor pool to these sites.

The research team recognizes the limits to the survey data and survey approach. Yet, these limitations are often reflective of applied research conducted with limited time and budget. This economic impact assessment, and the accompanying survey, are being completed on an aggressive timeline outside of the prime visitor season. The survey data represented the best available data. We recommend that the national Park Service and the Ohio History Connection field a similar survey over a much longer period of time, including across the summer high tourism season, prior to World Heritage designation. The results from such a survey would offer a baseline against which to examine the effect of World Heritage designation, and the survey could be re-fielded after designation to quantify the impact of World Heritage retrospectively. (Does this make sense? This seems to me a natural conclusion from what you've said about the survey and considering our desire to better understand the impact of designation after the fact.)