

Lewis & Clark National Historic Trail Visitor Use and Economic Expenditure Patterns

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LEWIS AND CLARK TRUST, INC.

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Executive Summary

The purpose of this study was to explore visitor use patterns and quantify economic impact along the Lewis Clark National Historic Trail (LECL). These objectives were accomplished through the use of aggregated mobility data (MDD), on-site visitor surveys, and IMPLAN economic modeling. For this project, six sites were chosen along the LECL as study sites. Stratified random sampling techniques were utilized to intercept visitors as they exited each site. Key findings uncovered by this research include: 62% of visitors were first-time visitors. Approximately 14% of visitors considered their visit to be part of a longer trip on the LECL. LECL visitors at the five selected LECL sites (and excluding the Gateway Arch) generated \$14.5 million in annual expenditures based on NPS expenditure patterns and 2023 visitation estimates. Visitor expenditures at the five sites supported an estimated 195 jobs in the Midwest and generated \$7.49 million in labor income for Midwestern families. Based on these insights, we recommend tailoring outreach and interpretation strategies to distinct visitor segments, adjusting staffing models to reflect seasonal variation in use, and expanding sampling efforts to underrepresented sites, particularly in remote or backcountry areas, to ensure a more comprehensive understanding of trail-wide use and impact.



Executive Summaries Infographics

LECL 2024 FINDINGS

ECONOMIC IMPACT



LEWIS AND CLARK TRAIL HEADQUARTERS

Supported 40.3 jobs and generated \$3,001,374 in visitor expenditures.

LEWIS AND CLARK BOAT HOUSE

Supported 30.37 jobs and generated \$2,248,053 in visitor expenditures.



FORT OSAGE

Supported 7.3 jobs and generated \$525,451 in visitor expenditures.

LEWIS AND CLARK STATE PARK

Supported 106.4 jobs and generated \$7,881,761 in visitor expenditures.



MISSOURI RIVER BASIN INTERPRETIVE CENTER

Supported 11.21 jobs and generated \$849,479 in visitor expenditures.

LECL VISITOR IMPACTS

KEY FINDINGS



FIRST-TIME VISITORS

62% of visitors to the survey sites were first time visitors.

REPEAT VISITORS

Repeat visitors made an average of three trips to their survey site in the last 12 months.

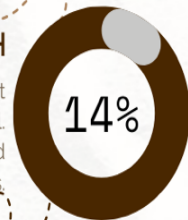


TRIP PLANNING

A significant portion (73%) of visitors planned their trip, with most using the NPS website for assistance.

LECL REACH

14% of visitors described their visit as part of a longer trip on the trail. On average, those people visited 10 sites.



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Common Abbreviations

LECL	Lewis & Clark National Historic Trail
State Park	Lewis & Clark State Park
Interpretive Center	Missouri River Basin Interpretive Center
Boat House	Lewis & Clark Boat House and Museum
Gateway Arch	Gateway Arch National Park
Fort Osage	Fort Osage National Historic Landmark
Trail Headquarters Visitor Center	Lewis & Clark National Historic Trail Headquarters Visitor Center
NPS	National Park Service

Additional Notes

- LECL is defined for this report as Any location within the Trail corridor—regardless of land owner—where recreational use occurs.
- Trail Headquarters Visitor Center is in reference to the the public facing portion of this building only.

1.0 - Study Purpose and Rationale

This research project is designed to inform visitor use management and associated planning for Lewis & Clark National Historic Trail (LECL). This report provides information to understand visitor uses and intents for visiting LECL, while guiding future visitation at LECL. Ultimately, outcomes from this project will inform potential management options and engagement of current and future visitors. This work is guided by the steps and principles of the Interagency Visitor Use Management Framework (IVUMF), which identifies the interdependent relationship between resource conditions, visitor experiences, and management actions as a strategic area of focus.

The outcomes of this project will provide information that will directly align with two key mission areas of the NPS: 1. expanding outdoor recreation and access and 2. modernizing organization and infrastructure for the next 100 years. These two mission areas will be fulfilled by a) informing management planning processes for public use and access, b) fostering partnerships to achieve balanced stewardship and use of public lands, and c) enhancing public satisfaction at LECL. This research provides visitor input that will inform strategies to manage access while still maintaining high quality visitor experiences.

This research had four key research questions:

1. **How do visitor use patterns vary across the six LECL sites?** To establish LECL visitor use patterns while also establishing if users are visiting LECL as a primary or secondary part of their visit. It was unknown to what degree visitors were attempting to retrace Lewis and Clark's steps, visit a standalone museum or historical site, or overlapping with LECL as a result of outdoor recreation (hiking, paddling, mountain biking, trail running, etc.).
2. **Can we develop visitation estimates to six sample locations along the LECL and the visitation patterns relative to the other sampling locations in this study.** It was unclear to what extent visitors utilize more than one location on the LECL and how many persons visit these areas overall. The survey results assist in understanding visitation patterns on the LECL in these areas within a limited budget.
3. **What are the visitor characteristics, including demographics and previous visitor use of the LECL, in a sample of locations in Missouri and Nebraska.** This information was needed because Park staff are unaware of previous visitor surveys being conducted here, and need this visitor data in order to make informed decisions about planning and management.
4. **What are the total and per-site economic impacts as estimated by IMPLAN** - To explore the expenditure patterns of LECL visitors. The survey asked visitors about their home location, length of stay, group size, number of previous visits, and expenditures in common areas such as lodging, travel, food, retail, and service purchases occurring while visiting the LECL. The survey results will be used for making informed management decisions with a limited budget.

This provides a proving ground for a visitation and economic impact methodology which can be applied to LECL and other long distance, multi-entry trails across the National Park System.

1.1 - Contextual Background

The Lewis and Clark National Historic Trail is a commemoration of the 1803-1806 Corp of Discovery led by Merriwether Lewis and William Clark. The trail, established in 1978, and extended in 2019 stretches 4,900 miles from Pittsburgh, Pennsylvania to Astoria, Oregon. The more than 100 sites along the trail allow travelers to experience the journey taken by the Corp of Discovery. This epic journey contributed significant scientific knowledge and led to political, social, economic, cultural, and environmental changes throughout North America. The journals kept by Lewis and Clark have encouraged many people to follow in their footsteps.

The Lewis and Clark expedition is more than a story of two men. It is a story of many. It is a story of America. The influence of the expedition affected individuals, groups, men and women, military and science, and American Indians. Since 1978 the National Park Service has been committed to upholding the integrity of the trail to allow people to experience this story for themselves. 2018 marked the 50 year anniversary of this important relic of American history. Research such as this project allows for insight into the best practices of managing the trail and the impact the trail has on the nation. Understanding trail visitors and the economic impact of the trail allows the National Park Service to allocate resources adequately throughout its many units.

2.0 - Methodology

2.1 - Site selection

The researchers aimed to include a wide array of location types found on the LECL, including museums, parks, and historical physical sites, when initially identifying survey sites for this study. The researchers also aimed to identify these location types within a relatively small area to reduce survey costs. The researchers selected six sites on the LECL for surveys: Lewis & Clark State Park (Rushville, MO), Lewis & Clark Boat House and Museum (St Charles, MO), the Gateway Arch and Museum (St Louis, MO), Fort Osage National Historic Landmark (Sibley, MO), Missouri River Basin Lewis & Clark Interpretive Trail and Visitors Center (Nebraska City, NE), and Lewis & Clark National Historic Trail Headquarters Visitor Center (Omaha, NE). The survey locations were selected as diverse sites in the middle segment of the trail. Sites varied from low, medium, and high use levels to ensure a wide sample. Sites were also selected by access type with some being primarily used for boating, hiking, or historical education.

2.2 - Survey methods

Surveys were collected on-site from July 1-July 25, 2024. The researchers spent three days at all sites except for the Gateway Arch (four days) and Boat House (only two days due to flooding in region). Within each stratum every visitor had an equal selection probability. Sampling windows were rotated by time of day and day of the week to reduce sampling bias. The surveyors approached visitors exiting from the survey site to request a survey be completed. Surveys were managed using Qualtrics, a survey platform. In all, 587 persons were engaged to take the survey with 425 agreeing to complete the full survey. Potential limitations include weather, weekday timing, and exclusion of offtrail/backcountry users.

2.3 - Data cleaning and organization

Data were transferred from the survey platform (Qualtrics) into Excel for initial cleaning. This included naming variables, converting qualitative responses (i.e., “two”) into quantitative

responses (“2”), and recoding variables. The data were then transferred to Stata for recoding and statistical analyses. For example, categorical variables were selectively recoded as dichotomous measures to efficiently explain results. In a dichotomous coding, a 0=the absence of a category and 1=the presence of the category. This approach allows means to be easily interpreted as percentages. For example, a Yes/No measure could be coded where 0=No and 1=Yes, and a mean of .25 would mean 25% of the sample responded Yes. Surveys with less than 50% completion or logical inconsistencies were dropped.

2.4 - Economic impact measures

A forward-looking element of this study is establishing and demonstrating a sound methodology for conducting the economic impact of the entire LECL at some point in the future. This potential outcome shaped the study’s economic impact methodology in a few key ways.

This study utilizes the NPS visitor segment approach, focusing on five established segments as explained in Thomas and associates (2019)¹ and applied in Flyr and Koontz (2023)². Day visits (visits involving no overnight stay as a result of the visit) are divided into *local day visitors* (persons living 30 or less miles from the survey site) and *non-local visitors* (persons living more than 30 miles from the location where the survey site). Overnight stays focus only on non-local visits and cover three lodging types: camping, hotel/cabin rentals, and unpaid lodging. This third, less-intuitive overnight category focuses on non-local visitors who stay overnight with friends, families, and the like while visiting in lieu of paying for lodging. When constructing visitor segments, the researchers excluded the Gateway Arch respondents to ensure the visitor segments better matched the great majority of locations on the LECL.

The researchers also utilized visitor expenditure patterns provided by the NPS. These patterns focus on 2023 adjusted per party day/night expenditures. The patterns, by design, focus on less visited sites which describe the near entirety of the LECL’s sites (naturally excluding the Gateway Arch), which makes them ideal for future studies of the LECL. Although the researchers collected data on visitor expenditures, utilizing the NPS expenditure patterns had several benefits. For example, the NPS patterns had a notably larger sample utilized to create them across a much wider swath of locations. The patterns are also (using NPS methods) easily applied to visitor segments and site by site visitation estimates.

2.5 - Cuebiq methods

Aggregated mobility data (MDD) are provided by Cuebiq, a location intelligence platform. Data are collected from anonymized users who have opted-in to provide access to their location data anonymously, through a CCPA and GDPR-compliant framework. Through its Social Impact program, Cuebiq provides mobility insights for academic research and humanitarian initiatives. The Cuebiq responsible data sharing framework enables research partners to query anonymized and privacy-enhanced data by providing access to an auditable, on-premise Data Cleanroom environment. All final outputs provided to partners are aggregated in order to preserve privacy.

¹ Thomas, Catherine Cullinane, Egan Cornachione, Lynne Koontz, and Christopher Keys. 2019. “National Park Service Socioeconomic Monitoring Pilot Survey Visitor Spending Analysis.” USGS Report 37.

² Flyr, Matthew and Lynne Koontz. 2023. “National Park Visitor Spending Effects: Economic Contributions to Local Communities, States, and the Nation.” Science Report NPS/SR 1-68.

The MDD source used within this study provided several tables available for analysis. This analysis utilized an uplevelled Stops table, uplevelled Device Location table, and uplevelled Device Metrics table. Each table undergoes a level of aggregation and de-identification by the data provider to protect the device users that comprise the MDD sample. The Stops table provides inferred stationary events based on Cuebiq's stop-detection algorithm, which considers dwell time, movement speed, and signal patterns to determine significant pauses in user mobility. The Cuebiq Device Location table contains location data after it has been de-identified, processed, and cleaned. To preserve privacy, Cuebiq obscures data points close to a device's inferred home location to the census block group level. The inferred Home Census Block Group of a device is provided in an uplevelled Device Metrics table that can be joined by the date of the observed stop and the device identifier so that additional data regarding the parks' visitor profiles may be developed.

Researchers defined the geographic extent of each site's boundaries with the vertices stored within a comma separated value file as coordinates to examine how MDD samples interacted within those vertices. Two temporal ranges were used in the analysis. The larger temporal range of the analysis was January 1st, 2024 through December 31st, 2024 and was retrieved between January 28th, and 31st, 2025. The smaller temporal range used in this study was between July 1st, 2024 and July 31st, 2024, and was retrieved on January 28th, 2025. This smaller temporal range was chosen so that the data may be directly compared to the on-site survey completed at the six sites during July 2024.

The second stage of the data collection and analysis entailed developing a script to determine the number of stops within each site's boundaries during the specified temporal periods. Implemented in SQL and Python, the script identified relevant pings from the designated dataset. The workflow involved importing necessary libraries, accessing the appropriate table, and executing queries to filter data based on predefined spatial and temporal parameters. SQL queries were structured to extract only records that met predefined geographic and temporal criteria, ensuring that all stops analyzed occurred strictly within the designated site boundaries and timeframes.

In addition to retrieving the number of visits made to each site within the year and month of July, the Cuebiq dataset was used to explore two additional questions: the origins of site visitors and the number of individuals that were observed visiting multiple sites along the LECL throughout 2024. The origin of site visitors was operationalized as the number of visits made to the site by individuals whose home Census Block Group is likely within and outside a 30-mile buffer. We selected a 30-mile buffer to define local visitors because the same threshold was used in the on-site survey, allowing for a direct comparison between self-reported visitor origins and those inferred from the mobile device data. Using a center point of each site to create a 30-mile buffer around the site in ArcGIS Pro, census blocks whose center point falls within the buffer were identified. Each observed stop that was associated with a likely home census block was then compared with the list of census blocks within the buffer for the associated site. The number of stops with devices whose likely home census block could be identified was recorded along with the number of devices whose likely home census blocks fall within a 30-mile buffer were recorded. To identify multi-site visitors, a set of unique devices observed at each site was compared to the set of unique devices observed at every other site. The number of devices observed at each pair of sites during the analysis period was recorded.

Our study follows similar methods to those employed by Li and Mostafavi (2022)³ in their use of Cuebiq mobility data to analyze human activity patterns. Specifically, we utilized the Device Location table to identify likely home locations at the census block level based on dwell time, and the Stops table to extract visits to specific sites using Cuebiq's stop-detection algorithm. While Li and Mostafavi (2022) focused on detecting visits to points of interest (POIs) relevant to hurricane preparedness, our study applies a comparable methodology to analyze visitor behavior within site boundaries, using spatial filtering to isolate stops within predefined site polygons.

³ Li, B. & Mostafavi (2022). Location intelligence reveals the extent, timing, and spatial variation of hurricane preparedness. *Sci Rep.* 12(1).

3.0 - Results

3.1 - Non-response Survey Questions

Table 1 examines non-response results. In all, 72% of respondents (n=425) agreed to take the main survey. Respondents who declined to take the main survey (n=162, or 27%) were asked if they would be willing to answer a short non-response survey, and 65 (40%) agreed. Overall, 62% (n=40) indicated that this was their first time visiting the survey site. Only a handful of respondents (less than 5%) reported making multiple visits to the site. Figure 1 displays the states of residence for respondents who are US residents/citizens (n=57, 89%), with most reporting Missouri as their home state. Note, however, this response is potentially skewed due to high survey responses at the Gateway Arch site.

Table 1 - Non-response survey results

Measure	Response n	% of cases
Would you be willing to take a 10-minute survey?		
Yes	425	72.4
No	162	27.6
(If no) Instead of completing the full survey, could I ask you three quick questions?		
Yes	65	40.4
No	96	59.6
Is this your first time visiting here?		
Yes	40	62.5
No	24	37.5
Over the last 12 months, how many times have you visited this location?*		
Never	4	6.4
Once	56	88.9
Twice	0	0.0
Three times	1	1.6
More than three times	2	3.2
Are you a permanent resident or citizen of the United States?		
Yes	57	89.1
No**	7	10.9

*This question's responses may be somewhat misleading as most persons visiting the site for the first time also reported having visited once in the last 12 months.

**Other countries listed include Canada, Cuba, Italy, Russia, and Switzerland, with one person living in the United States but not a citizen.

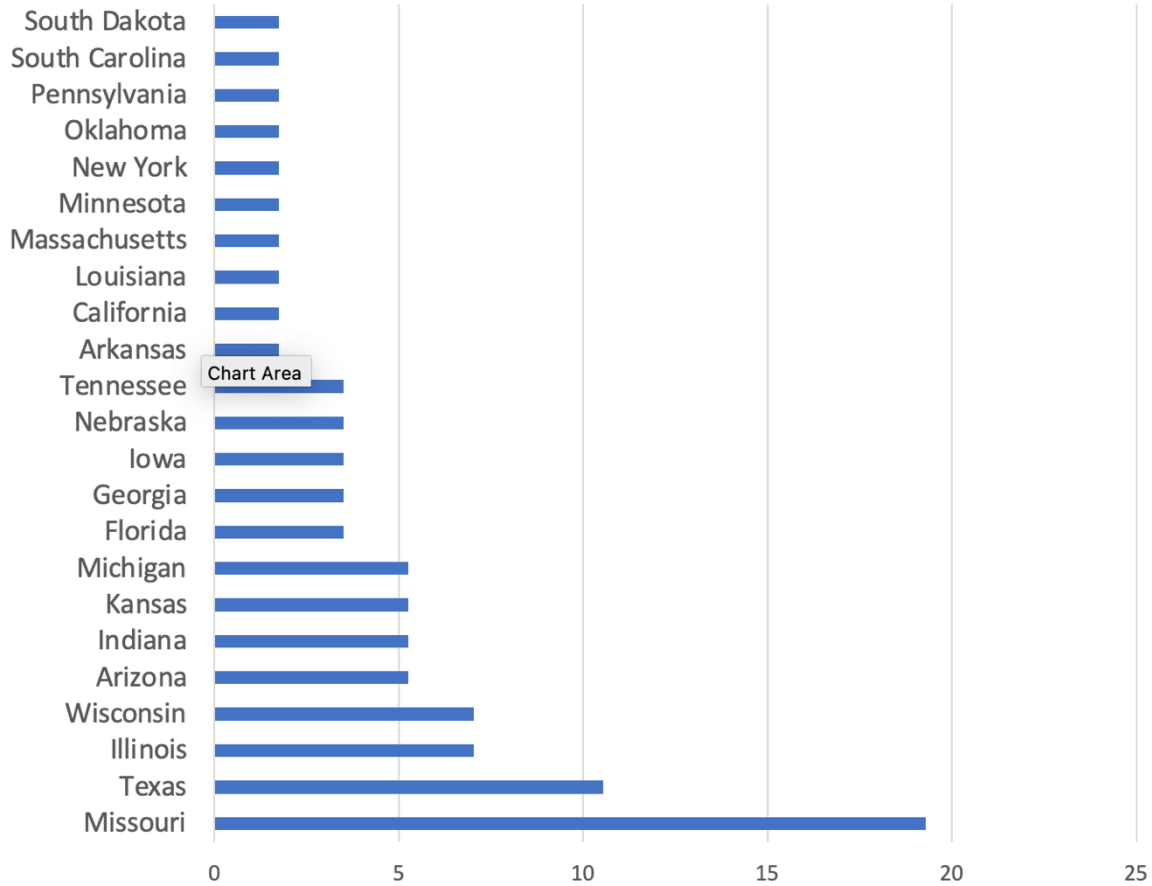


Figure 1 - States of residence

3.2 - Visit Characteristics

In all 72% of potential respondents (n=425) agreed to take the full survey in which they were asked to indicate each location they planned to visit on their trip. Table 2 begins summarizing statistics on respondents' visit and plans. This table utilizes dichotomous coding where a respondent who visited a given site would thus be marked a 1, while respondents who did not visit a site would be marked a 0. For example, a respondent who visited the Gateway Arch in this table would be marked a 1. The mean of a dichotomous measure can be treated as a percentage of cases denoted as a 1. For example, 57% (or mean=.57) of respondents indicated visiting the Gateway Arch. Likewise, 17% of respondents visited the Trail Headquarters Visitor Center, while 12% indicated visiting the River Basin Interpretive Center. In all, 62% (n=250) of respondents shared this was their first visit to the survey site. Respondents who previously visited their site reported an average of eight visits per year to that location. When excluding outliers (n=2), this decreases to around three visits per year. Most respondents first visited their survey site around 2012.

Results in the survey somewhat vary by location where the visitor was intercepted and surveyed. Throughout this report, a follow-up table (for example, see Table 3 below) will examine the results from the prior table by survey location. Throughout the report the follow-up table responses across sites may not perfectly match its prior table as 13 respondents indicated visiting more than one of our survey sites (most often pairing the Gateway Arch with the Boat House or State Park)

and the researchers opted to include those responses where applicable due to lower response rates at select sites.

Table 3 demonstrates that respondents at the Gateway Arch were more likely to be repeat visitors (with 58% visiting for the first time) when compared to the Boat House and Museum or the Trail Headquarters Visitor Center (where 77% and 79% of respondents were visiting for the first time, respectively). Repeat visits over the last year ranged from an average of three visits per year at the Gateway Arch and Boat House to approximately one visit at the Trail Headquarters Visitor Center. Although the results may be shaped by a low response rate (n=5), State Park visitors reported coming there nearly ten times in the last year. Respondents indicated on average visiting the Gateway Arch and Boat House Museum for the first time in the late 1990s, Fort Osage in the late 1980s, the State Park in the early 2000s, and the Interpretive Center and Trail Headquarters Visitor Center in the 2010s.

3.3 - Planning Behaviors

Table 4 examines respondent planning behaviors. Respondents were asked how carefully they planned for this trip, and nearly 73% engaged in pre-planning of some form. Only 12% reported *carefully* planning this trip, however, while 32% engaged in *some* pre-planning and 28% engaged in *very little* pre-planning. A remaining 27% engaged in *no* planning and considered the visit to be spontaneous. Respondents were also asked which information sources were utilized in the planning process. Park websites (35%) were very popular, while talking to other visitors (8%) and park brochure/maps (6%) were more distant results.

Table 5 examines how these results vary by location. Fort Osage, Gateway Arch, the Interpretive Center, and the State Park indicated higher rates of spontaneous and/or unplanned visits. Users often reported using the NPS website to prepare for a visit to the Gateway Arch and Fort Osage. Note that due to a handful of cases indicating visiting one or more of the six survey sites, the planning totals by location may not perfectly match the prior table's totals.

Table 2 - Visit Characteristics: survey location and frequency of visits

Measure	n	Mean	SD	Min	Max
On today's visit, which of the following locations did you visit? Please select all that apply.^					
Gateway Arch	409	0.57	0.5	0	1
Lewis & Clark Trail HQ	409	0.17	0.4	0	1
Missouri River Basin Interpretive Center	409	0.12	0.3	0	1
Lewis & Clark Boat House and Museum	409	0.07	0.3	0	1
Fort Osage National Historic Landmark	409	0.04	0.2	0	1
Lewis & Clark State Park	409	0.04	0.2	0	1
Another location not listed	409	0.02	0.2	0	1
Is this your first time visiting this location? (1=yes, 0=no)	400	.625	0.5	0	1
Over the past twelve months, how many visits have you made to this location?	146	8.36	42.7	0	400
Over the past twelve months, how many visits have you made to this location? (adjusted)	144	3.62	12.5	0	100
In which year did you make your first visit to this location?	142	2000.95	17.3	1960	2024

^Other locations included: Confluence Point, St. Louis Aquarium, Ulysses S. Grant National Historic Site, and an unnamed zoo.

Table 3 - Visit Characteristics: survey location and frequency of visits by survey site

Columns list n, mean, and standard deviation

Measure	Gateway Arch	L&C Trail HQ	MO River Basin Interpretive Center	L&C Boat House and Museum	Fort Osage National Historic Landmark	L&C State Park
Is this your first time visiting this location? (1=yes, 0=no)	n=229 .580 .494	n=68 .794 .407	n=49 .571 .500	n=27 .777 .423	n=16 .500 .516	n=15 .400 .507
Over the past twelve months, how many visits have you made to this location?	n=94 3.085 11.368	n=14 1.285 1.204	n=21 2.809 2.803	n=5 3.600 4.774	n=8 .750 .462	n=5* 9.800 12.755
In which year did you make your first visit to this location?	n=93 1997.699 17.261	n=14 2012.071 9.926	n=20 2011.850 7.442	n=5 1997.000 9.460	n=7 1988.714 24.025	n=7 2004.571 23.143

*excludes n=3 atypical cases where visits equaled 100 or more days.

Table 4 - Planning Behaviors

Measure	Responses	% of cases
How would you describe your planning for this trip?		
Carefully planned	48	12.15
Some pre-planning	129	32.66
Very little pre-planning	111	28.10
Spontaneous; no planning	107	27.09
Which information sources below did you use? (Check all that apply)		
Park website	138	35.11
I did not plan to visit this site today	77	19.59
I did not use any of these	66	16.79
Other visitors	34	8.65
Park brochure/map	25	6.36
Signs	21	5.34
Ranger/employee	14	3.56
Interpretive program	9	2.29
Educational groups	7	1.78
Newspaper	2	0.51

Table 5 - Planning Behaviors by Survey Site
 Columns contain n and percentage of responses

Measure	Gateway Arch	L&C Trail HQ	MO River Basin Interpretive Center	L&C Boat House and Museum	Fort Osage National Historic Landmark	L&C State Park
How would you describe your planning for this trip?						
Carefully planned	38 16.67	5 7.35	1 2.04	2 8.00	0 0.00	3 20.00
Some pre-planning	77 33.77	24 35.29	14 28.57	9 36.00	5 33.33	2 13.33
Very little pre-planning	39 17.11	28 41.18	21 42.86	11 44.00	3 20.00	7 46.67
Spontaneous; no planning	74 32.46	11 16.18	13 26.53	3 12.00	7 46.67	3 20.00
Which information sources below did you use? (Check all that apply)						
Park website	106 46.70	11 16.18	8 16.67	5 20.00	6 40.00	2 13.33
I did not plan to visit this site today	21 9.25	29 42.65	14 29.17	10 40.00	1 6.67	2 13.33
I did not use any of these	39 17.18	11 16.18	6 12.50	3 12.00	3 20.00	5 33.33
Other visitors	22 9.69	3 4.41	4 8.33	2 8.00	1 6.67	4 26.67
Park brochure/map	15 6.61	6 8.82	1 2.08	2 8.00	1 6.67	1 6.67
Signs	7 3.08	4 5.88	8 16.67	0 0.00	1 6.67	1 6.67
Ranger/employee	8 3.52	3 4.41	1 2.08	1 4.00	2 13.33	0 0.00
Interpretive program	4 1.76	1 1.47	3 6.25	1 4.00	0 0.00	0 0.00
Educational groups	4 1.76	0 0.00	2 4.17	1 4.00	0 0.00	0 0.00
Newspaper	1 0.44	0 0.00	1 2.08	0 0.00	0 0.00	0 0.00

3.4 - Length, Type and Purpose of Stay, and Local/non-local Status

Table 6 examines the characteristics of the respondent's visit at the time of the survey. Respondents who indicated they planned to spend more than one day at the site where they were surveyed (13%) expected to spend nearly two days there. Note that this is not the same as staying overnight at the location; 51% of respondents indicated that they would stay overnight within 30 miles of the survey site. During their visit, 75% of respondents planned to stay at the site for more than one hour. When excluding three atypical multiday responses, those surveyed planned to stay an average of two hours at the survey site.

One important component of this study is understanding the broader travel patterns of persons visiting the LECL. Of note, 14% of visitors envisioned their visit as being part of a larger trip along the LECL. Moreover, those persons indicated having visited three other sites when excluding outliers. Respondents who reported that their survey site was one stop in a larger trip on the LECL indicated they planned to visit around five sites on the LECL. Looking further into the survey responses, 13 persons indicated they would be visiting more than one location as part of their *current* visit. This most often meant combining the Gateway Arch with another nearby location (Boat House and Museum, n=3; State Park, n= 2; another location not listed, n=7).

Table 6 also includes questions delineating between local residents (persons living within 30 miles of their survey site) and non-locals. This concept will be revisited in the economic expenditure measures later in the report. Roughly one in five respondents qualified as locals, and over 70% indicated their visit to the survey site was the primary purpose of their visit today. In comparison, nearly 80% of the sample qualified as non-locals. Excluding outliers, non-local respondents reported planning to spend just over two days within 30 miles of the survey site as a result of their trip. Roughly one in five described their visit to their survey site as the primary purpose for their overall trip away from home.

In all, 51% of respondents indicated they planned to stay overnight as a result of their trip. On average, stays largely lasted around two nights when excluding outliers (groups larger than 8; visits longer than one month). Campers stayed 2.83 nights on average (with a maximum of 30 days) while hotel/cabin users stayed 2.47 nights. Unpaid lodging users stayed only one night across all cases in the survey when eliminating outliers.

Table 7 expands on the findings of Table 6 by examining responses by location. Results varied somewhat by survey location. For example, State Park visitors indicated higher rates of a multi-day visit to the survey site (ostensibly due to site design and its amenities). In comparison, Fort Osage included no multi-day visits. There were interesting differences by site when asked about a broader LECL visit. The Trail Headquarters Visitor Center, Interpretive Center, and Boat House all had a slightly higher percentage of persons indicating this was part of a wider LECL visit. There are also a few interesting differences in use patterns by locals and non-locals by location. Across the six survey sites, Fort Osage and the State Park had higher than average uses by persons living within 30 miles. The Interpretive Center respondents also had a comparatively longer stay for non-locals at three days. Finally, unpaid lodging from visitors was higher for the Gateway Arch and Trail Headquarters Visitor Center than the overall average from Table 6.

Table 6 - Visit Characteristics, Length, Type and Purpose of Stay, and Local/non-local Status

Measure	n	Mean	SD	Min	Max
Did you plan on visiting this site for more than one day? yes=1, no=0	395	0.13	0.33	0	1
How many days did you plan to visit this site on this trip? (If yes)	50	1.84	1.29	1	7
Did you plan to stay more than one hour on this trip?	393	0.75	0.43	0	1
How many hours did you stay? (If yes)	293	2.79	8.01	1	96
How many hours did you stay? (adjusted)	290	1.99	1.03	1	12
Is this visit part of a larger trip along the Lewis & Clark National Historic Trail? (yes=1, no=0)	392	0.14	0.35	0	1
How many sites have you visited along the trail?	53	10.05	53.01	0	388
How many sites have you visited along the trail? (adjusted)	52	2.78	3.27	0	20
How many sites do you plan on visiting along the trail?	41	4.75	3.97	0	20
Are you a permanent or seasonal/second home resident of the area within 30 miles of where you are being surveyed?	387	0.19	0.39	0	1
How many days did you or are you planning to spend within 30 miles of survey site on this trip? (Non-locals)	295	3.67	14.19	0	200
How many days did you or are you planning to spend within 30 miles of survey site on this trip? (Non-locals, adjusted)	292	2.37	3.45	0	40
Was your visit to survey site the primary purpose for your overall trip away from home? (1=yes, 0=no; Non-locals)	311	0.19	0.39	0	1
Was your visit to survey site the primary purpose for your overall trip away from home? (1=yes, 0=no; Locals)	76	0.71	0.45	0	1
Purpose of visit (Non-locals)					
An incidental or spontaneous stop	249	0.55	0.49	0	1
One of two or more equally important stops	249	0.31	0.46	0	1
The primary reason you came here today	249	0.14	0.34	0	1
Purpose of visit (Locals)					
An incidental or spontaneous stop	22	0.81	0.39	0	1
One of two or more equally important stops	22	0.18	0.39	0	1
The primary reason you came here today	22	0.00	0.00	0	0
On this trip away from home, have you or will you stay overnight away from your permanent residence within 30 miles of the survey site? (1=yes, 0=no)	386	0.51	0.50	0	1
How many nights will you stay overnight? (adjusted)					
Camping outside	36	2.83	4.84	1	30
Hotels and cabins	157	2.47	2.93	1	28
Unpaid accommodations	24	1	NA	1	1

Table 7 - Visit Characteristics by Survey Site

Column includes n, Mean, and Standard Deviation

Measure	Gateway Arch	L&C Trail HQ	MO River Basin Interpretive Center	L&C Boat House and Museum	Fort Osage National Historic Landmark	L&C State Park
Did you plan on visiting this site for more than one day? yes=1, no=0	n=228 .153 .361	n=68 .102 .306	n=49 .020 .142	n=25 .160 .374	n=15 0.00 0.00	n=15 .533 .516
How many days did you plan to visit this site on this trip? (If yes)	n=33 1.757 1.090	n=7 1.142 .690	n=1 1.000 0.000	n=4 1.250 .500	n=0 0.000 0.000	n=8 3.000 1.927
Did you plan to stay more than one hour?	n=226 .858 .349	n=68 .470 .502	n=49 .632 .487	n=25 .640 .489	n=15 .933 .258	n=15 .866 .351
How many hours did you stay? (If staying more than one hour) (adjusted)	n=194 2.085 .867	n=30 1.408 .778	n=30 1.850 .617	n=16 2.062 .771	n=14 1.714 .425	n=10 2.800 3.359
Is this visit part of a larger trip along the Lewis & Clark National Historic Trail?	n=226 .128 .335	n=67 .223 .419	n=49 .142 .353	n=25 .200 .408	n=15 .066 .258	n=15 .066 .258
How many sites have you visited along the trail? (adjusted)	n=27 2.888 3.745	n=14 2.785 2.833	n=7 1.857 1.463	n=4 4.500 3.696	n=1 1.000 0.000	n=1 1.000 0.000
How many sites do you plan on visiting along the trail?	n=19 4.052 2.146	n=13 4.692 3.923	n=6 5.000 4.816	n=3 9.000 9.643	n=1 5.000 0.000	n=0 0.000 0.000
Are you a permanent or seasonal/second home resident of the area within 30 miles of where you are being surveyed?	n=223 0.121 0.326	n=67 0.223 0.419	n=47 0.212 0.413	n=25 0.360 0.489	n=15 0.600 0.507	n=15 0.530 0.516
How many days did you or are you planning to spend within 30 miles of survey site on this trip? (Non-locals; adjusted)	n=189 2.335 2.699	n=29 1.344 1.078	n=48 3.166 6.415	n=16 2.375 1.668	n=6 1.833 1.602	n=6 5.00 4.93
Was your visit to survey site the primary purpose for your overall trip away from home? (1=yes, 0=no; non-locals)	n=196 0.229 0.421	n=52 0.038 0.194	n=37 0.135 0.346	n=16 0.125 0.341	n=6 0.666 0.516	n=7 0.142 0.377
Was your visit to survey site the primary purpose for your overall trip away from home? (1=yes, 0=no; locals)	n=27 0.814 0.395	n=15 0.400 0.507	n=10 0.900 0.316	n=9 0.555 0.527	n=9 0.888 0.333	n=8 0.750 0.462

Table 7 (con't): Visit Characteristics by Survey Site

Column includes n, mean, and standard deviation

Measure	Gateway Arch	L&C Trail HQ	MO River Basin Interpretive Center	L&C Boat House and Museum	Fort Osage National Historic Landmark	L&C State Park
Purpose of visit (non-locals only)	n=150	n=49	n=32	n=14	n=2	n=5
An incidental or spontaneous stop	0.426	0.755	0.750	0.642	0.500	0.600
One of two or more equally important stops	0.496	0.434	0.439	0.497	0.707	0.547
The primary reason you came here today	0.406	0.183	0.156	0.214	0.000	0.200
Purpose of visit (locals only)	0.492	0.391	0.368	0.425	0.000	0.447
An incidental or spontaneous stop	0.166	0.061	0.093	0.142	0.500	0.200
One of two or more equally important stops	0.373	0.242	0.296	0.363	0.700	0.447
The primary reason you came here today	n=5	n=9	n=1	n=4	n=1	n=2
On this trip away from home, have you or will you stay overnight away from your permanent residence within 30 miles of the survey site? (1=yes, 0=no)	1.000	0.777	1.000	1.000	0.000	0.500
How many nights will you stay overnight? (adjusted)	0.000	0.440	0.000	0.000	0.000	0.707
Camping outside	0.000	0.222	0.000	0.000	1.000	0.500
Hotels and cabins	0.000	0.440	0.000	0.000	0.000	0.707
Unpaid accommodations	0.000	0.000	0.000	0.000	0.000	0.000
On this trip away from home, have you or will you stay overnight away from your permanent residence within 30 miles of the survey site? (1=yes, 0=no)	0.000	0.000	0.000	0.000	0.000	0.000
How many nights will you stay overnight? (adjusted)	n=222	n=66	n=48	n=25	n=15	n=14
Camping outside	0.612	0.500	0.312	0.400	0.133	0.285
Hotels and cabins	0.488	0.503	0.468	0.500	0.351	0.468
Unpaid accommodations	3.523	2.571	1.667	0.000	1.000	0.000
Camping outside	6.193	1.812	1.154	0.000	0.000	0.000
Hotels and cabins	2.477	2.266	3.875	2.428	1.000	1.000
Unpaid accommodations	3.068	1.910	5.083	1.718	0.000	0.000
Camping outside	4.000	3.666	2.000	3.000	0.000	0.000
Hotels and cabins	3.450	2.309	1.000	1.414	0.000	0.000

3.5 - Visit Purpose by Activities

Table 8 summarizes the intent of the visitor's presence at the survey site. The survey question included three elements: asking if a particular activity was the *primary* purpose of that day's visit, was a *secondary* part of today's visit, and if the respondent had engaged in this activity in the last twelve months at this site. Respondents could check all that applied, but could only select one activity as their primary activity for the current trip.

The most common primary activities were overwhelmingly museum visitation (n=159) and visiting the LECL (n=93). Distant, but still popular, primary activities included historic tours (n=37), hiking/backpacking (n=26), and nature/wildlife observation (n=24). Secondary activities largely mirrored the primary activities category, as museum visitation (n=121) and visiting the LECL (n=71) were the top reported secondary activities. Nature/wildlife observation (n=46), historic tours (n=38), and hiking/backpacking (n=37) were the next most popular secondary activities. When examining activities over a 12-month period, the results are more comparably spread across all categories. Museum visitation (n=66) remains most popular, followed by nature/wildlife observation (n=57).

Table 9 results largely reflect recreation opportunities available at the location while also supporting the broader findings summarized in Table 8. For example, museum visitation remained popular across all locations with a museum component. This was particularly true for the Gateway Arch, where respondents overwhelmingly listed museum visitation as their primary purpose. However, visiting the LECL was popular across all six locations, especially the Boat House and Basin Interpretive Centers.

Table 8 - Visit Characteristics by Visit Purpose

Measure	Responses	% of cases	Measure	Responses	% of cases
Visiting the Lewis & Clark National Historic Trail			Mountain biking		
Primary	93	0.48	Primary	7	0.16
Today's visit	71	0.37	Today's visit	10	0.23
In last 12 months	30	0.15	In last 12 months	26	0.6
Retracing Lewis & Clark's travels			Historic tours		
Primary	12	0.16	Primary	37	0.31
Today's visit	31	0.42	Today's visit	38	0.31
In last 12 months	30	0.41	In last 12 months	46	0.38
Hiking/backpacking			Museum visitation		
Primary	26	0.25	Primary	159	0.46
Today's visit	33	0.31	Today's visit	121	0.35
In last 12 months	46	0.44	In last 12 months	66	0.19
Camping			Cultural interpretation		
Primary	10	0.17	Primary	21	0.25
Today's visit	17	0.28	Today's visit	38	0.46
In last 12 months	33	0.55	In last 12 months	24	0.29
Kayaking/paddling			Visit other locations sites on LECL		
Primary	7	0.15	Primary	19	0.23
Today's visit	11	0.23	Today's visit	33	0.4
In last 12 months	30	0.63	In last 12 months	31	0.37
Nature/wildlife observation			Traveling the entire LECL		
Primary	24	0.19	Primary	5	0.16
Today's visit	46	0.36	Today's visit	8	0.25
In last 12 months	57	0.45	In last 12 months	19	0.59

Table 9 - Visit Characteristics by Visit Purpose Across Survey Sites

Measure	Gateway Arch	L&C HQ	MO River Basin Interpretive Center	L&C Boat House and Museum	Fort Osage National Historic Landmark	L&C State Park
Visiting the Lewis & Clark National Historic Trail						
Primary	22 0.50	31 0.45	23 0.62	11 0.68	4 0.40	4 0.36
Today's visit	14 0.32	28 0.41	10 0.27	5 0.32	5 0.50	4 0.36
In last 12 months	8 0.18	10 0.14	4 0.11	0 0.00	1 0.10	3 0.27
Retracing Lewis & Clark's travels						
Primary	2 0.09	5 0.19	1 0.09	2 0.25	2 0.34	0 0.00
Today's visit	11 0.48	9 0.34	7 0.64	3 0.38	3 0.50	0 0.00
In last 12 months	10 0.43	12 0.46	3 0.27	3 0.38	1 0.16	1 1.00
Hiking/backpacking						
Primary	5 0.11	8 0.27	4 0.29	3 0.38	0 0.00	6 0.66
Today's visit	14 0.32	12 0.41	6 0.43	1 0.13	0 0.00	1 0.11
In last 12 months	25 0.57	9 0.31	4 0.29	4 0.50	1 1.00	2 0.22
Camping						
Primary	2 0.07	1 0.08	1 0.17	2 0.33	0 0.00	4 0.57
Today's visit	11 0.38	5 0.42	0 0.00	1 0.17	0 0.00	1 0.14
In last 12 months	16 0.55	6 0.50	5 0.83	3 0.50	1 1.00	2 0.28
Kayaking/paddling						
Primary	4 0.17	1 0.09	0 0.00	1 0.14	0 0.00	1 0.50
Today's visit	7 0.29	4 0.36	0 0.00	1 0.14	0 0.00	0 0.00
In last 12 months	13 0.54	6 0.55	4 1.00	5 0.71	1 1.00	1 0.50
Nature/wildlife observation						
Primary	8 0.17	10 0.27	2 0.11	2 0.18	1 0.20	1 0.12
Today's visit	14 0.29	15 0.41	8 0.42	5 0.45	3 0.60	2 0.25
In last 12 months	26 0.54	12 0.32	9 0.47	4 0.36	1 0.20	5 0.62

Table 9: (con't) Visit Characteristics by Visit Purpose Across Survey Sites

Measure	Gateway Arch	L&C Trail HQ	MO River Basin Interpretive Center	L&C Boat House and Museum	Fort Osage National Historic Landmark	L&C State Park
Mountain biking						
Primary	5 0.20	0 0.00	0 0.00	1 0.17	0 0.00	1 1.00
Today's visit	7 0.28	3 0.43	0 0.00	1 0.17	0 0.00	0 0.00
In last 12 months	13 0.52	4 0.57	4 1.00	4 0.67	1 1.00	0 0.00
Historic tours						
Primary	23 0.30	20 0.54	4 0.28	2 0.25	4 0.40	0 0.00
Today's visit	30 0.39	7 0.19	4 0.28	3 0.38	3 0.30	0 0.00
In last 12 months	23 0.30	10 0.27	6 0.42	3 0.38	3 0.30	1 1.00
Museum visitation						
Primary	97 0.53	10 0.24	17 0.40	11 0.44	5 0.33	0 0.00
Today's visit	70 0.38	21 0.51	13 0.31	10 0.40	7 0.46	2 0.67
In last 12 months	16 0.09	10 0.24	12 0.29	4 0.16	3 0.20	1 0.33
Cultural interpretation						
Primary	9 0.26	3 0.18	6 0.31	2 0.22	1 0.33	0 0.00
Today's visit	20 0.59	7 0.41	7 0.36	3 0.33	1 0.33	1 1.00
In last 12 months	5 0.15	7 0.41	6 0.31	4 0.44	1 0.33	0 0.00
Visit other locations along the LECL						
Primary	6 0.18	7 0.27	3 0.21	1 0.17	1 0.25	2 0.40
Today's visit	15 0.45	11 0.42	5 0.36	1 0.17	1 0.25	1 0.20
In last 12 months	12 0.36	8 0.31	6 0.43	4 0.66	2 0.50	2 0.40
Traveling the entire LECL						
Primary	1 0.07	2 0.25	1 0.25	1 0.20	0 0.00	0 0.00
Today's visit	6 0.43	2 0.25	0 0.00	1 0.20	0 0.00	0 0.00
In last 12 months	7 0.50	4 0.50	3 0.75	3 0.60	2 1.00	0 0.00

3.6 - Economic Impacts of Select LECL Sites

For this section, the researchers utilized IMPLAN (IMpacts for PLANning), a leading economic impact estimator used by the NPS. IMPLAN was created by the United States Forest Service in 1976

How IMPLAN Works

IMPLAN builds on the ideas of economist Wassily Leontief in modeling input-output (i-o) analyses. Leontief argued economies are connected through buy-sell relationships. IMPLAN's i-o models consider how expenditures of interest (such as though created by LECL visitors) generate additional economic activity a study area's economy.

IMPLAN's i-o analyses use a wealth of data sources (including US Bureau of Economic Analysis, Department of Agriculture, Bureau of Labor Statistics, and Census Bureau) to predict relationships between industry, business, and household spending patterns. Those patterns can then be applied to national, state, and county study areas to study the economic impacts of activities occurring in that study area.

to examine the economic effects of resource outputs on local communities. In 1985, the University of Minnesota established IMPLAN as a standalone corporation to meet demands for regional modeling beyond the United States Forest Service. The company (then known as Minnesota IMPLAN Group, or MIG) would be sold in 2013 and officially change its name to IMPLAN. The online estimator approach utilized in the present study was released in 2018.

IMPLAN quantifies economic impacts across four measures: job estimates, labor wages, value added, and output. *Job estimates* are a count of full, part-time, and seasonal jobs supported by the activities being studied. Note these are not the same as full-time equivalent (FTE) jobs and are not presented as such. The next three terms (labor income, value added, and output) are nested ideas. *Labor income* is a measure of the total employment-based income supported by the activity being studied. This includes both employee compensation and proprietor income. *Value added* measures changes in values generated by production of goods and services in the analysis. Value added equals labor income plus taxes on production and imports plus other property income. Value added also can be treated as the same thing as Gross Domestic Product (GDP) in most studies. Finally, *output* represents the total value of production as it includes value added (which includes labor income) and intermediate inputs. Intermediate inputs are the purchase of non-durable goods and services used to create other goods and services but not intended for final consumption. Of the three, labor income is the most conservative measure of economic impact and often the most intuitive to understand. The analysis which follows includes all three but focuses on jobs and labor income.

IMPLAN also describes economic impacts at three levels: direct, indirect, and induced. *Direct impacts* represent changes resulting from the activity being studied. For example, when a LECL visitor

stops to buy a souvenir at the Gateway Arch, their expenditures create a direct impact in the analysis. IMPLAN now considers how that direct expenditure supports changes in the local economy starting with indirect impacts. *Indirect impacts* represent business to business transactions in purchasing goods and services to prepare for the next direct impact. For example, in our hypothetical souvenir purchase at the Gateway Arch, the souvenir vendor would now need to purchase more souvenirs to sell, pay electric bills, pay worker wages, and cover any other costs

needed to be ready for the next customer. Wages paid to workers represent our third and final form of impact: induced impact. *Induced impact* represents expenditures by households as a result of the direct effects being studied. Returning to our example, the employees of the souvenir shop would take their wages and pay housing costs, buy groceries and gasoline, and numerous other expenditures. Moreover, workers impacted at the indirect level (such as the company wholesaling those souvenirs and the company making them) would also likely generate induced spending as they pay their workers (indirect) and those workers spend their wages (induced). This process continues in IMPLAN until the expenditures being studied have fully leaked from the economy due to purchases of services and goods not available in the study area.

The study area is the final concept needed to understand IMPLAN. A study area considers the location of the direct impacts being studied while also considering the immediate areas impacted by those direct impacts, such as where local businesses are located and where workers live. For this study, the researchers made the conservative approach of using the state where the survey site is located as its study area. This supports capturing more indirect and induced expenditures supported by the direct expenditures of visitors to LECL sites. In the event a site is located along a state line, both states are included in the analysis.

3.7 - Visitor Segments

Table 10 describes the visitor segments utilized in this study. These select five of the NPS visitor segments: local day trips, non-local day trips, non-local hotel/cabin/rentals, non-local camping, and non-local unpaid lodging. The table describes the visitor segment shares created by the researchers based on Thomas and associates (2019) and as applied in Flyr and Koontz (2023). The table also includes some key elements in the construction of the visitor segments for future reference, including entry rates, party size, and party days/nights. Note that these visitor segments excluded respondent data from the Gateway Arch as it was determined visitation at the arch (over 1.6 million visits in 2022) was dissimilar to the remainder of the LECL. By excluding those data, the researchers instead have results from five sites which we argue are very representative of the remainder of the LECL. The researchers will thus focus on the five remaining sites for the remainder of this section.

3.8 - Visitation Expenditure Patterns

Table 11 examines the expenditure patterns (in party days/nights format) utilized in this study. The expenditure patterns were kindly provided by the NPS and represent the expenditure patterns utilized in analyses of less popular NPS sites. The expenditures cover all the common expenditure areas from NPS studies, including camping costs, hotel/cabin rental costs, gasoline, groceries, local transportation, recreation and entertainment, restaurants, and souvenirs and other retail.

Table 11 also includes IMPLAN categories utilized in the analysis. Note that in modeling these expenditures, regional purchase coefficients (RPC) were not adjusted as there were no rationale for adjusting IMPLAN's preset models. Adjusting RPCs changes the percentage of total demand met by local supplies for commodities. There were no indications that commodity shortages would be an issue for state-wide models. Local purchasing percentages (LPP) were also left at the default settings and not adjusted as there was no rationale to do so. Decreasing LPPs from its default

increases leakages as expenditures are assumed to be occurring beyond the study area. As the study uses a statewide study area approach, this assumption is not practical.

3.9 - Visitor Patterns

Table 12 describes 2023 visitation by survey site alongside the expenditures and resulting economic impacts which are detailed in subsequent tables. First, visitation data in this table was submitted by staff at each survey site and represents visitation for the entire year. The most visits occurred at the State Park site (90,000 visits in 2023) followed by the Trail Headquarters Visitor Center with 34,272 visits.

Table 12 aggregates the results of Tables 13-17 by totaling the expenditures by visitor segment for each site. For example, visits to the Boat House supported \$2.24 million in expenditures, which per Table 13, consists of \$141,335 in local day visit expenditures, \$222,383 in nonlocal day visit expenditures, \$1.7 million in hotel overnight visits, \$109,398 in camping overnight visits, and \$46,541 in unpaid overnight visits. Note that Tables 13-17 list expenditures by category (gas, groceries, etc.) and by visitor segment for each site. In this analysis, the State Park resulted in the most expenditures (\$7.8 million) followed by the Trail Headquarters Visitor Center (\$3 million) and the Boat House (\$2.2 million). The Interpretive Center and Fort Osage each supported \$849,479 and \$525,451 respectively.

Table 12 also aggregates the results of Tables 18-22 to summarize the economic impact results for the five sites. The analysis utilizes the NPS economic impact methodology and visitor segment approach, NPS expenditure patterns, and visitation estimates from each site. For example, our analysis indicates the presence of the Lewis & Clark National Historic Trail Headquarters Visitor Center in Omaha, Nebraska and its annual ~34,000 visitors support 40 jobs and and \$1.47 million in labor income which local households use to meet their daily needs. Likewise, the existence of Lewis & Clark State Park in Missouri supports over 100 jobs in the region and state, as well as \$4.15 million in labor income. Collectively, the five sites studied support an estimated 195 jobs and \$7.49 million in labor income in the Midwest region.

Table 10 - Visitor Segments, non-NPS LECL sites

Visitor segments	Visitor segment share	Entry rates	Party size	Party days/nights
<i>Day trips</i>				
Local day	0.207	1.000	2.098	1/NA
Non-local day	0.359	1.000	2.661	1/NA
<i>Non-local overnight trips</i>				
Hotel/cabin/rentals	0.320	1.128	2.830	NA/2.480
Camping	0.080	1.917	2.750	NA/2.080
Unpaid lodging	0.034	1.000	2.800	NA/3.400

Table 11 - Expenditure patterns per party days/nights with IMPLAN categories Type SAM multiplier: 1.8435; Type I multiplier 1.4339

	camping fees	gas	groceries	hotels	local transportation	recreation and entertainment	restaurants	souvenirs and other retail
<i>Day trips</i>								
Local day	\$0.00	\$10.44	\$5.73	\$0.00	\$1.59	\$10.13	\$16.70	\$11.14
Non-local day	\$0.00	\$15.90	\$4.42	\$0.00	\$2.09	\$10.29	\$17.17	\$14.33
<i>Non-local overnight trips</i>								
Hotel/cabin/rentals	\$1.08	\$29.90	\$8.71	\$125.64	\$6.72	\$16.38	\$61.17	\$20.73
Camping	\$38.00	\$34.20	\$16.39	\$0.00	\$2.64	\$10.17	\$22.12	\$12.29
Unpaid lodging	\$0.00	\$11.84	\$5.19	\$0.00	\$3.05	\$5.29	\$12.10	\$6.79
IMPLAN categories	508	3408	3406	507	418/450, 25/75% split	504	509/510, 50/50% split	3412

Table 12 - Visitation, Expenditures, and Economic Impacts summary (rounded) Type SAM multiplier: 1.8435; Type I multiplier 1.4339

Location	Visitation Estimate	Total expenditures	Total Jobs	Total Labor income	Total Value Added	Total Output
Lewis & Clark Boat House and Museum	25,670	\$2,248,053	30.37	\$1,185,241	\$1,902,420	\$3,428,629
Fort Osage National historic Landmark	6,000	\$525,451	7.10	\$277,033	\$444,664	\$801,394
Lewis & Clark State Park	90,000	\$7,881,761	106.44	\$4,155,334	\$6,669,662	\$12,020,410
Missouri River Basin Interpretive Center	9,700	\$849,479	11.21	\$401,244	\$678,306	\$1,226,789
Lewis & Clark National Historic Trail Headquarters Visitor Center	34,272	\$3,001,374	40.30	\$1,471,212	\$2,400,754	\$4,336,277

Table 13 - Expenditures by party days/nights (rounded totals), Lewis & Clark Boat House and Museum

	camping fees	hotels	gas	groceries	local transportation	recreation and entertainment	restaurants	souvenirs and other retail	totals only
<i>Day visits</i>									
local day	\$0	\$0	\$26,477	\$14,532	\$4,032	\$25,690	\$42,352	\$28,252	\$141,335
non local day	\$0	\$0	\$55,076	\$15,310	\$7,240	\$35,644	\$59,475	\$49,638	\$222,383
<i>Overnight visits</i>									
hotel overnight	\$6,905	\$803,299	\$191,170	\$55,689	\$42,965	\$104,728	\$391,100	\$132,540	\$1,728,397
camp overnight	\$30,610	\$0	\$27,549	\$13,202	\$2,127	\$8,192	\$17,818	\$9,900	\$109,398
unpaid overnight	\$0	\$0	\$12,450	\$5,458	\$3,207	\$5,563	\$12,724	\$7,140	\$46,541
								Total	\$2,248,053

Table 14 - Expenditures by party days/nights (rounded totals), Fort Osage National Historic Landmark

	camping fees	hotels	gas	groceries	local transportation	recreation and entertainment	restaurants	souvenirs and other retail	totals only
<i>Day visits</i>									
local day	\$0	\$0	\$6,189	\$3,397	\$943	\$6,005	\$9,899	\$6,603	\$33,035
non local day	\$0	\$0	\$12,873	\$3,579	\$1,692	\$8,331	\$13,901	\$11,602	\$51,979
<i>Overnight visits</i>									
hotel overnight	\$1,614	\$187,760	\$44,683	\$13,016	\$10,043	\$24,479	\$91,414	\$30,979	\$403,988
camp overnight	\$7,155	\$0	\$6,439	\$3,086	\$497	\$1,915	\$4,165	\$2,314	\$25,570
unpaid overnight	\$0	\$0	\$2,910	\$1,276	\$750	\$1,300	\$2,974	\$1,669	\$10,878
								Total	\$525,451

Table 15 - Expenditures by party days/nights (rounded totals), Lewis & Clark State Park

	camping fees	hotels	gas	groceries	local transportation	recreation and entertainment	restaurants	souvenirs and other retail	totals only
<i>Day visits</i>									
local day	\$0	\$0	\$92,828	\$50,949	\$14,138	\$90,072	\$148,489	\$99,052	\$495,527
non local day	\$0	\$0	\$193,099	\$53,679	\$25,382	\$124,968	\$208,522	\$174,032	\$779,682
<i>Overnight visits</i>									
hotel overnight	\$24,210	\$2,816,396	\$670,250	\$195,247	\$150,638	\$367,181	\$1,371,211	\$464,692	\$6,059,825
camp overnight	\$107,319	\$0	\$96,587	\$46,288	\$7,456	\$28,722	\$62,471	\$34,709	\$383,552
unpaid overnight	\$0	\$0	\$43,651	\$19,134	\$11,245	\$19,503	\$44,610	\$25,033	\$163,175
								Total	\$7,881,761

Table 16 - Expenditures by party days/nights (rounded totals), Missouri River Basin Interpretive Center

	camping fees	hotels	gas	groceries	local transportation	recreation and entertainment	restaurants	souvenirs and other retail	totals only
<i>Day visits</i>									
local day	\$0	\$0	\$10,005	\$5,491	\$1,524	\$9,708	\$16,004	\$10,676	\$53,407
non local day	\$0	\$0	\$20,812	\$5,785	\$2,736	\$13,469	\$22,474	\$18,757	\$84,032
<i>Overnight visits</i>									
hotel overnight	\$2,609	\$303,545	\$72,238	\$21,043	\$16,235	\$39,574	\$147,786	\$50,083	\$653,114
camp overnight	\$11,567	\$0	\$10,410	\$4,989	\$804	\$3,096	\$6,733	\$3,741	\$41,338
unpaid overnight	\$0	\$0	\$4,705	\$2,062	\$1,212	\$2,102	\$4,808	\$2,698	\$17,587
								Total	\$849,479

Table 17 - Expenditures by party days/nights (rounded totals), Lewis & Clark National Historic Trail Headquarters Visitor Center

	camping fees	hotels	gas	groceries	local transportation	recreation and entertainment	restaurants	souvenirs and other retail	totals only
<i>Day visits</i>									
local day	\$0	\$35,348	\$19,401	\$0	\$5,383	\$34,299	\$56,544	\$37,719	\$188,696
non local day	\$0	\$73,532	\$20,440	\$0	\$9,665	\$47,587	\$79,405	\$66,271	\$296,902
<i>Overnight visits</i>									
hotel overnight	\$9,219	\$255,231	\$74,349	\$1,072,483	\$57,363	\$139,822	\$522,157	\$176,954	\$9,219
camp overnight	\$40,867	\$36,780	\$17,626	\$0	\$2,839	\$10,937	\$23,788	\$13,217	\$40,867
unpaid overnight	\$0	\$16,622	\$7,286	\$0	\$4,281	\$7,426	\$16,987	\$9,532	\$0
								Total	\$3,001,374

Table 18 - Lewis & Clark Boat House and Museum economic impact results

Visitor segment	Impact	Jobs	Labor income	Value added	Output
local day	Direct	1.57	\$41,799	\$52,350	\$97,340
	Indirect	0.23	\$13,751	\$23,450	\$48,077
	Induced	0.26	\$14,438	\$26,593	\$46,735
	Total	2.06	\$69,988	\$102,393	\$192,152
non local day	Direct	2.36	\$62,405	\$78,773	\$146,506
	Indirect	0.35	\$20,887	\$35,560	\$72,871
	Induced	0.39	\$21,609	\$39,801	\$69,948
	Total	3.10	\$104,901	\$154,134	\$289,325
camping overnight	Direct	1.06	\$36,344	\$46,168	\$74,345
	Indirect	0.15	\$8,930	\$14,835	\$29,874
	Induced	0.21	\$11,594	\$21,356	\$37,532
	Total	1.42	\$56,869	\$82,358	\$141,751
hotel overnight	Direct	16.54	\$548,083	\$862,875	\$1,486,877
	Indirect	3.19	\$194,397	\$318,623	\$643,313
	Induced	3.45	\$190,627	\$351,109	\$617,041
	Total	23.18	\$933,107	\$1,532,607	\$2,747,232
unpaid overnight	Direct	0.46	\$11,889	\$15,921	\$29,746
	Indirect	0.07	\$4,292	\$7,279	\$14,844
	Induced	0.08	\$4,195	\$7,727	\$13,580
	Total	0.61	\$20,376	\$30,928	\$58,170
Total across segments		30.37	\$1,185,241	\$1,902,420	\$3,428,629

Table 19 - Fort Osage National historic Landmark economic impact results

Visitor segment	Impact	Jobs	Labor income	Value added	Output
local day	Direct	0.37	\$9,770	\$12,236	\$22,752
	Indirect	0.05	\$3,214	\$5,481	\$11,237
	Induced	0.06	\$3,375	\$6,216	\$10,924
	Total	0.48	\$16,359	\$23,933	\$44,913
non local day	Direct	0.55	\$14,586	\$18,412	\$34,244
	Indirect	0.08	\$4,882	\$8,312	\$17,032
	Induced	0.09	\$5,051	\$9,303	\$16,349
	Total	0.72	\$24,519	\$36,027	\$67,626
camping overnight	Direct	0.25	\$8,495	\$10,791	\$17,377
	Indirect	0.03	\$2,087	\$3,467	\$6,983
	Induced	0.05	\$2,710	\$4,992	\$8,773
	Total	0.33	\$13,292	\$19,250	\$33,132
hotel overnight	Direct	3.87	\$128,107	\$201,685	\$347,537
	Indirect	0.74	\$45,438	\$74,474	\$150,365
	Induced	0.81	\$44,556	\$82,067	\$144,225
	Total	5.42	\$218,101	\$358,225	\$642,127
unpaid overnight	Direct	0.11	\$2,779	\$3,721	\$6,953
	Indirect	0.02	\$1,003	\$1,701	\$3,470
	Induced	0.02	\$981	\$1,806	\$3,174

Table 20 - Lewis & Clark State Park economic impact results

Visitor segment	Impact	Jobs	Labor income	Value added	Output
local day	Direct	5.52	\$146,549	\$183,541	\$341,277
	Indirect	0.80	\$48,212	\$82,217	\$168,559
	Induced	0.92	\$50,619	\$93,235	\$163,855
	Total	7.24	\$245,381	\$358,993	\$673,691
non local day	Direct	8.26	\$218,794	\$276,180	\$513,656
	Indirect	1.22	\$73,230	\$124,674	\$255,487
	Induced	1.37	\$75,762	\$139,544	\$245,240
	Total	10.85	\$367,786	\$540,399	\$1,014,383
camping overnight	Direct	3.70	\$127,423	\$161,866	\$260,655
	Indirect	0.52	\$31,311	\$52,012	\$104,741
	Induced	0.74	\$40,650	\$74,874	\$131,588
	Total	4.96	\$199,384	\$288,751	\$496,984
hotel overnight	Direct	58.00	\$1,921,503	\$3,025,098	\$5,212,777
	Indirect	11.17	\$681,529	\$1,117,047	\$2,255,368
	Induced	12.09	\$668,311	\$1,230,939	\$2,163,262
	Total	81.26	\$3,271,343	\$5,373,084	\$9,631,406
unpaid overnight	Direct	1.61	\$41,684	\$55,821	\$104,291
	Indirect	0.25	\$15,047	\$25,521	\$52,042
	Induced	0.27	\$14,709	\$27,093	\$47,613
	Total	2.13	\$71,440	\$108,435	\$203,947
Total across segments		106.44	\$4,155,334	\$6,669,662	\$12,020,410
	Total	0.15	\$4,763	\$7,229	\$13,596
Total across segments		7.10	\$277,033	\$444,664	\$801,394

Table 21 - Missouri River Basin Interpretive Center economic impact results

	Impact	Jobs	Labor income	Value added	Output
local day	Direct	0.59	\$14,788	\$20,024	\$37,222
	Indirect	0.08	\$4,538	\$7,939	\$16,143
	Induced	0.08	\$4,372	\$8,473	\$14,768
	Total	0.75	\$23,698	\$36,436	\$68,134
non local day	Direct	0.88	\$22,123	\$29,922	\$55,806
	Indirect	0.12	\$6,894	\$12,044	\$24,440
	Induced	0.13	\$6,549	\$12,692	\$22,122
	Total	1.13	\$35,566	\$54,658	\$102,367
camping overnight	Direct	0.40	\$13,412	\$17,565	\$28,531
	Indirect	0.05	\$3,008	\$5,180	\$10,365
	Induced	0.07	\$3,662	\$7,097	\$12,369
	Total	0.52	\$20,082	\$29,842	\$51,264
hotel overnight	Direct	6.35	\$191,380	\$322,285	\$563,567
	Indirect	1.14	\$66,028	\$112,644	\$226,426
	Induced	1.10	\$57,467	\$111,376	\$194,117
	Total	8.59	\$314,876	\$546,305	\$984,110
unpaid overnight	Direct	0.18	\$4,272	\$6,015	\$11,416
	Indirect	0.02	\$1,458	\$2,546	\$5,134
	Induced	0.02	\$1,292	\$2,504	\$4,364
	Total	0.22	\$7,022	\$11,064	\$20,914
Total across segments		11.21	\$401,244	\$678,306	\$1,226,789

Table 22 - Lewis & Clark National Historic Trail Headquarters Visitor Center economic impacts

Visitor segment	Impact	Jobs	Labor income	Value added	Output
local day	Direct	2.14	\$52,039	\$68,974	\$129,388
	Indirect	0.27	\$16,206	\$28,597	\$56,841
	Induced	0.29	\$15,387	\$29,899	\$51,323
	Total	2.70	\$83,632	\$127,471	\$237,553
non local day	Direct	3.19	\$77,635	\$102,900	\$193,544
	Indirect	0.41	\$43,117	\$43,117	\$85,616
	Induced	0.43	\$44,631	\$44,631	\$76,611
	Total	4.03	\$165,383	\$190,648	\$355,771
camping overnight	Direct	1.41	\$47,774	\$61,671	\$99,390
	Indirect	0.18	\$10,574	\$18,401	\$35,882
	Induced	0.24	\$12,965	\$25,193	\$43,245
	Total	1.83	\$71,313	\$105,265	\$178,517
hotel overnight	Direct	22.95	\$675,212	\$1,118,221	\$1,980,158
	Indirect	4.17	\$246,093	\$422,010	\$827,798
	Induced	3.83	\$205,116	\$398,573	\$684,171
	Total	30.95	\$1,126,421	\$1,938,804	\$3,492,127
unpaid overnight	Direct	0.63	\$14,867	\$20,868	\$39,610
	Indirect	0.08	\$5,107	\$8,974	\$17,723
	Induced	0.08	\$4,489	\$8,724	\$14,976
	Total	0.79	\$24,463	\$38,566	\$72,309
Total across segments		40.30	\$1,471,212	\$2,400,754	\$4,336,277

3.10 - Sensitivity Analysis and Future Projects

Table 23 provides an exploration of how changes in visitation/total expenditures create linear changes in the economic impact models. The table includes the baseline results from the economic impacts in Table 12 and examines how 10%, 30%, and 50% increases/decreases in visitation support changes in the findings of Table 12. The baseline visitation estimate for all areas studied in the economic impact was 165,642 visits across all visitor segments. Using a 10% margin either direction, this establishes a range of visitation between 149,078 and 182,206 total visits. Similarly, this adjusts expenditures between \$13 million and just shy of \$16 million. The table also includes changes of more extreme 30% and 50% for reference purposes.

Table 23 - Sensitivity to Changes in Visitation/Expenditures

Hypothetical Changes in Models	Visitation Estimate	Total expenditures	Total Jobs	Total Labor income	Total Value Added	Total Output
Baseline Model (No change)	165642	\$14,506,118	195.42	\$7,490,064	\$12,095,806	\$21,813,499
Incremental visit changes						
-10%	149078	\$13,055,506	175.88	\$6,741,058	\$10,886,225	\$19,632,149
-30%	115949	\$10,154,283	136.79	\$5,243,045	\$8,467,064	\$15,269,449
-50%	82821	\$7,253,059	97.71	\$3,745,032	\$6,047,903	\$10,906,750
10%	182206	\$15,956,730	214.96	\$8,239,070	\$13,305,387	\$23,994,849
30%	215335	\$18,857,953	254.05	\$9,737,083	\$15,724,548	\$28,357,549
50%	248463	\$21,759,177	293.13	\$11,235,096	\$18,143,709	\$32,720,249

3.11 - MDD Derived Visitation Estimates

This study established and tested a methodology utilizing Cuebiq to estimate visitation at LECL sites in lieu of other techniques, such as gate counts and ground estimates. Despite extensive efforts and adjustments to methodology over time, the researchers found it difficult to reconcile aggregated mobility data (MDD) derived visitation estimates with ground-level visitation estimates.

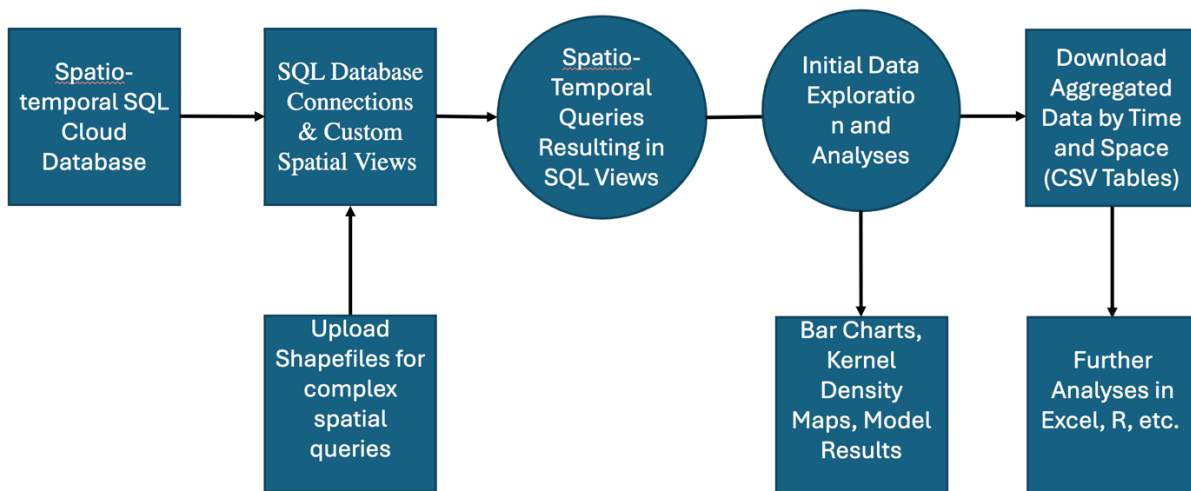


Figure 2 - MDD Methods Workflow

Table 24 tests the methodology in detecting the number of visitors each location received during July 2024. The table looks at both stops and devices present, which were collected through Cuebiq. Stop table examines cases where a device remains in one of the survey sites for an hour or more, while device table examines devices moving through the area. The stop table count and device location table count were gathered through Cuebiq while the actual count was gathered directly from each site. In each case, the actual counts differed from the stop and device approaches.

Table 25 further tests the use of MDD in comparison to survey data by examining the estimated percentage of visits from within a 30 mile area. This comparison shows more similarities between the two data sources. For example, at the Gateway Arch, 12.1% of survey participants answered that they live within 30 miles of the site. This is reasonably close to the 16.3% found using MDD. However, sites such as the Lewis and Clark Boat House do not yield similar results between the two data sources. This discrepancy is likely due to the site's temporary closure caused by flooding the day before visitor surveys were conducted. The closure may have deterred local visitors who were aware of the conditions, while non-local visitors, who were less likely to receive real-time updates, continued to visit the site. Similarly, differences observed at the Trail Headquarters Visitor Center could be attributed to the presence of employees, who are detected in the MDD dataset but were not surveyed as visitors. The headquarters employs a larger staff than the other sites, leading to an inflated percentage of visitors from within 30 miles in the cell phone mobility data. These site-specific factors highlight some of the limitations of MDD when directly comparing it to survey responses, particularly in distinguishing between recreational visitors and employees or accounting for unexpected site closures.

Table 26 tests a third element of the the use of MDD by examining the potential for persons visiting more than one survey site in the same year. The table provides some evidence of what was found in the survey while also commenting on the difficulty of tracking visitors across sites. As a point of reference, recall that 14% of survey respondents indicated their surveyed visit was part of a greater trip on the LECL, but were not limited to visiting other sites within a calendar year. The few cases who reported visiting more than one site on their current trip largely were pairing the Gateway Arch with either the Boat House or the Interpretive Center. Our findings somewhat supports this, with the biggest linkages being persons found at the Gateway Arch and Boat House or Interpretive Center. However, there are also inconsistencies in tracking visitors. For example, 2.13% of visitors to the Boat House were observed visiting Gateway Arch in 2024, but conversely, only 0.5% of visitors to the Arch were observed visiting the Boat House. To preserve privacy, Cuebiq assigned a new identifier to devices every 12 months. This along with general panel attrition could account for the slight discrepancy seen here.

Although MDD provides valuable insights into visitor behavior, several limitations must be acknowledged. Grassini and Dugheri (2021)⁴ note that mobile phone data often struggles with representativeness issues, as it excludes individuals who do not carry mobile devices, those who opt out of location tracking, and visitors that do not use compatible applications. Additionally, the

⁴Grassini, L. & Dugheri, G. (2021). Mobile phone data and tourism statistics: A broken promise? *National Accounting Review*, 3(1), 50-69.

spatial accuracy of mobile data is constrained by the resolution of cell towers or GPS precision, which makes it difficult to distinguish between actual site visitors and those simply passing through. MDD also does not differentiate visitor intent, making it challenging to determine whether an individual is a recreational visitor, an employee, or passing through the area. These challenges align with the discrepancies observed in this study.

Table 24 - Observed stops versus actual visitation

Site	Stop Count, July 2024	Device Count, July 2024	Actual Count Received from Site, July 2024
Gateway Arch	2,307	23,688	533,302
Boat House	399	4,037	2,201
Fort Osage	7	192	584
Interpretive Center	17	3,113	1,233
State Park	205	2,190	5,708
Headquarters	176	3,623	5,916

Table 25 - Comparison of home locations with surveys

Site	Visits from a Home Census Block within 30 miles of the Site (as percent of known home census blocks)	Visits from within 30 miles of the Site derived from survey data
Gateway Arch	16.3%	12.1%
Boat House	72.5%	36%
Fort Osage	67.1%	60%
Interpretive Center	34.7%	21.2%
State Park	47.1%	53%
Headquarters	61.1%	22.3%

Table 26 - Multi-Site Visitors for 2024

Site	Gateway Arch	Boat House	Fort Osage	Interpretive Center	State Park	Headquarters
Gateway Arch	-	0.5%	0%	0.03%	0.01%	0.08%
Boat House	2.13%	-	0.04%	0.07%	0%	0%
Fort Osage	0%	1.19%	-	1.19%	0%	0%
Interpretive Center	2.26%	1.13%	0.56%	-	0%	1.13%
State Park	0.09%	0%	0%	0%	-	0%
Headquarters	0.73%	0%	0%	0.16%	0%	-

3.12 - Respondent Demographics and Comments

Table 27 summarizes respondent demographics. Respondents were asked their year of birth to determine age. Responses ranged from 1941 to 2007, with the mean year of birth being 1973, placing the average respondent around 51 years of age. Respondents are largely educated, with 30% holding a bachelor's degree and another 30% holding a master's degree. Responses were fairly split between males (45%) and females (55%). A majority of respondents identified as White, with around 2% of persons reporting more than one racial identity and 5% indicating being Latino/Hispanic.

One in ten respondents were retired veterans. Respondent incomes were most concentrated within the \$50,000 to \$199,999 range, with 25% reporting low six-figure incomes. In all, 95% of respondents reported being US residents, with non-residents visiting from ten different countries and four continents. Table 28 lists demographics for respondents across survey sites. However, the results are not especially notable when compared to the means in Table 8; results which seem of note are often attributable to smaller sample sizes in a particular site and demographic category.

Respondent state and zip codes of origin

Table 29 summarizes respondents' states of origin. Visitors arrived from 44 states and Washington, D.C. The most common state was Missouri, which accounted for 18% of respondents. However, this result is likely due to a larger sample obtained at the Gateway Arch. Other popular states included Nebraska (10%), Florida (5%), Illinois (4%), and Iowa (4%). Table 30 further breaks down responses by survey site. As expected, a great deal of Missouri responses are from the Gateway Arch, but also Fort Osage and the State Park. Nebraska respondents were found at the Trail Headquarters Visitor Center and Interpretive Center. Table 31 includes a list of respondent zip codes which were not broken down by survey site, as this data is more succinctly captured at the state level in the prior table. Additionally, a heat map of responses is included following Figure 3.

Comments

Table 32 includes comments from respondents. Comments are reported verbatim as entered in the survey. Cases where no comments were left (missing data) and comments indicating the respondent had no additional comments (i.e., responses of *no*, *no thank you*, *NA*, and so forth) were removed from the table for clarity. The comments overwhelmingly are positive and encouraging with visitors valuing the opportunity to engage in the living history of the Lewis and Clark expedition.

Table 27 - Respondent Demographics

“Prefer not to respond” category treated as missing data in percentages

	n	Mean	SD	Min	Max
Year of birth	300	1973.25	15.56	1941	2007
Education					
Less than high school/GED	336	0.01	0.12	0	1
High School/GED	336	0.07	0.25	0	1
Some college, no degree	336	0.14	0.34	0	1
Vocational/trade degree	336	0.04	0.19	0	1
Associate degree	336	0.05	0.21	0	1
Bachelor’s degree	336	0.30	0.46	0	1
Master’s degree	336	0.30	0.46	0	1
Doctorate/terminal degree	336	0.10	0.29	0	1
Sex					
Male	333	0.45	0.49	0	1
Female	333	0.55	0.49	0	1
Race					
American Indian or Alaskan Native	336	0.02	0.13	0	1
Asian	336	0.05	0.23	0	1
Black or African American	336	0.04	0.19	0	1
Native Hawaiian or other Pacific Islander	336	0.01	0.11	0	1
White	336	0.91	0.28	0	1
Indicated more than one race	336	0.02	0.15	0	1
Ethnicity					
Identifies as Latino/Hispanic	321	0.05	.22	0	1
Military status					
Active duty presently	332	0.01	0.08	0	1
Active duty previously but not now	332	0.10	0.30	0	1
Active duty for Reserves/National Guard training	332	0.01	0.11	0	1
Income					
Less than \$24,999	284	0.05	0.21	0	1
\$25,000-\$34,999	284	0.03	0.17	0	1
\$35,000-\$49,999	284	0.07	0.26	0	1
\$50,000-\$74,999	284	0.17	0.37	0	1
\$75,000-\$99,999	284	0.16	0.37	0	1
\$100,000-\$149,999	284	0.25	0.43	0	1
\$150,000-\$199,999	284	0.15	0.35	0	1
\$200,000 or more	284	0.11	0.31	0	1
Residential status					
Respondent is US resident*	338	.95	.21	0	1

*Non-US residents included visitors from Australia, Brazil, Canada, Germany, Haiti, India, Mexico, New Zealand, Scotland, and Taiwan.

Table 28 - Demographics by Survey Site

Measure	Gateway Arch	L&C Trail HQ	MO River Basin Interpretive Center	L&C Boat House and Museum	Fort Osage National Historic Landmark	L&C State Park
Year of birth	n=175 1974.669 14.756	n=48 1973.042 16.054	n=37 1966.514 13.423	n=18 1977.167 19.061	n=11 1973.727 23.199	n=14 1968.929 15.364
Education	n=192	n=55	n=45	n=20	n=13	n=14
Less than high school/GED	0.021 0.143 0.083	0.000 0.000 0.000	0.000 0.000 0.022	0.000 0.000 0.100	0.077 0.277 0.077	0.000 0.000 0.143
High School/GED	0.277 0.109	0.000 0.127	0.149 0.111	0.308 0.300	0.277 0.308	0.363 0.214
Some college, no degree	0.313 0.042	0.336 0.055	0.318 0.000	0.470 0.000	0.480 0.000	0.426 0.143
Vocational/trade degree	0.200 0.042	0.229 0.073	0.000 0.022	0.000 0.050	0.000 0.154	0.363 0.000
Associate degree	0.200 0.276	0.262 0.364	0.149 0.422	0.224 0.300	0.376 0.231	0.000 0.214
Bachelor's degree	0.448 0.328	0.485 0.309	0.499 0.244	0.470 0.200	0.439 0.154	0.426 0.286
Master's degree	0.471	0.466	0.435	0.410	0.376	0.469
Doctorate/terminal degree	0.099 0.299	0.073 0.262	0.178 0.387	0.050 0.224	0.000 0.000	0.000 0.000
Sex	n=189	n=55	n=45	n=20	n=13	n=13
Male	0.465 0.500	0.418 0.497	0.377 0.490	0.450 0.510	0.384 0.506	0.538 0.518
Female	0.534 0.500	0.581 0.497	0.622 0.490	0.550 0.510	0.615 0.506	0.461 0.518
Race (check all that apply)	n=190	n=56	n=45	n=21	n=13	n=13
American Indian or Alaskan Native	0.020 0.120	0.035 0.187	0.000 0.000	0.047 0.218	0.000 0.000	0.000 0.000
Asian	0.060 0.230	0.071 0.259	0.000 0.000	0.142 0.358	0.000 0.000	0.000 0.000
Black or African American	0.030 0.160	0.535 0.227	0.000 0.000	0.142 0.358	0.076 0.277	0.000 0.000
Native Hawaiian or other Pacific Islander	0.010 0.100	0.017 0.133	0.000 0.000	0.047 0.218	0.000 0.000	0.000 0.000
White	0.900 0.300	0.892 0.312	1.000 0.000	0.857 0.358	0.076 0.277	1.000 0.000
Indicated more than one race	0.105 0.102	0.053 0.312	0.000 0.000	0.142 0.358	0.000 0.000	0.000 0.000
Ethnicity	n=186	n=54	n=41	n=19	n=11	n=13
Identifies as Latino	0.064 0.246	0.092 0.292	0.000 0.000	0.000 0.000	0.000 0.000	0.000 0.000

Table 28 (con't): Demographics by Survey Site

Measure	Gateway Arch	L&C Trail HQ	MO River Basin Interpretive Center	L&C Boat House and Museum	Fort Osage National Historic Landmark	L&C State Park
Military status	n=188	n=56	n=45	n=20	n=12	n=13
Active duty presently	0.005	0.000	0.022	0.000	0.000	0.000
	0.072	0.000	0.149	0.000	0.000	0.000
Active duty previously but not now	0.090	0.142	0.088	0.000	0.083	0.153
	0.287	0.353	0.028	0.000	0.288	0.375
Active duty for Reserves/National Guard training	0.015	0.000	0.022	0.000	0.000	0.000
	0.12	0.000	0.149	0.000	0.000	0.000
Income	n=164	n=48	n=35	n=16	n=11	n=12
Less than \$24,999	0.054	0.020	0.000	0.125	0.090	0.083
	0.228	0.144	0.000	0.341	0.301	0.288
\$25,000-\$34,999	0.042	0.000	0.000	0.000	0.090	0.083
	0.202	0.000	0.000	0.000	0.301	0.288
\$35,000-\$49,999	0.853	0.083	0.085	0.000	0.000	0.000
	0.280	0.279	0.284	0.000	0.000	0.000
\$50,000-\$74,999	0.128	0.270	0.114	0.187	0.454	0.166
	0.335	0.449	0.322	0.403	0.522	0.389
\$75,000-\$99,999	0.164	0.145	0.228	0.187	0.090	0.083
	0.371	0.356	0.426	0.403	0.301	0.288
\$100,000-\$149,999	0.243	0.270	0.314	0.187	0.272	0.083
	0.430	0.449	0.471	0.403	0.467	0.288
\$150,000-\$199,999	0.140	0.166	0.142	0.250	0.000	0.333
	0.348	0.376	0.355	0.447	0.000	0.492
\$200,000 or more	0.140	0.041	0.114	0.062	0.000	0.166
	0.348	0.201	0.322	0.250	0.000	0.389
Residential status	n=193	n=55	n=46	n=20	n=13	n=13
Respondent is US resident	0.943	0.945	0.978	1.000	1.000	0.846
	0.232	0.229	0.147	0.000	0.000	0.375

Table 29 - Visitor Demographics, States of Origin

State	n	%	State	n	%
Alabama	3	0.96	Missouri	58	18.47
Arizona	2	0.64	Montanna	1	0.32
Arkansas	4	1.27	Nebraska	33	10.51
California	10	3.18	Nevada	1	0.32
Colorado	10	3.18	New Hampshire	1	0.32
Connecticut	2	0.64	New Jersey	2	0.64
Florida	16	5.10	New Mexico	1	0.32
Georgia	8	2.55	New York	4	1.27
Hawaii	1	0.32	North Carolina	9	2.87
Idaho	2	0.64	Ohio	11	3.50
Illinois	13	4.14	Oklahoma	6	1.91
Indiana	8	2.55	Pennsylvania	7	2.23
Iowa	13	4.14	Rhode Island	1	0.32
Kansas	8	2.55	South Carolina	2	0.64
Kentucky	3	0.96	South Dakota	2	0.64
Louisiana	2	0.64	Tennessee	10	3.18
Maine	2	0.64	Texas	9	2.87
Maryland	7	2.23	Utah	2	0.64
Massachusetts	5	1.59	Virginia	5	1.59
Michigan	10	3.18	Washington	6	1.91
Minnesota	4	1.27	Washington DC	2	0.64
Mississippi	2	0.64	Wisconsin	2	0.64
			Wyoming	4	1.27

Table 30 - Demographics, State of Origin by Survey Location

Columns include n and percentage of cases

Gateway Arch	L&C Trail HQ	MO River Basin Interpretive Center	L&C Boat House and Museum	Fort Osage National Historic Landmark	L&C State Park
Missouri (27, 15%)					
California (9,5%)		Nebraska (18,40%)	Missouri (9, 45%)		
Florida (9,5%)	Nebraska (12,24%)	Florida (4, 8%)	Illinois (2, 10%)	Missouri (9, 75%)	Missouri (8, 72%)
Illinois (9,5%)	Iowa (5,10%)	Kansas (4, 8%)	Washington state (2, 10%)		
Ohio (9, 5%)		Missouri (4, 8%)			
Tennessee (9,5%)					

Table 31 - Respondent Zip Codes

Zip	n	Zip	n	Zip	n	Zip	n	Zip	n	Zip	n	Zip	n
01562	1	27705	1	40769	1	52742	1	63385	1	68028	1	77001	1
01701	1	28037	1	42103	1	52807	1	63560	1	68046	1	77098	1
02048	1	28205	1	43065	1	53716	1	63628	1	68102	1	77478	1
02061	1	28217	1	43235	1	54915	1	63901	1	68104	1	78664	1
02747	1	29642	1	43613	1	55306	1	63965	1	68105	1	78962	1
02860	1	29687	1	43617	1	55406	1	64012	1	68106	1	80022	2
03033	1	30028	1	44023	1	55946	1	64052	1	68116	2	80031	1
04043	1	30224	1	44643	1	56267	1	64055	1	68122	2	80126	2
04072	1	30622	1	44883	1	57501	1	64056	1	68131	1	80516	2
06062	1	30642	1	45036	1	57719	1	64057	1	68137	1	80909	1
06084	1	30655	1	45040	1	59041	1	64058	3	68144	2	80922	1
07828	1	30701	1	45303	1	60047	1	64070	1	68333	1	81003	1
08540	1	31005	1	45322	1	60441	1	64098	2	68336	1	82604	1
10461	1	31793	1	46143	1	60548	1	64119	1	68339	1	82633	1
12771	1	32137	1	46280	1	61820	1	64133	1	68355	1	82930	1
13031	1	32317	1	46375	1	61924	1	64152	2	68410	4	83002	1
13753	1	32504	1	46562	1	62221	1	64153	1	68421	1	83607	1
14228	1	32765	1	46580	1	62226	1	64157	1	68448	1	83713	1
18040	1	32812	1	46805	1	62258	1	64468	1	68502	1	84097	1
18049	1	32908	1	47454	1	62269	1	64484	2	68505	1	84120	1
19114	1	33036	1	47993	1	63011	1	64501	1	68510	1	85122	1
19193	1	33050	1	48076	1	63016	1	64870	1	68787	1	85374	1
19426	1	33060	1	48104	1	63028	1	65020	1	68845	1	87313	1
19464	1	33304	1	48188	1	63043	1	65101	1	69360	1	89433	1
19530	1	33905	1	48304	1	63074	1	65624	1	70508	1	90064	1
20005	1	33908	1	48451	1	63090	1	65656	1	71111	1	92075	1
20010	1	34113	1	48912	1	63101	2	65712	1	72034	1	92626	1
20175	1	34205	1	49032	1	63102	2	65714	1	72116	1	93063	1
21108	1	34698	1	49249	1	63109	1	65738	1	72703	1	94024	1
21228	1	34997	1	49271	1	63116	1	66062	1	72830	1	94040	1
21701	1	35677	1	50112	1	63117	1	66111	1	73055	1	94063	1
21713	1	36092	1	50210	1	63118	1	66223	1	73120	1	94507	1
22039	1	36784	1	50265	1	63123	1	66409	1	73772	1	95135	2
22193	1	37040	1	50613	1	63131	2	66502	1	74075	1	96825	1
22802	1	37421	1	51315	1	63135	2	66543	1	74538	1	98118	1
23059	1	37664	3	51401	1	63301	3	66605	1	74884	1	98272	2
25419	1	37777	1	51521	1	63303	1	67037	1	76028	1	98383	1
27312	1	37918	1	51601	1	63304	1	67410	1	76108	1	98501	1
27525	1	38343	1	51632	1	63366	1	67901	1	76110	1	98642	1
27608	1	38461	1	51640	1	63369	1	68008	1	76118	1		
27612	1	39759	1	52302	1	63376	1	68023	1	76643	1		

Heat Map of LECL visitors

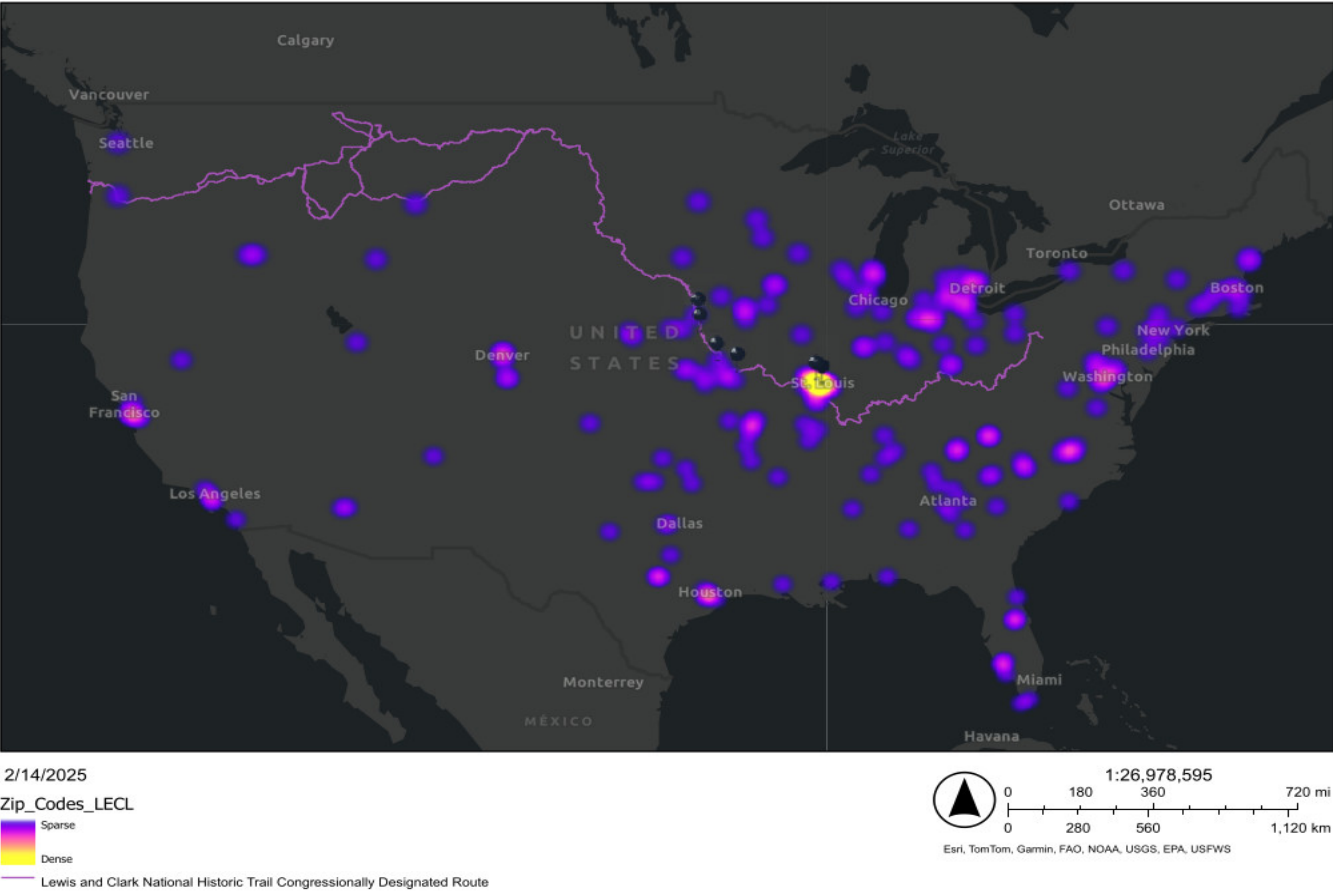


Figure 3 - Heat map of visitor locations

Table 32 - Comments by Survey Site

Is there anything else you would like to share about your experiences visiting Lewis and Clark National Historic Trail?	Survey Site
Had a great time! Very nice staff, beautiful sites to see.	Fort Osage National Historic Landmark
Hands on and actually seeing the history you learned about in school makes it more alive!	Fort Osage National Historic Landmark
It was very fun	Fort Osage National Historic Landmark
Visited for a project	Fort Osage National Historic Landmark
Better parking please	Gateway Arch
Cool	Gateway Arch
Cool scenery compared to everyday normal. Good tourist sites	Gateway Arch
Enjoyed	Gateway Arch
Fully support trail development, maintenance and funding	Gateway Arch
GO see history museum in Forrest Park too	Gateway Arch
Great experience	Gateway Arch
Great staff at the Gateway Arch	Gateway Arch
great time	Gateway Arch
Had fun!	Gateway Arch
I have enjoyed my time here at the arch.	Gateway Arch
I like the tour	Gateway Arch
I never experienced it	Gateway Arch
It's a quite unique experience.	Gateway Arch
Just starting	Gateway Arch
my great uncle helped build the arch	Gateway Arch
River tour cruise on the Mississippi	Gateway Arch
Rock on	Gateway Arch
So cool to see renovations	Gateway Arch
Thank you for conducting this survey!	Gateway Arch
Thanks	Gateway Arch
Thanks for the experience	Gateway Arch
The arch is impressive	Gateway Arch
The trek of Lewis and Clark is of great historical significance that I have wanted to follow and imagine the struggle that led to the expansion of the United States.	Gateway Arch
The two super confusing to figure out and follow. There should be a main starting facility and ending with stops in the middle. Nothing is consistent and it's so confusing.	Gateway Arch
Very nice display of history.	Gateway Arch
Very proud of the state parks	Gateway Arch
Was so fun! Was a bucket list item I was able to cross off my list	Gateway Arch
We love showing our kids the depth of history our country holds. Our kids also love connecting what they are learning in school with real life, hands on experiences.	Gateway Arch
We loved it! Very interesting.	Gateway Arch
Worth the price and the trip	Gateway Arch
COOL seeing the river	Lewis & Clark Boat House and Museum
I am a music teacher and am writing a little musical about L and C	Lewis & Clark Boat House and Museum
I have read Stephen Ambrose book, so this also encouraged my visit with my wife	Lewis & Clark Boat House and Museum
very informative	Lewis & Clark Boat House and Museum
Very interesting	Lewis & Clark Boat House and Museum

Table 32 (con't): Comments by Survey Site

Is there anything else you would like to share about your experiences visiting Lewis and Clark National Historic Trail?	Survey Site
Great history	Lewis & Clark River Basin Interpretive Center
I volunteer at th Nebraska City site.	Lewis & Clark River Basin Interpretive Center
I would loveto do more of it in the future	Lewis & Clark River Basin Interpretive Center
It was great thank you!	Lewis & Clark River Basin Interpretive Center
It was thorough.	Lewis & Clark River Basin Interpretive Center
It's a great place. Everybody in America should stop and visit	Lewis & Clark River Basin Interpretive Center
It's betterthan you think it might be fora small space.	Lewis & Clark River Basin Interpretive Center
Loved the lecture	Lewis & Clark River Basin Interpretive Center
Loved the lodge and trails	Lewis & Clark River Basin Interpretive Center
More funding	Lewis & Clark River Basin Interpretive Center
One of our favorite places in Nebraska	Lewis & Clark River Basin Interpretive Center
The center is an awesome place to hike, watch birds and watch the Missouri River.	Lewis & Clark River Basin Interpretive Center
The facility at Nebraska City, NE is wonderful. Great presentation today	Lewis & Clark River Basin Interpretive Center
Well put together history	Lewis & Clark River Basin Interpretive Center
Wonderful	Lewis & Clark River Basin Interpretive Center
Bring back the lakesnd recognize the native american contributions WAY more	Lewis & Clark State Park
Love this State Park	Lewis & Clark State Park
Lovely team we talked to	Lewis & Clark State Park
Nice park	Lewis & Clark State Park
Beautiful gardens and very interesting info on Lewis and Clark's expedition.	Lewis & Clark Trail Headquarters Visitor Center
Cool standing between 2 states.	Lewis & Clark Trail Headquarters Visitor Center
Didn't realize how long the trail is.	Lewis & Clark Trail Headquarters Visitor Center
Good place	Lewis & Clark Trail Headquarters Visitor Center
Great facility and ground	Lewis & Clark Trail Headquarters Visitor Center
Great trails	Lewis & Clark Trail Headquarters Visitor Center
Greatplacw. Glad we atopped here.	Lewis & Clark Trail Headquarters Visitor Center
I feel visiting n spending at Lewis&Clark trail and visitors center helps our Parks programs n nature preservation.	Lewis & Clark Trail Headquarters Visitor Center
It was cool!	Lewis & Clark Trail Headquarters Visitor Center
Love the tactile map and interior murals	Lewis & Clark Trail Headquarters Visitor Center
Love the visitor centers. And we love collecting the passport stamps at each.	Lewis & Clark Trail Headquarters Visitor Center
Neednore stuff to see	Lewis & Clark Trail Headquarters Visitor Center
Nicevisit	Lewis & Clark Trail Headquarters Visitor Center
SO very cool	Lewis & Clark Trail Headquarters Visitor Center
This was very interesting! Glad we stopped.	Lewis & Clark Trail Headquarters Visitor Center
Travelled most of the trail on previous trips	Lewis & Clark Trail Headquarters Visitor Center
We love visiting parks and spending time in the outdoors	Lewis & Clark Trail Headquarters Visitor Center

4.0 - Final Thoughts

Is an economic impact of the entire LECL now feasible? *Yes, it is!*

A central goal of this project was to establish a methodology which could be used in the future to conduct an economic impact study of the entire LECL. The researchers concur that a such a study is certainly feasible at this time using the methodology tested in this study. In this brief closing synopsis, the researchers outline what such a study might look like, what pieces would be used to assemble the study, and how costs could be kept low by building on preexisting NPS measures and ideas established in the present study.

Visitor segment data

We recommend applying the visitor segment data used in the present study to represent visitor segments across the entire LECL. These statistics were built around visitation survey data at sites we selected because we feel they are indicative of all visitation experiences across the LECL. Reusing these statistics would reduce costs by not requiring a second survey to be conducted which, we argue, would result in similar results.

Expenditure patterns

We recommend utilizing the visitor expenditure patterns used in the current study. Although we collected expenditure data in our survey, we preferred to use the adjusted national expenditure patterns provided by the NPS. These are standardized and ready for easy application into the NPS methodology, have a far higher number of cases sampled than we would likely get on a full survey of the LECL, and are adjusted by NPS employees to be used at NPS sites very similar to those found on the LECL. Additionally, the NPS response rate required for crafting economic expenditure patterns is quite high and would be very difficult to meet for some LECL sites.

Visitation estimates

Visitation counts are the biggest barrier going into the study, but is not without solutions. For many reasons, we recommend continuing the approach used in the economic impact portion of the study: collect visitation data from local sources. The researchers were quite surprised at how straightforward it was to collect ground-level visitation data from persons working at the survey sites. These statistics are easily applied to NPS methodology and can be obtained via emails, phone calls, and/or conversations at low cost.

We acknowledge there will be cases where no visitation data will be available. In those situations, we recommend using a similar visitation count from a comparable site, such as using one historical fort site to represent another. A second approach would be to track visitor data using Cuebiq or a similar company. We are undecided that this is a dependable option and it has a great deal more cost than the prior approach without a clear and measurable benefit.

One initial concern with visitation was analyzing how to handle visitors who are engaging more than one site on the LECL in the same year. However, after reviewing NPS visitor measures, the researchers feel this is no longer an issue. Simply put, a multi-site visitor would be counted in visitation at each site and their expenditures would be analyzed as such.

5.0 - Recommendations and Implications

Concluding this report there is a list of recommendations for future management of the Lewis and Clark National Historic Trail. First, the length and breadth of the trail must be addressed. Managing a 4,900-mile trail with over 100 sites is a difficult task, especially when the sites are managed by multiple parties including the NPS, state parks, non-profits, the USFS, and private organizations. It is our recommendation that communication among these sites be increased. Many sites are delivering a very similar experience to visitors. Diversifying the experience for visitors from site to site will incline visitors to go to more than one site. Communication between nearby sites is essential in understanding what your site wishes to uniquely provide to visitors. Second, many visitors to these sites expressed that they were unaware that they were on the Lewis and Clark National Historic Trail and were often surprised to learn the extent of the trail. It is our recommendation that more effort be put into advertising the entire trail to visitors at individual sites. This can be done at individual sites by promoting nearby sites and communicating that the site is part of a larger trail system. This can be accomplished through signage, interpretation programs, or increased conversation with visitors. Third, the economic impact data gathered from this report should be utilized. The impact that each site has on the local economy is beneficial and should be recognized. The economic data should be leveraged to support funding, garner partnerships, and outreach. Fourth, it is our recommendation that time and money should not be allocated to aggregated mobility data (MDD). The inconsistency of MDD, cost of data, and difficulty of obtaining results all hinder the application of MDD as a management tool. Rather, increased data collection at individual sites and communication of visitation data between sites will be much more helpful than MDD. Lastly, to address communication between sites, we suggest a qualitative study be done with the managers of individual sites along the trail. Understanding the perceptions, attitudes, and behaviors of managers will help improve cohesiveness throughout the trail system.