

**THE ECONOMIC AND FISCAL IMPACTS OF VIRGINIA'S STATE PARKS:**

**2023**

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## TABLE OF CONTENTS

Executive Summary	4
Introduction	5
Research Methods	7
Direct Impact Measurement	7
Secondary Impact Measurement	8
Visitation Measurement	9
Measuring Economic Activity vs. Impact	9
Results	11
Visitor Spending	12
Economic Activity and Impact	14
Jobs	16
Employment, Labor Income, Value-Added, and Tax Revenues	18
Economic Impacts of Capital Improvement Spending	26
Economic Impacts of Operational Spending	32
Discussion	34
Investigator Bio	37
Related References and Sources	38
Appendices	41
Appendix A: Map of Virginia State Parks	42
Appendix B: Glossary of Terms	43

## LIST OF TABLES AND FIGURES

TABLE 1: AVERAGE VISITOR SPENDING: PROFILES BY SEGMENT

TABLE 2: VISITOR SPENDING

TABLE 3: ECONOMIC ACTIVITY AND IMPACT OF VIRGINIA STATE PARKS

TABLE 4: JOBS ATTRIBUTED TO VIRGINIA STATE PARKS

TABLE 5: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 1

TABLE 6: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 2

TABLE 7: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 3

TABLE 8: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 4

TABLE 9: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 5

TABLE 10: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 6

TABLE 11: ECONOMIC IMPACTS OF CAPITAL IMPROVEMENTS

TABLE 12: ECONOMIC IMPACTS OF NON-VISITOR SUPPORTED PARK OPERATIONAL SPENDING

FIGURE 1: ECONOMIC RIPPLE EFFECTS

## EXECUTIVE SUMMARY

Visitors attracted annually to Virginia's State Parks stimulate a significant amount of economic activity throughout the state. This Executive Summary highlights the key findings of the 2023 Virginia State Parks economic impact analyses:

- In 2023, visitors to Virginia's State Parks spent an estimated \$349.9M in the Commonwealth. Approximately 40.2% [\$140.7M] of this spending was by out-of-state visitors.
- The total economic activity stimulated by Virginia State Parks during 2023 was approximately \$535.3M.
- The total economic impact of Virginia State Parks during 2023 was an estimated \$400.7M. Economic impact is a measure of "fresh money" infused into the state's economy that likely would not have been generated in the absence of the park system.
- At the individual park level, economic impacts ranged from \$1.2M to \$59.9M (not including parks under development).
- In 2023, for every \$1 of general tax revenue provided to state parks, \$12.72, on average, was generated in fresh money that likely would not have been produced without the operation of Virginia State Parks.
- Regarding employment, the economic activity stimulated by visitation to Virginia State Parks supported approximately 4,208 jobs in the state during 2023.
- In terms of wages and income, the economic activity spawned by Virginia State Parks was responsible for roughly \$194.3M in wage and salary income in 2023.
- Economic activity created by Virginia State Parks was associated with approximately \$316.5M in value-added effects which is a measure of the park system's contribution to the gross domestic product of the Commonwealth. These effects are especially important at the park-by-park level where most of the impact is retained in the local area.
- Economic activity stimulated by Virginia State Parks generated approximately \$35.7M in state and local tax revenues during 2023. As such, roughly \$1.13 in state and local taxes was generated for every dollar of tax money spent on the park system.

## INTRODUCTION

This study estimates the economic activity and impacts that Virginia State Parks create in the Commonwealth's economy. Specific objectives include:

- Assessing the direct and secondary economic activity and impacts of Virginia State Parks on a state-wide level;
- Estimating the direct and secondary economic activity and impacts of each specific park;
- Identifying economic benefits derived from non-residents of Virginia;
- Estimating spending derived from both day-user and overnight-user groups; and
- Modeling the economic benefits derived from park operational spending and capital improvement projects.

Achieving the above objectives, this study details the distribution of travel and recreational impacts of Virginia State Parks among the six park districts. The secondary economic impact items referred to above include indirect effects such as job creation and revenues brought into travel-related businesses. Secondary effects also include induced outcomes such as the increased spending power of those working in tourism, recreation, and supporting industries. In addition, a value-added effect is also calculated which models Virginia State Parks' contribution to the gross domestic product of the Commonwealth.

To fulfill the above objectives, the next section of this report describes the research procedures employed in this study. Subsequently, the study results are presented. Like any research, this economic modeling is subject to limitations which are also described herein. The report ends with a brief discussion section that summarizes key findings and also addresses some societal benefits provided by Virginia State Parks that cannot be included in econometric input-output modeling but are worthy of discussion.

This report represents the third year's work in a memorandum of understanding (MOU) between Longwood University and the Virginia Department of Conservation and Recreation in which Longwood's College of Business and Economics produces annual economic activity reports for Virginia State Parks. As will be explained later in this report, this agreement calls for

the continuous refinement of each economic modeling variable: administering a visitor spending survey to better understand spending patterns by visitor segment; and, incorporation of the most recent IMPLAN multipliers to model how money produces secondary economic effects in Virginia.

While every effort was taken to make this report clear and understandable to a non-economist audience, readers are advised that there is a glossary of terms contained in Appendix B.

{Research methods section begins on next page}

### DIRECT IMPACT MEASUREMENT

Economic activity of the state park system is created primarily from three sources: park visitor spending, the parks' operational expenditures (to the degree that they are not derived from visitor revenues, i.e. the tax derived portion of the park budget), and capital investment (again, to the degree that it is not derived from visitor revenues). In terms of visitor spending profiles, customized spending profiles were developed for Virginia State Parks by collecting 3,802 completed spending surveys from park visitors during 2016. The spending profile survey was added as a supplemental section on the agency's ongoing visitor satisfaction survey. The spending profiles that resulted from the analysis of the survey data and removal of data outliers are listed in Table 1.<sup>1</sup> These profiles represent spending both inside and outside of the park, but within the state. Other than visitors' spending, park operational and capital expenditure amounts were provided by the Virginia Department of Conservation and Recreation (DCR).

Additional primary data was collected in the parks during 2017 to further calibrate the economic impact modeling. More specifically, park staff recorded 762 vehicle observation hours as well as 679 visitor interviews to calibrate model estimations regarding the average number of occupants per vehicle (day use; camping; cabins) and the ratio of local, non-local,<sup>2</sup> and non-resident visitors.

{Table 1 is presented on next page}

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<sup>1</sup> The figures in Table 1 are adjusted for annual inflation. While the COVID-19 pandemic likely caused some spending to shift between expenditure categories (e.g. restaurant spending to grocery spending), there is no evidence to indicate that total spending per visitor has significantly reduced. Beginning in January 2024, visitor spending data is once again being collected as an auxiliary section of the 'Your Comments Count' surveying program. Therefore, in the coming year, the newly-collected data will be used to validate/refine the listed spending profiles.

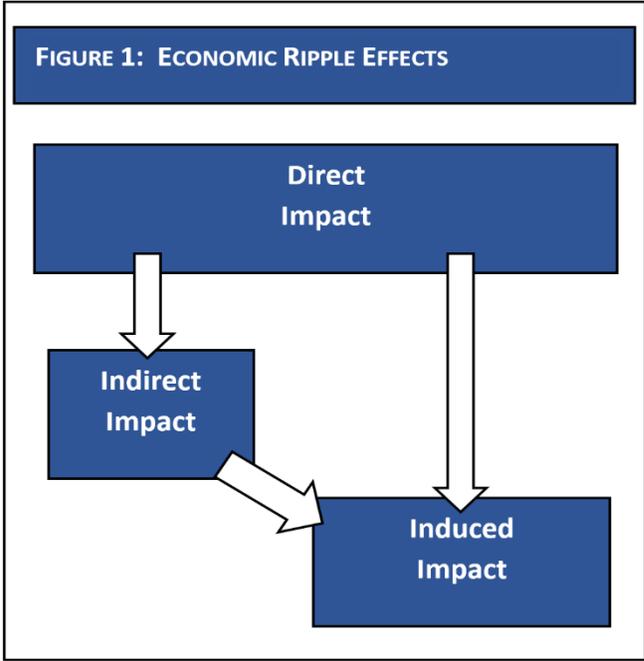
<sup>2</sup> Non-local visitors are defined as Virginia residents who drive 50 miles or more (one-way) to visit the park.

TABLE 1: AVERAGE VISITOR SPENDING: PROFILES BY SEGMENT (PER PARK DAY) <sup>a</sup>							
DAY VISITORS				OVERNIGHT GUESTS			
SPENDING CATEGORY	LOCAL DAY VISITOR	NON-LOCAL DAY VISITOR	NON-RESIDENT DAY VISITOR	RESIDENT CABIN GUEST	RESIDENT CAMPING GUEST	NON-RESIDENT CABIN GUEST	NON-RESIDENT CAMPING GUEST
<b>OVERALL PER VISITOR:</b>	<b>\$21.24</b>	<b>\$63.82</b>	<b>\$81.96</b>	<b>\$66.54</b>	<b>\$42.38</b>	<b>\$89.66</b>	<b>\$48.43</b>

<sup>a</sup> This Table does not include park operational or capital improvement spending.

**SECONDARY IMPACT MEASUREMENT**

In addition to assessing the direct impacts of the park system’s economic activity, this study also models secondary or ripple effects which comprise economic activity from subsequent rounds of re-spending of money. As shown in Figure 1, there are two types of ripple effects: indirect and induced. Indirect effects entail the changes in sales, income, and jobs of suppliers to entities included in direct impact (Stynes et al., 2000). Induced effects encapsulate the changes in economic activity in the region stimulated by household spending of income earned through direct and indirect effects.



Indirect and induced effects are estimated using economic multipliers. Multipliers reflect the extent of interdependency between sectors in a region’s economy and can vary significantly between regions and sectors (Stynes et al., 2000). Here is a simple example of how a multiplier can be interpreted: if the multiplier for the restaurant sector in a given region is 1.37 then it can be estimated that every dollar spent at a restaurant results in 37 cents of secondary economic activity in the region.

The economic multipliers, as well as calculations of job supported, tax revenues generated, and value-added effects were facilitated through the use of IMPLAN software. Specifically, economic multipliers for the Commonwealth of Virginia are commercially available in an economic impact estimation software titled IMPLAN commercialized by MIG, Inc. Therefore, the most recent IMPLAN multipliers were employed in this study to guide the estimation of indirect and induced economic impacts.

## **VISITATION MEASUREMENT**

Park attendance counts for 2023 were provided to the researcher by the Virginia Department of Conservation and Recreation. The attendance counting practices used in Virginia are in concert with accepted guidelines in the U.S. recreational park industry (see for example: *America's Byways Resource Center 2010*; Bezies, et al., 2011). For instance, automated vehicle counting technology is utilized at many unstaffed park entry points by multiplying vehicle counts by standard occupancy multipliers, with adjustments made for service vehicle traffic and park re-entry traffic. Overnight visitor calculations are made by multiplying site occupancies by standard multipliers, as well as employing information from the centralized reservations system.

The 2016 and 2017 data collection efforts described earlier in this report's Methods section proved useful in calibrating attendance multipliers. As such, to tabulate the modeling attendance for this study, per party multipliers of 3.4, 3.2, and 4.2 for day use, camping, and cabins (respectively) were used as model inputs.

## **MEASURING ECONOMIC ACTIVITY VS. ECONOMIC IMPACT**

Economic impact in this study is calculated using the "fresh money" flowing into an area as opposed to including spending by the local residents of the area. Therefore, this current study offers results compartmentalized according to the following categories:

Economic activity – economic output modeling that includes all visitor spending and consequent multiplier effects by both locals and non-locals as well as any money spent by parks that was not supported by visitor spending. Consequently, economic activity figures represent all of the economic activity stimulated by a park location within the state.

- Unadjusted economic activity: economic activity output figures computed using statewide IMPLAN multipliers.
- Adjusted economic activity: calibrated economic activity output figures based upon whether a given park’s county(ies) has economic activity above or below the state average.

Economic impact – economic output modeling that includes all visitor spending and consequent multiplier effects by 1) in-state residents traveling 50 miles or more (one-way) to visit the park; and 2) all out-of-state visitors. Economic impact modeling also includes any money spent by parks (operational and capital improvements) that was not supported by visitor spending. Although operational and capital improvement spending derive (in part) from tax monies, they demonstrate economic impact when infused into local areas where parks exist.

Thus, economic impact figures reflect all of the “fresh money” entering an economy as a result of a given state park.

- Unadjusted economic impact: economic impact output figures computed using statewide IMPLAN multipliers. Also, unadjusted figures do not deduct spending by visitors who report that the park was not their primary destination.
- Adjusted economic impact: calibrated economic impact output figures based upon whether a given park’s county(ies) has economic activity above or below the state average. Adjusted economic impact figures are also reduced by 12% (Magnini and Uysal, 2015a) to account for spending by park visitors who likely would have traveled and spent money in the state regardless of whether the park existed.

{Results section begins on next page}

## RESULTS

This section of the report contains the results of the economic modeling. First, visitor spending findings are presented (see Table 2). This visitor spending is portioned according to day use versus overnight and by Virginia resident versus non-resident. Second, economic activity and economic impact are reported (see Table 3). Third, job-related results are detailed (see Table 4). In the jobs outputs, both estimated total jobs and full-time equivalent (FTE) jobs are reported. FTE jobs represent total hours worked divided by the average annual hours worked in full-time jobs.

Fourth, park-by-park findings are listed in Tables 5-10 (see Appendix A for a map of park locations). The park-by-park results include estimated state and local tax revenues generated by each park's economic activity. In Virginia, for this type of tourism-related spending, the split between state and local tax revenues can be estimated at approximately 60-40 (state-local) for this type of tourism-related spending (<https://www.vatc.org/research/economicimpact/>).

Next in this results section, outcomes of capital investments are displayed (see Table 11). Lastly, the effects of park operational spending are reported (see Table 12). To reiterate, these capital improvement and operational components are already included in each park's modeling presented in Tables 5-10 but are partitioned as stand-alone modeling components in Tables 11 and 12 to tease-out the economic contributions of these elements. On a separate note, it is important to point out that the system-wide economic results (for example, those listed in the Executive Summary) are slightly different than the individual district results summed together because the overall system-wide IMPLAN modeling accounts for different indirect and induced effects than simply summing the individual district results. The glossary contained in Appendix B offers definitions of key terms used in this results section.

{Table 2 is presented on next page}

**TABLE 2: VISITOR SPENDING\***

PARK	DAY VISITOR SPENDING	OVERNIGHT GUEST SPENDING	RESIDENT SPENDING	NON-RESIDENT SPENDING	TOTAL VISITOR SPENDING
<b>DISTRICT 1</b>					
Belle Isle	\$892K	\$1.2M	\$1.3M	\$775K	\$2.1M
Chippokes Plantation	\$2.1M	\$2.3M	\$2.8M	\$1.6M	\$4.4M
False Cape	\$1.2M	\$588K	\$1.1M	\$706K	\$1.8M
First Landing	\$21.0M	\$8.6M	\$17.7M	\$11.8M	\$29.6M
Kiptopeke	\$8.6M	\$4.7M	\$8.1M	\$5.2M	\$13.3M
Machicomoco	\$4.1M	\$790K	\$2.9M	\$2.0M	\$4.9M
York River	\$4.7M	\$0	\$2.7M	\$2.0M	\$4.7M
<b>TOTAL D1</b>	<b>\$42.5M</b>	<b>\$18.2M</b>	<b>\$36.5M</b>	<b>\$24.2M</b>	<b>\$60.7M</b>
<b>DISTRICT 2</b>					
Caledon	\$1.9M	\$104K	\$1.1M	\$826K	\$2.0M
Lake Anna	\$4.8M	\$3.6M	\$5.3M	\$3.1M	\$8.4M
Leesylvania	\$18.3M	\$13K	\$10.5M	\$7.8M	\$18.3M
Mason Neck	\$6.5M	\$0	\$3.7M	\$2.8M	\$6.5M
Westmoreland	\$2.5M	\$3.3M	\$3.7M	\$2.1M	\$5.8M
Widewater	\$1.5M	\$1K	\$855K	\$636K	\$1.5M
<b>TOTAL D2</b>	<b>\$35.4M</b>	<b>\$7.0M</b>	<b>\$25.2M</b>	<b>\$17.3M</b>	<b>\$42.5M</b>
<b>DISTRICT 3</b>					
Douthat	\$1.4M	\$4.9M	\$4.1M	\$2.2M	\$6.3M
James River	\$591K	\$3.0M	\$2.4M	\$1.2M	\$3.6M
Natural Bridge	\$9.7M	\$73K	\$5.6M	\$4.2M	\$9.8M
Seven Bends	\$3.8M	\$0	\$2.2M	\$1.6M	\$3.8M
Shenandoah River	\$5.3M	\$4.3M	\$6.0M	\$3.6M	\$9.6M
Sky Meadows	\$5.8M	\$396K	\$3.6M	\$2.6M	\$6.2M
<b>TOTAL D3</b>	<b>\$26.5M</b>	<b>\$12.7M</b>	<b>\$23.8M</b>	<b>\$15.4M</b>	<b>\$39.2M</b>
<b>DISTRICT 4</b>					
Bear Creek Lake	\$1.8M	\$2.4M	\$2.7M	\$1.5M	\$4.2M
High Bridge Trail	\$13.6M	\$0	\$7.8M	\$5.8M	\$13.6M
Holliday Lake	\$2.6M	\$1.0M	\$2.2M	\$1.5M	\$3.7M
Pocahontas	\$50.7M	\$6.2M	\$33.2M	\$23.7M	\$57.0M
Powhatan	\$2.5M	\$1.3M	\$2.3M	\$1.5M	\$3.8M
Sailor's Creek Battlefield	\$613K	\$0	\$351K	\$261K	\$613K
Staunton River Battlefield	\$1.3M	\$0	\$736K	\$547K	\$1.3M
Twin Lakes	\$5.4M	\$1.6M	\$4.2M	\$2.8M	\$7.0M
<b>TOTAL D4</b>	<b>\$78.5M</b>	<b>\$12.6M</b>	<b>\$53.4M</b>	<b>\$37.7M</b>	<b>\$91.1M</b>
<b>DISTRICT 5</b>					
Claytor Lake	\$7.8M	\$4.0M	\$7.2M	\$4.6M	\$11.8M
Fairy Stone	\$1.3M	\$2.3M	\$2.3M	\$1.3M	\$3.6M
Occoneechee	\$2.9M	\$3.1M	\$3.8M	\$2.2M	\$6.1M
Smith Mountain Lake	\$18.7M	\$3.0M	\$12.7M	\$8.9M	\$21.6M
Staunton River	\$1.7M	\$1.6M	\$2.1M	\$1.3M	\$3.3M
<b>TOTAL D5</b>	<b>\$32.5M</b>	<b>\$13.9M</b>	<b>\$28.2M</b>	<b>\$18.3M</b>	<b>\$46.4M</b>

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<b>DISTRICT 6</b>					
PARK	DAY VISITOR SPENDING	OVERNIGHT GUEST SPENDING	RESIDENT SPENDING	NON-RESIDENT SPENDING	TOTAL VISITOR SPENDING
Clinch River	\$168K	\$2K	\$98K	\$72K	\$170K
Grayson Highlands	\$4.7M	\$2.7M	\$4.4M	\$2.9M	\$7.3M
Hungry Mother	\$6.0M	\$5.0M	\$6.8M	\$4.1M	\$10.9M
Natural Tunnel	\$2.1M	\$2.1M	\$2.7M	\$1.6M	\$4.3M
New River Trail	\$33.6M	\$693K	\$19.8M	\$14.6M	\$34.3M
Southwest VA Museum	\$1.5M	\$25K	\$886K	\$653K	\$1.5M
Wilderness Road	\$5.0M	\$6K	\$2.9M	\$2.1M	\$5.0M
<b>TOTAL D6</b>	<b>\$53.1M</b>	<b>\$10.5M</b>	<b>\$37.5M</b>	<b>\$26.1M</b>	<b>\$63.6M</b>
NOTES: * Slight differences in sums of addition are due to rounding of the figures. **Visitation and revenues impacted by closed facilities at Bear Creek Lake, Douthat, Fairy Stone, and First Landing.					

{Economic activity section begins on next page}

**TABLE 3: ECONOMIC ACTIVITY AND IMPACT OF VIRGINIA STATE PARKS**

PARK	ECONOMIC ACTIVITY (UNADJUSTED)	ECONOMIC ACTIVITY (ADJUSTED)	ECONOMIC ACTIVITY (AVERAGE)	ECONOMIC IMPACT (UNADJUSTED)	ECONOMIC IMPACT (ADJUSTED)	ECONOMIC IMPACT (AVERAGE)
<b>DISTRICT 1</b>						
Belle Isle	\$3.5M	\$3.4M	\$3.5M	\$2.8M	\$2.7M	\$2.7M
Chippokes Plantation	\$7.1M	\$6.9M	\$7.0M	\$5.6M	\$5.4M	\$5.5M
False Cape	\$3.4M	\$3.4M	\$3.4M	\$2.7M	\$2.7M	\$2.7M
First Landing	\$44.0M	\$44.0M	\$44.0M	\$32.7M	\$32.7M	\$32.7M
Kiptopeke	\$19.6M	\$18.0M	\$18.8M	\$14.6M	\$13.4M	\$14.0M
Machicomoco	\$7.1M	\$6.8M	\$7.0M	\$5.1M	\$4.9M	\$5.0M
York River	\$7.8M	\$7.5M	\$7.6M	\$5.8M	\$5.6M	\$5.7M
<b>TOTAL D1</b>	<b>\$92.5M</b>	<b>\$89.9M</b>	<b>\$91.2M</b>	<b>\$69.4M</b>	<b>\$67.4M</b>	<b>\$68.4M</b>
<b>DISTRICT 2</b>						
Caledon	\$3.7M	\$3.7M	\$3.7M	\$2.9M	\$2.9M	\$2.9M
Lake Anna	\$12.8M	\$13.3M	\$13.1M	\$9.9M	\$10.3M	\$10.1M
Leesylvania	\$27.7M	\$28.8M	\$28.2M	\$20.1M	\$20.9M	\$20.5M
Mason Neck	\$10.4M	\$10.8M	\$10.6M	\$7.7M	\$8.0M	\$7.9M
Westmoreland	\$13.7M	\$13.2M	\$13.4M	\$11.8M	\$11.3M	\$11.5M
Widewater	\$7.3M	\$7.6M	\$7.5M	\$6.7M	\$7.0M	\$6.8M
<b>TOTAL D2</b>	<b>\$75.6M</b>	<b>\$77.4M</b>	<b>\$76.5M</b>	<b>\$59.0M</b>	<b>\$60.3M</b>	<b>\$59.6M</b>
<b>DISTRICT 3</b>						
Douthat	\$18.0M	\$17.3M	\$17.7M	\$16.1M	\$15.5M	\$15.8M
James River	\$6.0M	\$5.7M	\$5.9M	\$4.9M	\$4.7M	\$4.8M
Natural Bridge	\$14.3M	\$13.7M	\$14.0M	\$10.2M	\$9.8M	\$10.0M
Seven Bends	\$6.4M	\$6.4M	\$6.4M	\$4.8M	\$4.8M	\$4.8M
Shenandoah River	\$13.9M	\$13.9M	\$13.9M	\$10.5M	\$10.5M	\$10.5M
Sky Meadows	\$9.8M	\$10.2M	\$10.0M	\$7.7M	\$8.0M	\$7.9M
<b>TOTAL D3</b>	<b>\$68.4M</b>	<b>\$67.3M</b>	<b>\$67.8M</b>	<b>\$54.3M</b>	<b>\$53.3M</b>	<b>\$53.8M</b>
<b>DISTRICT 4</b>						
Bear Creek Lake	\$8.1M	\$7.8M	\$7.9M	\$6.7M	\$6.4M	\$6.6M
High Bridge Trail	\$21.8M	\$21.0M	\$21.4M	\$16.2M	\$15.5M	\$15.9M
Holliday Lake	\$5.8M	\$5.6M	\$5.7M	\$4.4M	\$4.2M	\$4.3M
Pocahontas	\$82.9M	\$82.9M	\$82.9M	\$59.9M	\$59.9M	\$59.9M
Powhatan	\$6.1M	\$6.1M	\$6.1M	\$4.7M	\$4.7M	\$4.7M
Sailor's Creek Battle.	\$1.5M	\$1.5M	\$1.5M	\$1.3M	\$1.2M	\$1.2M
Staunton River Battle.	\$2.3M	\$2.1M	\$2.1M	\$1.8M	\$1.6M	\$1.7M
Twin Lakes	\$12.6M	\$11.6M	\$12.1M	\$10.0M	\$9.2M	\$9.6M
<b>TOTAL D4</b>	<b>\$141.2M</b>	<b>\$138.5M</b>	<b>\$139.8M</b>	<b>\$104.9M</b>	<b>\$102.8M</b>	<b>\$103.8M</b>
<b>DISTRICT 5</b>						
Claytor Lake	\$18.3M	\$17.6M	\$17.9M	\$13.9M	\$13.4M	\$13.6M
Fairy Stone	\$12.7M	\$11.7M	\$12.2M	\$11.6M	\$10.6M	\$11.1M
Occoneechee	\$9.0M	\$8.3M	\$8.6M	\$6.9M	\$6.4M	\$6.6M
Smith Mountain Lake	\$31.9M	\$31.9M	\$31.9M	\$23.3M	\$23.3M	\$23.3M
Staunton River	\$6.0M	\$5.5M	\$5.7M	\$4.9M	\$4.5M	\$4.7M
<b>TOTAL D5</b>	<b>\$77.8M</b>	<b>\$74.9M</b>	<b>\$76.3M</b>	<b>\$60.6M</b>	<b>\$58.2M</b>	<b>\$59.4M</b>

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<b>DISTRICT 6</b>						
<b>PARK</b>	<b>ECONOMIC ACTIVITY (UNADJUSTED)</b>	<b>ECONOMIC ACTIVITY (ADJUSTED)</b>	<b>ECONOMIC ACTIVITY (AVERAGE)</b>	<b>ECONOMIC IMPACT (UNADJUSTED)</b>	<b>ECONOMIC IMPACT (ADJUSTED)</b>	<b>ECONOMIC IMPACT (AVERAGE)</b>
Clinch River	\$805K	\$741K	\$773K	\$735K	\$676K	\$706K
Grayson Highlands	\$10.8M	\$9.9M	\$10.3M	\$8.0M	\$7.3M	\$7.7M
Hungry Mother	\$17.3M	\$15.9M	\$16.6M	\$13.5M	\$12.4M	\$12.9M
Natural Tunnel	\$9.4M	\$8.7M	\$9.0M	\$7.9M	\$7.3M	\$7.6M
New River Trail	\$50.6M	\$46.6M	\$48.6M	\$37.8M	\$34.8M	\$36.3M
SW VA Museum	\$3.3M	\$3.0M	\$3.1M	\$2.6M	\$2.4M	\$2.5M
Wilderness Road	\$9.0M	\$8.3M	\$8.7M	\$6.9M	\$6.4M	\$6.7M
<b>TOTAL D6</b>	<b>\$101.2M</b>	<b>\$93.1M</b>	<b>\$97.2M</b>	<b>\$77.5M</b>	<b>\$71.3M</b>	<b>\$74.4M</b>

{Jobs section begins on next page}

**TABLE 4: JOBS ATTRIBUTED TO VIRGINIA STATE PARKS**

PARK	DIRECT JOBS	INDIRECT JOBS	INDUCED JOBS	TOTAL JOBS	FTE JOBS <sup>a</sup>
<b>DISTRICT 1</b>					
Belle Isle	19.5	3.5	4.3	27.2	24.8
Chippokes Plantation	38.3	7.3	8.3	53.9	49.1
False Cape	19.3	3.4	4.5	27.1	24.7
First Landing	242.3	50.1	50.7	343.1	312.2
Kiptopeke	100.3	20.4	20.8	141.5	128.8
Machicomoco	37.9	7.9	7.9	53.7	48.8
York River	40.4	8.3	8.9	57.7	52.5
<b>TOTAL D1</b>	<b>577.1</b>	<b>112.1</b>	<b>108.8</b>	<b>798.2</b>	<b>726.2</b>
<b>DISTRICT 2</b>					
Caledon	20.0	3.9	4.6	28.5	26.0
Lake Anna	73.1	14.8	15.3	103.2	93.9
Leesylvania	156.7	33.4	33.4	223.5	203.4
Mason Neck	59.0	12.2	12.9	84.1	76.5
Westmoreland	60.8	14.2	14.8	89.8	81.7
Widewater	27.3	8.4	8.0	43.8	39.9
<b>TOTAL D2</b>	<b>396.4</b>	<b>78.9</b>	<b>78.1</b>	<b>553.3</b>	<b>503.4</b>
<b>DISTRICT 3</b>					
Douthat	73.8	18.0	18.6	110.4	100.5
James River	33.3	5.7	7.2	46.2	42.0
Natural Bridge	74.6	16.1	15.6	106.3	74.6
Seven Bends	34.8	7.1	7.7	49.7	45.2
Shenandoah River	78.8	15.5	16.3	110.5	100.5
Sky Meadows	56.3	11.5	12.2	80.0	72.8
<b>TOTAL D3</b>	<b>315</b>	<b>65.5</b>	<b>62</b>	<b>442</b>	<b>402.3</b>
<b>DISTRICT 4</b>					
Bear Creek Lake	39.3	8.4	8.9	56.6	51.5
High Bridge Trail	113.6	23.7	24.7	162.1	147.5
Holliday Lake	31.5	6.1	6.8	44.3	40.3
Pocahontas	457.0	96.5	95.4	648.9	590.5
Powhatan	34.8	6.6	7.6	49.0	44.5
Sailor's Creek Battlefield	8.0	1.4	2.0	11.5	10.4
Staunton River Battlefield	11.6	2.3	2.6	16.6	15.1
Twin Lakes	58.2	12.9	13.1	84.3	76.7
<b>TOTAL D4</b>	<b>635.2</b>	<b>125.5</b>	<b>120.5</b>	<b>880.8</b>	<b>801.6</b>
<b>DISTRICT 5</b>					
Claytor Lake	94.0	20.0	19.9	133.9	121.8
Fairy Stone	45.3	12.2	12.1	69.6	63.3
Occoneechee	46.8	9.0	9.7	65.5	59.6
Smith Mountain Lake	175.2	36.8	36.7	248.7	226.4
Staunton River	31.9	5.5	6.9	44.3	40.3
<b>TOTAL D5</b>	<b>394.3</b>	<b>79.7</b>	<b>76</b>	<b>549.7</b>	<b>500.2</b>
Continued on next page					

<b>DISTRICT 6</b>					
<b>PARK</b>	<b>DIRECT JOBS</b>	<b>INDIRECT JOBS</b>	<b>INDUCED JOBS</b>	<b>TOTAL JOBS</b>	<b>FTE JOBS<sup>a</sup></b>
Clinch River	4.1	0.6	1.1	5.8	5.3
Grayson Highlands	56.7	11.0	11.8	79.6	72.4
Hungry Mother	89.5	17.1	19.2	125.8	114.5
Natural Tunnel	45.7	8.7	10.9	65.3	59.4
New River Trail	246.8	53.1	54.0	354.0	322.2
Southwest VA Museum	16.5	3.0	3.9	23.4	21.3
Wilderness Road	45.0	9.0	10.2	64.3	58.5
<b>TOTAL D6</b>	<b>537.1</b>	<b>109.7</b>	<b>104.2</b>	<b>750.4</b>	<b>682.8</b>
<sup>a</sup> Full-time equivalent (FTE) jobs: total hours worked divided by avg. annual hours worked in full-time jobs.					

{Employment, labor income, value-added and tax revenue section begins on next page}

## EMPLOYMENT, LABOR INCOME, VALUE-ADDED, AND TAX REVENUES

Tables 5-10 add further detail to previously presented results by partitioning the direct, indirect, and induced effects of labor income and value-added figures for each park, as well as tax revenues generated.

TABLE 5: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 1				
PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
<b>DISTRICT 1</b>				
Belle Isle	Direct Effect	19.5	\$857K	\$1.2M
	Indirect Effect	3.5	\$225K	\$398K
	Induced Effect	4.3	\$243K	\$483K
	Total Effect	27.2	\$1.3M	\$2.1M
Total state and local taxes	\$209K			
Chippokes Plantation	Direct Effect	38.3	\$1.6M	\$2.3M
	Indirect Effect	7.3	\$481K	\$852K
	Induced Effect	8.3	\$467K	\$928K
	Total Effect	53.9	\$2.5M	\$4.1M
Total state and local taxes	\$453K			
False Cape	Direct Effect	19.3	\$899K	\$1.2M
	Indirect Effect	3.4	\$219K	\$390K
	Induced Effect	4.5	\$252K	\$501K
	Total Effect	27.1	\$1.4M	\$2.1M
Total state and local taxes	\$186K			
First Landing	Direct Effect	242.3	\$9.4M	\$14.1M
	Indirect Effect	50.1	\$3.3M	\$5.8M
	Induced Effect	50.7	\$2.9M	\$5.7M
	Total Effect	343.1	\$15.6M	\$25.6M
Total state and local taxes	\$2.9M			
Kiptopeke	Direct Effect	100.3	\$3.9M	\$5.8M
	Indirect Effect	20.4	\$1.3M	\$2.4M
	Induced Effect	20.8	\$1.2M	\$2.3M
	Total Effect	141.5	\$6.4M	\$10.5M
Total state and local taxes	\$1.2M			
Continued on next page				

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
Machicomoco	Direct Effect	37.9	\$1.5M	\$2.2M
	Indirect Effect	7.9	\$517K	\$914K
	Induced Effect	7.9	\$447K	\$887K
	Total Effect	53.7	\$2.4M	\$4.0M
Total state and local taxes	\$474K			
York River	Direct Effect	40.4	\$1.7M	\$2.4M
	Indirect Effect	8.3	\$543K	\$966K
	Induced Effect	8.9	\$506K	\$1.0M
	Total Effect	57.7	\$2.7M	\$4.4M
Total state and local taxes	\$491K			

{District 2 presented on next page}

**TABLE 6: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 2**

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
<b>DISTRICT 2</b>				
Caledon	Direct Effect	20.0	\$903K	\$1.3M
	Indirect Effect	3.9	\$252K	\$451K
	Induced Effect	4.6	\$262K	\$520K
	Total Effect	28.5	\$1.4M	\$2.2M
Total state and local taxes	\$106K			
Lake Anna	Direct Effect	73.1	\$2.9M	\$4.4M
	Indirect Effect	14.8	\$977K	\$1.7M
	Induced Effect	15.3	\$867K	\$1.7M
	Total Effect	103.2	\$4.7M	\$7.9M
Total state and local taxes	\$936K			
Leesylvania	Direct Effect	156.7	\$6.1M	\$9.1M
	Indirect Effect	33.4	\$2.2M	\$3.9M
	Induced Effect	33.4	\$1.9M	\$3.8M
	Total Effect	223.5	\$10.2M	\$16.7M
Total state and local taxes	\$1.9M			
Mason Neck	Direct Effect	59.0	\$2.4M	\$3.5M
	Indirect Effect	12.2	\$797K	\$1.4M
	Induced Effect	12.9	\$730K	\$1.4M
	Total Effect	84.1	\$3.9M	\$6.4M
Total state and local taxes	\$1.6M			
Westmoreland	Direct Effect	60.8	\$2.8M	\$4.2M
	Indirect Effect	14.2	\$941K	\$1.7M
	Induced Effect	14.8	\$836K	\$1.7M
	Total Effect	89.8	\$4.5M	\$7.6M
Total state and local taxes	\$797K			
Widewater	Direct Effect	27.3	\$1.5M	\$2.3M
	Indirect Effect	8.4	\$553K	\$1.1M
	Induced Effect	8.0	\$456K	\$905K
	Total Effect	43.8	\$2.5M	\$4.2M
Total state and local taxes	\$128K			

**TABLE 7: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 3**

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
<b>DISTRICT 3</b>				
Douthat	Direct Effect	73.8	\$3.5M	\$5.5M
	Indirect Effect	18.0	\$1.2M	\$2.2M
	Induced Effect	18.6	\$1.1M	\$2.1M
	Total Effect	110.4	\$5.7M	\$9.8M
Total state and local taxes	\$989K			
James River	Direct Effect	33.3	\$1.4M	\$2.1M
	Indirect Effect	5.7	\$379K	\$665K
	Induced Effect	7.2	\$406K	\$807K
	Total Effect	46.2	\$2.2M	\$3.5M
Total state and local taxes	\$392K			
Natural Bridge	Direct Effect	74.6	\$2.8M	\$4.3M
	Indirect Effect	16.1	\$1.1M	\$1.9M
	Induced Effect	15.6	\$885K	\$1.8M
	Total Effect	106.3	\$4.8M	\$7.9M
Total state and local taxes	\$902K			
Seven Bends	Direct Effect	34.8	\$1.5M	\$2.1M
	Indirect Effect	7.1	\$461K	\$819K
	Induced Effect	7.7	\$438K	\$869K
	Total Effect	49.7	\$2.4M	\$3.8M
Total state and local taxes	\$402K			
Shenandoah River	Direct Effect	78.8	\$3.1M	\$4.6M
	Indirect Effect	15.5	\$1.0M	\$1.8M
	Induced Effect	16.3	\$921K	\$1.8M
	Total Effect	110.5	\$5.0M	\$8.2M
Total state and local taxes	\$970K			
Sky Meadows	Direct Effect	56.3	\$2.3M	\$3.3M
	Indirect Effect	11.5	\$751K	\$1.3M
	Induced Effect	12.2	\$691K	\$1.4M
	Total Effect	80.0	\$3.7M	\$6.0M
Total state and local taxes	\$624K			

<b>TABLE 8: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 4</b>				
<b>PARK</b>	<b>IMPACT TYPE</b>	<b>EMPLOYMENT</b>	<b>LABOR INCOME</b>	<b>TOTAL VALUE-ADDED</b>
<b>DISTRICT 4</b>				
Bear Creek Lake	Direct Effect	39.3	\$1.7M	\$2.6M
	Indirect Effect	8.4	\$555K	\$998K
	Induced Effect	8.9	\$505K	\$1.0M
	Total Effect	56.6	\$2.8M	\$4.6M
Total state and local taxes	\$502K			
High Bridge Trail	Direct Effect	113.6	\$4.6M	\$6.7M
	Indirect Effect	23.7	\$1.6M	\$2.8M
	Induced Effect	24.7	\$1.4M	\$2.8M
	Total Effect	162.1	\$7.6M	\$12.2M
Total state and local taxes	\$1.3M			
Holliday Lake	Direct Effect	31.5	\$1.3M	\$1.9M
	Indirect Effect	6.1	\$396K	\$701K
	Induced Effect	6.8	\$385K	\$764K
	Total Effect	44.3	\$2.1M	\$3.3M
Total state and local taxes	\$358K			
Pocahontas	Direct Effect	457.0	\$17.5M	\$26.2M
	Indirect Effect	96.5	\$6.3M	\$11.2M
	Induced Effect	95.4	\$5.4M	\$10.7M
	Total Effect	648.9	\$29.2M	\$48.1M
Total state and local taxes	\$5.5M			
Powhatan	Direct Effect	34.8	\$1.5M	\$2.1M
	Indirect Effect	6.6	\$429K	\$759K
	Induced Effect	7.6	\$428K	\$850K
	Total Effect	49.0	\$2.3M	\$3.7M
Total state and local taxes	\$391K			
Sailor's Creek Battlefield	Direct Effect	8.0	\$413K	\$544K
	Indirect Effect	1.4	\$89K	\$159K
	Induced Effect	2.0	\$114K	\$226K
	Total Effect	11.5	\$615K	\$929K
Total state and local taxes	\$81K			
Continued on next page				

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
Twin Lakes	Direct Effect	58.2	\$2.4M	\$3.7M
	Indirect Effect	12.9	\$853K	\$1.5M
	Induced Effect	13.1	\$744K	\$1.5M
	Total Effect	84.3	\$4.0M	\$6.7M
Total state and local taxes	\$682K			
Staunton River Battlefield	Direct Effect	11.6	\$514K	\$722K
	Indirect Effect	2.3	\$148K	\$264K
	Induced Effect	2.6	\$150K	\$298K
	Total Effect	16.6	\$812K	\$1.3M
Total state and local taxes	\$131K			

{District 5 presented on next page}

**TABLE 9: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 5**

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
<b>DISTRICT 5</b>				
Claytor Lake	Direct Effect	94.0	\$3.7M	\$5.6M
	Indirect Effect	20.0	\$1.3M	\$2.3M
	Induced Effect	19.9	\$1.1M	\$2.2M
	Total Effect	133.9	\$6.1M	\$10.2M
Total state and local taxes	\$1.2M			
Fairy Stone	Direct Effect	45.3	\$2.2M	\$3.6M
	Indirect Effect	12.2	\$809K	\$1.5M
	Induced Effect	12.1	\$685K	\$1.4M
	Total Effect	69.6	\$3.7M	\$6.5M
Total state and local taxes	\$637K			
Occoneechee	Direct Effect	46.8	\$1.8M	\$2.8M
	Indirect Effect	9.0	\$599K	\$1.1M
	Induced Effect	9.7	\$549K	\$1.1M
	Total Effect	65.5	\$3.0M	\$4.9M
Total state and local taxes	\$580K			
Smith Mountain Lake	Direct Effect	175.2	\$6.8M	\$10.2M
	Indirect Effect	36.8	\$2.4M	\$4.3M
	Induced Effect	36.7	\$2.1M	\$4.1M
	Total Effect	248.7	\$11.3M	\$18.6M
Total state and local taxes	\$2.1M			
Staunton River	Direct Effect	31.9	\$1,377,377	\$2.0M
	Indirect Effect	5.5	\$363,183	\$637K
	Induced Effect	6.9	\$389,483	\$774K
	Total Effect	44.3	\$2,130,043	\$3.4M
Total state and local taxes	\$303K			

<b>TABLE 10: EMPLOYMENT, LABOR INCOME, VALUE-ADDED, TAX REVENUES: DISTRICT 6</b>				
<b>PARK</b>	<b>IMPACT TYPE</b>	<b>EMPLOYMENT</b>	<b>LABOR INCOME</b>	<b>TOTAL VALUE-ADDED</b>
<b>DISTRICT 6</b>				
Clinch River	Direct Effect	4.1	\$246K	\$305K
	Indirect Effect	0.6	\$37K	\$67K
	Induced Effect	1.1	\$64K	\$127K
	Total Effect	5.8	\$346K	\$498K
Total state and local taxes	\$35K			
Grayson Highlands	Direct Effect	56.7	\$2.2M	\$3.3M
	Indirect Effect	11.0	\$724K	\$1.3M
	Induced Effect	11.8	\$670K	\$1.3M
	Total Effect	79.6	\$3.6M	\$5.9M
Total state and local taxes	\$658K			
Hungry Mother	Direct Effect	89.5	\$3.7M	\$5.4M
	Indirect Effect	17.1	\$1.1M	\$2.0M
	Induced Effect	19.2	\$1.1M	\$2.2M
	Total Effect	125.8	\$5.9M	\$9.6M
Total state and local taxes	\$1.1M			
Natural Tunnel	Direct Effect	45.7	\$2.2M	\$3.1M
	Indirect Effect	8.7	\$565K	\$1.0M
	Induced Effect	10.9	\$618K	\$1.2M
	Total Effect	65.3	\$3.4M	\$5.3M
Total state and local taxes	\$515K			
New River Trail	Direct Effect	246.8	\$10.0M	\$14.8M
	Indirect Effect	53.1	\$3.5M	\$6.2M
	Induced Effect	54.0	\$3.1M	\$6.1M
	Total Effect	354.0	\$16.6M	\$27.1M
Total state and local taxes	\$2.9M			
Southwest VA Museum	Direct Effect	16.5	\$791K	\$1.1M
	Indirect Effect	3.0	\$194K	\$347K
	Induced Effect	3.9	\$223K	\$443K
	Total Effect	23.4	\$1.2M	\$1.9M
Total state and local taxes	\$99K			
Continued on next page				

PARK	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED
Wilderness Road	Direct Effect	45.0	\$2.0M	\$2.8M
	Indirect Effect	9.0	\$582K	\$1.0M
	Induced Effect	10.2	\$580K	\$1.2M
	Total Effect	64.3	\$3.1M	\$5.0M
Total state and local taxes		\$366K		

### ECONOMIC IMPACTS OF CAPITAL IMPROVEMENT SPENDING\*

This section details the effects of capital improvement spending during 2023. These capital improvement expenditures were already included in the economic activity and economic impact models presented earlier in this report but are also teased-out separately in this section to demonstrate how such expenditures infuse money into the economies of parks' host communities.

TABLE 11A: CAPITAL IMPROVEMENTS: BEAR CREEK LAKE [SPENT: \$790K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	2.81	\$179K	\$340K	\$1.3M
Indirect Effect	1.58	\$106K	\$210K	
Induced Effect	1.14	\$64K	\$128K	
Total Effect	5.53	\$349K	\$678K	

State and local taxes from capital improvements: \$59K

TABLE 11B: CAPITAL IMPROVEMENTS: BELLE ISLE [SPENT: \$23K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.09	\$5K	\$10K	\$38K
Indirect Effect	0.04	\$3K	\$5K	
Induced Effect	0.03	\$2K	\$4K	
Total Effect	0.16	\$10K	\$19K	

State and local taxes from capital improvements: \$2K

\*In this report, a monetary amount without a "K" or "M" is smaller than \$1,000 and is represented in actual value.

**TABLE 11C: CAPITAL IMPROVEMENTS: CALEDON [SPENT: \$46K]**

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.17	\$11K	\$21K	
Indirect Effect	0.08	\$6K	\$11K	
Induced Effect	0.07	\$4K	\$7K	
Total Effect	0.33	\$21K	\$39K	\$79K

State and local taxes from capital improvements: \$4K

**TABLE 11D: CAPITAL IMPROVEMENTS: CHIPPOKES PLANTATION [SPENT: \$168K]**

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.60	\$38K	\$72K	
Indirect Effect	0.30	\$20K	\$40K	
Induced Effect	0.23	\$13K	\$26K	
Total Effect	1.14	\$71K	\$138K	\$276K

State and local taxes from capital improvements: \$12K

**TABLE 11E: CAPITAL IMPROVEMENTS: CLAYTOR LAKE [SPENT: \$741K]**

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	2.64	\$168K	\$319K	
Indirect Effect	1.48	\$99K	\$197K	
Induced Effect	1.07	\$61K	\$120K	
Total Effect	5.19	\$328K	\$636K	\$1.3M

State and local taxes from capital improvements: \$58K

**TABLE 11F: CAPITAL IMPROVEMENTS: DOUTHAT [SPENT: \$4.5M]**

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	15.69	\$984K	\$1.9M	
Indirect Effect	7.65	\$509K	\$1.0M	
Induced Effect	5.99	\$339K	\$673K	
Total Effect	29.33	\$1.8M	\$3.6M	\$7.1M

State and local taxes from capital improvements: \$303K

<b>TABLE 11G: CAPITAL IMPROVEMENTS: FAIRY STONE [SPENT: \$3.8M]</b>				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	13.31	\$835K	\$1.6M	
Indirect Effect	6.49	\$431K	\$872K	
Induced Effect	5.08	\$287K	\$571K	
<b>Total Effect</b>	<b>24.87</b>	<b>\$1.6M</b>	<b>\$3.0M</b>	<b>\$6.0M</b>

State and local taxes from capital improvements: \$257K

<b>TABLE 11H: CAPITAL IMPROVEMENTS: FIRST LANDING [SPENT: \$1.0M]</b>				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	3.86	\$242K	\$457K	
Indirect Effect	1.89	\$126K	\$254K	
Induced Effect	1.47	\$83K	\$166K	
<b>Total Effect</b>	<b>7.22</b>	<b>\$451K</b>	<b>\$876K</b>	<b>\$1.8M</b>

State and local taxes from capital improvements: \$75K

<b>TABLE 11I: CAPITAL IMPROVEMENTS: HIGH BRIDGE TRAIL [SPENT: \$484K]</b>				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	4.01	\$248K	\$255K	
Indirect Effect	0.59	\$45K	\$82K	
Induced Effect	1.19	\$67K	\$133K	
<b>Total Effect</b>	<b>5.79</b>	<b>\$361K</b>	<b>\$471K</b>	<b>\$208K</b>

State and local taxes from capital improvements: \$36K

<b>TABLE 11J: CAPITAL IMPROVEMENTS: HUNGRY MOTHER [SPENT: \$121K]</b>				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.42	\$26K	\$50K	
Indirect Effect	0.20	\$14K	\$27K	
Induced Effect	0.16	\$9K	\$18K	
<b>Total Effect</b>	<b>0.78</b>	<b>\$49K</b>	<b>\$95K</b>	<b>\$191K</b>

State and local taxes from capital improvements: \$8K

<b>TABLE 11K: CAPITAL IMPROVEMENTS: KIPTOPEKE [SPENT: \$299K]</b>				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	1.02	\$65K	\$123K	
Indirect Effect	0.57	\$38K	\$76K	
Induced Effect	0.41	\$23K	\$46K	
<b>Total Effect</b>	<b>2.01</b>	<b>\$127K</b>	<b>\$246K</b>	<b>\$486K</b>

State and local taxes from capital improvements: \$22K

<b>TABLE 11L: CAPITAL IMPROVEMENTS: LAKE ANNA [SPENT: 191K]</b>				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.75	\$47K	\$89K	
Indirect Effect	0.36	\$24K	\$49K	
Induced Effect	0.28	\$16K	\$32K	
<b>Total Effect</b>	<b>1.40</b>	<b>\$87K</b>	<b>\$170K</b>	<b>\$341K</b>

State and local taxes from capital improvements: \$15K

<b>TABLE 11M: CAPITAL IMPROVEMENTS: NATURAL TUNNEL [SPENT: \$597K]</b>				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	2.04	\$130K	\$246K	
Indirect Effect	1.14	\$77K	\$152K	
Induced Effect	0.83	\$47K	\$93K	
<b>Total Effect</b>	<b>4.01</b>	<b>\$253K</b>	<b>\$491K</b>	<b>\$969K</b>

State and local taxes from capital improvements: \$44K

<b>TABLE 11N: CAPITAL IMPROVEMENTS: NEW RIVER TRAIL [SPENT: \$1.5M]</b>				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	5.32	\$336K	\$636K	
Indirect Effect	2.79	\$186K	\$372K	
Induced Effect	2.09	\$118K	\$235K	
<b>Total Effect</b>	<b>10.20</b>	<b>\$640K</b>	<b>\$1.2M</b>	<b>\$2.5M</b>

State and local taxes from capital improvements: \$109K

**TABLE 11O: CAPITAL IMPROVEMENTS: POCAHONTAS [SPENT: \$96K]**

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.36	\$23K	\$43K	
Indirect Effect	0.18	\$12K	\$24K	
Induced Effect	0.14	\$8K	\$16K	
Total Effect	0.68	\$42K	\$82K	\$164K

State and local taxes from capital improvements: \$7K

**TABLE 11P: CAPITAL IMPROVEMENTS: TWIN LAKES [SPENT: \$1.2M]**

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	4.17	\$265K	\$503K	
Indirect Effect	2.34	\$157K	\$310K	
Induced Effect	1.68	\$95K	\$189K	
Total Effect	8.19	\$517K	\$1.0M	\$2.0M

State and local taxes from capital improvements: \$92K

**TABLE 11Q: CAPITAL IMPROVEMENTS: WESTMORELAND [SPENT: \$2.3M]**

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	8.29	\$527K	\$1.0M	
Indirect Effect	4.63	\$310K	\$614K	
Induced Effect	3.35	\$189K	\$376K	
Total Effect	16.27	\$1.0M	\$2.0M	\$3.9M

State and local taxes from capital improvements: \$180K

**TABLE 11R: CAPITAL IMPROVEMENTS: WIDEWATER [SPENT: \$2.3M]**

EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	9.00	\$572K	\$1.1M	
Indirect Effect	5.05	\$338K	\$670K	
Induced Effect	3.64	\$206K	\$409K	
Total Effect	17.69	\$1.1M	\$2.2M	\$4.3M

State and local taxes from capital improvements: \$196K

TABLE 11s: CAPITAL IMPROVEMENTS: WILDERNESS ROAD [SPENT: \$53K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.18	\$11K	\$22K	
Indirect Effect	0.10	\$7K	\$13K	
Induced Effect	0.07	\$4K	\$8K	
Total Effect	0.35	\$22K	\$43K	

State and local taxes from capital improvements: \$4K

TABLE 11t: CAPITAL IMPROVEMENTS: YORK RIVER [SPENT: \$43K]				
EFFECT TYPE	EMPLOYMENT	LABOR INCOME	TOTAL VALUE-ADDED	OUTPUT
Direct Effect	0.15	\$10K	\$18K	
Indirect Effect	0.09	\$6K	\$11K	
Induced Effect	0.06	\$3K	\$7K	
Total Effect	0.30	\$19K	\$37K	

State and local taxes from capital improvements: \$3K

{Operational spending section begins on next page}

## ECONOMIC IMPACTS OF OPERATIONAL SPENDING

This section details the effects of operational spending not supported by visitor revenues during 2023. This operational spending was already included in the economic activity and economic impact models discussed earlier in this report but is also teased-out separately in this section to demonstrate how such operational spending infuses money into the economies of parks' host communities. Because the majority of parks are located in areas of the Commonwealth in which economic activity is recorded below statewide metrics, such operational-related spending can be a boon to these economies.

<b>TABLE 12: ECONOMIC IMPACTS OF NON-VISITOR SUPPORTED PARK OPERATIONAL SPENDING</b>				
<b>(PORTION OF PARK BUDGET DERIVED FROM VISITOR REVENUE REMOVED TO AVOID DOUBLE COUNTING)</b>				
PARK	TOTAL VISITOR REVENUE	PARK OPERATIONAL EXPENDITURE	NET EXPENDITURE FROM NON-VISITOR SOURCES *	ECONOMIC IMPACT FROM OPERATIONAL SPENDING
<b>DISTRICT 1</b>				
Belle Isle	\$328K	\$660K	\$331K	\$573K
Chippokes Plantation	\$658K	\$992K	\$334K	\$578K
False Cape	\$100K	\$594K	\$494K	\$889K
First Landing	\$3.3M	\$3.0M	\$0	Reflected in park revenue
Kiptopeke	\$1.6M	\$1.1M	\$0	Reflected in park revenue
Machicomoco	\$203K	\$215K	\$12K	\$21K
Middle Peninsula	\$0	\$107	\$107	\$185
York River	\$150K	\$628K	\$478K	\$828K
<b>DISTRICT 2</b>				
Caledon	\$53K	\$475K	\$422K	\$759K
Lake Anna	\$1.3M	\$1.4M	\$158K	\$293K
Leesylvania	\$765K	\$1.3M	\$497K	\$919K
Mason Neck	\$200K	\$720K	\$521K	\$963K
Westmoreland	\$908K	\$1.6M	\$724K	\$1.3M
Widewater	\$59K	\$630K	\$572K	\$1.1M
Continued on next page				

PARK (CONTINUED)	TOTAL VISITOR REVENUE	PARK OPERATIONAL EXPENDITURE	EXPENDITURES FROM NON-VISITOR SOURCES	ECONOMIC IMPACT FROM OPERATIONAL SPENDING
<b>DISTRICT 3</b>				
Douthat	\$1.5M	\$2.3M	\$823K	\$1.4M
James River	\$794K	\$1.3M	\$485K	\$840K
Natural Bridge	\$2.5M	\$2.1M	\$0	Reflected in park revenue
Seven Bends	\$36K	\$481K	\$445K	\$801K
Shenandoah River	\$1.1M	\$1.2M	\$117K	\$211K
Sky Meadows	\$356K	\$809K	\$453K	\$838K
<b>DISTRICT 4</b>				
Bear Creek Lake	\$676K	\$1.0M	\$358K	\$620K
High Bridge Trail	\$89K	\$711K	\$622K	\$1.1M
Holliday Lake	\$273K	\$592K	\$319K	\$551K
Pocahontas	\$2.5M	\$2.6M	\$89K	\$160K
Powhatan	\$319K	\$713K	\$394K	\$709K
Sailor's Creek Battlefield	\$17K	\$365K	\$348K	\$602K
Staunton River Battlefield	\$9K	\$250K	\$241K	\$410K
Twin Lakes	\$550K	\$933K	\$383K	\$652K
<b>DISTRICT 5</b>				
Claytor Lake	\$1.8M	\$1.8M	\$0	Reflected in park revenue
Fairy Stone	\$874K	\$1.4M	\$559K	\$951K
Occoneechee	\$1.1M	\$1.3M	\$153K	\$260K
Smith Mountain Lake	\$1.2M	\$1.4M	\$217K	\$390K
Staunton River	\$410K	\$655K	\$245K	\$417K
<b>DISTRICT 6</b>				
Clinch River	\$6K	\$314K	\$307K	\$522K
Grayson Highlands	\$1.1M	\$1.3M	\$207K	\$351K
Hungry Mother	\$1.6M	\$2.4M	\$821K	\$1.4M
Natural Tunnel	\$701K	\$2.0M	\$1.3M	\$2.2M
New River Tail	\$361K	\$2.2M	\$1.9M	\$3.2M
Southwest Virginia	\$50K	\$609K	\$559K	\$950K
Wilderness Road	\$58K	\$939K	\$881K	\$1.5M
*In the net expenditure column, an entry of zero represents a situation in which operating revenues exceeded operating expenses.				

## DISCUSSION

The findings of this 2023 economic impact study highlight many of the contributions of the state park system to the economy of Virginia. The economic activity supported by Virginia's State Parks contributed approximately \$535.3M to the Commonwealth's economy; whereas, the economic impact was estimated at \$400.7M during 2023. The difference between the economic activity amount (includes spending by local residents) and the economic impact amount (does not include spending by local residents) illustrates that Virginia's State Parks not only attract fresh-money from outside of the area, but also serve to limit the economic leakage of money from within Virginia. In other words, the parks help entice locals to spend their money inside the Commonwealth as opposed to pursuing such recreational outings in other localities.

### Return on Investment

*Every \$1 of tax money spent on the park system in 2023 yielded approximately \$1.13 in state and local tax revenues in return.*

Furthermore, in terms of employment, the economic activity surrounding visitation to Virginia's State Parks supported an estimated 4,208 jobs. The wages and salaries associated with these jobs is estimated at \$194.3M in wage and salary income. Moreover, economic activity stimulated by Virginia State Parks generated approximately \$35.7M in state and local taxes during 2023 and contributed roughly \$316.5M to the GDP of Virginia through value-added effects. Using these modeling estimations, roughly \$1.13 in state and local taxes was generated for every dollar of tax money spent on the park system.

As detailed in the final sections of this study's findings, capital improvement expenditures in parks couple with visitor spending to produce economic outputs. Particularly with high usage volumes, park infrastructure and facilities periodically need significant maintenance and repair. The point here being that such capital investment is associated with economic impacts: temporary impacts from the construction project itself, and long-run impacts by enhancing a park's ability to attract and retain visitors. During 2023, for instance, an estimated \$3.8M and \$4.5M were invested at Fairy Stone and Douthat, respectively.

Regarding state park economic modeling, it is important to understand that all modeling inputs are dynamic. More specifically, according to Crompton (1993), the validity and reliability of an

economic impact study depend on: 1) the accuracy of visitor spending estimates; 2) adherence to statistical rules applied in the study in particular pertaining to the use of the multiplier coefficients; and 3) reasonable attendance estimates. First, in terms of spending estimates, customized spending profiles were developed by the research team by collecting spending data from 3,802 park visitors during 2016. An updated spending survey has been programmed in the Qualtrics surveying platform and is currently being administered to visitors during 2024. Second, regarding the multiplier coefficients, the most recent IMPLAN multipliers were utilized. Third, in terms of attendance estimation, as described earlier in this report, during 2017 park staff recorded 762 vehicle observation hours as well as 679 visitor interviews to calibrate model estimations regarding the average number of occupants per vehicle (day use; camping; cabins) and the ratio of local, non-local and non-resident visitors. In any state park system, these modeling inputs should be continually evaluated and refined through time because all three (spending, multipliers, and attendance) are dynamic and change according to economic and other external conditions. To state differently, this study is part of an overall effort that encompasses continuous refinement of all modeling inputs.

As demonstrated by two radical economic disruptions [the great recession and the covid-19 pandemic], state parks help insulate Virginia's tourism infrastructure from economic disruptions. When the economy flourishes, people visit state parks... when the economy contracts, people STILL visit state parks. Thus, many other businesses within Virginia's tourism infrastructure (e.g. convenience stores, gas stations, etc...) often benefit from the steady, relatively recession-resistant flow of visitors to Virginia's State Parks. Along these lines, many of Virginia's State Parks help inject money into economically-strained areas of the Commonwealth. In fact, the majority of Virginia's State Parks are located in areas that are below the statewide average on commonly employed economic indicators such as median income. The blue way park being developed along the Clinch River, for instance, serves as an illustration of how state parks can infuse fresh money into economically recessed areas of the Commonwealth.

When addressing the various impacts of parks, it is also germane to note that even non-visitors value parks. That is, even people who do not visit parks, value their existence and want to see them preserved (Greenley, Walsh, and Young, 1981; Institute for Service Research, 2018). Therefore, parks have an *existence value* by which even those who do not visit are typically glad that they exist. In addition, parks have a *bequest value* in that both visitors and non-visitors want parks preserved for future generations. Evidence of such value associated with parks is seen in studies that find residential real estate values to be higher when a property abuts or fronts a passive use park (for a meta-analysis, see: Crompton 2005).

Lastly, while this study estimated many economic impacts of Virginia’s State Parks such as jobs, labor income, value-added, and state and local taxes generated, it is prudent to note that a number of other benefits (both tangible and intangible) could not be included in the modeling. For example, visitation counts increased at many nature-based venues during the COVID-19 pandemic, in part, because such activities are known to improve both physical and mental/cognitive health (for a review, see: Quendler, Magnini, and Driouech, 2020). It is hoped that such increased outdoor patronage will continue to be incorporated into an increased number of individuals. While the physiological benefits associated with outdoor recreation have both economic and non-economic benefits, such outcomes are difficult to capture and measure using input-output economic modeling.

{End of narrative}

## INVESTIGATOR BIO

**Dr. Vincent Magnini** was ranked as one of the top 12 most prolific hospitality researchers worldwide in the most recently published global ranking study. He is a U.S. Fulbright Scholar and has published seven books including a new release in 2020 for park management and rangers titled *An Ecotourism Provider's Handbook* (with Donald Forgione). Dr. Magnini has also been featured on National Public Radio's *With Good Reason, All Things Considered, Pulse on the Planet* and cited in the *New York Times* and *Washington Post*.

Examples of economic impact studies completed by Dr. Magnini include:

- The Economic Impacts of the 2023 Something in the Water Music Festival held in Virginia Beach, VA
- The Economic Impacts of the 2023 Beach It County Music Festival held in Virginia Beach, VA
- The Economic Impacts of the 2023 Virginia beach Jackalope Festival
- The Economic Impacts of the 2023 Bulls and Barrels Beach Rodeo held in Virginia Beach, VA
- The Economic Impacts of the Audacy Oceanfront Concert Series held in conjunction with the 60<sup>th</sup> Annual East Coast Surfing Championships
- The Economic Impacts of Virginia's Civil Rights in Education Heritage Trail (with Chuck Wyatt)
- The Economic and Fiscal Impacts of Doe Mountain Recreational Area (with Chuck Wyatt)
- The Economic Impacts of the Virginia Capital Trail (with Lauren Pilkington and Chuck Wyatt)
- The Economic Impacts of Agritourism in Loudoun County, VA
- The Economic Impacts of Michigan's Ports and Harbors (with Dr. John Crotts)
- Potential Economic Impacts of a Shooting and Archery Range Complex in the SRRRA Area (with Chuck Wyatt)
- Virginia State Parks Economic Impact Report (conducted annually)
- The Economic Impacts of the Southern Virginia Higher Education Center
- The Economic Impacts of Southside Virginia Community College
- Potential Economic Impacts and Factors Contributing to the Success of Rail-to-Trail Conversions (with Chuck Wyatt)
- The Economic Impacts of Spearhead Trails (with Chuck Wyatt)
- The Fiscal and Economic Impacts of Virginia's Agritourism Industry (with Esra Calvert and Dr. Martha Walker)
- The Economic Significance and Impacts of West Virginia's State Parks and Forests (with Dr. Muzzo Uysal)

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## APPENDICES



## APPENDIX B: GLOSSARY OF TERMS

{Many of the definitions in this glossary are paraphrased directly from Stynes et al. (2000) MGM2 users' manual}

**Direct effects** – the changes in sales, income, and jobs in an area as a result of first-round visitor spending.

**Economic activity** – economic output modeling that includes all visitor spending and consequent multiplier effects by both locals and non-locals as well as any money spent by parks that was not supported by visitor spending. Consequently, economic activity figures represent all of the economic activity stimulated by a park location within the state.

- **Unadjusted economic activity** - economic activity output figures computed using statewide IMPLAN multipliers.
- **Adjusted economic activity** – calibrated economic activity output figures based upon whether a given park's county(ies) has economic activity above or below the state average.

**Economic impact** – economic output modeling that includes all visitor spending and consequent multiplier effects by 1) in-state residents traveling 50 miles or more (one-way) to visit the park; and 2) all out-of-state visitors. In addition, economic impact models include capital improvements and operational expenditures not derived from visitor spending. Thus, economic impact figures reflect all of the “fresh money” entering an area's economy as a result of a given state park.

- **Unadjusted economic impact** - economic impact output figures computed using statewide IMPLAN multipliers.
- **Adjusted economic impact** – calibrated economic impact output figures based upon whether a given park's county(ies) has economic activity above or below the state average. Adjusted economic impact figures are also reduced by 12% (Magnini and Uysal, 2015a) to account for spending by park visitors who likely would have traveled and spent money in the state regardless of whether the park existed.

**Indirect effects** – the changes in sales, income and jobs to businesses that supply goods and services to the park location.

**Induced effects** – the changes in economic activity in the region stimulated by household spending of income earned through direct and indirect effects of visitor spending.

**IMPLAN** – a computer-based input / output economic modeling system. With IMPLAN one can estimate more than 500 sector input / output models for any region consisting of one or more counties. IMPLAN includes procedures for generating multipliers and estimating impacts by applying final demand changes to the model.

**Multipliers** – these estimates express the magnitude of the secondary effects in a given geographic area and are often in the form of a ratio of the total change in economic activity relative to the direct change. Multipliers reflect the degree of interdependency between sectors in a region’s economy and can vary substantially across regions and sectors.

**Secondary effects** – the changes in economic activity from subsequent rounds of re-spending of dollars. There are two types of secondary effects: indirect and induced (see previously listed definitions).

**Value-added (also termed ‘gross regional product’)** – the sum of total income and indirect business taxes. Value-added is a commonly used measure of the contribution of a region to the state/national economy because it avoids the double counting of intermediate sales and incorporates only the ‘value-added’ by the region to final products.

{END OF REPORT}