

# JAMES CITY COUNTY PARKS & RECREATION ECONOMIC IMPACT STUDY

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# Economic Impact Study; Revenue & Spending Streams

The James City County Parks & Recreation Division provides public-sector services and facilities to residents, funded by a combination of membership fees, tournaments, and local tax revenues. The many services and facilities provided and maintained by the Parks & Recreation Division are analyzed here in terms of revenue and spending streams. Tournaments and youth sporting events hosted at Parks & Recreation facilities generate direct revenue for the Parks Department through rental fees paid by the event rights holder. These events also generate household and corporate income as well as tax revenue for the County. We estimate that a sports showcase/recruitment camp generates an average of \$13,000 in local tax revenue and \$70,000 in household income, whereas youth sports tournaments generate on average \$35,000 in household income. JCC Parks & Recreation hosted 14 external, for-bid sporting events in 2010, resulting in over \$80,000 in estimated tax revenue for JCC. We applied this tax revenue to the Recreation and Community Center budgets, as it subsidizes fees for users. Community center and recreation services users receive direct and indirect benefits, including health and behavioral outcomes. Programs including before/after school, summer camps, and youth sports are offered at discounted rates and result in a healthier population overall. Community centers provide the benefits of a private health club to JCC residents at subsidized rates.

We estimate that tax revenue from tournaments and recreation service user fees result in just over a 55% recovery rate for JCC Recreation Services and Community Centers combined.

Parks provide indirect benefits to nearby property owners and direct health benefits for users. Parks produce positive externalities in the form of increased property values and health benefits. Proximity to parks increases property values and increases tax revenue and seller returns. Health benefits include lower obesity rates and a decrease in public health costs. We estimate that increased property tax revenue, combined with park user fees and direct revenue to the Parks Department through tournament reservation fees, results in a 45% recovery rate for JCC Parks.

Overall, tax revenue generated by tournaments and increased property values increases the recovery rate for James City County Parks & Recreation from around 43% to nearly 47%. According to a 2010 survey conducted by the National Recreation & Park Association, nearly 70% of Parks & Recreation Departments nationwide report having recovery rates of 40% or less . According to our findings, James City County Parks & Recreation, through tournament revenue, reports a higher rate of return than a majority of departments nationwide.

## TOTAL DEPARTMENT RECOVERY RATES

	Budget	Direct Revenue	Cost Recovery Rate	Est. Tax Revenue	Est. Total Recovery Rate
<b>Parks</b>	1,166,441	461,051	39.5%	77,997	46.2%
<b>Recreation &amp; Community Centers</b>	3,930,681	2,115,869	53.8%	82,308	55.9%
<b>Admin</b>	788,755				
<b>Total</b>	<b>5,885,877</b>	<b>2,576,920</b>	<b>43.8%</b>	<b>160,305</b>	<b>46.5%</b>

# I – Tourism as Revenue

## Tournaments & Events; Bringing New Dollars to JCC

Each year, James City County Parks & Recreation hosts external showcases/recruitment camps, youth sports tournaments, and adult events – drawing participants and spectators from outside of the Historic Triangle. These visitors inject new dollars into the local economy through lodging, retail, dining, and entertainment purchases. This spending raises additional local tax revenue as well as household and corporate income. Tournaments also generate revenue through direct collection of reservation and usage fees, paid by the hosting organization to the JCC Parks Department. Our methodology analyzes the impact of new tax revenue on the recovery rates for recreation services and community centers, and direct usage fees on the recovery rates for the Parks Department. We find that external tax revenue raises the recovery rate for Community Centers and Recreation Services nearly three percentage points from just below 44% to nearly 47%. Direct revenues from fees contribute over \$60,000 each year to the Parks Department, raising the recovery rate from 40% to just over 46%.

For the purposes of our analysis, we divided the 14 events hosted on JCC facilities into three categories: (1) Showcases and Recruitment Camps (for example, Top Gun Football Camp/Football University and the Olympic Development Program), (2) Youth Tournaments (Legacy Soccer, women’s lacrosse, and field hockey), and (3) Adult Events (Patriot Triathlon). These categories reflect differences in types of participants (individual or team), the varying number of spectators and accompanying guests, and spending habits. Most importantly, we estimate that 90–95% of showcase participants and corresponding spectators are from outside of the Historic Triangle, with 95% traveling specifically for the event (they would not have visited the Historic Triangle within 12 months otherwise)<sup>1</sup>. This means that nearly all of the visitors are bringing new dollars to the area which would otherwise not have been spent in the Historic Triangle. Showcases have the largest percentage of out-of-town guests, with youth tournaments drawing between 30 and 60% (an average of around 50%) non-local guests. This difference in out-of-town participation results in different hotel and lodging expenditures between the three categories, with showcases exhibiting the greatest spending. Finally, showcase participants are likely participating in the camp as individuals and traveling with

their families, whereas youth tournament participants are likely traveling with their team, and therefore with fewer family members.

To measure the economic impact of this additional tourism, we utilized a return on investment formula created by the National Association of Sports Commissions (NASC, 2007) with the cooperation of the Williamsburg Area Chamber and Tourism Alliance (WACTA).<sup>3</sup> This formula was developed using information from over 25 surveys of nationwide youth sporting events and provided minimum, average, and maximum estimates across a number of expenditure categories.<sup>4</sup> To estimate actual economic returns, we utilized income (0.38) and spending (1.30) multipliers to account for the recycling of new direct spending.<sup>5</sup> Our model assumes that, of the gross impact on local income, 64.7% is household income, 23.5% is corporate income, and 11.8% is local tax revenue. We also assumed that the original estimates would capture spending in Williamsburg, JCC, and York County and that 34.2% of spending in the Historic Triangle occurs in JCC.<sup>6</sup>

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<sup>1</sup>Patrick Rshe (2007), “Calculating and Reporting Economic Impact Results: A Guide for NASC Members.” National Association of Sports Commissions.

<sup>2</sup>The estimated party size was 3 persons for showcases and 2.5 persons for youth tournaments.

<sup>3</sup>National Association of Sports Commissions. Report on Economic Impact. October 2010.

<sup>4</sup>Our estimation of the 2007 NASC formula, including a complete listing of our estimates by FY 2010 sporting event, is included in the appendix to this report.

<sup>5</sup>NASC, 2010. These multipliers are comparable to those reported in IMPLAN (Version 3).

<sup>6</sup>The Virginia Tourism Corporation’s FY 2007-09 Profile of Travel in Virginia.

# I – Tourism as Revenue

## Tournaments & Events; Bringing New Dollars to JCC

Figure 1.1 below shows estimated average total income (including multiplier effects) for eight JCC events in each of these three categories.<sup>7</sup>

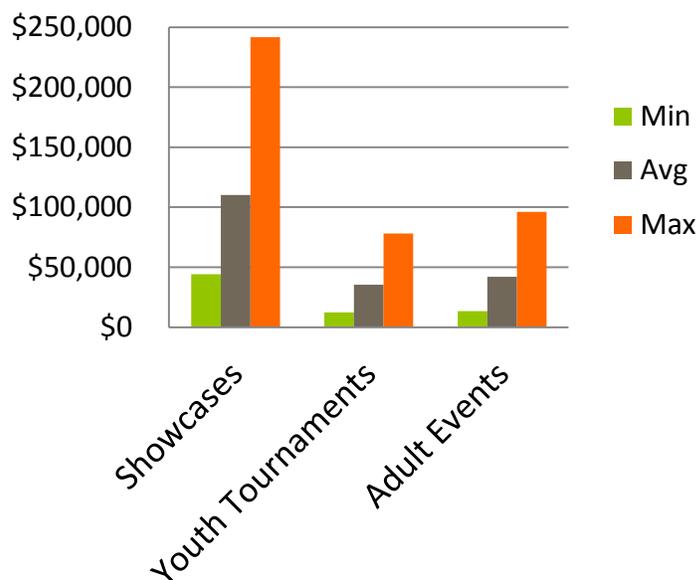
Figure 1.2 shows estimates for minimum, average, and maximum estimated total income by category. Overall, showcases show a significantly higher amount of anticipated income than the other two categories. This is mainly due to the high out-of-town percentage of participants and spectators (90-95%) compared to tournaments, where only 30-60% of teams are non-local. Also, spending tendencies may be different between the two groups. Families who bring their child to participate in a showcase may stay longer or engage in shopping/entertainment while their child is attending the development camp.

We estimate that the total revenue generated by taxes (average) and user fees is around \$140,000 annually. We estimate over \$750,000 annually in total generated income for James City County and slightly more than \$2 million in local tax revenue, corporate, and household income for the Historic Triangle.

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<sup>7</sup>We calculated average income for the remaining five events for which we did not have participation numbers by estimating participation based on event category and length event. See appendix for these figures.

**FIGURE 1.2: ESTIMATED TOTAL INCOME BY CATEGORY**



**FIGURE 1.1: AVERAGE TOTAL INCOME BY SECTOR**

	Showcases		Youth Tournaments					Adult Events
	FBU	ODP	VCCL Showcase (Men's and Women's)	Focus Field Hockey	Women's Lacrosse	VLSC Labor Day	VLSC Memorial Day	Patriot Triathlon
Household Income	81,265	60,285	10,543	9,841	65,581	29,166	10,942	26,934
Local Tax Revenue	14,937	11,080	1,938	1,809	12,054	5,361	2,011	4,951
Corporate Income	29,747	22,067	3,859	3,602	24,005	10,676	4,005	9,859

## II – Recreation Programming & Community Centers; Investing in the Community

Tax revenues from non-local tourists allow Parks & Recreation to partially subsidize their Community Center membership and Recreation programming fees. This cost shifting benefits the community, as the burden of funding recreation services and community centers is partially shifted to non-residents. In this way, revenue generated by tournaments and associated tourism is reinvested in the community through recreation services and community centers.

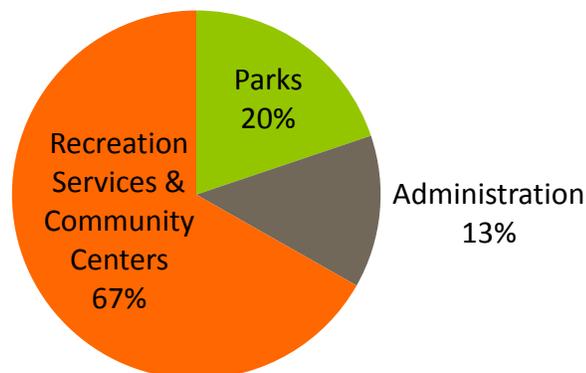
In FY 2010, two-thirds of JCC's Parks & Recreation budget was allocated to recreation services and community centers. Recreation services include Rec Connect before and after school care, youth outdoor sports leagues, summer day and specialty camps, health and wellness classes, and several community events hosted throughout the year. The two community centers offer swimming, exercise and fitness machines, an indoor track, racquet ball courts, in addition to meeting space for youth, teen, and adult programs. These services are maintained by tax revenue through the JCC budget, as well as individual user and service fees. The public-private funding structure of JCC programs and facilities allows them to be offered at a discounted rate when compared to private services. This investment into the community results in an increase in the quality of life for users living in the James City County community.

We developed and administered an online survey entitled "Rec Connect Survey" to over 3,500 households in the Parks & Recreation database. Our survey asked respondents to estimate their usage rates and various qualitative benefits they might experience as a result of their consumption. Over 300 responses were collected and used to express the benefits accruing to users of Parks & Recreation services. Demographics of the respondents suggest that the survey is representative of the overall James City County population.<sup>8</sup>

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<sup>8</sup>According to 2010 U.S. Census data, median household income is \$76,000 in JCC; this comports with our finding that the average HH income for survey respondents is roughly \$85,000. Approximately 20% of the JCC population is 65+; survey respondents 65+ were exactly 20%. The survey reported 88% white whereas the census reports 82.3% white. See <http://quickfacts.census.gov>

### PARKS & RECREATION FY 2010 BUDGET



### FALL 2010 REC CONNECT SURVEY

qualtrics.com

This fall, the James City County Department of Parks & Recreation is working with William & Mary Master's of Public Policy students to evaluate the economic impact and community benefits of Parks & Recreation facilities and programs. This survey is designed to gather more information about program usage and outcomes from current and former users. This survey asks questions about which JCC Parks & Recreation programs you currently or have ever used and should take between 15-20 minutes to complete.

Individual responses collected from this survey are completely anonymous and no individual responses will be released.

We appreciate your time and participation!

I currently reside in:

- James City County
- City of Williamsburg
- York County
- New Kent County
- Other

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## II – Recreation Programming & Community Centers; Investing in the Community

### RECREATION SERVICE AND COMMUNITY CENTER USERS EXPERIENCE SIGNIFICANT BENEFITS AND SAVINGS IN THE FORM OF SUBSIDIZED MEMBERSHIP RATES AND FEES

Parks & Recreation is funded annually through the general tax revenue, and is able to offer additional services through memberships and user fees. If the recreation services and community centers operated at cost, the Division would have to charge significantly more to its users for the provided services. After an analysis of Parks & Recreation’s FY 2010 budget and revenues, we were able to estimate the average savings accruing to users of services offered by the Division. We calculated replacement rates as the percentage of the FY2010 budget covered by a combination of tax revenues and user fees. Assuming a 100% replacement rate (operating at cost), users of recreation services realize over \$1 million dollars in savings each year. Similarly, Community Center members see over \$750,000 in savings per year. We estimate that users of the Rec Connect Before and

After School Program and Summer Day Camp save on average \$600 and \$365 per child annually, respectively. According to the Rec Connect survey, over 90% of parents who used the Rec Connect programs used these programs for childcare, which would cost significantly more in the private market.

Public community center memberships are less expensive than privately run health clubs. If the centers operated at cost, fees would double. We estimate that community center pass holders save an average of \$86 per pass. Estimated savings fluctuate depending on the type and duration of pass purchased, and our survey does not distinguish between membership types. Reduced fees for those who take advantage of Parks & Recreation services encourage community members to engage in healthy and community-building activities such as exercise and participation in special events .

**FIGURE 2.1: SAVINGS TO RECREATION SERVICES USERS**

<b>FY2010 Budget \$2,421,606</b>	<b>Fees</b>	<b>Fees at Cost</b>	<b>Savings</b>	<b>Per Child</b>
Before/After School	738,776	1,315,952	577,176	603
Special Programs	59,951	106,788	46,837	
Events	5,212	9,283	4,071	
Youth Sports Leagues	45,534	81,107	35,573	
Summer Camps	291,454	519,155	227,702	365
Classes	217,339	387,137	169,798	
Misc.	1,201	2,139	938	
<b>Total Revenue</b>	<b>1,359,467</b>	<b>2,421,565</b>	<b>1,062,098</b>	
<b>Coverage Rate</b>	<b>56.1%</b>	<b>100%</b>		

**FIGURE 2.2: SAVINGS TO COMMUNITY CENTER USERS**

<b>FY2010 Budget \$1,509,181</b>	<b>Fees</b>	<b>Fees at Cost</b>	<b>Savings</b>	<b>Per Pass Savings</b>
Membership	691,529	1,379,746	688,217	86
Single Fees	47,605	94,982	47,377	
Vending	5,448	10,869	5,421	
Head Start Rent	11,820	23,583	11,763	
<b>Total Revenue</b>	<b>756,402</b>	<b>1,509,181</b>	<b>752,779</b>	
<b>Coverage Rate</b>	<b>50.1%</b>	<b>100%</b>		

## II – Recreation Programming & Community Centers; Investing in the Community

RECREATION PROGRAMMING PROVIDES DIRECT BENEFITS TO USERS THROUGH PRICE SAVINGS AS WELL AS POSITIVE BEHAVIORAL, SOCIAL, AND HEALTH OUTCOMES

State certified Rec Connect Before and After School programs and Summer Day Camps are offered throughout the year to students in the Williamsburg/James City County School district. In FY 2010, over 950 students participated in a Rec Connect Before and After school program, representing approximately 15% of the WJCC elementary and secondary school population.<sup>9</sup> Current studies suggest that high quality before and after school programs can result in positive social outcomes for participants, such as: greater interpersonal and behavioral skills, better school performance and lower high school dropout rates, and an increased interest in attending college.<sup>10</sup> According to our fall 2010 survey, parents report similar positive results in their children who attend Rec Connect programs. A majority of parents whose children participated in the Rec Connect School Programs report that their children demonstrated an increased interest in a healthy lifestyle, improved interpersonal skills, and a greater ability to relate to peers. Similar results were reported by parents of children in the Rec Connect Summer Day Camp. Positive school performance and behavioral outcomes resulting from participation in high quality before and after school programs lead to better life outcomes for the youth of James City County. These direct benefits to participants may translate into community benefits in the form of positive returns to investment in education, lower juvenile crime rates, and higher levels of human capital within the community.

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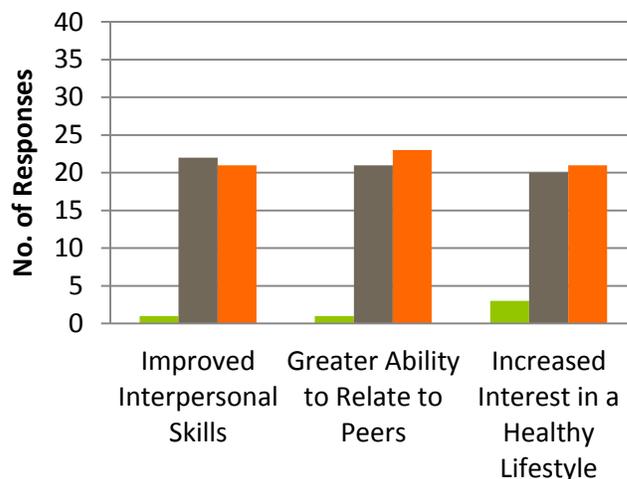
<sup>9</sup>Elementary and Secondary School Population Statistics are from the U.S. Department of Education.

<sup>10</sup>See Peter A. Witt et.al., *2005 Evaluation Summary, East Harris County Youth Program*, Prepared for Commissioner Sylvia R. Garcia President of EHCYP Board of Directors (2005). Peter A. Witt, *Re-examining the Role of Recreation and Parks in After-School Programs*, Parks and Recreation. 36(7): 20-28 (2001). Patricia A. Lauer et.al., *Out-of-School-Time Programs: A Meta-Analysis of Effects for At-Risk Students*, 76 Rev. of Educational Research 275 (2006).

FIGURE 2.3: BENEFITS OF BEFORE/AFTER SCHOOL PROGRAMS



FIGURE 2.4: BENEFITS OF SUMMER CAMPS



■ Disagree  
 ■ Neutral  
 ■ Agree/Strongly Agree

## II – Recreation Programming & Community Centers; Investing in the Community

### COMMUNITY CENTERS PROVIDE THE BENEFITS OF HEALTH CLUB MEMBERSHIP AT A DISCOUNTED RATE, PROMOTING POSITIVE HEALTH OUTCOMES AMONG USERS

As shown, JCC community center users would pay at least twice as much for membership passes if the centers operated under a private business model. In FY 2010, JCC sold approximately 8,000 community center passes. Of 193 respondents, 83% resided in James City County, 10% in the City of Williamsburg, and the remaining 7% in surrounding counties. From these results, we estimate that roughly 10% of JCC residents take advantage of community centers.



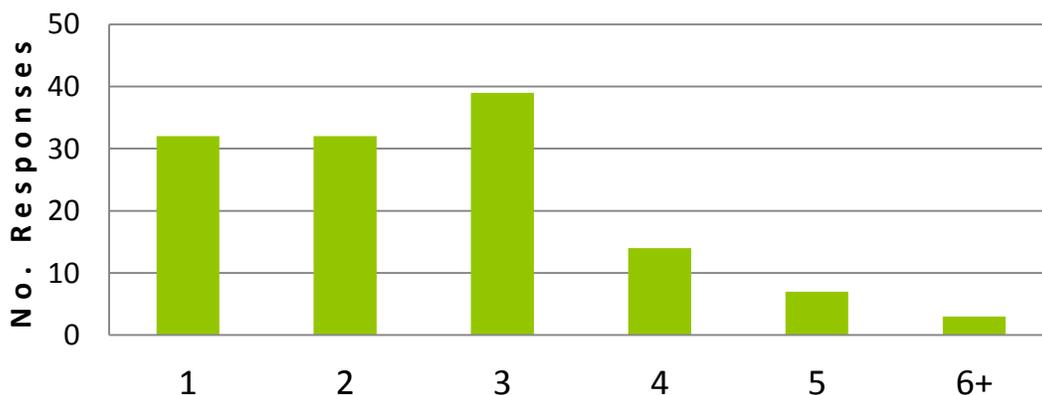
**67% of FY2010 Budget**  
Allocated to Recreation Services  
& Community Centers

Our survey also indicates that members visit centers an average of 2 to 3 times per week, and primarily utilize the pool and circuit machines. According to the CDC, greater access to facilities increases physical activity by 25%, thus reducing incidences of obesity and diabetes.<sup>11</sup> Along with the park acres in James City County, the two community centers contribute to the improved health outcomes of community members who take advantage of the amenities offered by the Division of Parks & Recreation.

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<sup>11</sup>See Recommended Community Strategies and Measurements to Prevent Obesity in the United States, Center for Disease Control and Prevention (2009) at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5807a1.htm>; Erica Gies, *The Health Benefits of Parks*, The Trust for Public Land (2006).

**FIGURE 2.5: WEEKLY COMMUNITY CENTER VISITS BY PASS HOLDERS**



\*Based on Rec Connect Survey Responses

# III – Parks as Stocks; Productive Assets to Generate Tax Revenue and Reduce Long Run Health Costs

James City County is home to 15 county-wide parks, totaling more than 1,800 acres of parkland, 32 miles of trails, and offering a variety of venues to swim, boat, and participate in athletic activities. The park system, however, is more than just aesthetically pleasing to the community that it serves. Rather, it ought to be viewed as a productive asset that produces monetary benefits and positive externalities for the community. The following analysis attempts to identify and quantify the economic impact of these facilities for JCC Parks & Recreation and members of the community. Using research conducted by the Trust for Public Land, a national, non-profit, land conservation agency, we identified five value-producing factors for parks:

- Increased “real” residential property value due to park proximity,
- Property tax revenue attributable to parks,
- Health savings to park users,
- Direct use savings to park users, and
- A community cohesion value created by building social capital and encouraging civic engagement through volunteering and athletic participation.<sup>12</sup>

## PARK PROXIMITY INCREASES RESIDENTIAL PROPERTY VALUES & COUNTY TAX REVENUE

Numerous studies demonstrate that parks increase the value of adjacent residential properties through the “Proximate Principle”.<sup>13</sup> Frederick Law Olmstead conducted one of the earliest documented applications of the proximity principle. His study of Central Park from 1856 to 1873 demonstrated that the project was not only revenue producing, but also eventually self-financing

through the increase in adjacent property values and resulting rise in property tax revenues. In 1978, Mark Correll et al., verified the proximity principle in a study of properties in Boulder, Colorado using more advanced statistical methods.<sup>14</sup> Lutzenhiser and Netusil (2001) demonstrated that the magnitude and “reach” of the proximity principle varied with the type of green space, and the situation of a residence along the perimeter of the space.<sup>15</sup> Although these landmark studies document the proximity principle in urban areas, similar results have been reported for rural areas.<sup>16</sup>

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<sup>12</sup>Direct use savings and community cohesion are discussed as an appendix to this report.

<sup>13</sup>John L. Crompton (2001), “The Impact of Parks on Property Values: A Review of the Empirical Evidence,” *Journal of Leisure Research* 33(1), 1-31, <http://www.rpts.tamu.edu/faculty/crompton/Crompton/Articles/4.6.pdf>.

<sup>14</sup>Mark R. Correll, Jane H. Lillydahl, Larry D. Singell (1978), *The Effects of Greenbelts on Residential Property Values: Some Findings on the Political Economy of Open Space*, *Land Economics* 54(2), 207-217, <http://www.jstor.org/stable3146234>.

<sup>15</sup>Margot Lutzenhiser and Noelwah R. Netusil (2001), *The Effect of Open Spaces on a Home’s Sale Price*, *Contemporary Economic Policy* 19(3), 291-298, <http://web.ebscohost.com.proxy.wm.edu/ehost/pdfviewer/pdfviewer?vid=4&hid=122&sid=8429a381-88cb-4b61-9e1d-f484d7fbc787%40sessionmgr115>.

<sup>16</sup>John L. Crompton (2001), “The Impact of Parks on Property Values: A Review of the Empirical Evidence.”

**FIGURE 3.1: ANNUAL ESTIMATED ECONOMIC IMPACT OF PARKS**

<b>Revenue-producing Factor for County Government</b>	
Annual Property Tax Revenue, Due to Park Proximity Effect	<b>\$77,997</b>
<b>Wealth-increasing Factor for Residents</b>	
"Real" Property Value from Park Proximity	\$11,203,166
<b>Cost-Savings Factors to Residents</b>	
Health Cost Savings	\$4,444,002
<b>Total Estimated Annual Economic Value</b>	<b>\$15,725,165</b>

# III – Parks as Stocks; Productive Assets to Generate Tax Revenue and Reduce Long Run Health Costs

With assistance from GIS specialists within the James City County Real Estate Assessment Division, we identified 377 residential properties located within 1,000 feet of a JCC park. These properties have a combined assessment value of over \$200 million for FY 2010.<sup>17</sup> Higher property values result in increased tax revenue for JCC. Using a conservative assumption that a park contributed to 5% of a property’s assessment value, we applied the County’s property tax rate and determined that the County realizes \$77,997 in annual property tax capture due to the proximate effect of parks on residential property values.<sup>18</sup>

We then cross-referenced the assessed value of our identified properties with FY 2010 residential property sales and identified 16 properties that were both within 1,000 feet of a park and were sold in the last year. On average, the market price for a property on this list was approximately 10.5% higher than the assessment value. Therefore, to determine the increased “real” property value that residents who live within 1,000 feet of a park

experience, the combined assessment value was increased by 10.5%. By applying the 5% proximate effect to the new combined “real” property value, we determined that the park system increases the wealth of these residents by over \$11 million, or roughly \$30,000 per residential property within 1,000 feet of a County park.

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<sup>17</sup>The total calculated assessment value is \$202,588,900.

<sup>18</sup>This is a conservative estimate because a park proximity effect of 5% is a rather low assumption. For example, Lutzenhiser and Netusil (2001) demonstrate that natural area parks can increase the value of a residential property by more 15%. In the same study, specialty parks (i.e. boat ramps) can have up to about a 10% percent park proximity effect on surrounding properties. Given the variety of green spaces within the James City County park system, there is reason to believe that some of these spaces can have a park proximity effect greater than 5%.

**TABLE 3.2: TAX REVENUE DUE TO PARK PROXIMITY**

Tax Revenue Attributable to Parks		
Number of Properties within 1,000 Feet of a Park	377	
Total Assessment Value for all Properties		\$202,588,900
Park Proximity Effect	5.0%	\$10,129,445
Property Tax Rate	0.0077	
<b>Tax Revenue due to Park Proximity</b>		<b>\$77,997</b>

**TABLE 3.3: “REAL” PROPERTY VALUE ATTRIBUTABLE TO PARK PROXIMITY**

Property Value due to Park Proximity		
Total Assessment Value		\$202,588,900
Average Market Correction Factor	10.6%	\$224,063,323
Park Proximity Effect	5.0%	
“Real” Property Value Attributable to Parks		\$11,203,166
<b>Per Residential Property within 1,000 Feet of a Park</b>		<b>\$29,717</b>

# III – Parks as Stocks; Productive Assets to Generate Tax Revenue and Reduce Long Run Health Costs

## HEALTH OUTCOMES FOR PARK USERS

Numerous health studies demonstrate the detrimental health effects caused by a sedentary lifestyle, and the resultant personal and social costs of ill health.<sup>19</sup> An accessible and well-maintained park system encourages physical activity.<sup>20</sup> Residents improve their health by using the parks with enough frequency and intensity.<sup>21</sup> Using data from the 1987 National Medical Expenditures Survey, Michael Pratt and colleagues estimated that the average annual health cost differential between physically active and sedentary individuals was approximately \$330; in 1987, physically active individuals spent an average of \$1,019 on health care, and inactive individuals spent an average of \$1,349.<sup>22</sup> In a study involving individuals of late middle age, Tatiana Andreyeva and Roland Sturm demonstrated that this difference in health costs increases later in life.<sup>23</sup> Using data from the Health and Retirement Study, Andreyeva and Sturm estimated the cost differential to be \$483 annually among this older cohort (54 to 69).

Although we do not have sufficient information from the Rec Connect survey to determine the proportion of James City County residents who engage in sufficient activity at parks to improve their health, previous studies conducted by The Trust for Public Land demonstrate that this proportion typically ranges from 20 to 30 percent of a locality’s population. We assumed 20% of James City County residents engage in sufficient activity at parks to realize improvements in their health. Furthermore, of the 141 survey respondents who reported using parks, 87% were under 65. By applying these proportions to the estimated population engaging in sufficient physical activity and using the appropriate cost differential, we determined that JCC residents experience an estimated annual health cost savings of nearly \$4.5 million attributable to park use.

In total, for FY 2009, James City County Parks realized a combined economic value of just over \$15.7 million.<sup>24</sup>

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<sup>19</sup>Kenneth E. Thorpe, Curtis S. Florence, David H. Howard, and Peter Joski (2004), “The Impact Of Obesity On Rising Medical Spending,” Health Affairs, [http://content.healthaffairs.org/cgi/reprint/hlthaff.w4.480v1?](http://content.healthaffairs.org/cgi/reprint/hlthaff.w4.480v1?maxtoshows=&hits=10&RESULTFORMAT=&fulltext=The+Impact+Of+Obesity+On+Rising+Medical+Spending&andexactfulltext=&and&searchid=1&FIRSTINDEX=0&resourcetype=HWCIT)

<sup>20</sup>Andrew T. Kaczynski, Luke R. Potwarka, and Brian E. Saelens (2008), “Association of Park Size, Distance, and Features with Physical Activity in Neighborhood Parks,” American Journal of Public Health 98(8), 1451-1456.

<sup>21</sup>Randall S. Rosenberger, Terry R. Bergerson, and Jeffrey D. Kline (2009), “Macro-Linkages between Health and Outdoor Recreation: The Role of Parks and Recreation Providers,” Journal of Park and Recreation Administration 27(3), 8-20.

<sup>22</sup>Michael Pratt, Caroline A. Macera, and Guijing Wang (2000), “Higher direct medical costs associated with physical inactivity,” Physician and Sportsmedicine 28(10), 63-70.

<sup>23</sup>Tatiana Andreyeva and Roland Sturm (2006), “Physical Inactivity and Changes in Health Care Cost in Late Middle Age,” Journal of Physical Activity and Health (3), 6-19.

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<sup>24</sup>We researched the assessed value for many of the properties (all of the 16 properties used to measure the real market value) for FY2009 and found that the assessed value did not change between FY 2009 and FY 2010. Therefore, we felt comfortable comparing FY 2009 and FY 2010 values, based on data availability.

**TABLE 3.4: ESTIMATED LONG RUN HEALTH SAVINGS**

Health Savings		
	Per Capita	Population
JCC Population (2008)		62,414
Park Users 65 and younger	87%*	10,361
Annual Health Cost Savings	\$330	\$3,419,039
Park Users Older than 65	13%*	2,122
Annual Health Cost Savings	\$483	\$1,024,963
<b>Total</b>		<b>\$4,444,002</b>

\*Based on Rec Connect Survey Responses

## IV – Conclusions & Final Analysis

In FY 2010, sports tournaments and showcases brought in over \$140,000. We broke this revenue into two categories: tax revenue (\$82,000) and direct fees (\$62,000) and applied those estimates to the budgets for Recreation Department/Community Centers and the Parks Department, respectively. According to the National Recreation and Park Association’s most recent Economic Survey Report, 68% of all Parks and Recreation Divisions surveyed recover less than 40% of their operating budget.<sup>25</sup> Taking into account Parks & Recreation’s administrative budget, the Division recovers 44% of its budget through fees and charges and 47% of their budget after accounting for our estimates of tax revenue generated by out-of-town sports tourists and property taxes. Thus, James City County is performing significantly better with respect to cost recovery than a majority of nationwide Parks & Recreation Divisions. Furthermore, the above cost recovery calculation for James City County Parks & Recreation does not take into account the increases in household income as a result of sports tourism, for FY 2010 approximately \$450,000, and corporate income, approximately \$130,000, that makes all of James City County wealthier.

Overall, the JCC Parks & Recreation Division should be hesitant to accept claims of large economic impacts for individual events. While tournaments and showcases bring large numbers of visitors to the area, more data is needed to more accurately estimate their spending habits and hotel expenditures.

Tables 4.3 and 4.4 on the next page show how we applied to revenue (direct and tax) from tournaments and showcases to: (1) recreation services and community centers and (2) parks. Breaking down the revenue in this way increases the total estimated recovery rate for the department from just under 44% to 46.5%.

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<sup>25</sup>National Recreation and Park Association, Economic Update Survey Report available at <http://www.nrpa.org/uploadedFiles/Economic%20Update%20Survey%20Report%20-%20Spring%202010.pdf> (2010).

**TABLE 4.1: TOTAL JCC PARKS & RECREATION RECOVERY RATE BY DEPARTMENT**

	Budget	Direct Revenue	Cost Recovery Rate	Est. Tax Revenue	Est. Total Recovery Rate
Parks	1,166,441	461,051	39.5%	77,997	46.2%
Recreation & Comm Centers	3,930,681	2,115,869	53.8%	82,308	55.9%
Admin	788,755				
<b>Total</b>	<b>5,885,877</b>	<b>2,576,920</b>	<b>43.8%</b>	<b>160,305</b>	<b>46.5%</b>

**TABLE 4.2: AVERAGE PARKS & RECREATION RECOVERY RATES**

Recovery Rate	No. Depts.	Percentage
< 20%	309	34.8%
21-40%	298	33.6%
41-70%	197	22.2%
70% +	83	9.4%

Nearly 70% of Parks & Recreation Departments nationwide report recovery rates of **40% or less**

Source: National Recreation & Park Association (2010)

## IV – Conclusions & Final Analysis

TABLE 4.3: RECREATION SERVICES & COMMUNITY CENTER RECOVERY RATE

<b>Tourism as Revenue</b>		
<i>For All 2010 Events</i>		
<b>Average Local Tax Revenue</b>	\$	<b>82,308</b>
<b>Programming as Investment</b>		
<i>Community Centers</i>		
FY 2010 Budget	\$	1,509,075
FY 2010 Revenue (Fees)	\$	756,402
<b>Net</b>	<b>\$</b>	<b>752,673</b>
<i>Recreation Services</i>		
FY 2010 Budget	\$	2,421,606
FY 2010 Revenue (Fees)	\$	1,359,467
<b>Net</b>	<b>\$</b>	<b>1,062,139</b>
<b>Budget Not Covered by Revenues</b>	<b>\$</b>	<b>1,732,504</b>
<b>Recovery Rate</b>		<b>55.9%</b>

TABLE 4.4: PARKS DEPARTMENT RECOVERY RATE

<b>Tourism as Revenue</b>		
<i>For All 2010 Events</i>		
<b>FY 2010 Revenue (Tournament Fees)</b>	\$	<b>61,757</b>
<b>Parks as Stocks</b>		
FY 2010 Budget	\$	1,166,441
FY 2010 Revenue (User Fees)	\$	399,294
Property Tax Revenue from Proximity	\$	77,997
<b>Budget Not Covered by Revenues</b>	<b>\$</b>	<b>627,393</b>
<b>Recovery Rate</b>		<b>46.2%</b>

## Appendix A: NASC Formula Estimation

### Number of Parties =

$[(\text{Tournament Attendance} + \text{Spectators}) / (\text{Estimated Average Party Size})]$

\*(% Non-Local)

\*(% Primary Reason for Coming)

### Direct Spending=

$(\text{No. of Parties}) * (\% \text{ Non-Locals Using Hotels}) * (\text{No. Nights}) * (\text{No. Rooms}) * (\text{Rate per Night})$

+  $(\text{No. of Parties}) * (\% \text{ Non-Locals Using Rental Car}) * (\text{No. Days}) * (\text{Rental Rate per Day})$

+  $(\text{No. of Parties} * \text{No. of Days}) * (\text{Food} + \text{Parking} + \text{Private Auto} + \text{Retail} + \text{Entertainment} + \text{Miscellaneous})$

+  $(\text{No. of Parties}) * (\text{On-site Concessions} + \text{On-site Merchandise})$

**Total Spending** = Direct Spending \* Spending Multiplier (1.30)

**Total Income** = Total Spending \* income Multiplier (0.38)

# Appendix B – Parks as Stocks; Direct Use Savings and Community Cohesion Value

The following sections include two analyses that attempt to quantify the direct use savings and community value attributable to the JCC park system. These effects are included in an appendix, rather than in the report, for two primary reasons: (1) Because of survey limitations, the analyses depend heavily on assumptions, and (2) the calculations use rough proxies, rather than established measures, to reach the resultant values. Despite these limitations, the analyses are included to demonstrate the methodology found in the literature. The limitations can be overcome by more extensive surveying of county residents.

## DIRECT USE SAVINGS

The James City County park system offers opportunities for residents to enjoy an array of recreational and leisure activities, often free of charge. This represents a cost savings for those who make use of the parks. The Trust for Public Land estimates unit day values for three categories of recreational activities: general park use (\$1.91), sports facilities use (\$3.05), and special uses (\$9.33).<sup>26</sup> These values represent one’s willingness to pay to enjoy the recreational activities in the private marketplace. To determine how JCC residents use the park system, we surveyed residents who are registered with the James City County Rec Connect system. Over 300 households completed the survey, and 141 households indicated they utilized JCC parks, and completed the corresponding questions. This resulted in over 680 unique park use responses. We calculated proportional estimates for each activity using park use responses. These estimates were then applied to the total park attendance estimates for FY 2009 to determine the yearly totals for each activity. Total direct use savings were then calculated by applying the appropriate unit day value to the yearly activity estimates. We estimate that JCC residents realized a combined direct use savings of \$3,990,991 for FY 2009.

## COMMUNITY COHESION VALUE

In *Bowling Alone: The Collapse and Revival of American Community*, Harvard researcher Robert Putnam discusses historical trends concerning civic engagement and social capital.<sup>27</sup> Using data from multiple surveys as proxies for social capital, Putnam demonstrates that social capital has been on the decline nationally since the mid 1960’s. Putnam also demonstrates that high social capital is positively related with the education performance of youth, child welfare, public trust, altruism, and tolerance, and is negatively related to crime. Therefore, this decline in social capital should be of concern. Many studies demonstrate that participation in recreational programs and activities helps build social connectedness, and influences civic engagement throughout one’s life.<sup>28</sup> Although measuring the economic value of social capital is difficult, volunteer hours and financial contributions to parks can serve as a proxy.<sup>29</sup> In FY 2009, residents of James

City County donated 46,331.48 volunteer hours to the Parks & Recreation Division. The nonprofit organization Independent Sector values one hour of volunteerism in Virginia at \$21.45. This results in \$993,810.25 of value through volunteerism. Furthermore, residents contributed \$3,550 to the Parks & Recreation Division in FY 2009. Therefore, in FY 2009, James City County residents contributed \$997,360.25 in social capital value to the parks and recreation division.

Including these additional measures of economic value that a park system provides, the value of the James City County Park system was \$20,713,516 for fiscal year 2009.

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<sup>26</sup>Peter Harnik and Ben Welle (2009), “Measuring the Economic Value of a City Park System,” The Trust for Public Land, [http://www.tpl.org/tier3\\_cd.cfm?content\\_item\\_id=22879&folder\\_id=3208](http://www.tpl.org/tier3_cd.cfm?content_item_id=22879&folder_id=3208).

<sup>27</sup>Robert Putnam (2000), *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster).

<sup>28</sup>Sherri Torjman (2004), “Culture and Recreation: Links to Well-being,” The Caledon Institute of Social Policy, <http://www.caledoninst.org/Publications/PDF/472ENG%2Epdf>.

<sup>29</sup>Peter Harnik and Ben Welle (2009), “Measuring the Economic Value of a City Park System.”

Activity	Annual Visits	Value per Visit	Value
Playground or Child Activities	304,442	\$1.91	\$ 581,485
Enjoy Nature/Picnic	185,398	\$1.91	\$ 354,109
Running Park Trails	66,743	\$3.05	\$ 203,567
Walking Park Trails	320,361	\$3.05	\$ 977,120
Biking Park Trails	133,486	\$3.05	\$ 407,133
Playing Sports	160,184	\$3.05	\$ 488,560
Swimming	70,256	\$3.05	\$ 214,281
Boating or Fishing	81,965	\$9.33	\$ 764,736
<b>Total</b>	<b>1,334,863</b>		<b>\$3,990,991</b>

Community Cohesion		
Total Volunteer Hours, FY2009		46,331
Value of Volunteer Hours	\$21.45	\$993,810
Financial Contributions, FY2009		\$3,550
<b>Total</b>		<b>\$997,360</b>