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Memorandum

To: Cobbs Creek Foundation
From: Econsult Solutions, Inc.
Date: December 5, 2023
RE: Economic and Social Impact of Cobbs Creek Golf Course

1 Introduction

Cobbs Creek Golf Course is located in the heart of Philadelphia and is a testament to the evolution of golf in America. Founded in 1916, it has remained resilient to the highs and lows of the golf sport, societal change, and the resilience of a community determined to preserve its heritage.

Cobbs Creek has an illustrious history, designed by Hugh Wilson and the entire Philadelphia School of Architecture - renowned for his architectural brilliance and designing the world-famous Merion Golf Club's East Course. Since its establishment, Cobbs Creek has been an emblem of democratized sport in America. In an era when golf was often considered the preserve of the elite, Cobbs Creek challenged the status quo by opening its gates to golfers regardless of race or economic standing. It transformed it into Philadelphia's premier public golf course and a beacon for inclusivity.

Boasting two 18-hole courses – the Olde Course and the Karakung Course – Cobbs Creek rose to prominence in the golfing world. The Olde Course, with its intricate design and challenging layout, was sought after and became synonymous with top-tier golfing events. Its fairways hosted tournaments, most notably the PGA Daily News Open multiple times. It solidified the course's reputation, placing it firmly on the national golfing map.

However, as the decades passed, Cobbs Creek faced challenges threatening its existence. The latter half of the 20th century saw the course grappling with neglect. Without adequate maintenance and care, its once pristine fairways and greens began to show signs of wear, resulting in waning popularity among golf enthusiasts.

Recognizing the historical and cultural significance of the course, the community has rallied around Cobbs Creek. Spearheaded by the Cobbs Creek Foundation, the determination and engagement, combined with funding initiatives, laid the groundwork for restoration efforts aimed at bringing back the course's golden era. Cobbs Creek Foundation intends to complete renovations at Cobbs Creek Golf Course (CCGC) over the next three years. Upon completion,

the site will yield an 18-hole championship-level course, a two-level driving range, a restaurant, a 9-hole short course and 30,000 square foot learning lab in partnership with Tiger Wood's TGR Foundation. Investments will also prioritize creek restoration, infrastructure enhancements, and youth programming.

This technical memo explores the economic and social impacts that will result from this project, to be used in the Foundation's engagement with elected officials, community leaders, and the public. This memo updates estimates generated by Econsult Solutions, Inc. (ESI) in 2017, to reflect new project details.

2 One-Time Impacts from Upfront Construction

The course will be fully open in 2026 after $132 million in renovations are performed at the site. These capital investments put people to work and create procurement opportunities during the construction period, which in turn generates a multiplier effect throughout the local and state economy. Below is a breakdown of the construction costs assumptions used for IMPLAN's input-output modeling.

Figure 2.1: Estimated Construction Cost of CCGC (2023-2026 Total)

Activity	Cost ($M)
Hard Cost	120
Soft Cost	12
Total Construction Cost	**132**

Source: Cobbs Creek Foundation (2023), ESI (2023)

ESI employed a standard input-output model approach to translate direct construction outlays into the total economic output supported by it, accounting for the "indirect effect" of some spending on goods and services benefitting area businesses and the "induced effect" of some of the salaries and wages earned by workers being spent back into the area economy.

The proposed capital investments will have a one-time[1] estimated economic impact of $201 million in direct, indirect, and induced effects within the City of Philadelphia's economy, supporting 1,010 new jobs and $66 million in employee compensation. Within the state of Pennsylvania economy, proposed capital investments will generate a one-time economic

[1] One-time refers to the construction period of three years, which has already commenced, and which is scheduled to end in 2026.

impact of $245 million in direct, indirect, and induced effects, supporting 1,200 jobs[2] and $78 million in employee compensation.[3]

Figure 2.2: Potential One-time Economic Impact of the Construction of CCGC

	Philadelphia	Pennsylvania
Direct Output ($M)	$132	$132
Indirect and Induced Output ($M)	$69	$113
Total Output ($M)	$201	$245
Total Employment (FTE)[4]	1,010	1,200
Employee Compensation ($M)	$66	$78

Source: IMPLAN (2021), ESI (2023)

The capital investment expenditures will produce significant income, sales, and business tax revenues. This activity will generate significant tax revenues because of the direct, indirect, and induced economic activities associated with construction. Upon completion, the cumulative capital investments will generate $3.1 million in tax revenues to the City of Philadelphia government and $3.4 million to the Commonwealth of Pennsylvania government during the construction period from the total economic impact of the capital investments.[5]

Figure 2.3: Potential One-Time Fiscal Impact Generated from the Construction of CCGC

	Philadelphia	Pennsylvania
Wage/Income Tax ($M)	$1.9	$1.3
Sales Tax ($M)	$0.4	$1.5
Business Tax ($M)	$0.8	$0.5
Total	$3.1	$3.4

Source: ESI (2023), IMPLAN (2021), City of Philadelphia CAFR (2020), Commonwealth of Pennsylvania CAFR (2020)

Importantly, many of these jobs supported by upfront construction will be accessible to residents in households near the site. As described above, the spillover effect of the renovation project's direct economic footprint has the potential to benefit residents who are employed at

[2] All estimated job numbers in this report are rounded to the nearest 10. Throughout the report, job estimates represented full-time equivalent jobs unless otherwise labeled.

[3] As the City of Philadelphia's economy is wholly contained within the state of Pennsylvania's economy, the Pennsylvania economic impact figures include the Philadelphia economic impact figures, and the difference between the two impact figures represents the impacts in the parts of Pennsylvania outside of Philadelphia.

[4] Full-Time Equivalent Employment (FTE) is estimated by converting full-time, part-time and temporary positions to full-time equivalent jobs, by dividing estimated total hours worked by average annual hours worked in full-time jobs. (IMPLAN 2017)

[5] As the City of Philadelphia government is distinct from the Commonwealth of Pennsylvania government, these tax revenue impact figures represent the estimated impact to each government and do not overlap.

vendors that provide goods and services for the project (e.g., a local landscaping business) or merchants for whom construction workers are their patrons (e.g., a lunch spot, a gas station).

Furthermore, many of the estimated 650 direct jobs on the site will be accessible to residents in households near the site due to their proximity to the job site. In addition, the matching of skills and credentials required for the jobs to the profile of the residents. Using educational attainment as a proxy for accessibility and considering West Philadelphia (See Appendix Figure 6.1) as the geography from which workers might be drawn from, a simple estimate of the composition of jobs on site compared with the composition of labor supply in the area suggests a high proportion of jobs on site being accessible to those residents.

The following tables demonstrate job accessibility as proxied in two ways, first by comparing labor demand by educational attainment with the number of people in the labor force with that level of educational attainment, and second by comparing labor demand by industry category with number of people currently employed in the construction industry.

Figure 2.3: Estimated Number of One-Time Construction FTE Jobs Accessible to West Philadelphia Residents, by Education Attainment Level

Education Attainment	Share of Jobs	Estimated # of Jobs	West Philadelphia
Less Than High School	29%	190	13,500
High School and/or Some College	61%	390	66,300
Bachelor/Associate	10%	60	26,700
Master or Doctoral Degree	1%	10	17,000
Total		650	123,500

Source: BLS (2023), ACS 5-year Estimate (2022), ESI (2023)

Figure 2.4: Estimated Number of One-Time Construction FTE Jobs Accessible to West Philadelphia Residents, by Related Industry

Industry	FTE Supported by CCGC Construction	Total Employed Workers in West Philadelphia
Construction	650	1,400

Source: OnTheMap (2019), IMPLAN (2021), ESI (2023)

The distribution of educational attainment in the West Philadelphia plays a pivotal role in shaping the job market and economic prospects. The construction is expected to create well-paying low-barriers-to-entry jobs.

3 Annual Impacts from Ongoing Operations

Upon completion of renovations, the site will be open to the public and represent a significant amount of ongoing operating activity. This direct operational footprint will also have a multiplier effect on the local and state economy, as new jobs represent new salaries and wages that are expended into the area economy and as new procurement of goods and services represent new economic opportunities for area businesses.

Figure 3.1: Estimated Future Annual Operation Expense of CCGC, CCF and TGR (in 2026 dollar)

Operating Expense	Cost ($M)
CCGC	**$9.2**
Capital Expenditure	$0.3
Non-Labor Operation and Management	$4.8
Employee Compensation	$4.0
CCF	**$2.4**
Non-Labor Operation and Management	$2.1
Employee Compensation	$0.3
TGR	**$4.5**
Operation and Management	$4.5
Total	**$16.1**

Source: Cobbs Creek Foundation (2023), TGR Foundation (2023)

ESI employed the same input-output model approach as described above for construction impacts, to estimate the annual economic impact from ongoing operations. From there, estimates of annual tax revenue impacts from operations could also be made.

Assuming this amount of operating budget is taking place in the sector of amusement and recreational activities,[6] Cobbs Creek Golf Course's economic footprint would generate an annual impact of $25.7 million within the City of Philadelphia economy, supporting approximately 160 jobs associated with $9.3 million in employee compensation.

Within the state of Pennsylvania economy, this economic footprint would generate an estimated annual economic impact of around $29.5 million in direct, indirect, and induced spending, supporting approximately 180 jobs associated with $10.4 million in employee compensation.

[6] NAICS 713: Amusement, Gambling and Recreation Industries

Figure 3.2: Potential Annual Economic Impact for the On-going Operation of CCGC, CCF and TGR (in 2023 dollar)

	Philadelphia	Pennsylvania
Direct Output ($M)	$16.3	$16.3
Indirect and Induced Output ($M)	$9.5	$13.2
Total Output ($M)	$25.7	$29.5
Total Employment (FTE)	160	180
Employee Compensation ($M)	$9.3	$10.4

Source: IMPLAN (2021), ESI (2023)

The operational footprint of the course will generate additional tax revenues to the City of Philadelphia government and the Commonwealth of Pennsylvania government. When accounting for Wage/Income Tax, Sales Tax, as well as the indirect and induced portion of Business Tax, it is estimated that the potential annual fiscal impact to the City is about $378,000 and to the Commonwealth is also about $438,000.

Figure 3.3: Potential Annual Fiscal Impact for Operation of CCGC, CCF and TGR

	Philadelphia	Pennsylvania
Wage/Income Tax	$276,000	$181,000
Sales Tax	$57,000	$222,000
Business Tax	$45,000	$35,000
Total	$378,000	$438,000

Source: ESI (2023), IMPLAN (2021), City of Philadelphia CAFR (2020), Commonwealth of Pennsylvania CAFR (2020)

As with the construction phase, ongoing operations also holds the promise for jobs accessible to nearby residents. Using the same approach of using educational attainment levels to match labor demand on site with labor supply in the area, an estimate can be made of the number and proportion of the estimated 114 fulltime equivalent (FTE) jobs on site that are accessible to area residents.

The following tables demonstrate job accessibility as proxied in two ways, first by comparing labor demand by educational attainment with the number of people in the labor force with that level of educational attainment, and second by comparing labor demand by industry category with number of people currently employed in the corresponding industries.

Figure 3.4: Direct Employment and Corresponding FTE Job Counts by Operating Organization

	Employment	FTE
CCGC	98	80
CCF	10	9
TGR	29	25
Total	137	114

Source: CCGC (2023), CCF (2023), TGC (2023), IMPLAN (2023), ESI (2023)

Figure 3.5: Estimated Number of Permanent Ongoing Operation Jobs Accessible to West Philadelphia Residents, by Education Attainment Level[7]

Education Attainment	Share of Jobs	Estimated # of Jobs	West Philadelphia
Less Than High School	2%	2	13,500
High School and/or Some College	25%	28	66,300
Bachelor/Associate	43%	49	26,700
Master or Doctoral Degree	31%	35	17,000
Total		114	123,500

Source: BLS (2023), ACS 5-year Estimate (2022), IMPLAN (2021), ESI (2023)

Figure 3.6: Estimated Number of Permanent Ongoing Operation Jobs Accessible to West Philadelphia Residents, by Related Industry

Operation Category	Industry	Direct Employment (FTE)	Total Employed Worker in West Philadelphia
CCGC - Golf Couse Operation	Arts, Entertainment, and Recreation	80	1,270
CCF - Nonprofit Operation	Other Services	9	2,580
TGR - Educational Programming	Educational Services	25	7,680
Total		114	11,530

Source: OnTheMap (2019), IMPLAN (2021), ESI (2023)

[7] See Figure 6.2 in Appendix for detailed breakdown of jobs.

4 Potential Impacts from Visitor Spending and Tourism Activity

The impact estimates above for construction and operations do not account for additional economic activity drawn into the area by visitors and tourism. It is a potentially significant aspect of the project's contribution to the area economy since it is likely that the site will draw out-of-town visitors interested in playing the course and spectators interested in watching professional golfers compete in large-scale tournaments.

In both cases, this results in significant additional spending drawn into the area, which then benefits area businesses and creates a multiplier effect that supports jobs and generates tax revenues. For one, out-of-town visitors drawn into the area by the opportunity to play at the course will spend additional dollars while in town on accommodations, transportation, food, and entertainment.

In addition, large-scale tournaments hold even more promise of area economic impact since they bring in many participants (players, media, officials) and spectators, many of whom will be spending multiple days in town, thus significantly increasing their spending profiles. A brief scan of contemporary estimates of economic impact from golf tournaments at venues similar to Cobbs Creek demonstrates the scale of impact that is possible once the course is completed and ready to play host to similar tournaments.

Figure 4.1: Selected Comparable Golf Tournaments and Their Estimated Economic Impacts

Tournament	Venue	Economic Impact ($M)	# of Visitors
Waste Management	TPC Scottsdale	$454	700,000
TPC	TPC Sawgrass	$150	72,000
PGA Championship	Bethpage Black Course	$100	-
Travelers Championship	TPC River Highlands	$68	200,000
Memorial Tournament	Muirfield Village Golf Club	$35	-
Rocket Mortgage Classic	Detroit Golf Club	$32	70,000
BMW Championship	Olympia Fields	$30	130,000

Source: WM Phoenix Open (2023), First Coast (2023), ABC News (2023), DPM (2022), Detroit News (2019), PGA Tour (2023)

By comparing the size and economic impacts of the comparative tournaments in Figure 4.1, we arrived at a conservative assumption of $50 million of total economic impact for the golf tournament that will potentially be held at Cobbs Creek Golf Course. We have modeled that would support approximately 400 jobs locally.

Figure 4.2: Estimated Annual Economic and Employment Impacts of the Golf Tournament held at CCGC

Estimated Annual Economic Impact from Tournament	Estimated Jobs Supported by the Economic Impact	Estimated Labor Income Supported by the Economic Impact
$50 million	400	$16 Million

Source: ESI (2023)

On average, 60,000 rounds[8] were played annually on comparative courses that host golf tournaments. These rounds will be played by locals as well as out-of-town visitors who will be bringing their spending into the local economy. According to GCSAA's report on golf industry in Cape Cod, approximately 75% of golfers are local, 20% make daytrips and 5% stay overnight[9].

In addition to spending at CCGC, which has been accounted for in the operation section, out-of-town visitors will also be paying for restaurants, food and beverage, retail, and others elsewhere while they are in town. On average, daytrip visitors spend $157 per day, while overnight visitors spend $345 on a leisure trip. After taking out the recreation portion from the spending, which we assume is spent at CCGC, and deducting the spending non-attributable to golf, we reached the assumption of $90 and $151 per person spending attributable to CCGC for daytrip and overnight visitors respectively.

Figure 4.3: Estimated Total Annual Rounds Played at CCGC, and Per Person Spending Attributable to CCGC, by Visitor Type

Type	Share	Rounds	Average Per Person Spending Attributable to CCGC
Local	75%	45,000	-
Daytrip	20%	12,000	$90
Overnight	5%	3,000	$151
Total	100%	60,000	-

Source: GCSAA (2018), ESI (2023)

Figure 4.4: Estimated Annual Total Spending Attributable to CCGC

Category	Daytrip ($M)	Overnight ($M)	Total ($M)
Local Transportation	$0.4	$0.2	$0.6
Lodging	$0.0	$0.1	$0.1

[8] 65,000 rounds at Harding Park (NYTimes, 2020); on average 60,000 rounds per course at Bethpage (New York State Park, Recreation and Historic Preservation Department); 58,000 rounds at Stadium Course at TPC Scottsdale (Club and Resorts, 2008)

[9] The Economic Contribution of the Golf Industry to Cape Code (2018)

Food and Bev	$0.3	$0.1	$0.4
Retail	$0.4	$0.1	$0.4
Total	$1.1	$0.5	$1.5

Source: Pennsylvania Office of Tourism, Longwoods International and Tourism Economics (2021), ESI (2023)

Figure 4.5: Potential Annual Economic Impact of Visitor Spending Attributable to CCGC

	Philadelphia	Pennsylvania
Direct Output ($M)	$1.0	$1.0
Indirect and Induced Output ($M)	$0.8	$1.4
Total Output ($M)	$1.8	$2.4
Total Employment (FTE)	20	20
Employee Compensation ($M)	$1.0	$1.2

Source: IMPLAN (2021), ESI (2023)

5 Additional Impacts

Besides economic impacts from construction, operations, and visitor spending, the site will likely generate additional benefits worth noting in this technical memo. These impacts are summarized below.

5.1 Social and Economic Impacts from Youth Programming

The site will likely play host to a significant amount of youth programming, in partnership with the Tiger Wood's Foundation – The TGR Foundation. Tiger Woods himself may be in attendance due to this connection, which significantly increases the chance for large attendance figures at events on site. More and more studies have indicated the significant economic consequences of access to extra-curricular programming for at-risk youth, namely the meaningful improvement in educational and employment outcomes seen in participants.

In addition, the TGR Foundation's mission is to provide access and opportunities to under resourced communities through college-access and career preparation resources along with STEM-based experiential learning coursework. TGR Foundation is partnering with the Cobbs Creek Foundation to enhance access to education opportunities for youth in Philadelphia through a new TGR Learning Lab on the Cobbs Creek campus. The campus will support the community through innovative education programs and opportunities to empower

youth to discover and achieve career potential. It's expected to serve 4,500 students each year after a three-year rollout.[10]

Youth programming in golf can have multiple social and economic impacts on individuals and communities. Here are some of the potential impacts:

Social Impacts

After-school programs play an important role in skill development, beyond the athletic skills gained from playing golf, young participants learn patience, discipline, perseverance, and the value of practice and continuous improvement. This, in turn, leads to character building, as a sport, golf emphasizes etiquette, honesty (players often keep their scores), and respect for others.

The hands-on, experiential learning approach employed in STEM after-school programs like that of the TGR Foundation not only develops critical thinking and problem-solving skills but also sparks interest in STEM careers, opening doors to opportunities that may have been previously overlooked.[11] Access to advanced technology and equipment will help level the educational playing field, offering resources that may be lacking in traditional academic settings. Moreover, mentorship components connect students with STEM professionals, providing guidance and support.

Beyond academic benefits, after-school STEM initiatives prepare students for the future workforce by equipping them with essential skills for a technology-driven world. This early exposure enhances employability and economic prospects, addressing long-term societal challenges.

In addition, youth programs provide an opportunity for young people to interact with peers and mentors, fostering friendships and valuable interpersonal relationships. There is also an opportunity to build on Cobbs Creek history of diversity and inclusivity by ensuring that children of all backgrounds can play and learn together.

Finally, as a physical activity, golf gets kids outdoors, promoting a healthy lifestyle and appreciation for nature while presenting opportunities for emotional and psychological growth. Through the sheer fact of playing sports presents challenges and triumphs that can boost confidence, resilience, and the ability to handle pressure.

Economic Impacts

[10] Data provided by Cobbs Creek Foundation

[11] Katy Koop, Benefits of STEM After School Programs (kidsparkeducation.org)

Outside of the estimates provided in the operational impacts section of this report, youth golf tournaments and training camps can boost local economies. That is not necessarily quantified in *Section 3 - Annual Impacts of Ongoing Operations* of this report. For example, the jobs created from golf courses, training centers, and associated facilities can create jobs ranging from instructors to administrative and maintenance staff.

The investments in infrastructural development in golfing facilities for youth programs might also lead to improved infrastructure that can benefit other community activities. In addition, a strong youth golf program can make a location attractive for family tourism, as parents and guardians might combine trips for youth golf events with other tourist activities, thereby boosting tourism. The Tiger Woods Foundation can provide scholarship opportunities, and many universities may offer golf scholarships that provide young athletes with educational opportunities they might not have had otherwise.

There would be local ancillary spending on golf sporting goods, as younger people get involved in golf, the more demand there is for golf-related goods (clubs, balls, apparel, etc.), potentially leading to growth in the golf industry. Golf is a sport known for its networking opportunities.[12] Young players can form connections that might benefit them in their future careers, both inside and outside the sport. By engaging youth in healthy, educational, and recreational after-school activities, negative social outcomes are reduced which in turn reduces social costs to the community. In the following reports and studies, the economic gains of investment in youth programing are quantified.

Figure 5.1: Potential Economic Benefits of Youth Programs

Example/Study	Economic Benefits	Impact Areas
Boys & Girls Club, California[13]	**$1** invested inducing **$16** statewide impact	Increasing earning power, saving public dollars, strengthening local economies
Boys & Girls Club, Pennsylvania[14]	**$1** investment inducing **$8.5** return	Increasing national economic benefits
Social and Emotional Learning Interventions[15]	**$1** invested inducing **$11** worth of benefits	Supporting personal growth, preventing risks and delinquency
Benefits of Youth Sports[16]	Collectively **$28 billion** decrease of personal health care costs	Improving physical activeness, reducing health care costs

[12] Deborah M. Gray, Nancy Hicks, Jennifer J. Rundels, Getting in the game: Putting golf at the forefront of your networking toolbox, Business Horizons, Volume 63, Issue 5, 2020

[13] Investing in Our Youth, Strengthening Our Economy: The Economic Impact of Boys & Girls Clubs in California. (2012)

[14] Return on Investment of Afterschool Programs in Pennsylvania: A Report of the Advisory Committee. Joint State Government Commission, June 2021.

[15] The Economic Value of Social Emotional Learning. Clive Belfield, et al. (2015)

[16] Benefits of Youth Sports. PCSFN Science Board (2020)

Evaluations of Afterschool Programs[17]	**$50 to $300 billion** recovery of business nationally	Restoring the productivity of parents at workplace

In conclusion, youth programming in golf is about much more than just teaching kids how to play the sport. The ripple effects from such programs can be felt throughout the community, both socially and economically.

5.2 Economics Aspect of Remediation

This memo does not speak directly to the nature and consequence of remediations anticipated for the site, such as creek restoration and green space preservation. However, studies show that these kinds of investments do have economic ramifications. First, when an area improves (e.g., cleaner air/water, less flooding), people are willing to pay more to live there, creating house price increases that translate into household wealth increases (and, if properly accounted for in property assessments, increased property tax revenues to a municipality to fun critical public services like public schools and social services). In 2022, the nationwide golf industry directly generated $15 billion in golf real estate, and $3.8 billion in taxes[18]. Second, these environmental enhancements effectively perform desired ecological services that might otherwise need to be paid for in the open market, allowing municipalities to divert those funds to other uses. Third, these environmental enhancements can have material effects on nearby households' wellbeing, as active recreation sites or as amenities that reduce stress, which in turn results in improved health outcomes and lower health care cost burden.

Figure 5.2 Examples of Potential Economic Benefits of Aquatic Ecological Restoration Projects, Cases in Massachusetts

Case	Impact Area	Potential Economic Impact
Town Creek Restoration	Flood damage reduction	$2.5 million over 30 years
Muddy Creek Estuary Restoration	Water quality improvement	$3.9 million over 30 years
Damde Meadow and Broad Meadow Salt Mash Restoration	Carbon Sequestration	$86,000 and $138,000 GHG damage prevention through 2025
Herring River Restoration Project	Landscape Appeal	$10.4 million of property value increase

Source: Massachusetts Department of Fish and Game Division of Ecological Restoration (2015)

[17] Evaluations Backgrounder: A Summary of Formal Evaluations of Afterschool Programs' Impact on Academics, Behavior, Safety and Family Life. Afterschool Alliance. (2015)

[18] American Golf Industry Coalition. Golf Impact Report (April 2023)

5.3 Quality of Life Gains from Infrastructural Remediation

Site improvements include infrastructure enhancements to address access to and circulation around the site. These investments have the effect of improving the aesthetic look of and overall experience at the site, for which the site's immediate residential neighbors will be the largest beneficiaries. This activates many of the benefits described in the paragraph above.

By emphasizing stormwater management, the renovation plan will help mitigate neighborhood flooding problems, and improve water quality sustainably. Projected to start in Spring 2023, the restoration program of CCGC covers areas including the Creek Reservoir, the Short Course, and upper and lower Cobbs Creek. Adjacent to a primarily residential neighborhood, these interventions will improve the aesthetic experience of local residents and visitors, as well as provide practical benefit of better managing stormwater runoff on site and of the creek.

In addition, golf courses offer essential green areas that boost air quality and biodiversity. The trees and grass on these courses generate oxygen and filter pollutants, ensuring cleaner groundwater. In the U.S., these courses not only serve as recreational spaces but also as vital habitats supporting diverse plant and animal life. Measuring the species richness of the cases, study[19] suggests that the ecological value of golf courses is 64% higher than other land uses.

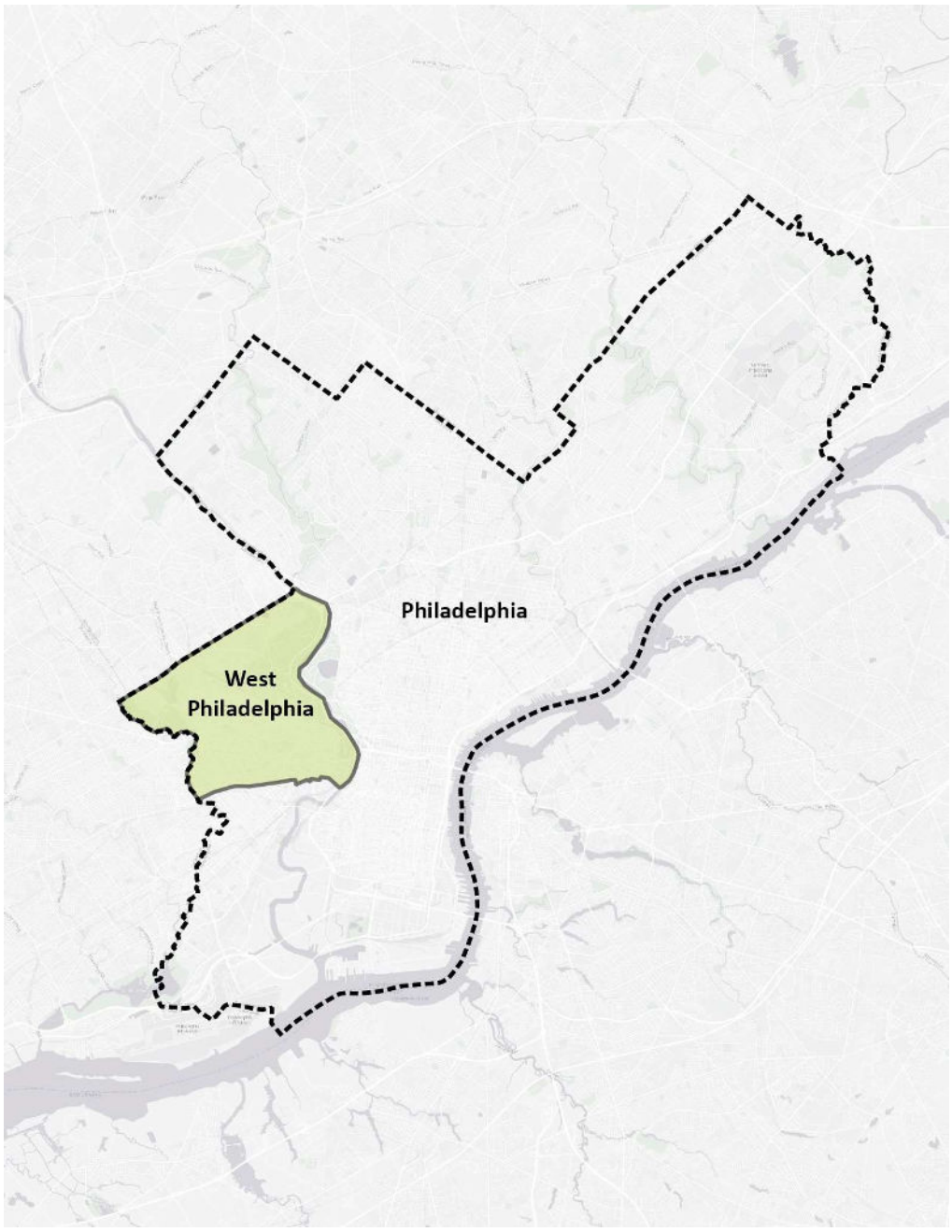
There's been a notable push towards environmental sustainability in the golf industry. A standout achievement is the reduced water consumption in golf courses, which has decreased by 29% since 2005[20]. While some of this reduction comes from decreased supply at facilities, the major contributors are the industry's sustainable initiatives. These include more efficient water usage, adopting best practices like water conservation guidelines, introducing grass types that require less water, and cutting down on the total area needing irrigation by 11.5% at existing venues.

[19] Colding, J., Folke, C. The Role of Golf Courses in Biodiversity Conservation and Ecosystem Management. Ecosystems 12, 191–206 (2009). https://doi.org/10.1007/s10021-008-9217-1

[20] GCSAA (2022). Water Use and Management Practices on U.S. Golf Courses. Lawrence, KS GCSA. Retrieved October 2023 from https://www.gcsaa.org/environment/golf-course-environmental-profile

6 Appendix

Figure 6.1: A Map of West Philadelphia Boundaries



Source: OpenDataPhilly (2023), ESRI (2023), ESI (2023)

Figure 6.2: Jobs Related to CCGC, CCF and TGR's Operation, by Education Attainment Level

Occupation	Less Than High School	High School and/or Some College	Bachelor/ Associate	Master or Doctoral Degree
Recreation, Entertainment and Related Workers				
Amusement and recreation attendants	6	54.5	33.2	6.3
Locker room, coatroom, and dressing room attendants	6	54.5	33.2	6.3
Entertainment attendants and related workers	6	54.5	33.2	6.3
Teachers and Social Workers				
Preschool teachers	1.5	30.5	48.9	19.1
Kindergarten teachers	1.5	30.5	48.9	19.1
Elementary school teachers	0	2.8	46.5	50.7
Middle school teachers	0	2.8	46.5	50.7
Career/technical education teachers, middle school	0	2.8	46.5	50.7
Secondary school teachers	0	1.9	41.2	56.9
Self-enrichment teachers	1.9	27.9	44.5	25.7
Substitute teachers, short-term	1.9	27.9	44.5	25.7
Tutors	0.5	14.2	50.4	34.9
Healthcare social workers	2.9	28	32.1	37
Social workers, all other	1.2	10.9	44.2	43.7
Community and social service specialists, all other	2.3	27	44.4	26.4
Average	**2.1**	**24.7**	**42.5**	**30.6**

Source: BLS (2023)