Recreational Reuse and the Benefit to Community

A Beneficial Effects Economic Case Study for the Lipari Landfill Superfund Site

Introduction

Established in 1892, Alcyon Park and Alcyon Lake in Pitman Borough, New Jersey, soon became a regional recreational amenity. By the first half of the 20th century, the area included bathing facilities, boating amenities, a boardwalk, bowling alleys and the Alcyon Speedway. In the 1970s, studies confirmed that contamination from the nearby Lipari Landfill had migrated downstream and compromised the safety of these recreational resources, prompting closure of the park and lake as well as two other public parks. In 1983, Lipari Landfill became one of the first sites listed on the Superfund program's National Priorities List (NPL). Extensive cleanup efforts over nearly four decades have facilitated the restoration, expansion and revitalization of the community's recreational resources. This case study explores the Lipari Landfill Superfund site's cleanup and reuse, illustrating the beneficial effects of Superfund Redevelopment.

Beneficial Effects

Outdoor recreation in New Jersey results in $18.9 billion in consumer spending annually, supports 143,000 jobs and generates nearly $6 billion in salaries.

An estimated $1.2 billion in state and local tax revenues are generated by outdoor recreation activities in New Jersey each year.

Recent economic studies conservatively estimate a $101,000 annual direct use value for park facilities. Pedestrian uses alone are estimated to provide $137,000 in medical cost savings annually.

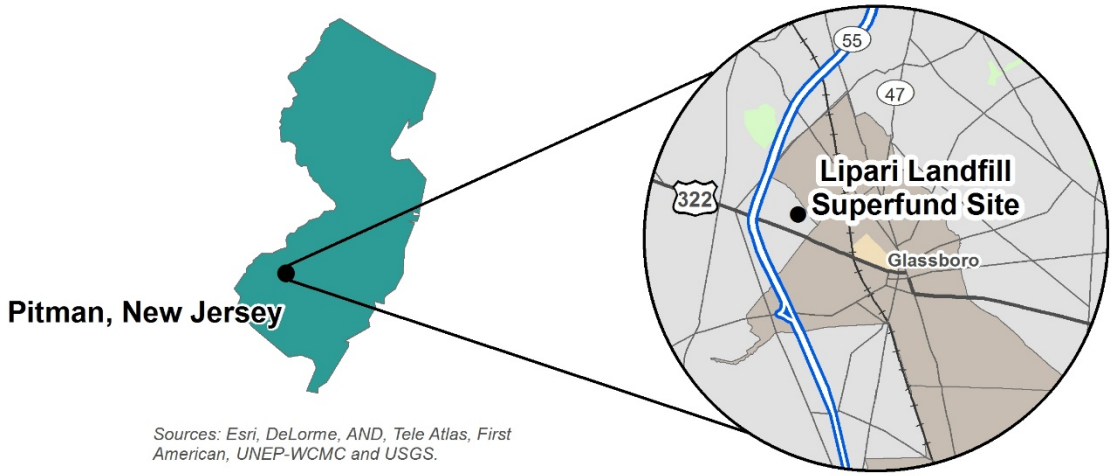

Figure 1. The Lipari Landfill Superfund site is located in the borough of Pitman, Gloucester County, New Jersey.

Site History

The 47-acre site is located in the borough of Pitman in Gloucester County, New Jersey. It consists of a 16-acre landfill area that includes the former 6-acre Lipari Landfill and an additional 31 acres of surface water, wetland areas and park property in the drainage basin north-northeast of the landfill. The drainage basin includes Alcyon Lake, Chestnut Branch, Rabbit Run, Girl Scout Branch, Lost Lake Run and three public parks – Alcyon Park, Betty Park and Hollywood Dell Park. Rabbit Run borders the landfill area to the northwest and Chestnut Branch borders it to the northeast. These streams converge north of the landfill and flow into Alcyon Lake, which is manmade and covers 26 acres (see Figure 7). The site is in an agricultural, educational, commercial and residential area. According to the 2018 U.S. Census Bureau population estimate, about 9,000 people live in Pitman.

Nicholas Lipari purchased the site property in 1958 and began operating a sand-and-gravel excavation business behind a peach orchard. He converted the excavated pit area into an unofficial landfill, accepting municipal trash and liquid, semi-solid and other chemical waste products from industries in and around Philadelphia. The landfill operated between 1958 and 1971. The nature and quantity of wastes disposed of at the landfill is not known; investigations estimate that 12,000 cubic yards of solid wastes and 2.9 million gallons of liquid wastes were disposed of on site during landfill operations. At least one fire and two explosions occurred during its operations, prompting the facility to discontinue accepting liquid wastes after 1969.

Figure 2. Entrance to Alcyon Park circa 1905.

A Recreational Retreat

In 1888, George Washington Carr purchased 192 acres of land in the area that would later become the borough of Pitman. Together with his brother, Dr. Henry H. Carr, he designed Alcyon Park. Alcyon Lake and Alcyon Park became popular recreational amenities for area residents starting in the late 1800s. The manmade lake offered boating and fishing opportunities. Alcyon Park featured a boardwalk along the lake, a bathhouse for swimming, a bowling alley and the Alcyon Speedway, which hosted horse, bicycle, automobile and motorcycle races. The racetrack operated until July 1960.

Source: https://www.nj.com/gloucester/voices/2011/11/whats_in_a_name_alcyon_park.html. By Kelly Roncace for NJ.com.

Figures 3 and 4. Boardwalk and bowling alleys at Alcyon Park in 1906 and postcard of Alcyon Lake boaters in 1907.

The New Jersey Solid Waste Administration ordered the landfill's closure in May 1971, following health complaints from local residents and the detection of landfill leachate seeping into area surface water. Contaminants seeped into the underlying aquifers and leached into nearby marshlands, Chestnut Branch, Rabbit Run and Alcyon Lake. The borough closed Alcyon Park and Alcyon Lake in 1981 to prevent public exposure to site contamination.

Figures 5 and 6. Car racing at Alcyon Speedway in 1920 and Alcyon Park boardwalk in 1906.

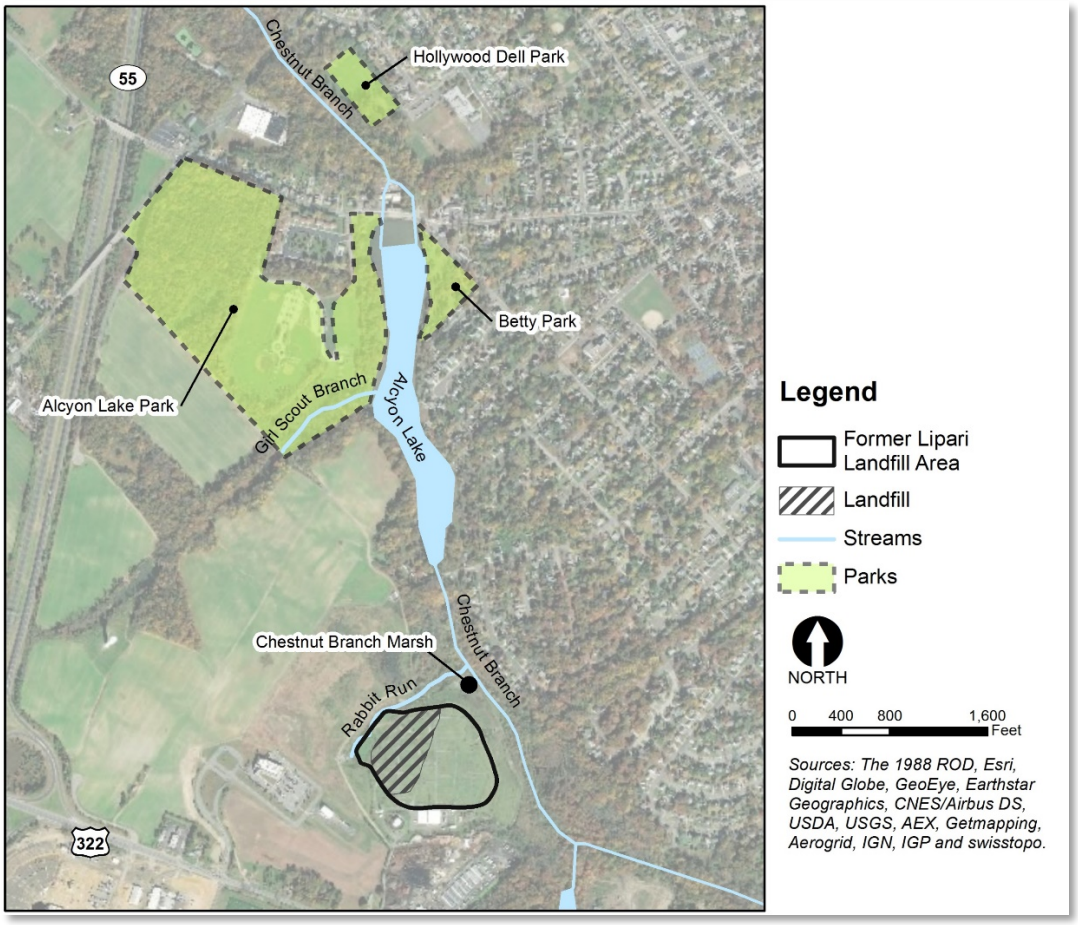

Figure 7. Detailed site map showing recreation areas and waterways affected by site contaminants.

Site Cleanup

EPA added Lipari Landfill to the NPL in 1983. To facilitate cleanup, EPA divided cleanup into three operable units (OUs) targeting source control, cleanup of contaminated groundwater and treatment of leachate from the landfill, and cleanup of downstream properties in the drainage basin affected by contaminants migrating from the landfill. A combination of federal, state and potentially responsible party resources have funded the cleanup.

EPA led site cleanup activities, which included the following:

Figure 8. Aerial view of the OU1 containment system and the OU2 groundwater and leachate treatment facility. (Source: 2019 Google Imagery, 2019 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, map data 2019)

Figure 9. Sign warning of pollution in Alcyon Park and Alcyon Lake in the 1980s.

- The OU1 remedy, selected in the 1982 record of decision (ROD) and completed in 1984, included construction of a soil/clay subsurface barrier wall around the landfill and keyed into a confining clay layer to contain landfill leachate and prevent additional migration of contaminants. A cap over the containment area prevented rainwater from entering the waste and creating more leachate.
- The OU2 remedy, selected in the 1985 ROD and completed in 2019, included a process called batch flushing to clean soil and trash in the OU1 containment area. Water pumped through the containment area flushed out water-soluble contaminants into groundwater and as leachate in the containment area. The groundwater and leachate were then treated on site prior to being discharged to a local treatment facility. EPA discontinued batch flushing in 2008 because the system was no longer removing much contamination – most contaminants had been flushed out. Since 2000, a system has operated to capture and treat contaminated vapors at the site. Long-term operation and maintenance activities, including routine groundwater, surface water and air monitoring, are underway. The New Jersey Department of Environmental Protection manages these activities.
- The OU3 remedy, selected in the 1988 ROD and completed in 2001, addressed cleanup of soil, sediment and groundwater outside of the OU1 containment area. This OU3 cleanup targeted the drainage basin downgradient of the site, including Alcyon Lake, Alcyon Park, Chestnut Branch, Rabbit Run, Girl Scout Branch, Lost Lake Run, Betty Park and Hollywood Dell Park. Contaminated soil and sediment were excavated and treated thermally, as needed, prior to use as non-hazardous fill material at the site. Alcyon Lake was completely drained to facilitate excavation of contaminated sediment. A groundwater interceptor trench and seep collection prevent migration of any contamination into the drainage basin. Intercepted leachate and contaminated groundwater are sent to the local treatment facility.

Restoring Recreational Uses

The Pitman Land Use Committee and local residents started working with EPA in 1993, seeking opportunities to return the OU3 parklands and lake to recreational use. Pitman Borough reopened Alcyon Lake for boating use in 1995, following dewatering, removal of contaminated sediment and refilling of the lake. A fishing advisory limiting consumption of largemouth bass and black crappie was put in place for Alcyon Lake. It remains in place today.[1]

In 1996, community stakeholders and EPA focused on restoration of recreational uses at Alcyon Park and reopening full recreational access to Alcyon Lake. EPA and the borough of Pitman signed an agreement addressing the locality's acquisition of a vacant parcel of land within the OU3 parkland cleanup area. The property provided EPA with a staging and handling area near contaminated areas downstream of the landfill, which helped expedite cleanup work, reduced the need to transport contaminated sediment and soil on local streets, and resulted in substantial cleanup savings. Additionally, the agreement also supported preparations for future recreational reuse at the site by providing non-hazardous soil and dewatered sediment to grade the park land.

The Pitman Land Use Committee retained a civil engineering firm to spearhead park restoration efforts. A multi-faceted stakeholder process involved the community, area schools, local and state government officials, land use planners and environmental scientists. In addition to recreational reuse to include athletic fields and walking paths, stakeholders identified two other priorities:

1. Restoring local wildlife to wooded and aquatic areas of the site.
2. Honoring the park's rich history in the community.

Alcyon Park reconstruction took place from 1997 to 1999, when it officially reopened to the public. Design elements included:[2]

- A central plaza with a concession stand and pavilion for surrounding athletic fields.
- A perimeter walking path that echoes the location of the historic Alcyon Speedway track.
- Park facilities that are American Disabilities Act (ADA) accessible to ensure that everyone in the community can enjoy them.
- Wildflower meadows planted with native species to attract local wildlife and pollinators.
- Nature trails through Alcyon Woods, a forested section of Alcyon Park beyond the athletic fields, which are used by nature enthusiasts as well as area schoolchildren visiting the park to learn about its history and environmental legacy.

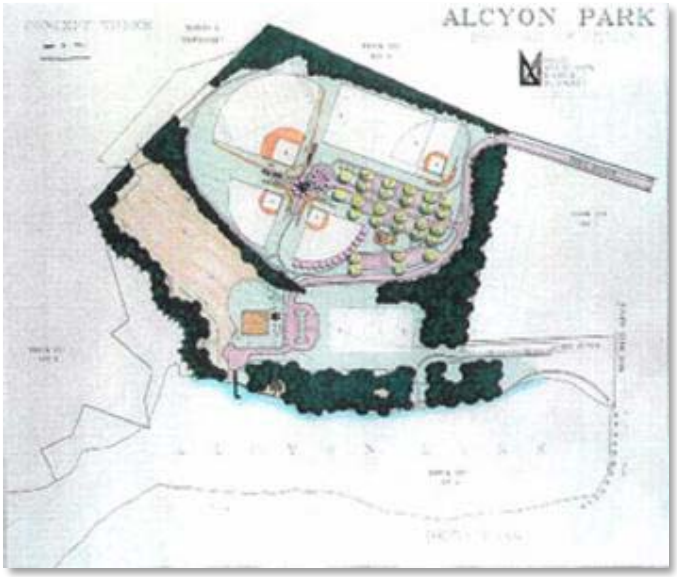

Figure 10. Draft design drawing for redevelopment of Alcyon Park.

[1] New Jersey Department of Environmental Protection and New Jersey Department of Health. 2018 Fish Smart, Eat Smart: A Guide to Health Advisories for Eating Fish and Crabs Caught in New Jersey Waters.
[2] Turning a Former Superfund Site into an Award-Winning Park. Parks and Recreation, Volume 35, Number 6. June 2000.

Beneficial Effects

Today, the site supports a range of recreational and ecological activities. Three public parks and Alcyon Lake – all owned and operated by the borough of Pitman – are once again available for community use. The legacy of peace and tranquility that inspired the Carr brothers to establish Alcyon Park in 1892 has guided the restoration of passive and active recreation opportunities at the site as well as restored habitat that supports native wildlife in the area.

Figure 11. One of three lighted baseball game fields at Alcyon Park. There is also a fourth practice field.

Recreational reuse can bolster local economies not only through bringing day and overnight visitors to the area to use recreation spaces – meals, snacks, registration fees, vehicle fuel, hotels for overnight guests – but also through the purchase of equipment used to support these activities – fishing tackle, athletic equipment, walking shoes and binoculars. The Outdoor Industry Association's 2018 Outdoor Recreation Economy Report shows that outdoor recreation in the United States generates $887 billion in consumer spending annually, supports 7.6 million jobs and provides a total of $124.5 billion in federal, state and local tax revenue each year.[3] In New Jersey alone, the report showed $18.9 billion in consumer spending annually, 143,000 jobs and $5.9 billion in salaries as a result of outdoor recreation. The report calculated that these outdoor recreation activities generated $1.2 billion in state and local tax revenues.

The 2018 update to the 2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation Summary for New Jersey indicated more than 2.4 million people, both residents and non-residents, participated in wildlife-related outdoor recreation activities in the state, resulting in over $2.3 billion in trip-related, equipment and other expenditures.[4] The site is located in New Jersey's 2nd Congressional District, whose residents account for $1.2 billion in outdoor recreation spending each year.[5]

The draft 2018-2022 Statewide Comprehensive Outdoor Recreation Plan indicates that about 19,000 of Gloucester County's 215,000 acres are currently preserved for open and green space; 5,389 of those 19,000 acres are part of municipal parklands such as Alcyon Park, Betty Park and Hollywood Dell Park.[6] According to the Plan, Gloucester County had the second-highest county urbanization increase in the state between 2007 and 2012, indicating the importance of preserving these vital green spaces for residents' quality of life. This section describes the beneficial effects of the reuse activities at the site.

[3] Outdoor Industry Association. 2018 Outdoor Recreation Economy Report.
[4] 2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation Summary for New Jersey. 2018 update.
[5] Outdoor Industry Association. New Jersey 2nd Congressional District Economic Summary.
[6] New Jersey Department of Environmental Protection Green Acres Program. Draft 2018-2022 New Jersey Statewide Comprehensive Outdoor Recreation Plan.

Alcyon Park

Today Alcyon Park features baseball fields, softball fields, a football field, two tournament-sized soccer fields, a picnic pavilion, a bike path, a concession stand and scoring pavilion, a wildflower meadow, nature trails, restored streams and wetland areas, and a paved and lighted parking area. The borough of Pitman spends an estimated $141,300 annually on maintenance of Alcyon Park, including salary, hourly wages and other expenditures.[7]

Figure 12. Central plaza and athletic fields at Alcyon Park.

Active Recreation

Alcyon Park is used extensively for athletics by several area youth, high school and semi-professional teams and clubs. Some of these teams and clubs are listed below.

<u>Baseball</u>

- New Jersey Independent Baseball League
- Pitman High School boys baseball
- Borough's T-ball program
- Pitman Little League baseball

<u>Softball</u>

- Pitman High School girls softball
- Pitman Little League fastpitch softball

<u>Soccer</u>

- Borough's Soccer Shots program (ages 2-8)
- Borough's Micro-Mini Soccer (ages 5-7)
- Pitman High School girls soccer
- Pitman High School boys soccer
- South Jersey Girls Soccer League
- Pitman Eclipse Under-19 Women's College Showcase Team

[7] 2019 Borough of Pitman adopted budget.

Football

- Pitman Athletic Association football and cheerleading for young people between the ages of 4 and 14
- Pitman Recreation football camps

Running

- Pitman High School cross country meets
- Healthy Kids Running Series

Disc Golf

- An 18-hole disc golf course opened in 2019[8]

Passive Recreation and Wildlife Viewing

In addition to the crushed gravel walking paths along the lake, ecological restoration and preservation efforts draw wildlife enthusiasts to the area. There is an arboretum, butterfly garden and wildflower pollinator meadow at Alcyon Park. The range of habitats – from lakeside wetlands and marshes to hardwood forests – attracts local wildlife as well as a variety of migrant birds and butterflies. The New Jersey Audubon Society has developed a list of commonly sighted birds as well as fish, reptiles and amphibians at Alcyon Park.[9] A viewing platform for observing aquatic bird species is accessible along the Alcyon lakefront.

Figures 13, 14 and 15. Lighted fields provide a major draw for baseball and soccer field uses at Alcyon Park. The central pavilion at the center of the three baseball game fields has a race car weathervane, hearkening back to the Alcyon Speedway days. The park also includes play equipment for young children.

[8] The Disc Golf Scene. Alcyon Woods Disc Golf.

[9] New Jersey Audubon. Pine Barrens and Beyond – Camden Gloucester II: Alcyon Lake Park.

Betty Park

Betty Park was closed to the public in 1982 due to contaminant levels in park soil and proximity to Alcyon Lake. Following cleanup, the park is now a popular neighborhood destination featuring picnic facilities, a playground, walking paths and shoreline access to Alcyon Lake.

Figures 16, 17 and 18. Play equipment and picnic tables at Betty Park. A view of Betty Park from Alcyon Beach across the lake.

Hollywood Dell Park

Hollywood Dell Park, now referred to as Dell Field, is located close to Memorial Elementary School. The Hollywood Dell Recreational Area was originally developed in 1980 by the Pitman Recreation Commission using grant funding from CBS, Inc., a former large employer in the area. The New Jersey Department of Environmental Protection's Green Acres program has provided grant resources to restore and conserve the recreation and open space uses of this area. Today, Dell Field consists of three soccer fields owned by the borough of Pitman and used by the Pitman Soccer Association.

Figures 19, 20 and 21. A roadside sign for the fields used by Pitman Soccer Association at Dell Field. A view of one of the three soccer fields at Dell Field with parking for Memorial Elementary School in the background. A view of the dell itself fed by water outfall from Alcyon Lake.

Alcyon Lake

Non-motorized boats can obtain permits to access Alcyon Lake via a boat ramp in Alcyon Park for angling and recreational boating. The Pitman Recreation Commission hosts an annual Youth Week with events for young people in the community. As part of Youth Week activities, the Pitman Police Department began hosting an annual Youth Fishing Derby in 2015. The event is held each year at Alcyon Lake and benefits the Pitman Police Department K-9 Unit. While Alcyon Lake is a relatively small freshwater lake, an estimated 766,000 anglers fished in New Jersey in 2011, spending over $1.1 billion annually on fishing in New Jersey.[10]

Figures 22, 23 and 24. Plaque commemorating the borough's acquisition of Alcyon Lake in 1965. Non-motorized boat access to Alcyon Lake from Alcyon Park. Safe fishing tackle disposal containers are available at several locations around the lake.

Ecological Revitalization and Preservation Efforts

While recreational amenities are plentiful at these park properties, the borough has also worked to ensure the sustained preservation and restoration of ecological resources. At Alcyon Park, beyond the athletic fields, the borough has planted a no-mow wildflower meadow that has attracted deer, fox and other wildlife to the area. The walking path passes along the meadow area, and a viewing platform allows visitors to observe the natural area. Local groups, such as the New Jersey Bluebird Society, have also supported projects to attract bats and birds to the Alcyon Park area.

The borough has also established a natural buffer with native plantings around Alcyon Lake to fortify the lakeshore against erosion. Roots from plantings stabilize the banks, while plantings limit pedestrian access to the shoreline. Some areas are still maintained open, such as the Alcyon Beach area, to allow fishing access to the lake.

In developing the new disc golf course in the Alcyon Woods area of Alcyon Park, the borough minimized clearing for the course, resulting in a rustic, challenging course to play through the woods instead of along cleared throughways. In the few months that the course has been open, the borough has noted both increased use of the hiking and walking trails through Alcyon Woods and that disc golf players have been good stewards for the course

[10] 2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation Summary for New Jersey. 2018 update.

and wooded area around it. During remedial work, the U.S. Army Corps of Engineers reached out to nearby Rowan University to seek opportunities for environmental education and collaboration. The New Jersey Department of Environmental Protection continues outreach efforts to engage Rowan University today, and the school's disc golf players are routinely found using the new course.

Figures 25, 26 and 27. Ecological restoration and revitalization efforts have included a no-mow wildflower meadow, bluebird and bat boxes in Alcyon Park, and riparian border restoration and erosion prevention using natural plantings around Alcyon Lake.

Benefits of Green Space at Superfund Sites

Open green spaces at Superfund sites can be used to support a wide range of reuse activities, including recreational, ecological and agricultural uses. Careful planning can enable the integration of green spaces into site cleanup plans, resulting in the transformation of contaminated properties into valuable community assets. Green spaces are integral components of sustainable communities – they can help protect the environment and human health while providing other social and economic benefits. Parks, community gardens and other public green spaces create opportunities for people to gather, exercise and connect with nature. The creation of green spaces at once-contaminated properties can reintroduce ecosystems and biodiversity into urban and suburban landscapes by providing corridors for migrating species and preserving habitat. They can also help mitigate stormwater runoff problems by slowly absorbing and naturally filtering stormwater, resulting in improved water quality due to decreased runoff and erosion.

Parks, natural areas and scenic landscapes also have great economic value – supporting regional economies through tourism, agriculture and other activities. Economic impacts of recreational activities can include outdoor recreation spending and reduced public costs related to healthcare and infrastructure. Protected green space can also increase the property values of nearby homes by providing amenities that draw people to live and work in the community. To learn more, see EPA's Smart Growth website at https://www.epa.gov/smartgrowth.

Direct Use Value

One approach to quantifying the value that a community places on recreational opportunities is to ask community members how many dollars a certain park is worth to them (whether or not they themselves actually go to the park). These economic approaches are called "willingness to pay" or "contingent valuation." A 2007 study[11] found that households in Alberta, Canada, would be willing to pay US$17 (study lists 2007 Canadian dollar value of $18) per year for small enhancements in sports and recreation programs. Applying this willingness-to-pay value to the 3,359 households in Pitman Borough[12] yields a total annual value of $57,103. Including the 5,934 households in nearby Glassboro Borough[13] increases this value to $100,878. Given that the park facilities are a major area draw, bringing in recreational users from outside the borough and that the facilities at Alcyon Park and Dell Field in particular are much more than a "small enhancement," this value is a likely underestimate of the true direct use value of these borough recreational amenities.

Property Value Benefits

Borough residents enjoy being within walking distance of the walking trails, athletic fields, playground equipment, fishing access and other recreational amenities offered by Alcyon Park, Betty Park, Dell Field and Alcyon Lake. Economists have found that having a park nearby increases the value of nearby real estate. For example, a 2005 survey of the previous 20 years of research on this topic in the United States recommends a guideline of 20% increase in value for properties abutting or fronting a passive park (with lower premiums for parks serving primarily active users), with substantial impact up to 500-600 feet.[14] A 2010 review of over 60 studies on the impact open spaces have on residential property values found that increases in property value existed up to 500-600 feet away from the park; for community-sized parks over 30 acres, the effect may be measurable out to 1,500 feet, but 75% of the premium value generally occurs within the 500- to 600-foot range.[15] The Trust for Public Land (TPL) has developed a methodology for analyzing the economic benefits of parks.[16] TPL's methodology conservatively assumes a 5% increase in property value for all residential properties within 500 feet of a park. The TPL does not include commercial properties, because although it is likely that commercial properties experience property value increases due to proximity to parks, economists have not yet measured these effects for commercial properties.

Figure 28. Signs at the main entrance to Alcyon Park.

[11] Johnson, Bruce; Whitehead, John; Mason, Daniel; and Walker, Gordon. 2007. Willingness to Pay for Amateur Sport and Recreation Programs. Contemporary Economic Policy.
[12] United States Census Bureau Quick Facts for Pitman Borough, New Jersey.
[13] United States Census Bureau Quick Facts for Glassboro Borough, New Jersey.
[14] Crompton, John L. 2005. The Impact of Parks on Property Values: Empirical Evidence from the Past Two Decades in the United States. Leisure Management 10, 203-218.
[15] Shoup, Lily and Ewing, Reid. 2010. The Economic Benefits of Open Space, Recreation Facilities and Walkable Community Design.
[16] The Trust for Public Land. 2016. The Economic Benefits of the Park & Recreation System in San José, California.

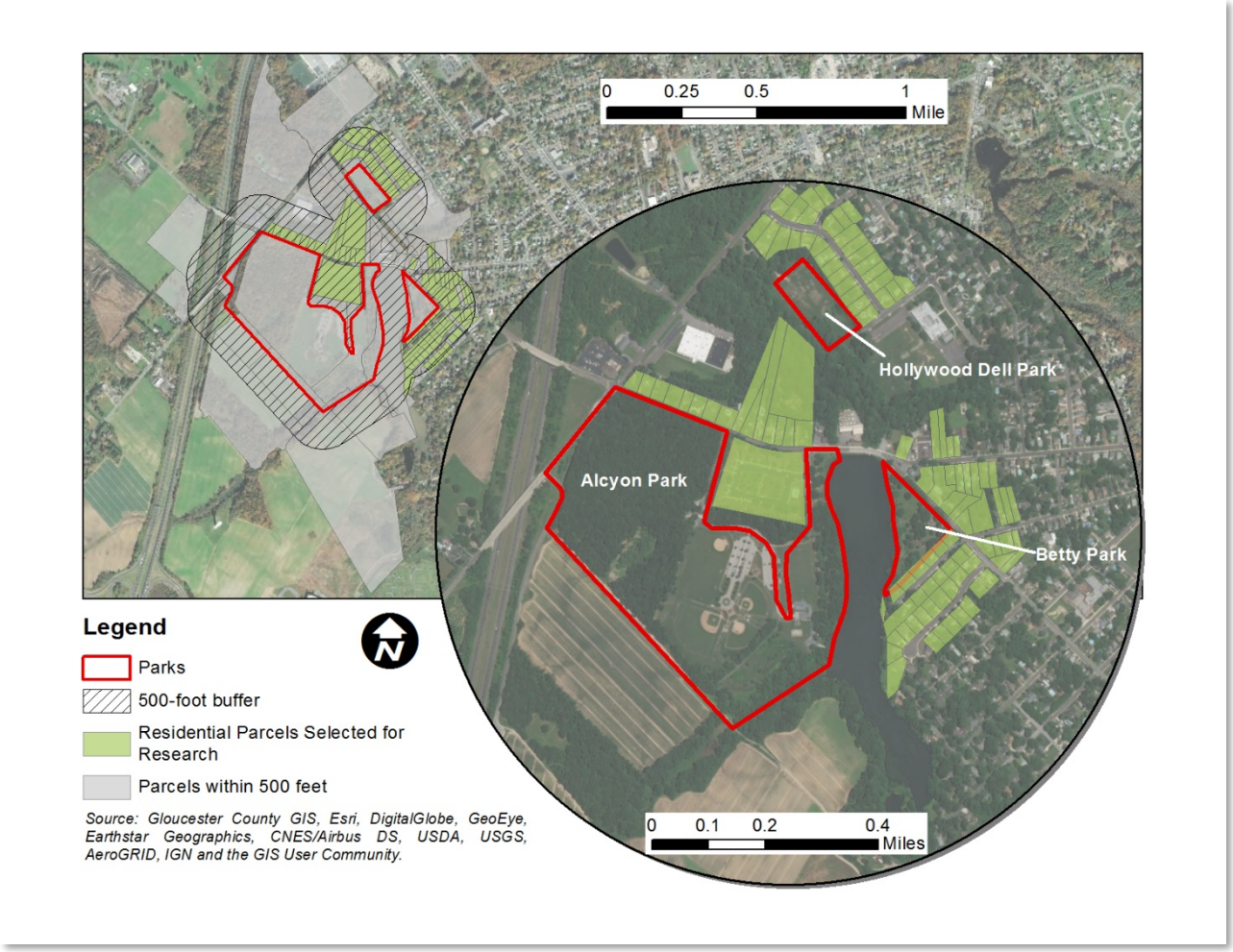

Figure 29. Parcels within 500 feet of the three recreational parks cleaned up as part of the Lipari Landfill remediation efforts.

For this case study, it is conservatively assumed that a 5% property value boost is experienced by properties within 500 feet of the recreational spaces that have been returned to beneficial use following cleanup. Figure 29 depicts parcels within 500 feet of the three parks – Alcyon Park, Betty Park and Dell Field – considered in this case study. For the purposes of this analysis, only parcels that are at least halfway within the 500-foot buffer are included; these are colored green on Figure 29. The total assessed value of these parcels is $28,905,900. Using a conservative value of 5% for the park proximity premium yields a property value benefit of $1,445,295 due to proximity to these recreational, ecological and open space areas.

Health Benefits

One of the most important benefits provided by parks is the improved health of park users. This includes both physical health benefits from outdoor exercise, as well as mental health benefits from time spent participating in various outdoor activities. Following the methodology developed by the TPL,[17] this study assumes an annual savings of $1,100 in medical expenses for every adult who exercises regularly. For people over the age of 65, the annual benefit is $2,210, due to their higher medical expenses. The TPL methodology does not quantify the health benefits for children.

Figure 30. Lake views from walking path at Alcyon Park.

The walking path that recreates the historic loop of the Alcyon Speedway at Alcyon Park is popular among walkers and joggers. The U.S. Department of Health and Human Services recommends that adults get at least 150 minutes of moderate-intensity aerobic physical activity or 75 minutes of vigorous-intensity aerobic physical activity, or an equivalent combination each week.[18] At a November 2019 Monday morning visit to the site, about 15 joggers, walkers and dog walkers were observed at the park. Based on this observation, this study conservatively estimates that about 100 adults (15 individuals per day equals 105 walkers per week) using the walking paths and other areas at the former site meet the U.S. Department of Health and Human Services guidelines. This does not include the many adults who participate in less-frequent exercise or other athletic activities at the park. Assuming that a quarter of the 100 adults are seniors yields an annual savings of $137,750 in medical expenses due to the site's recreational redevelopment.

Researchers have found that there are significant mental health benefits from participating in sports and even from living near a park. For example, a 2011 paper found that "sports participation has a positive effect upon the subjective well-being of the population."[19] A 2014 study found that "mental health is significantly related to residential distance from parks, with the highest Mental Health Inventory (MHI-5) scores among residents within short walking distance from the park (400 meters) and decreasing significantly over the next distances."[20] The study authors calculated that "a nearby urban park is associated with the same mental health benefits as decreasing local unemployment rates by 2 percentage points."

[17] The Trust for Public Land. 2016. The Economic Benefits of the Park & Recreation System in San José, California.
[18] U.S. Department of Health and Human Services. 2018. Physical Activity Guidelines for Americans, 2nd edition.
[19] Downward, Paul and Rasciute, Simona. May 2011. Does sport make you happy? An analysis of the well-being derived from sports participation. Pages 331-348.
[20] Sturm, Roland and Cohen, Deborah. 2014. Proximity to urban parks and mental health. Journal of Mental Health Policy and Economics. 17(1):19–24.

Conclusion

Contamination from the Lipari Landfill Superfund site resulted in the closure of historic recreation resources in the borough of Pitman. EPA worked closely with the locality and the community throughout the cleanup process, supporting their efforts to return these properties to recreational use. The borough's acquisition of land near the OU3 cleanup and its permission for EPA to use the parcel as a staging area lowered cleanup costs and expedited cleanup of contamination in the drainage basin while also minimizing the impact of truck traffic in area neighborhoods.

Today, outdoor recreation enthusiasts – from anglers and soccer players to birdwatchers and cyclists – benefit from active recreation opportunities at Alcyon Park, Alcyon Lake and Dell Field as well as relaxing passive recreation opportunities at Betty Park. Recreational amenities bolster the local economy, drawing visitors and athletes to the area who invest tourism, travel and equipment dollars for their activities. Gloucester County continues to experience new growth and development; the restored recreational amenities in the borough of Pitman continue to sustain the same high quality of life for long-time residents, as well as recent arrivals and visitors, that attracted the Carr brothers to establish the area as a park more than a century ago.

For more information about EPA's Superfund Redevelopment Program, visit: https://www.epa.gov/superfund-redevelopment-initiative.

Technical Appendix

Property Values and Local Tax Revenue Generated from Property Taxes

EPA obtained data on the most recently assessed values for property parcels at the Lipari Landfill Superfund site in December 2019 through property records accessible through Gloucester County's online property appraisal database.[1]

Table 1. Property Values for Parcels Located within the 500 Foot Buffer Surrounding Alcyon Park, Betty Park and Hollywood Dell Park

Parcel ID No.	Assessed Value of Land and Improvements (2019)
0810_254.01_35	$380,100
0810_254.01_36	$1,065,900
0810_260.01_4.02	$101,000
0810_261_1	$308,500
0810_261_2	$95,500
0815_177_2	$184,500
0815_177_3	$120,000
0815_177_4	$152,600
0815_177_5	$209,300
0815_177_6	$205,200
0815_177_9	$250,700
0815_178_1	$162,100
0815_178_11	$34,800
0815_178_2	$133,200
0815_178_21	$210,000
0815_178_22	$209,000
0815_178_23	$295,600
0815_178_24	$280,500
0815_178_25	$289,600
0815_178_26	$200,000
0815_178_27	$273,600
0815_178_28	$230,600
0815_178_29	$250,000
0815_178_3	$159,800
0815_178_30	$310,400
0815_178_31	$287,800
0815_178_32	$337,200

[1] http://gloucester.msnj.us/inq/08/cgi/inq/search.cgi?user=gz1&cc=08

Parcel ID No.	Assessed Value of Land and Improvements (2019)
0815_178_35	$234,900
0815_178_36	$255,700
0815_178_37	$253,700
0815_178_38	$325,200
0815_178_39	$248,900
0815_178_4	$161,600
0815_178_40	$279,400
0815_178_5	$183,700
0815_178_6	$193,800
0815_178_7	$256,400
0815_178_8	$168,700
0815_186_10	$149,700
0815_186_11	$148,200
0815_186_13	$108,000
0815_186_14	$172,200
0815_186_15	$245,300
0815_186_16	$175,800
0815_186_16.01	$166,300
0815_186_19	$213,000
0815_186_20	$166,800
0815_186_21	$158,200
0815_186_22	$28,300
0815_186_23	$179,400
0815_186_24	$184,200
0815_186_25	$160,500
0815_186_7	$189,000
0815_186_8	$167,800
0815_186_9	$182,700
0815_187_17	$147,100
0815_187_18	$203,100
0815_187_19	$200,800
0815_187_20	$152,700
0815_187_21	$163,700
0815_187_22	$148,900
0815_194_1	$224,100
0815_194_14	$170,900
0815_194_2	$160,300
0815_194_3	$133,400
0815_194_4	$150,100
0815_194_5	$153,600
0815_194_6	$200,000
0815_201_1	$175,500

Parcel ID No.	Assessed Value of Land and Improvements (2019)
0815_204_10	$171,200
0815_204_11	$175,500
0815_204_6	$172,200
0815_204_7	$175,500
0815_204_8	$236,700
0815_204_9	$198,900
0815_208_1	$173,000
0815_208_10	$176,800
0815_208_11	$149,800
0815_208_12	$186,600
0815_208_13	$201,900
0815_208_15	Not Available
0815_208_2	$228,400
0815_208_3	$176,000
0815_208_4	$167,900
0815_208_5	$191,300
0815_208_6	$169,400
0815_208_7	$184,600
0815_208_8	$172,200
0815_208_9	$179,400
0815_209_11	$167,400
0815_209_12	$167,900
0815_209_13	$190,400
0815_209_14	$183,600
0815_209_15	$234,300
0815_209_16	$178,200
0815_209_17	$192,100
0815_209_18	$179,500
0815_209_19	$168,500
0815_209_20	$169,800
0815_209_21	$188,500
0815_209_22	$218,900
0815_215.01_2	$26,900
0815_215.01_3	$50,000
0815_218_10	$72,000
0815_218_11	$35,000
0815_218_12	$110,700
0815_218_14	$182,500
0815_218_15	$144,600
0815_218_16	$120,600
0815_218_17	$194,500
0815_218_18	$150,500

Parcel ID No.	Assessed Value of Land and Improvements (2019)
0815_218_19	$181,600
0815_218_2	$176,800
0815_218_20	$193,500
0815_218_21	$212,300
0815_218_22	$178,700
0815_218_23	$204,700
0815_218_24	$15,100
0815_218_3	$157,300
0815_218_4	$162,000
0815_218_5	$244,500
0815_218_6	$173,500
0815_218_7	$163,900
0815_218_7.01	$254,900
0815_218_8	$494,600
0815_218_9	Not Available
0815_219.01_7	$47,200
0815_219_3	Not Available
0815_219_4	$106,300
0815_220_1	$4,646,200
Total	**$28,905,900**
5% of total	$1,445,295
Total + 5%	**$30,351,195**