

# Environmental and Social Justice Outcomes in U.S. Cities Hosting International Expositions

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## Abstract

A World's Fair or International Exhibition (Expo) is designed to offer the best face of its host city, with the effort expected to bring in millions of visitors to generate a local economic boom and international prestige. Given the effort and expense required to host an Expo, we should expect the near and long-term outcomes, at least for the neighborhoods where they occur, to be positive. But are they? This paper analyses demographic, environmental, and health metrics to evaluate environmental and social justice outcomes for the cities and neighborhoods hosting U.S. Expos. We then offer three case studies and follow with a discussion of whether the short and long-term benefits of hosting an Expo may be worth the cost.

## Keywords

Environmental Justice, Injustice, International Expositions, Social Justice, World's Fairs

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## 1. Introduction

World's Fairs and International Exhibitions (Expos) are designed to offer the best face of a host city to the world. They highlight the most up-to-date public goods, showcase the cream of the crop in artistic offerings, highlight regional cultures, and offer a glimpse into a bright technology-driven future. The host cities expect to bring in millions of visitors and generate a local economic boom. Demonstrations of this kind of soft power are also expected to provide the host entity with regional, national, and even global prestige (Ley & Olds, 1988; Lord & Blankenberg, 2016; Samuels, 1985).

Competition to host an Expo is fierce, requiring submitting an application to the Bureau International des Expositions (BIE) in Paris, along with a thoroughly documented plan, between six and nine years in advance of the event (*How Is an*

*Expo Organised? 2024*). Participating nations as well as the host cities set goals for their pavilions, showcasing how they wish to be perceived in the world. For example, the World Expo from October 2021 to March 2022 occurred in Dubai, the United Arab Emirates (UAE). The UAE Pavilion was the largest in the Expo, a Certified LEED Platinum structure, shaped like a flying falcon with photovoltaic panels to generate energy and glass-fiber moveable wings. The UAE pavilion portrayed that nation's bright, technological future. In contrast, the United States provided a pavilion with a moving walkway showcasing Thomas Jefferson's copy of the Quran, a Moon rock sample, and a replica of the Mars Opportunity Rover. The goal of the USA Pavilion was to highlight a "dynamic society that has shaped the modern world and supports freedom and prosperity for all" (*USA Pavilion/Expo 2020 Dubai, 2024*). Indeed, the goals the pavilions sought to portray were very different.

The part of the Expo that the world sees is only part of what happens before, during, and after the event. Planning and organizing a fair may be spurred by private investors seeking to capture their previous experiences with an Expo (*1964 New York World's Fair, 2024*), from urban planners seeking to use the event for development or urban renewal (*Bradley, 2003; Minner et al., 2022; World's Fairs, 2024*), from the business community seeking to spur investments and an economic boom (*Glaeser & Gottlieb, 2009; Samuels, 1985*), from local, state, and national politicians seeking prestige, or all of the above (*How to Win at World Expo, 2024; Why Is Hosting the 2030 World Expo So Important to South Korea? 2024; Swartout, 2014*). The events require large tracts of land near the heart of a city and with good transportation access. For developing cities, obtaining large tracts of land may not be a significant concern. For cities that are fully built out, it becomes more difficult. Land has to be obtained, often by eminent domain and other coercive, often contested practices (*Gonzalez, 2019; Jacobs, 1999; Neumark & Simpson, 2015*). Once an Expo concludes, most of the temporary structures are torn down but relics may be left behind (*Brook, 2024; Guarecuco, 2024*). Without diligent legacy planning, these relics may leave nearby communities with little except sad memories of better times (*Aenlle, 2015*).

The United States has not hosted an International Expo for four decades. Why so long? Is it because the previous ones have not been financially successful or is there some other answer? Some claim it is because Americans have moved on (*Swartout, 2014; Wong, 2022*). They can now see extravaganzas at theme parks and hold the world at their fingertips with their smartphones and watches. Robots have replaced people in many workplaces and appliances can be set to automatically clean floors, check the food in refrigerators, and order groceries online. In other words, it may be that International Expos no longer hold the promise of experiencing global innovations for today's Americans as they did in the past.

In contrast, it may be that competition to host global events has increased

worldwide as more cities and nations seek exposure for foreign investments and political connections. Some cities are more willing to foot the bill for increased visibility and political influence than are Americans. For instance, it cost Shanghai \$ 45 billion to host the 2020 Expo (*Expo 2010's Legacy, 2024*) but attracted only 73 million visitors and foreign investments worth \$ 2.2 billion from HSBC and Walmart. Osaka 2025 is projected to cost \$ 1.16 billion but Japan hopes to boost the economy by more than \$ 32 billion (*How to Win at World Expo, 2024; Kyodo News, 2024*). In a 3-way contest for the 2030 Expo, Riyadh (Saudi Arabia) submitted a plan estimated to cost \$ 7.7 billion, outspending those submitted by Busan (South Korea) and Rome (Italy). The Riyadh plan will spur a construction boom, including new airports and metro lines symbolizing Saudi Arabia's ambitious growth pursuits (*Riyadh Beats South Korea's Busan to Host World Expo 2030, 2024; Riyadh Expo 2030 to Generate over \$ 50 Billion for the Saudi Economy, 2024; World Expo Through the Ages—What Saudi Arabia Stands to Gain as Host in 2030, 2024*). With the largest American cities almost fully built out, and with redevelopment of declining areas and economic recovery of local economies as goals, perhaps the cost of hosting an Expo is out of range for most American cities.

Given the great deal of effort and expense required to host an Expo, we should assume that the cities hosting them expect that their near and long-term outcomes would be positive. There are, however, good reasons to question that assumption. The literature on place-based policies is generally supportive of redevelopment efforts (*Duranton & Venables, 2018; Neumark & Simpson, 2015*), yet it also shows mixed results for enterprise and industrial zones, as well as for various tax policies and other efforts (*Busso et al., 2013; Glaeser & Gottlieb, 2009; Hanson & Rohlin, 2013; Kolko & Neumark, 2010*). There is literature on the benefits cities can expect when hosting an international Expo (*Expo Benefits AIPH, 2024; The Benefits of Hosting International Events, n.d.*) but there is also a hole in the literature when it comes to examining the long-term effects of hosting a mega-temporary activity rather than a permanent one (*Minner et al., 2022*). Thus, asking whether the benefits accrued for U.S. cities and their neighborhoods hosting an international Expo are lasting is important to address.

This paper explores the long-term outcomes for the sites and surrounding areas of U.S. cities that hosted Expos since World War II. Specifically, we ask:

- 1) What types of land were chosen for U.S. Expo sites, what remnants of the Expos were retained, and how are the sites used today?
- 2) Have the Expo sites and the neighborhoods around them benefitted by giving rise to healthy communities with relatively low levels of environmental and social injustice?

The paper begins with an overview of the history of World's Fairs and International Expositions, focusing on those held in the United States since World War II. It reports on the history of each site, any remaining structural remnants, and the uses of the site today. It then analyses the long-term impacts of the Expo

sites on the neighborhoods hosting them, using demographic, environmental, and health metrics to evaluate environmental and social justice. We end with three case studies that compare two of the Expo cities (Seattle and New Orleans) with one that was accepted to host an Expo but withdrew its bid (Philadelphia). The discussion considers whether the short and long-term benefits of hosting an Expo are worth the cost.

## 2. Background

Two bodies of literature must be considered to do justice to the research questions: 1) information about the World's Fairs and International Expositions in general, and 2) the long-term impacts of impermanent developments.

The literature on Expos credits the first large-scale public exposition to Prague in 1791, created as part of the celebration for the coronation of King Leopold II (*List of World's Fairs, n.d.*). Additional Expos followed in Paris, New York, and Turin, but these were small compared to The Great Exposition of the Works of Industry of All Nations that took place in London's Hyde Park in 1851. The Crystal Palace was a temporary structure built specifically for The Great Exhibition. Made of cast iron and plate glass, it created a sense of awe among the more than six million visitors who attended (*The Great Exhibition of 1851, 2006*). The building was moved to south London after the event and succumbed to fire in 1936 (*Winter, 2021*).

The success of The Great Exposition led to another one being staged almost immediately in New York City from 1853 to 1854. A private firm raised money for the event, leasing Reservoir Square from the city for \$ 1 per year for five years. The exposition area covered 13 acres of what is now Bryant Park (near the New York Public Library), with six of those acres dedicated to the Exhibition Building. The event drew participation from 17 nations and six colonies or protectorates and cost \$ 891,070. With approximately 1,250,000 visitors paying \$ 0.50 for an adult one-day pass, the deficit had to be borne by the organizers (*Cotter & Young, 2004*). As with the Crystal Palace, the Exposition Building was used for other events for several years until it was also destroyed by fire in 1858 (*New York, United States 1853-4: The Exhibition of the Industries of All Nations, n.d.*).

Between 1876 and 1939, numerous World's Fairs and International Expositions were held around the world (*List of World's Fairs, n.d.*; *World's Fair History Quick List, n.d.*), including in the following U.S. cities:

- Philadelphia (1876)
- Louisville (1883)
- New Orleans (1884)
- Cincinnati (1888)
- Chicago (1893)
- San Francisco (1894)
- Atlanta (1895)

- Nashville (1897)
- Omaha (1898)
- Buffalo (1901)
- Charleston (1901-02)
- St. Louis (1904)
- Portland (1905)
- Jamestown (1907)
- Seattle (1909)
- San Francisco (1915)
- San Diego (1915-16)
- Philadelphia (1926)
- Chicago (1933-34)
- San Diego (1935-36)
- Cleveland (1936-37)
- Dallas (1936-37)
- San Francisco (1939-40)

With the number of these events mushrooming, there became a need for transparency so that all countries could deal with the national laws, regulations, and tax policies that would impact Expo participants. Additionally, with each host city trying to outdo the other, costs rose, and losses for both participants and the host cities accumulated. After several fits and starts, a 1928 convention led to 31 countries agreeing to regulate international exhibitions. The result was a new governing body, the BIE, that defined the types of Expos, their frequency, and the procedures to be followed by both the host and participating countries (BIE, 2023). In 1988, the BIE further clarified the types of Expos. World Expos may occur every five years and last up to six months. International Specialized Expos may occur between World Expos and have a duration of between three weeks and three months.

There has not been an Expo in the United States for 40 years. Philadelphia applied to the BIE for Expo status for 1976 but withdrew its bid in favor of hosting a more limited bicentennial celebration. Similarly, Los Angeles applied to the BIE for Expo status in 1981 but withdrew in favor of hosting the city's bicentennial celebration. Having hosted two previous World's Fairs in 1893 and 1933, Chicago applied for BIE Expo status for 1992, but the grand proposal was withdrawn due to a lack of local political support and concerns about the ability to recoup expenses. Finally, Minnesota submitted a bid to the BIE to host the 2023 World Expo, but it lost the bid to Argentina. The bid was resubmitted for a Specialized Expo in 2027 but lost to Belgrade, Serbia. The next available slot for the United States to compete to host a World Expo will be in 2030 (US Department of State, 2023).

The second body of literature that needs to be addressed is that of impermanence. At the most basic level, planners acknowledge that master plans must be regularly updated and revised, a recognition that cities are not static and change

is inevitable (Haar, 1955; Haar, 1959). To bring about positive change, the redevelopment literature notes the important role of cultural activities (e.g., arts districts, museums, performing arts centers, and more) in promoting and revitalizing cities. While the body of research that investigates cultural strategies in urban redevelopment is growing (Grodach & Loukaitou-Sideris, 2007), it does not focus on time-limited developments. Hughes does address the use of “festive time” strategies to promote tourism during economically underexploited temporal periods (e.g., parades, pop-ups, street fairs, and more), but festivals are short-term events at best (Hughes, 1999).

Expos are also time-limited activities, which makes them a challenge regarding their capacity to leave sustainable assets. However, these events are not as short-term as festivals. They also require large tracts of land and structures designed to last a year or more. The events should leave at least some positive long-term impacts by remediating and redeveloping distressed areas and replacing them with museums, parks, theaters, transportation hubs, zoos, and other assets that attract investments. Indeed, research shows that New York, Chicago, Houston, Los Angeles, San Francisco, and many other cities have put massive investments into such amenities, resulting in affluent individuals moving into the revitalized areas. The downside of the redevelopment efforts has often been gentrification (e.g., areas around New York’s Central Park; Grant Park and the loop in Chicago; and the Houston Arts District) (Bach, 2020; Betancur, 2011; Greenberg, 2022).

As four decades have now passed since the last U.S. Expo, it is prudent to now examine the long-term effects of those events on the neighborhoods and cities that hosted them (Minner et al., 2022). We expect that today’s city and tourism websites will tout their previous Expo experiences, especially those that have been successful in providing new cultural and recreational resources. Yet such information cannot be used to objectively determine whether the communities surrounding the Expo sites also benefitted. Thus, we undertook analyses to help fill that informational gap.

### 3. Data and Methods

To address the first research question, we selected seven Expos held in the United States since the outbreak of World War II as our study group (Table 1). We did not select the San Francisco event of 1939 as it closed early (*Golden Gate International Exposition, 2023*). We also note that the New York 1964-1965 event did not receive BIE sanction as the time frame for the event was extended by an additional summer. Despite the lack of BIE sanction, we chose to treat the two New York Expos as separate events for addressing question 1 as they occurred more than two decades apart and were large-scale events that drew similar numbers of visitors. We then evaluated the histories of each of the seven Expo sites, determining which structures were selected to remain and how both the structures and the sites themselves have been repurposed.

**Table 1.** Expos in the United States since the outbreak of World War II.

City	Year	Location	Estimated paid attendance
New York	1939-40	1216.5 acres in Flushing Meadows	57 million
Seattle	1962	74 acres in the center of the city	9.6 million
*New York	1964-65	646 acres in Flushing Meadows	51.7 million
San Antonio	1968	92.6 acres	6.4 million
Spokane	1974	50 acres of exhibits on a site of 100 acres	5.2 million
Knoxville	1982	73.4 acres	11 million
New Orleans	1984	84 acres along the Mississippi River	7.3 million

\*Not sanctioned by the BIE. Data sources: (City Archives, n.d.: p. 21; *Knoxville, USA 1982 World's Fair 1982*, n.d.; *List of World's Fairs*, n.d.; *New Orleans, U.S.A. 1984 Louisiana World Exposition, Rivers of the Worlds—Fresh Water as a Source of Life*, n.d.; *New York, United States 1939-40: The World of Tomorrow*, n.d.; *New York, United States 1964-65: Peace through Understanding*, n.d.; *San Antonio, United States 1868 Hemisfair'68*, n.d.; *Spokane, United States 1974 Expo'74, Celebrating Tomorrow's Fresh New Environment*, n.d.; *World's Fair History Quick List*, n.d.).

To address the second research question, we selected metrics for analysis from the U.S. Census Bureau's American Community Survey (Bureau, 2023), US EPA's EJScreen (*EJSCREEN: Environmental Justice Screening and Mapping Tool/US EPA*, n.d.), and the Centers for Disease Control's (CDC) PLACES dataset (CDC, 2022). Taken together, these metrics address issues of social and environmental justice as well as the health of the neighborhoods surrounding the Expo sites (Table 2). Because of the limitations of the software and the data sets available, we used two techniques for identifying the surrounding neighborhoods. The first technique, used with EJScreen and census data, employed fixed distances from the Expo site centroids to estimate demographic and environmental metrics. The second technique, used with the CDC PLACES data set, used census tracts within fixed distances from the Expo site centroids to estimate health metrics.

EJScreen is an interactive mapping tool that allows users to make comparisons of selected places with their surrounding areas, as well as with their city, county, state, and nation for many types of environmental and social justice metrics. We began our statistical analysis of the EJScreen data by creating fixed distances from centroids identified from published coordinates of the Expos. As the fairgrounds were large and irregular, some sites had few people living within 0.5 miles of the centroids, requiring the use of 1.0-mile radius zones (3.14 sq miles) to represent the surrounding neighborhoods. Since New York hosted two Expos and because the first one was sprawling and made it difficult to identify the centroid, we chose to use the location of the Unisphere in the most recent one as our starting point. This decision meant the metrics for both Expos would be



**Table 2.** Metrics used to determine outcomes for neighborhoods adjacent to U.S. expo sites and their host cities.

Metric	Data Source
<b>Demographics (n = 7)</b>	
<ul style="list-style-type: none"> <li>• People of color, %</li> <li>• Low-income population, %</li> <li>• Population with less than a high school education, %</li> <li>• Limited English speaking family, %</li> <li>• Unemployment rate, %</li> <li>• Population less than 5 years old, %</li> <li>• Population greater than 64 years old, %</li> </ul>	U.S. Census, American Community Survey, 2016-2020
<b>Environmental &amp; land use (n = 7)</b>	
<ul style="list-style-type: none"> <li>• Distance from Superfund (toxic waste) sites</li> </ul>	Estimated by EJScreen
<ul style="list-style-type: none"> <li>• Diesel particles</li> </ul>	Estimated by EJScreen tool as concentration of diesel particles as provided by the 2017 Air Toxics update
<ul style="list-style-type: none"> <li>• Traffic proximity and volume (daily traffic count/distance to road)</li> </ul>	Estimated by EJScreen tool as annual average vehicle counts at major roads within 500 meters of block centroid divided by distance in meters, 2019
<ul style="list-style-type: none"> <li>• Risk management plan (RMP) proximity (facility count/km distance)</li> </ul>	Estimated by EJScreen as sites within 5 km of the nearest one beyond 5 km divided by distance in km, 2019
<ul style="list-style-type: none"> <li>• Hazardous waste proximity (facility count/km distance), not Superfund</li> </ul>	Estimated by EJScreen as the count of Treatment, Storage and Disposal Facilities (TSDFs) within 5 km or the nearest one beyond 5 km divided by distance in km, 2019
<ul style="list-style-type: none"> <li>• Underground storage tanks, counts</li> </ul>	Estimated by EJScreen as the number of leaking underground storage tanks weighted by EPA, 2019, within 1500 feet of the centroid
<ul style="list-style-type: none"> <li>• Housing built before 1960, %</li> </ul>	U.S. Census, American Community Survey, 2016-2020
<b>Health (n = 4)</b>	
<ul style="list-style-type: none"> <li>• Coronary heart disease among population <math>\geq</math> 18 years</li> <li>• Current lack of health insurance among population <math>\geq</math> 18 - 64 years</li> <li>• Current smoking among population <math>\geq</math> 18 years</li> <li>• Obesity among population <math>\geq</math> 18 years</li> </ul>	Age-adjusted rates, 2016-2019 from CDC PLACES

duplicated, resulting in the ability to make only six rather than seven comparisons between the neighborhoods surrounding the sites and their host cities. We made an additional decision, choosing to use Queens County as our comparison for the New York Expo rather than New York City as a whole. We felt that with 2.4 million residents, Queens County is larger than any other city in this study and it presented a better comparison than New York City's five boroughs with a population of 8.5 million.

To determine if the areas immediately adjacent to the Expo sites demonstrate



better health outcomes than their host cities, we selected four variables that are widely reported in public health and used the binomial distribution to estimate the likelihood that the neighborhood areas were different from their host cities. This is a conservative statistical test, likely to accept the null hypothesis. Because the CDC PLACES software does not allow automatic aggregation of data into uniform circles, the authors calculated census tract approximations of the 1-mile radius circles used with the EJScreen data. Given the high uncertainty of results, we chose to report only whether the census tract areas yielded higher or lower 95% confidence intervals for health metrics compared to those for the city as a whole.

Given the limited number of Expo cities and available comparisons, statistical analysis can only take us so far. Hence, additional effort was expended to review three cases that support or deny the numerical analysis results. The case studies are reported at the end of the results section.

#### 4. Results

The first research question asked what types of land were chosen for U.S. Expo sites, which remnants of the Expos remain, and how are the sites used today. Reviews of the Expo histories, the remaining structures, and the use of the sites today appear below.

The first U.S. Expo reviewed for this study was that in New York City in 1939-40. The site covered more than one thousand acres in Flushing Meadows, Queens. The plan for the Expo included reclamation of the Corona Dumps, the site where the Brooklyn Ash Disposal Company dumped more than 50 million cubic yards of burnt refuse (Queens Museum, 2023). F. Scott Fitzgerald characterized the area as “a valley of ashes” in *The Great Gatsby* (Fitzgerald, 2021; *The Great Gatsby*, 2024). The Trylon and Perisphere (Figure 1) were to be the centerpieces for the 1939 event, with long-term plans for the area to become park space. Both the Trylon and the Perisphere were demolished at the end of the event, with their materials recycled for World War II armaments.

The only building that survived the 1939 World’s Fair was the New York City Building. From 1941 to 1946, it served as a recreational center, with a roller skating rink and an ice rink. From 1946 to 1950, the building housed the General Assembly of the United Nations until the organization’s Manhattan site became available. The building reverted to being a roller skating and ice rink in 1952, but ten years later renovations were started for it to be reused for the 1964 World’s Fair. The plan was for it to house The Panorama of the City of New York (*Flushing Meadows Corona Park Highlights—New York City Building: NYC Parks*, 2023; *Flushing Meadows Corona Park: The Enduring Legacy of the 1939 & 1964 World’s Fairs: NYC Parks*, n.d.). Today, the north side of the New York City Building is home to the Queens Museum. The south side of the building houses the City Ice Rink, open year-round and built to the specifications of the National Hockey League (*New York, United States 1964-65: Peace through Understanding*, n.d.).



By Samuel H. Gottscho, circa 1939. Courtesy of Metropolitan Museum of Art, CC0, via Wikimedia Commons.

**Figure 1.** Trylon and Perisphere, New York World's Fair.

The overall cost of the 1939 New York World's Fair to the Expo Authority and the participating countries was estimated at \$ 160 million, with a loss estimate of \$ 18 million. The economic benefit to the city at that time, however, was estimated at \$ 1 billion (*New York, United States 1853-4: The Exhibition of the Industries of All Nations*, n.d.).

The second U.S. Expo was held in Seattle in 1962. The event was smaller than the 1939-1940 one in New York, but several buildings were created with the intention that they would remain after the event was over—especially the Space Needle (**Figure 2**), the Pacific Science Center, the Seattle Center Coliseum (Key Arena), the International Fountain, and the monorail. Site selection included some of the oldest housing in Seattle, designated to be razed for a new civic center. The estimated cost of the event was about \$ 100 million, but the overall economic benefit to the city was unknown (*Seattle, United States 1962 Century 21 Exposition*, n.d.).

The Space Needle was privately financed and constructed on the site of an old fire station. It remains the only privately owned structure on the Seattle Center campus, the original Expo site. The Space Needle has been renovated twice and



Original image from 2009, Carol M. Highsmith's America, Library of Congress collection. Digitally enhanced by rawpixel. Courtesy of Flickr.

[https://www.flickr.com/photos/vintage\\_illustration/46201832292](https://www.flickr.com/photos/vintage_illustration/46201832292).

**Figure 2.** Seattle skyline featuring the Space Needle.

continues to draw approximately 1.3 million visitors annually. At the top, visitors find a restaurant, a retail store, and floor-to-ceiling glass viewing experiences, including a rotating glass floor on the upper observation level (*Space Needle Facts, 2023*). The Pacific Science Center claims more than 200 thousand visitors a year. A 2016 economic impact study of the Seattle Center claims the facility generated \$ 1.864 billion in area business activity, 18,621 jobs, and \$ 631 million in labor income (*Economic Impact, 2024*). The monorail originally cost \$ 4.2 million to build and carried 4.2 million visitors to the 1962 Expo. It continues to run today, utilizing the two original trains, each able to carry up to 450 people. The conveyance runs a total of 0.9 miles in length, taking two minutes from end to end with no stops. Ridership is estimated at 2 million users annually. All plans for monorail expansion have been canceled, and summarily rejected by Seattle citizens in the general election of 2005 (*Murakami, 2008; Seattle Monorail Project, 2023*).

The second New York City Expo was held in the same area of Queens as the first Expo, but it was only half the size in area. Despite its reduced footprint, over its two-year span, it drew about the same number of visitors as the first event. Three structures were designated to survive after the fair, the Unisphere (**Figure 3**), the New York State Pavilion, and the United States Pavilion. The United States Pavilion was demolished in 1977, leaving only two original structures on site. A Strategic Framework Plan for the city's Parks Department encouraged the



By Ajay Suresh, 2018. Courtesy of Wikipedia.

[https://en.wikipedia.org/wiki/File:Unisphere-2\\_%2827835155267%29.jpg](https://en.wikipedia.org/wiki/File:Unisphere-2_%2827835155267%29.jpg).

**Figure 3.** Unisphere in Queens, New York.

two structures to remain and be fully restored as a tribute to the Expo. It also encouraged restoring two lakes on the site, and better connecting the park to the city through improved signage, event circulation, and parking (*Flushing Meadows Corona Park*, n.d.).

Restoration of the New York State Pavilion included a plan for converting its “Theaterama” to a live performance venue in 1972. Called the Queens Playhouse, Theatre in the Park, and now simply the Queens Theatre, the venue still offers live performances. Restoration of the rest of the New York State Pavilion began in 2019 with a \$ 24 million project designed to stabilize and light the pavilion’s towers and the Tent of Tomorrow, structures that had been closed for half a century. The now stabilized structures are illuminated every night and the next phase of the reconstruction remains in the planning stages (*Queens’ Iconic New York State Pavilion Will Be Illuminated Every Night/6sqft*, 2023).

Corona Park, the name of the Expo site, now claims seven million annual visitors who use its sports fields, paths, lakes, recreational facilities, museums, and theater (*Flushing Meadows Corona Park*, n.d.). In addition to the original structures, it is now home to Citi Field (home of the New York Mets baseball team) and the USTA Billie Jean King National Tennis Center.

The 1968 San Antonio Hemisfair and the Spokane Expo of 1974 were sanctioned by the BIE as Special Events. The Expo areas in both cities were designated to address urban renewal, and the events drew six and five million visitors, respectively.

After the San Antonio event, the city was left with a rejuvenated downtown,



an extended and revitalized Riverwalk, a convention center, and Hemisfair Park containing the Tower of the Americas (**Figure 4**) (*San Antonio, United States 1868 Hemisfair'68*, n.d.). The monorail and the Swiss Sky Ride were removed and the Hemisfair Park Area Redevelopment Corporation (HPARC) began working to convert the Expo area into a live-work-play neighborhood (*Hemisfair Park Area Development Corporation*, 2012). Hemisfair Park now contains Yanaguana Garden with a splash pad, play structures, eateries, and festival activities. Civic Park opened in the fall of 2023 with a great lawn for concerts. Additional plans for the Expo site include a Hilton Hotel and new residential units (*Soslow*, 2023). The Riverwalk, a long-standing attraction for San Antonio, continued to expand after the Expo closed, now extending 15 miles and winding through the city, connecting all the major tourist draws of San Antonio, including the Alamo.

Spokane was the smallest city to ever host a U.S. Expo. Planning for the 1968 event called for clearing a tangled mess of railroad tresses used by four companies, as well as rampant industrial overgrowth along the Spokane River. After the event, the city was left with a 100-acre Riverfront Park containing several permanent structures, including the U.S. Pavilion and a carousel (*Spokane, United States 1974 Expo'74, Celebrating Tomorrow's Fresh New Environment*, n.d.).



By Carol M. Highsmith, 2014. Courtesy Library of Congress.  
<https://www.loc.gov/resource/highsm.27805/?r=-1.505,-0.088,4.009,1.665,0>

**Figure 4.** Tower of the Americas in Hemisphere Park, San Antonio, Texas.

**Figure 5** shows the most significant landmark remaining in Riverfront Park today, the defining structure of the U.S. Pavilion in 1974. Spokane's current comprehensive plan calls for updating the 40-year-old Riverfront Park with a refurbished promenade, an ice skating ribbon, a sky ride, an expanded building around an existing carousel, an improved design for the existing U.S. Pavilion, and a new destination playground. The approved budget for the project is \$ 74 million and construction is currently underway (*Riverfront Park Redevelopment, 2019*). The city encourages visitors to visit the Riverwalk even while parts of it are under construction. The city's promotional materials call it the "jewel of downtown Spokane." The promotional materials also highlight the Spokane River as winding and cascading over basalt rock to create the largest urban waterfall in the country (*Riverfront Park Spokane/Explore Nature in an Urban Setting, 2023*).

The 1982 Knoxville Expo, officially known as the Knoxville International Energy Exposition (KIEE), was sanctioned as a Special Event by the BIE. It drew 11 million visitors and, upon event conclusion, left the Sunsphere (**Figure 6**) and



By Adam Jones (2009), courtesy of Wikimedia Commons.

[https://en.wikipedia.org/wiki/File:Detail\\_of\\_Landmark\\_from\\_1974\\_World%27s\\_Fair\\_-\\_Spokane\\_WA\\_-\\_USA.jpg#/media/File:Detail\\_of\\_Landmark\\_from\\_1974\\_World's\\_Fair\\_-\\_Spokane\\_WA\\_-\\_USA.jpg](https://en.wikipedia.org/wiki/File:Detail_of_Landmark_from_1974_World%27s_Fair_-_Spokane_WA_-_USA.jpg#/media/File:Detail_of_Landmark_from_1974_World's_Fair_-_Spokane_WA_-_USA.jpg).

**Figure 5.** Landmark of the U.S. Pavilion for Expo 74 in Spokane's Riverfront Park.



By MJ (2019), courtesy of Wikimedia Commons.

[https://commons.wikimedia.org/wiki/File:Sunsphere\\_01.jpg#/media/File:Sunsphere\\_01.jpg](https://commons.wikimedia.org/wiki/File:Sunsphere_01.jpg#/media/File:Sunsphere_01.jpg)

**Figure 6.** The Knoxville Sunsphere.

the Tennessee Amphitheater. The plan for the Expo was originally put forth by the mayor and a local banker, but it was met with great skepticism by the public. With support from the governor and Tennessee politicians in Washington, the public came around to support the idea (*What If You Gave a World's Fair and Nobody Came? 2023*). The site, located between downtown Knoxville and the University of Tennessee campus, had originally been rail yards that were targeted for redevelopment. Only one rail line was saved, with the depot used as a restaurant during the Expo. The Convention Center in Knoxville was later built on the site of the U.S. Pavilion (*Knoxville, USA 1982 World's Fair 1982, n.d.*).

Today, the Second Creek Greenway connects downtown Knoxville, the University of Tennessee, the Tennessee River waterfront, and World's Fair Park. World's Fair Park has three sections—a festival lawn, a performance lawn, and a lake area. The Tennessee Amphitheatre continues to host music, film, opera, and theatrical performances, and the Sunsphere is a tourist destination sporting a 360-degree observation deck. In 2019, a dedicated fund was established to preserve, maintain, and upgrade the Sunsphere. The fund has allowed the fourth-floor Observation Deck to be updated; construction of a new visitors' center on the third level begins in 2024. The Sunsphere closed during Covid and reopened in February 2022. Since the reopening, the Sunsphere has hosted over 78,000 visitors (*Visit Knoxville Announces Sunsphere Updates, 2024*).

The last Special Event Expo in the United States occurred in New Orleans in



1984. The site spanned 84 acres along the city's Mississippi River Warehouse District, near the city's central business district. As with other U.S. Expos, the plans included removing a former rail yard and clearing abandoned and run-down warehouses along the river. It also included improving streets and renovating businesses that would cater to guests. A ten-car, 146-passenger monorail was built to encircle the Expo site. It ran a counterclockwise route at up to 10 miles per hour, taking 12 minutes for a complete loop (Cheynet, 2023). A gondola was also built to take visitors from the Warehouse District across the river to Algiers. The Louisiana Pavilion was housed at the newly constructed convention center. And while there was a display of the Space Shuttle *Enterprise* and temporary dockings of some high-profile ships, the Expo had no other major exhibits to draw tourists. The timing of the Expo was also a problem as it coincided with the Summer Olympics in Los Angeles and the opening of the EPCOT Center in Walt Disney World in Florida. The result was that the New Orleans Expo drew only 7 million visitors, about half the number expected. The state contributed \$ 5 million to the endeavor, but it wound up costing \$ 350 million for the city to host. That caused the event to be the only U.S. Expo to declare bankruptcy, leaving more than \$ 100 million in debt (Findling & Pelle, 2015).

At the end of the New Orleans Expo, the gondola was demolished and the monorail system was transferred to Zoo Miami in Florida. On the positive side, the event did benefit the city with Riverwalk (Figure 7), now called The Outlet Collection at Riverwalk, as well as the convention center, much-refurbished housing, and updated commercial space (*New Orleans, U.S.A. 1984 Louisiana World Exposition, Rivers of the Worlds—Fresh Water as a Source of Life*, n.d.).



Public domain via Wikimedia Commons.

[https://en.wikipedia.org/wiki/The\\_Outlet\\_Collection\\_at\\_Riverwalk#/media/File:New\\_Orleans\\_archway\\_outside\\_Riverwalk\\_Marketplace.jpg](https://en.wikipedia.org/wiki/The_Outlet_Collection_at_Riverwalk#/media/File:New_Orleans_archway_outside_Riverwalk_Marketplace.jpg).

**Figure 7.** Julia Street entrance to the New Orleans Riverwalk in June 2007.

The convention center was renovated in 2006 and it now contains the New Orleans Theater used for concerts, live shows, and special events. The convention center is a massive structure with over 3 million sq. ft. (280,000 m<sup>2</sup>) of total space, making it the fifth largest such facility in the nation (*New Orleans Morial Convention Center, 2023*).

The Warehouse District became a place for artists after the close of the Expo, but the area has been increasingly under pressure to provide upscale condominiums and high-priced retail associated with a tourist-oriented arts district (*Warehouse District/New Orleans, 2023; Whatley, 2014*). Visitors to the Warehouse District today can enjoy the World War II Museum, the Ogden Museum of Southern Art, and events at the convention center. While the Expo itself may not have been a success, tourism at Riverwalk and the Warehouse District has significantly increased.

A review of the histories of each of the Expo sites and information on how the sites are used today determined that all of the cities sought to either reclaim LULUs (abandoned dumps, rail yards, and industrial space) or remove old or substandard housing. All of the cities set long-term goals to create cultural and/or recreational spaces that would serve their residents and draw a tourist trade. The Expo cities seem to have at least partially succeeded in those goals.

Question two required comparisons of the neighborhoods immediately surrounding the Expo sites to their host cities and states. **Table 3** contains the populations of the neighborhoods surrounding the Expo sites. Note that New York and Seattle had markedly higher populations in the surrounding neighborhoods compared to the other four.

**Table 4** shows ratios that compare the demographic and environmental metrics for the 1-mile radius neighborhoods surrounding the Expo sites to those of their host states and cities. Ratios above 1.0 indicate that the 1-mile radius circular area had higher average values than the host state and/or host city. Those below 1.0 indicate that the site area had lower average values than the state and/or city. For the state comparisons, five of the seven demographic comparisons are

**Table 3.** Populations within 1-mile radius from the centroids of U.S. Expo sites, 2016-2020\*.

City	Populations within 1-mile radius of the Expo centroid (3.14 sq. miles)
Knoxville	17,492
New Orleans	11,432
New York (Queens County)	83,498
Seattle	59,198
San Antonio	11,134
Spokane	13,744

\*Population data from the American Community Survey, 2016-2020 estimates (via EJScreen).

**Table 4.** Ratios of the Demographic and Environmental Characteristics of the Six U.S. Expo Sites Compared to Their Host States and Cities.

Characteristics of the Expo sites	1-mile radius area compared to host state <sup>a</sup>	1-mile radius area compared to host city <sup>b,c</sup>
Demographic metrics		
• Limited English speaking family, %	1.54**	1.04
• Low income population, %	1.36*	1.11
• Unemployment rate, %	1.29*	1.01
• People of color, %	1.26	0.99
• Population with less than a high school diploma, %	1.09	0.98
• Population greater than 64 years, %	0.75	0.79
• Population less than 5 years, old, %	0.72	0.65*
Environmental metrics		
• Traffic proximity and volume (daily traffic count/distance to road)	1.87**	1.10*
• Hazardous waste proximity (facility count/km distance)	1.84**	1.17*
• Underground storage tanks, counts	1.81**	1.17*
• Diesel particles	1.76**	1.17*
• Distance from Superfund sites	1.63**	0.94
• Risk management plan (RMP) proximity (facility count/km distance)	1.51*	1.00
• Housing built before 1960-, %	1.48*	0.95

<sup>a</sup>Results of one-sample Kolmogorov-Smirnov test. <sup>b</sup>Queens County rather than New York City is the comparable area because of New York City's massive size and population. \*P significant at  $P < 0.05$ ; \*\*P significant at  $P < 0.01$ . Note: The numbers in the table are expressed as ratios as the actual numbers vary for each metric.

statistically significantly higher within the 1-mile radius neighborhoods, and three of these were significantly higher.

For the 1-mile radius of the Expo sites compared with their host city (or Queens County), seven of the fourteen neighborhoods are higher for demographics, and four of these are significantly higher. All of the ratios representing the environmental metrics are significantly higher. Given the locations of the Expo sites near business centers, it is not surprising that they have significant markers of industrial and commercial uses, such as traffic density, underground storage tanks, and hazardous waste sites. In other words, the neighborhoods created by the Expos have high concentrations of traffic, waste sites, fine particles in the air, and poor residents compared to their surrounding cities, as well

as relatively fewer young children.

**Table 5** summarizes the results for the Expo neighborhood areas compared to their host cities, grouped by demographic, environmental, and health metrics. A higher designation suggests the potential for social and environmental injustice in the neighborhoods surrounding the Expo sites relative to their host cities as a whole. Note that in the demographic column, the number of sites with higher and lower values for the neighborhoods compared to their host cities is almost identical (totals of 19 for the high and 21 for the low). In terms of environment, five of the six sites display evidence of more long-term environmental burdens than their host cities (totals of 32 and 9). Queens is the exception, with one more low rather than high environmental value.

The health comparisons show marked contrasts within the set of six places. For health indicators, when all six sites are included, the census tracts around the Expo sites tend to have rates similar to their host cities, with one exception, Seattle. The census tracts near the Space Needle demonstrate better health outcomes than the city as a whole. Overall, however, with that one exception, it would be inappropriate to assert that there are favorable health, environmental, and social justice outcomes for the neighborhoods surrounding the U.S. Expo sites compared to their host cities.

We looked at the six sites from another vantage point, comparing the six Expo sites and the three proposed sites in the cities (Philadelphia, Los Angeles, and Chicago) that were accepted by the BIE to host an Expo but withdrew their bids. A review of their efforts shows that the three cities did not add major local infrastructure to their plans. They demonstrated relatively higher levels of diesel particles, traffic proximity, and people of color than did the six Expo sites (data not shown). Interestingly, the neighborhoods around the proposed but withdrawn

**Table 5.** Summary of results for the neighborhood areas surrounding U.S. Expo sites compared with their host cities.

Expo	Demographic 1-mile radius area compared to city Higher*, Lower	Environment 1-mile radius area compared to city Higher, Lower	Health Census tracts compared to city Higher, Lower
Knoxville	2, 5	6, 0	13, 11
New Orleans	2, 5	6, 1	26, 20
New York (Queens County)	5, 2	3, 4	26, 10
Seattle	2, 5	6, 1	0, 33
San Antonio	3, 2	6, 1	11, 19
Spokane	5, 2	5, 2	15, 4
Aggregate of the six Expo sites	19, 21	32, 9	110, 97

\*Higher means more evidence of social and environmental injustice.

sites had a higher proportion of new housing, relatively fewer low-income residents, as well as further distances from hazardous waste and Superfund sites than their six Expo counterparts. While none of these differences are statistically significant, it appears that failure to host an Expo did not seem to hold the 1-mile radius neighborhoods of these three cities back in many areas of progress.

Below are three case studies to augment the findings of this paper. The first two focus on Expo cities. The third is offered as a comparison of a city that bid for an Expo but withdrew its bid in favor of a U.S. rather than an international event.

## 5. Case Studies

### 5.1. Seattle

Seattle's 1962 Expo appears to be the most successful of the sites studied in terms of long-term outcomes. One striking difference between where the Seattle Expo was geographically centered and that of the other sites is that the Queen Anne area of Seattle was never dominated by a single use. As the area is hilly, only the areas along the water are suitable for industrial and large commercial uses. This fact made it amenable to becoming a place where residences, religious institutions, parks, schools, and other urban activities could be built when the Expo was over. Historical reviews indicate that some of the residential areas in the Queen Anne area were blighted and targeted by the Expo for redevelopment (Findlay, 1992; Williams & Miller, 2015). Yet, redevelopment seems to have been achieved with less displacement of the local population compared to what happened in other Expo locations. Another major advantage for the redevelopment of the Queen Anne area after the Seattle Expo was that Boeing had facilities located in three directions from the site, all within 30 minutes by automobile. Microsoft, located in Redmond, is located only 20 minutes away from Queen Anne by automobile. Both corporate entities were supporters of the redevelopment efforts (*Boeing Spacearium Interior Model, Seattle World's Fair, January, 1962, 2023; Seattle, Scientific Innovation, and Microsoft Research, 2012*).

Seattle, along with Austin, Houston, and San Francisco, have attracted well-educated people and investors. The Space Needle lies in the southern part of Queen Anne, the Woodland Park Zoo is about seven minutes by car to the north, and the University of Washington's main campus is about ten minutes to the northeast. The list of assets in the Queen Ann area continues to grow. While this is a positive post-Expo result, Seattle ranks number 1 for rent increases, and the last decade has not lessened the challenge for this area to be accessible for people with limited resources (Cohen, 2022).

### 5.2. New Orleans

New Orleans suffered a large population loss relative to all the Expo cities due to domestic migration caused by Hurricane Katrina and the decline of the tourist economy during the pandemic (Park, n.d.). This makes New Orleans very dif-

ferent from the other Expo cities. The Data Center reports that the public housing projects that were destroyed in Katrina are being redeveloped for mixed-income families (Plyer, 2023). But even before Katrina, gentrification was happening. The Warehouse District was changing from a commercial/industrial area to an arts/residential area (Whatley, 2014). The 1984 Expo simply served as a critical force for change, introducing the district to potential investors who were interested in converting warehouses to galleries and studio spaces. Additionally, the nearby French Quarter experienced “tourism gentrification,” transforming the middle-class neighborhood into one for relatively affluent people and tourism venues (Gotham, 2005). This massive wave of gentrification happened seemingly overnight (Blum, 2019).

Census data show that only seven of New Orleans’ 72 neighborhoods have larger populations than they did in 2000. These include the Lower Garden District and the Central Business District which together encompass the Warehouse District where the Expo was centered (Plyer, 2023). Today, the Warehouse District is called the Arts/Warehouse District where many commercial buildings have been redeveloped into apartments and condo buildings. The area now sports rooftop swimming pools, award-winning restaurants, Gallery Row, the National World War II Museum, Blaine Kern’s Mardi Gras World, and the Convention Center. It is considered the artsy, sophisticated, and trendy place to be in the city. More upscale housing in the area is expected, and the result is that it will become less diverse and less accessible to those with limited resources (*Warehouse District/New Orleans, 2023*).

### 5.3. Philadelphia

Philadelphia differs from all of the Expo cities as it withdrew its bid to the BIE while going forward with a smaller celebration. In 1966, President Lyndon Johnson’s administration asked for bids for funding a national bicentennial. Philadelphia’s plan was pricey, including both a bicentennial celebration and a world’s fair. While the plan was rejected by the federal administration, its very existence began stirring racial divisions across the city. The plan called for redevelopment of the city’s central business district while largely neglecting neighborhood housing needs. The only plan for housing was for Society Hill, an area along the Delaware River targeted for new luxury apartments. The plan also called for revitalizing green spaces along the Delaware River as well as the area between City Hall and the Ben Franklin Parkway (Eggert-Crowe & Knowles, 2023). In reaction to threats of civil unrest, Mayor Frank Rizzo canceled the city’s BIE bid but planned to go forward with the city’s bicentennial plan.

As the 1776 celebration began, thousands of visitors came to witness the Liberty Bell being moved from Independence Hall to a new pavilion at Independence Mall. Activities occurred throughout the city, but not everything went according to plan. Marches and demonstrations against social injustice occurred, and the threat of violence reduced the expected number of visitors to the city

*(July 4th Demonstration in Philadelphia, 2023)*. Additional fear was created by the outbreak of Legionnaire's Disease at the Bellevue Stratford Hotel, a devastating event that led to the death of at least 30 people (Royes, 2023). Overall, efforts to create lasting value for the city were limited, likely due to failure to include the community in overall planning and the unfortunate occurrence of a potential new plague at a downtown hotel.

## 6. Discussion

Progress for fully built-out American cities requires determining what will aid in the redevelopment of distressed areas, such as abandoned rail yards or rusting industrial waterfronts. It requires visionary city planners and elected officials who are willing to develop and sell their plans to the public—plans that will hopefully alleviate poverty, provide affordable housing, enrich the local environment, and improve the health of both the neighborhood's and city's populations. It also means planning for a sustainable future. Can hosting an international Expo or another type of celebration such as a bicentennial help a host city achieve at least some of those results?

This study asked whether U.S. Expos since 1939 left long-term benefits for their host areas. Acknowledging that our results had few cases, they do suggest that a few places received long-term benefits. The areas immediately around Seattle's and, to a lesser extent, San Antonio's Expo arguably benefited. On the other hand, the neighborhoods surrounding the Expos in Knoxville, New Orleans, New York, and Spokane have not benefitted in terms of social and environmental justice compared to their cities as a whole. Although we do not have absolute counterfactual scenarios for the six Expo sites, we do have information about three U.S. cities that applied to the BIE but withdrew their Expo bids. Two of the three, Philadelphia and Los Angeles, went on to host bicentennial celebrations, but at a far smaller scale than would be required for an International Exposition. Yet they seem relatively better off than Knoxville, New Orleans, New York, and Spokane.

Overall, we did not find that hosting an Expo as a place-based policy option is a consistently good way of building a positive future for the hosting site area of American cities. In fact, in some places, the Expos seem to have contributed to worsened conditions. The popular image that proponents market to potential hosting cities is that building soft power through an Expo brings short and long-term benefits that are more than worth the economic cost. This may be the case for a hosting city as a whole, but the findings are distressing in the neighborhoods immediately surrounding the former Expo sites. The empirical evidence shows that these areas are far from models of social or environmental justice. The historical records show that some of the Expos were at least partly motivated by the redevelopment of abandoned rail yards and other LULUs. Measured by the social, environmental, and health metrics we used, these areas have not become exemplary locations. The impermanence of Expos and the lack of



investment in permanent infrastructure to support the event underscore the difficult challenge of redeveloping what is a temporary showcase into more sustainable land uses.

This study has limitations. We had a small number of Expos for our study, and both the locations of the neighborhoods surrounding the sites and their metrics were estimated. While the results may be good estimates of community health and while they may suggest issues with social and environmental injustice, the data alone cannot tell the whole story. Case studies are needed to account for local politics and the effects of natural or public health disasters on outcomes. Indeed, the Yiddish proverb states, “Man plans and God laughs” (*Yiddish Wit: Man Plans and God Laughs*, 2023).

## 7. Conclusion

As noted in the introduction, Expos in the United States have most likely outlived their utility as American cities cannot compete with plans submitted from other countries that have costs in the multiple billions of dollars. It is more efficient and economical to simply plan for revitalization and distressed areas. For example, the Minnesota 2023 plan was expected to cost \$ 1.5 billion (*Expo 2027 Would Cost \$ 1.5B If Minnesota Wins It; Planners Seek \$ 10M for Now*, 2023). That effort was lost to Serbia, which expects to spend \$ 18.5 billion (*Serbia to Invest 17.8 Bln Euro in Preparations for Belgrade Expo 2027*, 2024). The next opportunity to host an Expo will be 2032/33 or 2035. Should the United States again compete? We don't believe so unless there is a clear and implementable plan backed by funds to reuse the site for community-wide purposes (e.g., affordable housing, museums, schools, and other assets that benefit the host cities and the neighborhoods surrounding the site for at least a generation. Otherwise, the historical and empirical records show that investing a great deal of money and time in building a temporary showcase is a bad idea for American city redevelopment.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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