November 10, 2017

Ms. Barbara Alfano, Regional Brownfields Coordinator

Environmental Protection Agency Region 4

Atlanta Federal Center

61 Forsyth Street

Atlanta, Georgia 30303

RE: Waterfront Botanical Gardens, Louisville, Kentucky

EPA Brownfields Cleanup Grant

Waterfront Botanical Gardens / Former Ohio Street Dump

Dear Ms. Alfano:

Waterfront Botanical Gardens is pleased to submit an application for the cleanup of our 23-acre site that was formerly the Ohio Street Dump, an active operation from the 1940’s to 1980. We acquired this property after performing a Phase I Environmental Site Assessment and entering into an Option to Purchase Agreement with the city of Louisville. Due to years of neglect and abuse, the property we are revitalizing was of no use to no one. We are turning an abandoned landfill into a re-useable, positive energy site. We partnered with Louisville Metro Government to bring this project to fruition. The city sold us the 23-acre site for $1.00 so that we can develop the Waterfront Botanical Gardens for. We are building a state-of-the-art environmental education complex in a region ridden with chronic disease and concentrated poverty. Our environmental education programming has been designed to address the historically unhealthy behaviors that plague our service region and cause Kentucky and Southern Indiana to consistently lag behind. This project places Louisville, KY and Southern Indiana at the forefront of environmentalism and innovation. To accomplish our goals, we are partnering with (insert partners you want to name).

1. **Applicant Identification:**  Waterfront Botanical Gardens

P.O. Box 5056

Louisville, Kentucky 40255

1. **Funding Requested:**

i). Grant Type: Cleanup Grant

ii). Federal Funds Requested: $200,000/no cost share waiver requested

iii). Contamination:

1. **Location:** The 23 acre site of the Waterfront Botanical Gardens is located in Jefferson County, Kentucky; however, the city of Louisville surrounds the whole property. The site is situated at the corner of River Road and Frankfort Avenue.
2. **Property Information:** Waterfront Botanical Gardens/Former Ohio Street Dump

1411 North Frankfort Avenue

Louisville, Kentucky 40206

Ms. Barbara Alfano, Regional Brownfields Coordinator

Page 2

November 10, 2017

1. **Contacts:**

**i). Project Director: ii). Chief Executive:**

Clinton Deckard Kasey Maier

Construction/Project Manager Executive Director

Waterfront Botanical Gardens Waterfront Botanical Gardens

P.O. Box 5056 P.O. Box 5056

Louisville, Kentucky 40255 Louisville, Kentucky 40255

Phone: 502-544-0523 Phone: 502-648-1558

Email: [cdeckard@construct-solutions.com](mailto:cdeckard@construct-solutions.com) Email: [kmaier505@gmail.com](mailto:kmaier505@gmail.com)

1. **Population:**
2. Waterfront Botanical Gardens is not a jurisdiction. It is a nonprofit organization.
3. 597,337 in the city of Louisville; 741,096 in Jefferson County (Retrieved from: [https://suburbanstats.org/population/kentucky/how-many-people-live-in-jefferson-county in October 2017](https://suburbanstats.org/population/kentucky/how-many-people-live-in-jefferson-county%20in%20October%202017)).
4. The site is located within a county experiencing persistent poverty. Louisville, KY is one of America’s 11 poorest cities (Retrieved from: <https://www.cbsnews.com/media/americas-11-poorest-cities/2/> in October 2017).
5. **Other Factors Checklist:** Attached
6. **Letter from the State:** Attached

We greatly appreciate your consideration of our application. If there are any questions, please contact me at (502) 648-1448 or [kmaier505@gmail.com](mailto:kmaier505@gmail.com).

Very Truly Yours,

Kasey Maier

Executive Director

# Community Need

## 1.a. Target Community and Brownfields

1.a.i. *Community and Target Area Descriptions*

Four Paragraphs

Louisville, KY is the home of the Waterfront Botanical Gardens (WBG). Louisville was founded in 1778 by George Rogers Clark and is named after King Louis XVI of France, making Louisville one of the oldest cities west of the Appalachian Mountains. Home to 741,096 residents, Louisville is one of only two cities in Kentucky designated as first-class.[[1]](#footnote-1) Louisville received an invitation from the Rockefeller Foundation to join the 100RC cohort, which designated the city as one of the world’s 100 most resilient cities. Louisville is known for the Kentucky Derby, fine bourbon, and is referred to by many as a food mecca. It is also home to the late, great Muhammad Ali.

Despite the positive attributes, Louisville is a city that is plagued by poverty and chronic disease. Health statistics in our service region mirror those of deep rural areas although we are located in a thriving metropolis. In Louisville, place matters, and geography determines a person’s quality of life. The Greater Louisville Project Report exposed social determinants of health in Louisville.[[2]](#footnote-2) GLP showed children living in concentrated poverty live 8 years less than their peers living in higher socioeconomic statuses. 1 in 7 people in our service region live in concentrated poverty.[[3]](#footnote-3) What this means is that our urban core is contaminated by high cancer rates, diabetes rates, cardiovascular disease rates, obesity, low education levels, low college-going culture, lack of resources, and barriers to escaping a vicious cycle of poverty.

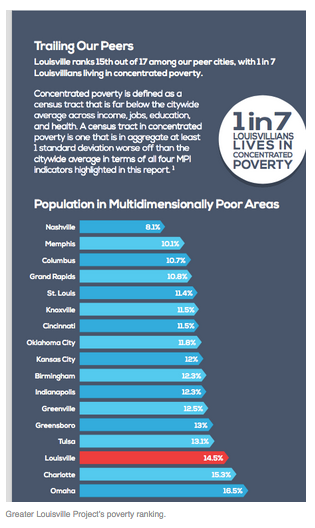
Louisville is the only city in the U.S. of its size to not have a state-of-the-art botanical garden. This is alarming because we are located in a region filled with preventable chronic diseases, and unhealthy behaviors that can be modified by environmental education. These historical data served as motivation for WBG when we decided to revitalize a former landfill and make it a re-useable property. WBG is being built on a site that was once so contaminated with environmental hazards that it was of no use to anyone.

Waterfront Botanical Gardens is located in an area that is historically industrious in nature. Being close to high trafficked highways such as I-71 and the Waterfront has contributed to poor air quality. Three interstate highways traverse Jefferson County and they converge in downtown Louisville near this project. In addition, there has been an overall disinvestment in the Butchertown, Crescent-Hill, Clifton area, and abandoned homes and buildings are evidence of that disinvestment. Place matters, and the location of the Waterfront Botanical Gardens has been burdened by poor environmental conditions such as pollution and flooding. ***Finally, the gardens sit on Beargrass Creek, an important waterway that traverses all of Jefferson County, and that is highly polluted by various sources.*** Our project will help raise awareness to this problem, and teach program participants how plants can help to clean the air and water.

*1.a.ii. Demographic Information and Indicators of Need*

Six Paragraphs with a Visual

While Louisville continues to grow in diversity in comparison to other parts of the state, the city still continues to get left behind in many respects. Disturbingly, 1 in 7 Louisvillians live in concentrated poverty.[[4]](#footnote-4) Concentrated poverty is defined as a census tract that is far below the citywide average across income, jobs, education, and health. A census tract in concentrated poverty is one that is in aggregate at least 1 standard deviation worse off than the citywide average in terms of four Multi Poverty Index indicators: Education, 21st Century Jobs, Quality of Place, and Health.[[5]](#footnote-5)



The Greater Louisville Project (GLP) report captured the attention of the city as a whole. The report drew a clear correlation between levels of concentrated poverty and the city’s overall competitiveness. The GLP assessed Louisville by neighborhood, using census data combined with a multidimensional poverty index developed by the Brookings Institution. Brookings’ analysis indicates that the effects of multidimensional poverty on a resident do not just add up – they compound the barriers to each citizen’s success and wellbeing.[[6]](#footnote-6) Unfortunately, the GLP revealed that Louisville ranks 15th out of its 17 peer cities in concentrated poverty. In comparison to peer cities such as Nashville, St. Louis, and Cincinnati Louisville is lagging behind, making it harder for individuals and the city itself to succeed.[[7]](#footnote-7)

The 2015 Community Health Needs Assessment (CHNA) ranked the top 3 most pressing health needs in the Louisville Metropolitan area (i.e. location of WBG). Those needs are: Obesity, Alcohol/Drug Abuse, and Heart Disease/Stroke.[[8]](#footnote-8) Obesity is an epidemic in Kentucky, and Louisville is no exception. Kentucky has the fifth-highest rate of obesity in the nation. About one-third of U.S. adults (33.8 percent) are obese. Approximately 17 percent (or 12.5 million) of children and adolescents ages 2-19 years are obese. Soaring the past 20 years, there has been a dramatic increase in obesity in the United States and rates remain high.[[9]](#footnote-9)

It is commonly known that obesity is correlated with chronic disease and lack of physical activity. Louisville’s data mirror this correlation. Louisville is tackling obesity throughout its community of 741,096 residents. On the basis of its high heart disease and diabetes rates, conditions that are closely related to obesity, Louisville was ranked the fifth-unhealthiest city in America by the American College of Sports Medicine. Approximately 21% of Kentucky children are obese, making it the third-most-obese state for children in the country.[[10]](#footnote-10)

In Louisville, 72.7% of black adults are overweight or obese, which is higher than the rates of overweight and obesity among whites (61.8%) in the city, and higher than the adult rates of overweight and obesity in Kentucky and nationwide. Further, only 22.1% of black adults in Louisville report eating five or more servings of fruits or vegetables each day, which is lower than consumption rates among white adults in the city (25.9%).[[11]](#footnote-11) WBG’s environmental education programming will teach residents how to grow their own food.

These data describe the health conditions in Louisville Metro neighborhoods, where the Waterfront Botanical Gardens is located. This is a high-risk area for health issues, such as heart disease, another health issue connected to obesity. Deaths due to heart disease are a serious concern for Louisville. Heart disease is largely preventable. It is driven by behaviors such as smoking, lack of physical activity, and diet, all of which can and will be addressed through our environmental educational programming. This is of critical importance because Louisville is experiencing heart disease-related deaths at a higher level than the national average. Thirty-eight percent of Louisville’s population is living in high-risk areas that are experiencing an all-too-common chronic disease.[[12]](#footnote-12)

Overview of health issues in the Waterfront Botanical Gardens area:

•1 in 3 adults are overweight or obese. This means they have an increased risk for high blood pressure, diabetes, some cancers, and arthritis/joint pain. All issues that can and will be addressed through our environmental education programming.

•25% of adults still use tobacco products which increases their risk for lung disease, cancer, heart attack and stroke, and poor wound healing. All issues that can and will be addressed through our environmental education programming.

•Rate of deaths for heart disease, cancer, diabetes, and stroke are higher than the death rates for Kentucky and the US.[[13]](#footnote-13)

**1.b. Welfare, Environmental, and Public Health Impacts**

*1.b.i. Welfare Impacts*

2-3 short paragraphs

The history of the WBG property dates back to the 1800’s when this property was a residential area. Maps from that period show several streets at the site, and 135 homes. The area flooded frequently, and eventually became an area of small houses and some commercial usage. By the 1940’s, the City of Louisville Sanitation Department condemned the neighborhood and turned the property into a disposal site. In 1976, the Louisville-Jefferson County Health Department took steps to close the site, and by 1980 the site had been partially capped and was used as a vehicle impound lot. The Louisville-Jefferson Metropolitan Sewer District constructed a force-main sewer across the site near Interstate I-71 in 1991. The site has essentially remained idle since it was capped.

There are also safety concerns related to the property – **homeless population and the infamous contamination of Beargrass Creek create an unsafe environment for the community**.Historically, this site has been the home to as many as 10 homeless camps. We have been in touch with homeless support agencies many times so that these individuals are aware of the community services available to them. There have been no contamination issues as a result of these individuals, but when an outsider (not visiting the gardens or attending our event) is present, there is always a question of safety. With the improvements to our site and the installation of a security fence, as well as the removal of the large honeysuckle grove which they seem to like to live in, we will eliminate this problem creating a safer environment for the surrounding community.

**Contamination of Beargrass Creek:** WBG sits on Beargrass Creek, an important waterway that traverses all of Jefferson County. Beargrass Creek is highly polluted by various sources. Our project will help raise awareness to this problem, and teach attendees how plants can help to clean the air and water. The polluted Beargrass Creek is an issue, especially in heavy rains. Health warning signs are posted near the creek, though people still use it. Contamination of Beargrass Creek dates all the way back to the 1800’s.

*1.b.ii. Cumulative Environmental Issues*

The history of the site is relevant when discussing cumulative environmental issues. The proposed site for the botanical gardens lies within the boundaries of one of Louisville’s oldest city areas, known as “The Point.” In its earliest days, The Point was part of a triangular area of land completely surrounded by water – Beargrass Creek and the Ohio River. An 1857 map of the city shows a small grid of streets in the area. Fulton (now River Road), Van Buren, Irvine, Lloyd, and Clinton Streets ran parallel to the Ohio River, and were bisected by Adams, Wayne, Ohio and Marion Streets.

During the antebellum period, Fulton Street was lined with summer homes of prosperous French families from New Orleans, who came north during the summer months to escape the heat. A house known as “French Garden” was located near where Ohio Street meets River Road, and it was a hotel for New Orleans summer visitors. In addition to fine homes, The Point included a wooded area that was a popular picnic spot for city residents. Floods in Louisville in 1832 and 1845 caused serious damage to houses lying along the Ohio River, destroying many of them. The old channel of the Beargrass Creek was enclosed during the 1850s to create a covered sewer, and the New Cut of Beargrass Creek was dug to divert storm water from the Muddy and Center Forks of Beargrass Creek into the Ohio River two miles upstream from downtown Louisville.

Over time, The Point evolved as a working class neighborhood with a mixture of small factories and mills, frame cottages, and small brick homes. From the 1850 census forward, the area was home to butchers, mill laborers, weavers, and others who worked in area businesses. Shops along what is now Story Avenue served the residents of the area. In February, 1883, the Ohio crested at 66-1/2 feet over low water, breaching the levee that protected the city, placing The Point under

30 feet of water. A second Ohio Valley flood the following January also damaged the area. In 1907 the area flooded again, followed by a March 1913 flood that led the New York Times to report, “On the Point, where only tops of houses can be seen, the Ohio has done its worst. Occasionally, one of the weather-beaten houses breaks from its moorings and is swept downstream. The river has been full of wreckage for two days. Stables, outhouses, and sometimes small cottages have floated past.”

The devastation to the area in the 1937 flood, and a later flood in the early 1940s, were so profound that the City decided to turn part of the area into a city dump for building refuse from flood damaged homes. The 300 and 400 blocks of Ohio Street, bounded by Irvine and Lloyd Streets, became the Ohio Street Dump. During World War II, the Ohio Street Dump became a source of income for many residents of the area who would scavenge for recyclable items, selling paper, cloth and metal refuse to recyclers as part of the war effort. In 1942, Mayor Wilson Wyatt went to Washington, DC to obtain funding for participation in the newly-developed federal landfill program, which the city received.

The early materials in the Ohio Street Dump were primarily building refuse from the city’s flood-damaged homes. Prior to the 1960s, trash transported to dumps often contained ash and sometimes hot coals from coal-burning furnaces. The Ohio Street Dump frequently caught fire, smoldering for days on end. While the burning caused air pollution problems at the time, it resulted in lower layers of refuse being burned away. When I-71 was completed in the late 1960s, it passed by the dump, rendering it the gateway to the city. Preparations began for the closing the Ohio Street site. Dirt and rock fill were added to seal the surface of the landfill.

In 1973, with the opening of the Edith Avenue Landfill, the Ohio Street Dump closed. An eight-year, multi-step closing plan was initiated, meeting public health requirements and stringent EPA rules for filling and stabilizing the site.

The site has a dirt fill cap approximately 25 feet in depth, covered with grass planting. Ongoing water monitoring of the water runoff from the site shows the area to be stable. At that time, the site was a designated Superfund site; however, as of November, 2010 it no longer appears on the National Priorities List. This is the result of ongoing efforts of the Waterfront Botanical Gardens staff and Board of Directors.

The site characterization activities conducted by Environmental Technology (ET) identified the presence of elevated lead, selenium, and polychlorinated biphenyls in subsurface soil at certain locations on the property. The groundwater and seep samples collected as part of the investigation did not detect the presence of compounds in access of their applicable screening levels. A number of volatile organic compounds were detected in the soil gas samples collected during the investigation. ET evaluated these results using an U.S. Environmental Protective Agency soil screening model. The results did not predict excessive risk from the soil gas concentrations using the available data and certain default assumptions of the model. The landfill is currently capped, and we will make sure the property remains protected during reuse.

*1.b.iii. Cumulative Public Health Impacts*

2 paragraphs with a Visual

Like the Ohio River, upon which our city was founded, Beargrass Creek has been used and abused and if the general public were fully aware of the issues caused by this creek they would be shocked and repulsed. The creek makes up the eastern edge of Louisville’s waterfront, as well as the backyard of the Waterfront Botanical Gardens. It is an essential body of water that runs through the community that has been treated shamefully. It is a body of water that has been in existence since the inception of Louisville. Unfortunately, it has been used as a dumping ground and an open sewer. Urban areas bring into focus the environmental degradations that impact our health. Louisville’s urban environment includes:

∗ Air toxins – highest potential health risk of any county in the southeast United States

∗ Air pollutants – nonattainment for ozone and fine particulates

∗ Asthma – one of the highest counts of mold and pollen in the United States

∗ Water contamination – no stream in the county meets body contact standards

∗ Contaminated soil – 25% of the downtown Louisville is classified as a “brownfield”

∗ Stress – potentially the single greatest cause of health impact

∗ Air contaminants – each day vehicles drive 24 million miles in Louisville, each emitting contaminants (Barnett, 2016).

../Documents/Botanica%20grant%20info/WBG%20map.pdf

The Beargrass Creek Watershed represents a sampling of practically every water quality problem

that can be imagined, including: combined and sanitary sewer overflows; package wastewater

treatment plants; septic tank seepage; urban storm water run-off (non-point source pollution from

streets, lawns and parking lots); erosion and sedimentation problems; and flood management.

The entire watershed, including the piped sections in the City of Louisville, receives storm water

and wastewater flow from residential, commercial and industrial customers. Approximately three

miles of the open sections of the creek were piped or channelized from the 1930s to the 1960s.

Based on federal water quality standards, the Commonwealth of Kentucky’s Division of Water

sets the uses designated for Beargrass Creek and monitors its progress in meeting specific water

quality standards. Based on these standards, the Kentucky Division of Water (KDOW) classifies all three forks of Beargrass Creek as not meeting the designated-use criteria for primary contact recreation (such as swimming and wading) or for aquatic life to live. Also contributing to the creek’s decline, and harmful to human health, are vehicle emissions such as oil, antifreeze, benzene from exhaust and heavy metals including zinc, copper and lead. Other pollutants found in measurable quantities in Beargrass Creek are household chemicals including solvents, paints, pesticides and herbicides. Storm water runoff from poorly managed construction sites contributes tons of silt and sediment that suffocate aquatic habitat.

The Louisville Metro Department of Public Health and Wellness announced in August 2017 that West Nile-infected mosquitoes had been found in six local zip codes: 40204, 40205, 40206, 40208, 40212 and 40214. Beargrass Creek runs through these zip codes. Mosquitos breed in stagnated water. Stagnant water is a byproduct of human neglect. Kentucky has an average of 10 cases of the West Nile virus annually. This year, 4 of those cases were in Louisville.[[14]](#footnote-14)

**1.c. Financial Need**

*1.c.i. Economic Conditions*

2 paragraphs

The Waterfront Botanical Gardens is located in an area where 29% of citizens make less than $25,000 annually, and Louisville is ranked as the 11th poorest city in the nation.[[15]](#footnote-15) Moreover, 1 in 7 people live in poverty, which negatively impacts Louisville’s overall competitiveness.[[16]](#footnote-16) The development of this project will impact the community in raising its quality of life for those who live here, and work to attract new residents and visitors. Along with other developing projects in the same area, the economic impact will be significant for both the urban core of Louisville and the adjacent southern Indiana.

When fully built, the gardens will attract 200,000 visitors, over 5,000 school students annually, 300 school teachers for professional development, 300 adult students, create 40+ jobs and utilize over 1000 volunteers. Finally, the development of this new project positively impacts neighborhood revitalization in the areas immediately surrounding the gardens. This will have a positive impact on property values, quality of life and eventually wages in the area.

*1.c.ii. Economic Effects of Brownfields*

2 paragraphs

The project impacts the community as a whole. There is no draw in the area where the Waterfront Botanical Gardens is being built. The former landfill is a dilapidated piece of land overridden with a small homeless population. A brownfield is a vacant or underutilized site where the threat of contamination has made redevelopment more complex. Brownfields come in all shapes and sizes. In Louisville, common examples include abandoned manufacturing facilities, gas stations, and dry cleaners. Bringing brownfields back into active use benefits the community by reducing blight and vacancy, creating jobs and amenities, and reducing hazards to human health and the environment. Furthermore, brownfield redevelopment can limit sprawl and take development pressures off greenspace and agricultural land.[[17]](#footnote-17)

The presence of brownfields in and near the city of Louisville has a negative effect on the city’s economic condition. In Louisville, place matters, and in the city 1 out of every 7 people live in a concentrated poverty pocket.[[18]](#footnote-18) In these areas, social determinants of health result in increased mortality, chronic disease, unemployment, lack of a college education, and an overall lack of resources in general. All of these health issues were taken into consideration when the gardens were designed. The Waterfront Botanical Gardens will provide a multitude of new recreational and educational opportunities. Residents can walk without any worries of traffic. Recreation has been empirically shown to lower diabetes rates, reduce the risk of heart disease and prevalence of obesity.

# Project Description and Feasibility of Success

## 2.a. Project Description

*2.a.i. Existing Conditions*

4 paragraphs – bullet point conditions

Several investigations dating back to 1994 have been performed to document the conditions of the landfill. An investigation in September 2013 was performed to specifically document the current condition of the cap, assess potential off-site impacts to soils, groundwater, surface water and sediments from materials disposed at the site, evaluate potential off-site migration of gases, and assess risks to human health and ecological receptors. At the time the investigation was performed the property was owned by the City of Louisville. Waterfront Botanical Gardens has since purchased the property from the City and plans to develop the site as a botanical garden. The findings of the investigation support that the potential risks to human health and the environment are acceptable or can be managed, so that development of the site can proceed.

From the investigation, borings indicate the subsurface soil contained lead, selenium, polychlorinated biphenyls (PCBs) above the established risk-based screening levels. Arsenic was detected above screening levels in the soil samples, but below background levels for the region. The investigation did not identify any contaminants above screening levels of target risk levels in groundwater or seep. For soil gas around the perimeter of the landfill, chemical constituents were detected but below target levels for vapor intrusion to buildings. Methane was not detected on the landfill cap during surface gas screening.

Results from previous investigations by the Kentucky DWM and reviewed by the U.S. EPA concluded the site posed a low risk to human health and recommended no further action under CERCLA.

Exposure to landfill waste and impacted groundwater within the landfill has been limited by the soil cap covering the landfill. Future exposure to the landfill waste and groundwater will be mitigated by enhancing and maintaining the cap and by pavement, buildings, and other infrastructure associated the development proposed by Waterfront Botanical Gardens. Future development will include an indicator mat, additional cap materials, and engineered drainage control that will limit water infiltration into the landfill.

Results from the latest and previous investigations indicate that the former Ohio Street site can be redeveloped under a site management plan similar to and successfully implemented for the development of Waterfront Park and Louisville Slugger Field.

* 23-acre site
* Was a neighborhood of 135 homes destroyed by flooding
* Became a landfill, open dump/burn and push operation for almost 40 years
* Capped with 25 feet of construction dirt and top soil, covering the deteriorating and settling landfill
* Heavy brush and tree growth encourages homeless encampments – unsafe for surrounding residents
* The site characterization activities conducted by Environmental Technology (ET) identified the presence of elevated lead, selenium, and polychlorinated biphenyls in subsurface soil at certain locations on the property. Testing results did not predict excessive risk from the soil gas concentrations using the available data
* Site remains stable at this time.
* Site is located adjacent to industrial areas including a car impound lot and heavy-use concrete plant.
* Site is located adjacent to Interstate-71.
* Site is located adjacent to the highly-contaminated Beargrass Creek.

*2.a.ii. Proposed Cleanup Plan*

2 paragraphs

The proposed future use of the site as a public garden will rely on engineering controls to protect human health and the environment. The existing cap and new hardscape (pavement or synthetics) surfaces will be used to cover the buried fill material and prevent exposure. All excavated soils throughout the project shall remain on site. The existing soil cap will be managed such that all disturbed areas will maintain cover thickness requirements consistent with the final design. If needed, additional soil be imported to meet the design criteria.

We are installing an indicator mat on top of the landfill under the cap wherever exposed to use as a warning to the general public. In addition, 24 inches of soil, pavement, pavers, gravel and buildings will provide a new cap for the site the encase the contents. Building structures, utilities and other park features to be constructed have been designed to handle potential issues associated with settlement and methane gas. Geotechnical investigations have been conducted to design the various foundations for the buildings, utilities, parking lot, and other proposed structures.

*2.a.iii. Alignment with Revitalization Plans*

6 paragraphs

Increasing outdoor recreation and education has been a theme in Louisville for a very long time, since the Olmsted Parks were developed: http://www.olmstedparks.org/.

More recently, starting in 2011, the 21st Century Parks were started and have resulted in over 2,000 acres of woodlands, trails, creeks and more: http://www.theparklands.org

Waterfront Park, adjacent to our project, is an 85-acre waterfront park that include trails, water sports, concerts, an amphitheater and a walking bridge that connects Louisville to southern Indiana: https://louisvillewaterfront.com/.

Southern Indiana is developing a similar waterfront to encourage outdoor recreation, called the Ohio River Greenway: http://ohiorivergreenway.org/

Finally, Louisville is building a 100-mile multi-use path around the city, called the Louisville Loop, which is directly connected to Waterfront Botanical Gardens: https://louisvilleky.gov/government/louisville-loop

**2.b. Tasks Descriptions and Budget Table**

11 paragraphs with each task underlined and explained thoroughly. Tasks may include but are not limited to: project management, community outreach, cleanup planning, and site cleanup

Environmental Protection Agency grant funds will be used for Cleanup Planning and Site Cleanup. Grant programmatic support will be provided by the Waterfront Botanical Gardens as an in-kind contribution and a part of its match. All cost estimates are based on similar expenses incurred by the work Clinton Deckard carried out while revitalizing other brownfields sites in Louisville, KY, such as Papa Johns Stadium, The Louisville Bats Stadium and the Yum! Center.

Task 1 – Project Management: Waterfront Botanical Gardens plans to: track project tasks, schedule, and budget; supervise the work of the selected brownfields contractor; and report on project activities and accomplishments with all the stakeholders that have been named in this grant application. If necessary, the project manager will attend relevant EPA meetings, workshops, and conferences. It is anticipated 100 hours of the project manager’s time will be required amounting to $10,000 in cost ($100/hour X 100 hours = $10,000) and $3,000 for travel to attend any training meetings and conferences. 40 hours of this time will be spent working with the Community Outreach Coordinator working on activities outlined below in Task 2. All $13,000 under Task 1 is in-kind funding from Waterfront Botanical Gardens’ match funder, Emil Graeser. Task 1 Outputs include: 12 Quarterly Reports, three Financial Status Reports, (leave blank for now)

Task 2 – Community Outreach: Waterfront Botanical Gardens will continue to work closely with the Louisville Metro Government to revitalize the former landfill, and to plan and conduct a series of strategic meetings with partners for this grant. Waterfront Botanical Gardens distributes critical information through its website, postcards, mailers, local newspapers, local radio stations, public meetings, television media, high quality videos, and social media. These efforts will not only continue, but they will increase for this grant effort. $20,000 has been allocated for carrying out the community outreach for this grant effort. Community outreach activities include, but are not limited to, the following:

* Boosting social media posts to reach a broader audience ($1,000)
* Updating the Waterfront Botanical Gardens’ current Community Involvement Plan ($3,000)
* Planning, executing, and facilitating 4 press events and public meetings to disseminate information about project activities and cleanup. The Community Outreach Coordinator will specifically hold a pre-Cleanup public meeting and a post-Cleanup public meeting with 2 meetings in between. This will keep the community up-to-date about what is happening on the site before, during, and after cleanup. ($10,000)
* Designing and distributing project brochures, postcards, and public notices ($3,000)

40 hours of the Project Manager’s time (configured with the $10,000 total cost) is projected to participate in and coordinate public meetings alongside the Community Outreach Coordinator. Total cost for Task 2 – Community Outreach is $17,000. The work will be carried out by Waterfront Botanical Gardens’ Executive Director in conjunction with the Project Manager. Outputs include, but are not limited to, the following: Updated Community Involvement Plan, four public events with partners, 1,000 project brochures, 1,000 postcards, 500 social media boosted posts, and four press releases.

Task 3 – Cleanup Planning: The cleanup planning phase has already started, but the following will take place during the life of the grant: finalizing the ABCA document to include obtaining review and approval from the EPA. The ABCA will be placed on a 30-day public review and comment period. A Quality Assurance Project Plan will be prepared. Cleanup planning contractor costs will include, but are not limited to, the following:

* Finalization of the ABCA document, including incorporation of comments from the general public notice and regulatory review ($5,000)
* Preparation of a Quality Assurance Project Plan and Health and Safety Plan ($7,000)
* Development of three sets of bid documents for site cleanup activities, bid evaluations, reference checking, coordination of a pre-bid onsite meeting and selection of contractors ($10,000)

Waterfront Botanical Gardens will contribute 20 hours of the Project Manager’s time to review documents ($100/hour X 20 hours = $2,000). Total cost of Task 3 – Cleanup Planning is $22,000. The work will be carried out by an environmental consultant in conjunction with supervision provided by the Project Manager. Outputs include, but are not limited to, the following: one finalized ABCA, one Quality Assurance Project Plan, one Health and Safety Plan, and three sets of bid documents.

Task 4 – Site Cleanup: Waterfront Botanical Gardens will use all EPA grant funding during this phase. Based on the Phase I Environmental Assessment and the ABCA, contractor cleanup activities are estimated at $240,856.18. $40,856.18 is being matched by Emil Graeser, as referenced in his letter of support that is attached with this grant application. The following corrective functions will be carried out. For the purposes of this grant, we will install 10,550 square feet of concrete pavers. The concrete pavers shall serve as an additional cap material as per the design of the main plaza in front of the Graeser Family Education Center.

* Fine grade for pavers ($1,687.68)
* Plaza pavers 15 x 15 ($239,168.50)

*2.b.ii. Budget Table*

1 paragraph with budget table

**2.c. Ability to Leverage**

Waterfront Botanical Gardens board and staff have actively been raising money for this project. Fundraising has been aggressive for four years. The entire project is estimated as a ten-year build and has a $60 million price tag. An official capital campaign was launched in 2016. To date, $6.8 million have been raised for Phase I. All funds raised are being used to build the first building on the site – The Graeser Family Education Center – a hub for innovative environmental educational programming. The building will also serve as a community asset that can be used for special events.

The Graeser Family Education Center is designed as a net zero building. Funds are being leveraged to pay for certain aspects of this building. An example of how funds are being leveraged is the partnership with the Kentucky Energy and Environment Cabinet. In August, the Waterfront Botanical Gardens project received a $375,000 Tennessee Valley Authority (TVA) Clean Air Act Settlement Grant. TVA funds are being used to purchase state-of-the-art equipment to make this building a net zero facility.

Another example is the partnership with Brownfields in Frankfort, KY. Waterfront Botanical Gardens received $390,000 from the Cleaner Commonwealth Fund to pay for materials and supplies needed for cleanup.

Additionally, funding has been secured from 15 local foundations and 1,900 individual donors. The Graeser Family Education Center is named in honor of the gardens’ biggest individual donor – Emil Graeser and his family. Emil provided monies to help meet matching requirements for the TVA grant, and numerous other grants we have applied for. Emil’s match funding is also being leveraged for this grant effort.

# Community Engagement and Partnerships

**3.a. Engaging the Community**

5 paragraphs

When the Master Plan was developed, one of the most important goals was to respond to the needs and interests of the communities we serve, providing the experiences that delight and sustain local visitors. Long-term sustainability of the gardens also depends on the strong community connections and relationships. Our motto is “Let’s build the gardens together!” As a critical part to achieving all of these goals, the planning process included ongoing efforts to include community members’ ideas and interests. Early in the process, the design team held two visioning sessions to solicit input on broad ideas as well as specifics for the gardens including visual character preferences, ideas for programming and activities, and ways to make the gardens reflect the unique needs of the targeted communities (i.e. Jefferson County and Southern Indiana). Draft planning and design concepts were reviewed in an open community meeting and extensively publicized in local media and on the Waterfront Botanical Gardens’ website.

Recently, conversations with the Butchertown Neighborhood Association and the Beargrass Creek Alliance have taken place to develop the corridor that connects the Waterfront Botanical Gardens to surrounding neighborhoods. Through collaboration, connectivity has been established. The Waterfront Botanical Gardens connects River Road to Crescent Hill to Butchertown to Nulu and to downtown. In addition, annual events take place on the site which not only bring the community together but the events also generate revenue for the project. Each year, we host the Prelude Event, ReGeneration Fair, member programs, corporate breakfasts, luncheons, and Beargrass Creek canoe historical education tours, arboretum tree tours, school program on site, etc..

To enhance community outreach for this grant, a Community Involvement Plan will be developed to guide outreach activities during cleanup. Activities will include, but are not limited to, a pre-cleanup meeting that involves interested people from Jefferson County and Southern Indiana to discuss project initiatives and upcoming activities. The pre-cleanup meeting will offer an opportunity to review the ABCA. During this time, the project team will address any comments or concerns expressed by the general public.

Other activities include facilitating communication through local media outlets including *The Courier Journal* (local newspaper) that has already been covering the project from day one. Local news stations such as WAVE 3 will participate in airing vital information about cleanup activities. Crescent Hill Radio Station WCHQ 100.9 FM is a community outreach partner, and airs information about the Waterfront Botanical Gardens regularly. They will assist with community outreach, as well. These communication mediums are the most effective in reaching our targeted populations.

Social media has been effective with communicating to the public. Major milestones are always announced on Facebook, Twitter and website. During this grant, social media outlets will be used to communicate updates regarding cleanup activities and major milestones of the project.

Project announcements will be distributed through all these formal and information channels as major milestones and project goals are accomplished. These announcements will include, but are not limited to, the following: announcement of EPA grant award; project start up; pre-cleanup public meeting; and, post-cleanup public meeting.

**3.b. Partnerships with Government Agencies**

WBG has worked closely with Metro Government to develop a multi-year agreement that has now led to the purchase agreement on the property. Many divisions of Metro Government have been helpful in this process: Mayor Fischer; Louisville Forward; Public Works; Waterfront Development; Metro Parks; and Metro Council. This year we received a grant from Metro Council to help fund the project. In addition, we are partnering with Louisville Forward in the development of a pedestrian sidewalk that borders our property, and connects pedestrians from the neighborhoods south of our property to Waterfront Park. The sidewalk will be integrated into the design of the gardens.

We have worked closely with the Kentucky State Cabinet of Energy and Environment for brownfield and energy funding. In addition, we are working on opportunities with the Kentucky Transportation Cabinet in reference to the highway land that borders our property and the vegetation planted along our common corridor. We are working with the Economic Development and the Tourism, Arts and Heritage Cabinets for future opportunities as we move forward. Finally we are working with Congressman Yarmuth’s office for opportunities that may develop out of the US Office of Interior.

**3.c. Partnerships with Community Organizations**

List of partners, underlined, with 1 paragraph descriptions of each partnership. (6 partners roughly)

Butchertown Neighborhood Assoc – Nick Johnson

Beargrass Creek Alliance – Ward Wilson

WCHQ Radio – Phyllis Fitzgerald

ART-FM Radio – Sharon Scott

Crescent Hill Community Council – Greg Smith or Mark Gaff

Nulu Business Association – Ina Miller

Creasey Mahan Nature Preserve – Tavia Cathcart Brown

River Rd. Business Association – Paul Bickel

Butchertown Neighborhood Association. We are actively working with BNA on the development of the project including the sidewalk, access from the east and west side and the bicycle path.

Beargrass Creek Alliance. The BCA is working with WBG to raise awareness of the adjacent Beargrass Creek through programming, canoe tours, walking site tours and planning of plants in the riparian border.

WCHQ Radio. Through educational programs and marketing via the radio in the adjacent neighborhood of Crescent Hill, we are working together to inform and education listeners about the WBG project, as well as other important opportunities in the area.

Crescent Hill Community Council. WBG is working with CHCC to insure the development of a project that is accessible to the residents of the the adjacent neighborhood, and provides educational programs of interest and importance to those residents.

Nulu Business Association. WBG is working with the Nulu Business Association to help support the businesses through cross-marketing in adjacent neighborhoods as the gardens develop and grow, and bring visitors to this area.

Creasey Mahan Nature Preserve. As a specialist in native plants, pollinators and the planning of specialty gardens, the Executive Director, Tavia Cathcart Brown, is active in the design and planning of the gardens at WBG to insure that we meet appropriate horticulture and education standards and accessibility

River Rd. Business Association. WBG is working with RRBA to insure that WBG is a development that the area businesses are proud of and can support. In addition, conversations about traffic and accessibility will soon be an important part of the discussion.

**3.d. Partnerships with Workforce Development Programs**

1 paragraph

Waterfront Botanical Gardens has an active Education Committee that is developing a myriad of programs focused on Science, Technology, Engineering, Agriculture, and Mathematics (STEAM). The STEAM curriculum will be carried out in an indoor/outdoor learning experience. The Graeser Family Education Center is a hub for environmental education in an urban setting. When environmental education is executed in an indoor-outdoor environment it is highly effective, and this is why. In an indoor setting, verbal mediation takes place. This is where concepts and definitional ideas take place. It is in the indoor environment where students learn about the ecological and conservational sub-areas of environmental education. In most cases, students do not have ample opportunities to apply these concepts in a real-world natural environment. At the Waterfront Botanical Gardens, the students learn concepts indoors and then have opportunities for guided discovery in the outdoor classroom. The outdoor classroom is the botanical gardens.

All of these programs have a direct connection to potential employment. Waterfront Botanical Gardens has been successful in recruiting and retaining 250 active volunteers. In time, these volunteers will be working at the botanical gardens. The surrounding community is rich with educational institutions (i.e. University of Louisville, Bellarmine University, Jefferson County Community Technical College). Each institution will be notified as jobs become available at the Waterfront Botanical Gardens. By 2019, it is anticipated a staff of 40 will be in place.

# Project Benefits

**4.a. Welfare, Environmental, and Public Health Benefits**

1 paragraph with a visual

|  |  |  |
| --- | --- | --- |
| AREA | ANTICIPATED BENEFIT | COMMUNITY NEED ADDRESSED |
| Welfare |  | Expanded economic opportunity  Increased tourism  Expanded opportunities for indoor/outdoor environmental education  Neighborhood revitalization |
| Environmental | Removing sources of contamination |  |
| Public Health | Removal of homeless population | Reduce sources of West Nile Virus  Reduce sources of cancer, obesity, and chronic disease |

**4.b. Economic and Community Benefits**

3 paragraphs

Last month, the Robert Wood Johnson Foundation released a report explaining that out of Kentucky’s 120 counties, Jefferson County is ranked 28th overall for health outcomes, which is based on length and quality of life. The same report ranks Jefferson County 57th for health factors, which includes behaviors like adult smoking, adult obesity and teen births as well as other areas like clinical care. Health outcomes include premature death, low birth weight babies, and self-reported quality of life and health. Health factors include smoking, high obesity rates, food environment index, and physical inactivity. The Waterfront Botanical Gardens is located in an area where 29% of citizens make less than $25,000 annually, and Louisville is ranked as the 11th poorest city in the nation. Poverty is correlated with health issues. Although there were many motivations for this project, improving health through education was at the top of the list. Although Louisville is classified as an urban area, the health statistics mirror those of highly rural areas. Based on high rates of heart disease and diabetes, and conditions closely related to obesity, Louisville is ranked as the fifth unhealthiest city in America. 21% of children are obese and are more likely to develop juvenile diabetes (CDC, 2013).

What sets the Waterfront Botanical Gardens apart from other parks in Louisville is the environmental education programming component. Environmental education has been empirically shown to improve health outcomes through teaching healthy behaviors. Not only will the gardens work to make Louisville a healthier place to live, but the gardens also have a strong economic and environmental impact. Considering the long-term goal, when fully built, the gardens will attract 200,000 visitors, over 5,000 school students annually, 300 school teachers for professional development, 300 adult students, create 40+ jobs and utilize over 1000 volunteers. The environmental impact is unprecedented. Since the gardens are being built on a former landfill, we will offer land revitalization education as part of our environmental education curriculum.

Finally, the development of this new project will positively impact neighborhood revitalization in the areas immediately surrounding the gardens. This will have a positive impact on property values, quality of life and eventually wages in the area.

# Programmatic Capability and Past Performance

**5.a. Audit Findings**

At this time, we have an annual Compilation Report completed by an outside Certified Public Accountant (CPA). In addition, we have a Finance Committee led by our Treasurer who reviews budgets and all financial activity. In terms of our programs, we will have an income of about $5,000 per year. This will increase once our facility is open in 2019. At this time, our programs for school students do not bring income as we do not charge a fee. Our adult programs bring in a small amount of income.

**5.b. Programmatic Capability**

3 paragraphs

Waterfront Botanical Gardens is working with a team of experts to bring this project to fruition because it is no small undertaking. The Waterfront Botanical Gardens, when completed, will be a product of a 25 person board of directors, 15 person advisory council, CMTA Consulting Engineers, Perkins + Will Architects, an Executive Director, Construction Manager, Grant Manager, 10 committees, 250 volunteers, and 2 staff members. There is an array of skill sets in law, construction, architecture, education, engineering, health, development, and nonprofit management. Key people include: Kasey Maier, Brian Voelker, Dominic Gratto, Clinton Deckard, Paula Swope, Edie Wooton, and Allison Whitehouse.

Kasey Maier joined WBG’s team of professionals three years ago as the lead person with development. In May 2017, Kasey was promoted to the Executive Director of the organization. Kasey’s previous experience includes being a co-founder of Kentucky School of Art. Kasey played a leading role in helping the school to grow from an idea into a thriving institution. Her work included establishing the entity and legal infrastructure, securing nonprofit status, building interest and support within the community, staff and board development, fundraising and more. In just over 3 ½ years, the school has grown to a body of 50 students, 11 full-time employees and a footprint of 35,000 square feet.

Brian Voelker, board member. Brian’s experience includes serving as the Managing Director of TimeLine Theatre Company in Chicago, where he helped the company grow from a startup to an organization with a theatre of its own, four full-time employees, a $1 million budget, and thriving base of supporters. Under his leadership, the company received the Alford-Axelson Award for Nonprofit Managerial Excellence, the first time the prestigious award was granted to an arts organization. He currently works at Humana and has been President of Botanica since 2011.

Dominic Gratto is President of the board of directors. Dominic has been on the board for six years. He is the Manager of Construction and Property Administration at CVS Health, and has 10 years of experience in project management and construction.

Clinton Deckard is the Construction Manager. Clinton has spent the last 30 years in the construction industry and has successfully managed over $650,000,000 in total projects. Clinton’s management work includes development, bridge, water treatment, and wastewater treatment. Clinton’s resume also includes three 3 years concentrating on the concrete admixture market, which involved managing projects ranging from $10,000 to $3.4 billion. Clinton was selected for the Waterfront Botanical Gardens project because of his extensive experience managing the construction phases of Louisville’s Waterfront Park, a 100 acre / $100 million project. This project had a wide array of environmental issues (i.e., old rail lines, groundwater contamination, old fuel storage facilities, gas manufacturing facility, and scrap yards). Under Clinton’s management, the project was awarded the USEPA Region IV and the National Phoenix Award for brownfield cleanup. The same management plan developed for that project was and is being used for other sites in Louisville, such as Slugger Field and Botanica, Inc.

Paula Swope is the Grant Manager. Paula has extensive experience in grant management working formerly with prestigious grant-funded institutions like Berea College and Eastern Kentucky University. Throughout Paula’s career, she is credited with $51,000,000 in awarded grant proposals. Paula has experience in federal grant management. She served as the project director on a Health Resources and Services Administration grant in 2009-2010. Since Paula came on board in May 2016, she has assisted with getting grant proposals awarded from the following foundations: Sam Swope Family Foundation, Paul Ogle Foundation, Inc., Horseshoe Foundation, Snowy Owl Foundation, Lift a Life Foundation, Tennessee Valley Authority, Commonwealth Cleaner Fund, Gheens Foundation, and Brown-Forman. Paula is certified by the Grantsmanship Center and she served as the President of Kentucky’s Grant Professionals Association (GPA) for four years. Paula has a bachelor’s degree in political science and a masters of public administration (MPA).

Edie Wooton has worked with nonprofits for the past 4 years in the areas of fundraising and financial management. Specific titles have been Finance Assistant with River Fields and Business Manager with the Center for Interfaith Relations. Grants managed while in nonprofits from grant agencies like The Kentucky Transportation Cabinet, Snowy Owl Foundation, Owsley Brown II Family Foundation, Gardner Foundation, Brown Forman Corporation. Prior to nonprofit experiences, she worked in higher education at the University of Louisville in the Kent School of Social Work for ten years, specifically on state and federal grant projects dealing with Child Welfare. Her role as Program Coordinator included monthly financial reconciling and financial reporting. Among the federal granting agencies were National Institute of Health (NIH) and Department of Health and Human Services (DHHS).

Allison Whitehouse is the Office and Development Coordinator. Allison joined WBG staff at the first of this year in a role vacated by her predecessor. She is responsible for the database, website, volunteers, fundraising support and more. She has a bachelors and masters in arts from the University of Louisville (U of L), and a masters in French from U of L.

**5.c. Measuring Environmental Results: Anticipated Outputs/Outcomes**

2-3 paragraphs with bullets

Outcomes: Surface drainage is engineered to direct runoff from the cover into existing stormwater collection systems. These measures will eliminate or minimize surface water runoff and dust generation, which will also benefit surface water resources and ecological populations by preventing migration of potential contaminant off the site.

**5.d. Past Performance and Accomplishments**

*5.d.i. Prior EPA Brownfields Assistance Grants*

Waterfront Botanical Gardens (WBG) has not previously received a US EPA Brownfields Assistance Grant. Until May 2017, the project had not received any funding outside of local foundation funding and funding from individual donors. As this massive project grows, state and federal grant opportunities are being pursued. This past summer, the project received a grant/loan from the Commonwealth Cleaner Fund and from the Tennessee Valley Authority. Both grants are in the implementation phases and Waterfront Botanical Gardens is in compliance and good standing with both funders, as stated in their letters of support that are attached with this grant application.

*5.d.ii. Other Federal/Non-Federal Assistance Programs*

Display information in a table

**Cleanup Factors Checklist – Appendix**

**Leveraging Letters – Attach**

**(i.e. letter outlining the match requirement and commitment)**

**Support Letters – Attach**

**Threshold Criteria for Cleanup Grants Document**

**Applicant Eligibility**

**Site Ownership**

**Basic Information:**

**Name:**

**Address:**

**Current Owner:**

**Status and History of Contamination At The Site**

**Brownfields Site Definition**

**Environmental Assessment Required for Cleanup Proposals**

**Enforcement or Other Actions**

**Sites Requiring a Property-Specific Determination**

**Site Eligibility and Property Ownership Eligibility**

1. **Hazardous Substance Sites**
2. *CERCLA 107 Liability*
3. *Information on Liability and Defenses/Protections*
4. Information on Property Acquisition
5. Timing and/or Contribution Towards Hazardous Substances Disposal
6. Pre-purchase Inquiry
7. Post-Acquisition Uses
8. Continuing Obligations
9. **Property Ownership Eligibility – Petroleum Sites**

**Cleanup Authority and Oversight**

**Statutory Cost Share**

**Community Notification**

All public hearing notes will be discussed here. Public hearing scheduled for October 30, 2017.

**Other Documents:**

**Tax Exempt Status**

**Final Analysis of Brownfield Site (letter)**

**Enclosures**

1. **Site Location, Site Layout, Sample Locations, and Delineation and Grid Soil Sample Locations**
2. **Chart Explaining Asbestos Containing Materials (ask Amanda)**
3. **Costs and Assumptions Associated with Cleanup Options**
4. **Preliminary Diagrams of the WBG**
5. **Community Notification Materials**
6. **Newspaper Ad**
7. **Image of Social Media Post**
8. **Handwritten notes from hearing**
9. **Pictures taken at hearing (if any)**
10. **1 page overview of public hearing happenings**
11. **Original sign-in sheet with names, emails, phone numbers, and addresses of attendees**

1. US Census Bureau. (2017). Louisville/Jefferson County Balance. Web. Retrieved: <https://www.census.gov/quickfacts/fact/table/louisvillejeffersoncountybalancekentucky,KY/PST045216>. [↑](#footnote-ref-1)
2. Greater Louisville Project Report. (2015). Louisville: A Focus on Poverty. Web. Retrieved: <http://greaterlouisvilleproject.com/annual-city-reports/2015-competitive-city-update/>. [↑](#footnote-ref-2)
3. Ibid. [↑](#footnote-ref-3)
4. Greater Louisville Project Report. (2015). Louisville: A Focus on Poverty. Web. Retrieved: <http://greaterlouisvilleproject.com/annual-city-reports/2015-competitive-city-update/>. [↑](#footnote-ref-4)
5. Ibid. [↑](#footnote-ref-5)
6. Ibid. [↑](#footnote-ref-6)
7. Ibid. [↑](#footnote-ref-7)
8. 2015 Community Health Needs Assessment (CHNA) Results. Louisville Metro. <https://louisvilleky.gov/sites/default/files/health_and_wellness/oppe_-_datareports/2015chna_hpallam_9-01-16.pdf>. [↑](#footnote-ref-8)
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10. Center for Disease Control and Prevention. (2016). Community Profile: Louisville, KY. <https://www.cdc.gov/nccdphp/dch/programs/communitiesputtingpreventiontowork/communities/profiles/obesity-ky_louisville.htm>. [↑](#footnote-ref-10)
11. Ibid. [↑](#footnote-ref-11)
12. Ibid. [↑](#footnote-ref-12)
13. Cancer and Chronic Disease Prevention. (2016). Department of Public Health and Wellness. <https://louisvilleky.gov/government/health-wellness/cancer-and-chronic-disease-prevention>. [↑](#footnote-ref-13)
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16. Greater Louisville Project Report. (2015). [↑](#footnote-ref-16)
17. <https://louisvilleky.gov/government/advanced-planning/services/brownfield-redevelopment> [↑](#footnote-ref-17)
18. Greater Louisville Project Report. (2015). Louisville: A Focus on Poverty. Web. Retrieved: http://greaterlouisvilleproject.com/annual-city-reports/2015-competitive-city-update/. [↑](#footnote-ref-18)