

DRAFT

Project Narrative: EPA 2019 Grant: Riverside Park Clean-Up

1. Project area description and plans for revitalization

1.a. Target Area and Brownfields

1.a.i.: Background and Description of Target Area The target brownfield site is Parcel 3 of Detroit's Riverside Park, located on the Detroit River adjacent to the Ambassador Bridge, which connects the US to Ontario Canada. Riverside Park is within and adjacent to some of the most polluted zip codes in Detroit. The area is plagued by vacant blighted properties, high poverty, and high unemployment. The properties surrounding Riverside Park have primarily been used for commercial/industrial activities. Residential properties exist northwest along West Grand Boulevard and north of the Site. Adjacent uses historically included tobacco processing, auto parts manufacturing, lumber, rail and cement yards, steel factory, soap works, an incinerator and Detroit Sanitary Works. Residents are exposed to sources of particulate matter (PM 2.5) more here than any other area in the city due to traffic density and industrial facilities. Several nearby projects (e.g. Detroit Intermodal Freight Terminal, Gordie Howe International Bridge, and the Gateway, a combination of I-96 and I-75) aimed at reducing traffic congestion and minimizing additional air quality concerns have been developed or are under construction. These projects, along with the remediation and re-opening of Riverside Park, will spur economic development in this rapidly growing section of the city.

Detroit has historically been considered a major industrial hub in Southeast Michigan, hosting large and small industries. However, the last 50 years have seen an overall decline. Industries that once prospered have all declined contributing to odors, contaminated land, property abandonment and an abundance of brownfield sites. An average brownfield site in this area can range anywhere from the size of a residential lot to an industrial factory of many acres. The majority of site impacts are due to historical industrial activities resulting in contamination from the use of hazardous substances, such as, toxic metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs).

1.a.ii: Description of the Brownfields Site(s): Riverside Park is located on West Jefferson Avenue, adjacent to the Detroit River and within a commercial/industrial setting. A very small area in the southwest corner of Riverside Park's Parcel 3 is in the 100-year (AE) flood plain. Historically, the 19 acre Riverside Park had been made up of three parcels. Parcels 1 (5 acres), 2 (4 acres) and 3 (10 acres). In March 2012, the City of Detroit closed Riverside Park due to soil contamination. The City and residents are anxious to have the park restored and reopened as a key recreational venue that gives residents access to the Detroit River. Though the focus is on remediating contamination in Parcel 3, the history of all three parcels is relevant to understanding the sources of Parcel 3's contamination. A coal gas manufacturing plant (MGP) operated at Parcels 1 and 2 from 1867 to 1954. These parcels were acquired by the City and became part of Riverside Park in 1978-79. Parcel 3 (donated to the city in 1919) was an open body of water connected to the Detroit River that was filled in sometime between 1906 and 1928. The origin of the fill material is unknown but is thought to be construction debris and waste material from nearby industrial/commercial sites mixed with urban fill. The focus of this grant proposal is restricted to hazardous materials on Parcel 3 of Riverside Park. Parcel 3 is ten acres bound by 24th Street, CSX Railroad, 3801 West Jefferson (a parcel soon to be incorporated as part of the park) and the Detroit River. Parcel 1 (northeast of the targeted brownfield site) was remediated in 2016 by DTE (local utility) and restoration by the Detroit General Services

Department (GSD) is nearly complete. The remediation of Parcel 2 by DTE is expected to be completed in 2019 with GSD completing restoration by 2020.

Between 2002 and 2018, multiple environmental assessments (i.e., investigation, Phase II, RI/FS, etc.) were conducted at Parcel 3, including a USEPA FY15 Brownfield Site-Specific Assessment grant that identified levels of contaminants above MDEQ Part 201 cleanup criteria. Assessments have identified the presence of VOCs, SVOCs, and metals within soil and/or groundwater at various depths ranging from 0 – 33 ft below ground surface. Offsite migration onto the sites from various historic northerly adjoining and nearby operations, as well as, unknown sources of fill placed at the site, is likely to have contributed to the impacts identified at the site. Due care concerns addressed for Parcel 3 will target lead, 1,2,3-trichloropropane and cyanide concentrations in surface soils that exceed Michigan Generic Cleanup Criteria, regional background, or site specific clean-up criteria and present a potential dermal contact risk.

1.b.i Revitalization of Target Area The Detroit Parks Strategic Master Plan sees Riverside Park as offering a balance of active and passive recreational activities to the surrounding neighborhood. It will allow for residents to enjoy this venue within walking distance of their homes. The park will serve as the western terminus of the Detroit International Riverwalk, which connects recreational and economic hubs along the Detroit River. Detroit's Parks and Recreation Improvement Plan describes public green space as critical to the strength of every neighborhood. Parks promote healthy lifestyles, crime reduction, community interaction, climate change management, and educational opportunities. In areas of growth, parks serve as catalysts for economic development. In areas of decline, parks can provide an essential stabilizing effect. In short, the importance of Detroit's parks and recreation system cannot be overstated, and the City is committed to revitalizing these assets. Riverside Park falls into this commitment. To date, the City has invested \$6 million into this park, with plans for future investment.

In March 2019, the City's Planning Department will begin the process of creating a neighborhood framework plan for improvements to Detroit's Delray neighborhood, which surrounds Riverside Park. This is part of the Detroit's City-wide Strategic Neighborhood Initiative to improve economic conditions and quality of life for the citizens of Detroit. Framework strategies include vegetative buffering, land assembly, industrial and commercial development, zoning and land use, streetscapes and connectivity, which will examine improving access to Riverside Park as well as other public spaces in Delray. This framework will include extensive community engagement, seeking input from community members throughout the process. Detroit's Recreation Department has worked closely with the Riverside Park Advisory Group, other organizations and community residents to develop and implement plans for Riverside Park's redevelopment. The plan will engaged residents to prioritize investments and then align city services and resources around those priorities to achieve greater neighborhood revitalization. The City also plans to expand the 19 acre park to 30 acres. The reopening of the park is a much anticipated event for the City, especially the underserved Southwest Detroit communities.

1.b.ii. Outcomes and Benefits of Redevelopment Strategy The City is currently in the process of executing a five-phase revitalization of Riverside Park that aligns the City's Plan for Parks and Recreation Improvement with the city's revitalization plan for the Delray neighborhood. Cleaning up Parcel 3 will enable the City to undertake Phases 4 of Riverside's revitalization plan. Environmental remediation of the site will allow for the creation of a unique, much needed picnic location along the Detroit River. Implementation of the revitalization plan for Riverside Park has already begun, with two phases nearly complete. Once finished, Riverside Park will

become a recreation destination that includes: sports fields, picnic areas, performance shelters, a boat launch, a skate park, a dog park, horseshoes courts, fishing access, playgrounds, a splash pad, and restroom/concession buildings. Redevelopment of Parcel 3 also includes energy efficiency lighting project to include LED and solar-powered lighting throughout the park. Ultimately, Riverside Park renovations will restore the recreational opportunities to citizens of Detroit, and give better access to the Detroit River. The Remedial Action Plan (ResAP) developed with guidance from the Michigan Department of Environmental Quality will be used to clean up the portions of the park for this disproportionately impacted low-income, minority community. Riverside Park will become an anchor for renewal and sustainable development of the targeted community by increasing the quality of life and providing walkable, bike-able green space for all residents to enjoy, especially those in southwest Detroit. It will also provide one of the few spots where Detroiters can access the Detroit River for recreation. The expectation is that reopening the park, and the existing and planned redevelopment projects will spur economic development in the target community.

1.c Strategy for Leveraging Resources

1. c. i. Resources needed for Site Reuse: The State of Michigan has developed a \$1.6 billion plan to transform Detroit into the logistics capital of the Midwest. The new Gordie Howe International Bridge, the Detroit Intermodal Freight Terminal, and the I-96/I-75 Gateway Project are located in southwest Detroit and are crucial economic development elements of this plan, expected to accrue multibillion-dollar benefits to the area. Included in this plan is the creation of a special logistics district and redevelopment of the Delray neighborhood, in which Riverside Park is situated. (*Detroit Free Press* 9/5/2015) The City of Detroit's 2017 Park and Recreation Improvement Plan to allocate \$6 million to restore Riverside Park's recreational amenities together with the Detroit general-funded Delray Strategic Neighborhood Plan effort to spend \$400,000 and the over \$25 million private funds invested by DTE to remediate Riverside Park Parcels 1 and 2, greatly expands the investment in economic viability for the Delray community. The five-phase Riverside Park project, includes sports fields, a restroom facility, a dog park and a skate park that is under construction. There will also be a playground, walking path, and concessions/comfort station on this portion of the property. An EPA Clean Up grant will enable the City to prepare Parcel 3 for investments in unique recreational amenities. Restoration will provide a beautiful, unique space for picnics and gatherings.

1.c. ii. Use of Existing Infrastructure: Riverside Parcel 3 is located near several major neighborhoods in the City of Detroit, including Southwest Detroit, Delray, Corktown, and Downtown. The current deteriorated state of the park has prevented its full use by citizens. It is the City's goal to take advantage of the existing location and infrastructure present at Riverside Park. The park is located near major highways and roads, and is serviced by all necessary utilities. DTE Energy provides electrical services to the area with no active lines on parcel 3.. The Detroit Public Lighting Department has underground electrical lines connected to light pole on the western portion of the site. Drinking water wells are prohibited in the City and therefore, no drinking water wells or septic systems are present on the site. However, water mains are in the adjacent street and can be easily tapped into. The site's storm water disposal needs are served by the City. . Where necessary, new amenities will tap into existing utilities, including water, electric, and sewer connections for a proposed bathroom facility on the property.

2. a. Community Need

2.a.i: Community's need for funding: The communities adjacent to Riverside Park (zipcodes 48209 & 48217) are primarily low-income neighborhoods. A staggering 44% of the population

and 62% of the children in these communities are considered to be living below the poverty level. More than 60% of residents are Hispanic and 23% are African American. Outdoor recreational opportunities for both children and adults in the community are limited. They became even more limited in 2012 when the City of Detroit closed Riverfront Park due to soil contamination. Cleaning up these environmental hazards is a significant unusual expense that will further the City's efforts to create opportunities for residents to enjoy outdoor sports and experience nature along the Detroit River. In spite of Detroit's waterfront location, most residents have limited opportunities to experience fishing, boating, swimming and other water-related recreation. When improvements are complete, Riverside will be an ideal place to fish, launch a boat, play ball, or relax and read by the waterfront.

2. a.ii: Threats to sensitive populations:

1. **Health or Welfare:** In 2012, the City of Detroit closed Riverside Park due to soil contamination. In a 2017-18 environmental assessment, lead, cyanide and 1,2,3-Trichloropropane were found in surface soils and that could have adverse effects on both children and adults participating in recreational activities at Riverside. Health in southwest Detroit (zip codes 48217 & 48209) is already impacted by high levels of greenhouse gas (GHG) emissions and the highest concentration of PM2.5 in areas with the highest Latino population. Elimination of soil contamination could reduce the cumulative effects of air pollution combined with soil contaminant effects on health.

2. **Greater than normal incidents of disease and adverse health conditions.** Contamination in southwest Detroit soils is a factor in numerous health issues, including respiratory and cardiovascular issues, kidney problems and cancer. Asthma hospitalization rates in southwest Detroit and surrounding areas are almost triple the state of Michigan average. The potential of exposure was so dire that the City closed the Park in 2012.

3. **Economically Impoverished/Disproportionately Impacted Populations:** Communities adjacent to Riverside Park are primarily low-income, minority communities with multiple health challenges due in large part to environmental issues. Cleaning up environmental contamination in Riverside Park will not only limit exposure but also set the stage for the installation of recreational amenities that studies have indicated will benefit community health.

2. b i. Community Engagement

Community Engagement has been a critical element in shaping its vision for Riverside Park. For example, in 2017 when the City began to consider plans to expand the 19 acre park to 30 acres, it published its plans for property acquisition, held a community meeting attended by 105 residents and offered stakeholders other ways to submit comments for the visioning and implementation process.

A similar process has been undertaken in engaging residents in preparing the 2019 EPA Clean-Up proposal. The following partners have been actively engaged:

Partner Name	Point of Contact (name, e-mail, phone)	Specific Role in Project
Riverside Park Advisory Committee	Mini Ramirez, 313 - 680 - 4137; ramirezmi@hotmail.com	The Advisory Committee helped convene residents and create the vision and plan for Riverside Park's revitalization
Southwest Detroit Business Association	Robert Dewalsche, President 313-842-0986 x 1001; robertd@southwestdetroit.com	Conducted business and community outreach to solicit business and resident involvement

Southwest Detroit Environmental Vision	Alondra G. Alvizo, Program Manager for Special Projects 313-842-1961; alondraalvizo.sdev@gmail.com	Hosted meetings and provided community outreach about environmental issues impacting the health of Southwest Detroit residents. Conducted outreach about Detroit's EPA proposal.
Community Push	Derrick Dykas derrickdykas@gmail.com 3130515-6626	Skateboarding organization that provided input on the skate park and other aspects of Riverside Improvements

2.b.ii. Incorporating Community Input: Input on the City of Detroit's EPA proposal was obtained from the Riverside Park Advisory Group and other stakeholders at a meeting held on January 23, 2019 at Detroit's Roberto Clemente Recreation Center near Riverside Park. The meeting and availability of the proposal to review were advertised in the *Detroit Free Press* and *Detroit News* on 1/15/2019 along with how to obtain copies of the proposal and submit comments. Flyers advertising the meeting were circulated in English and Spanish by members of the Riverside Park Advisory Committee, General Services Department and Department of Neighborhoods' staff, the office of Councilwoman Castañeda-López and other community partners. Flyers were posted at Detroit's municipal center, recreation centers, libraries, offices of Riverside partners and other neighborhood organizations. Copies of the proposal were available at the Robert Clemente Recreation Center, the City's Building, Safety Engineering and Environmental Department, as well as via a web link cited in the ads and on the flyer. The meeting was attended by 13 individuals. City staff explained the need to clean up Parcel 3, types of remediation that would take place, and its importance in overall plans to re-open Riverside Park. Questions were addressed and comment cards were collected. Support for both for the EPA proposal and park improvements were articulated.

3. Task Descriptions, Cost Estimates, and Measuring Progress

3. a. Proposed Cleanup Plan The remedy selected will remove twelve (12) "hot spot" areas of contaminated soils (0-1.5') impacted with unacceptable levels of total cyanide, lead and 1,2,3-trichloropropane at Parcel 3 above the current and proposed state Generic Residential Cleanup Criteria (GRCC) for Direct Contact (DC). This involves excavation of 3,168 CY of soil posing a potential direct contact hazard and disposal of the excavated soils at a licensed landfill. Six (6) of the "hot spots" are within the grassy areas of the park and six (6) of the "hot spot" areas are located below the existing Parking Lot. As detailed in the April 2018 Remedial Investigation and Data Gap Tech Memo(RIDGTM), the site soil profile has been divided into six distinct geological units. The uppermost layer referred to as the "sand fill" layer extends from 0-7' below ground surface over the entire site. This "sand fill" layer is relatively "clean" fill and with the exception of the "hot spot" areas and the area under the parking lot, provides a clean minimum (as directed by MDEQ) 18" cover to protect park users from contamination located at deeper depths. Because this protective layer is missing under the paved parking lot, additional backfill material will need to be imported under the areas of the existing parking lot area that will be reduced and left to grass following restoration of the site in order to create an 18" cover and protect park users from exposure to impacted soils below 18." The total amount of clean soil that will need to be imported, placed and compacted onsite to cover the exposed parking areas and the "hot spot" areas is approximately 7000CY. Disposal location is assumed to be a non-hazardous/Type II landfill, but waste characterization testing will be conducted to confirm the appropriate landfill type. Following removal of contaminated soils and appropriate verification sampling, the excavation will be backfilled with clean, imported sand and topsoil. The site will be stabilized by proper grading and seeding for soil erosion and sedimentation control.

Green remediation BMPs will be employed to the extent possible. Solicitation materials will include requirements to minimize total energy use, increase overall efficiency where possible, minimize emission of air pollutants and greenhouse gases, ensure adequate protection of natural resources, conserve material resources and minimize waste. Community outreach and education will be integral parts of the cleanup grant project and ongoing throughout the grant period. The ABCA was based on a Focused Feasibility Study (FFS) as informed by the RIDGTM and the Response Activity Plan (ResAP-ASTI June 2018) with an addendum (August 2018) for a soil delineation study prepared on behalf of the City as part of its USEPA funded Site-specific Assessment Grant (Grant Number: BF00E01519-1) awarded September 2015 . The City worked closely with the Michigan Department of Environmental Quality (MDEQ) to develop the ResAP that will guide the cleanup of Parcel 3. Based on the evaluation of potential relevant pathways for soil and groundwater reported in the ResAP and the stated goal for clean-up, the shallow soil direct contact (upper 1.5 feet) pathway will be addressed during the remedial activities. The remedy selected is appropriate to meet the required Michigan Natural Resource and Environmental Protection PA 451, Part 201 “due care” requirements related to protection of human health (per Part 201, Section 20107a(1)(b)), to reach the stated goal for the city to meet due care obligations in order to protect human health and re-open the park.

3.b. Description of Tasks and Activities

Task 1 – Cleanup Planning. Clean up planning will include finalizing the ABCA document, developing the cleanup work plan, fugitive dust plan, preparing the Quality Assurance Project Plan (QAPP), permitting and development of a health and safety plan to protect workers. The cleanup work plan will be prepared based on the proposed cleanup alternative identified within the feasibility study and other documents developed during the FY15 Assessment Grant. Prior to site cleanup activities, the work plan and QAPP will be submitted to EPA for review and approval. The City will consult with MDEQ with regards to work activities. The QAPP will apply to all cleanup activities conducted under the grant. The City will procure a qualified environmental consultant (QEC) through a professional services contract to accomplish this task. Selection of an environmental professional consultant/contractor for brownfield assessment and cleanup will comply with the procurement procedures contained in 40 CFR 31.36. Supplies (\$500) will be used for reference materials to help keep city personnel apprised of latest brownfield guidance and regulations, industry trends and recent research and legislation. Cleanup work plan (ResAP), final ABCA, QAPP, H&S, fugitive dust plan – Contractual – \$12,000; City will have overview and participation in planning meetings with consultant and MDEQ and review of contracted documents; bid preparation for site cleanup activities, evaluation of bids, and selection of contractor. Travel for two BSEED-EA personnel to attend the National Brownfields meeting (\$2500 includes M&I, airfare, hotel and registration) is requested, as well as, travel for four BSEED-EA personnel to attend the Michigan Environmental Compliance Conference (\$1000 includes and registration). The anticipated schedule for this task: Consultant procurement by April 30, 2020, all preliminary documents completed by summer 2020.

Task 2 - Outreach Activity. Community outreach will be led by City personnel and its partners. The City’s outreach plan will be developed by working closely with community leaders/groups in order to reach as many citizens as possible. The qualified environmental consultant will present environmental assessment results and cleanup alternatives implemented at the site. This will include development of signs, flyers, attending community and district meetings, providing information via email and phone, etc. BSEED-EA will work closely with

the Department of Neighborhoods and the Media Services Department to develop quality graphic materials for outreach activities. Complaints regarding cleanup activities will also be logged and addressed. Copies of meeting notes, presentations, and flyers will be added to the grant file and shared with USEPA and community members. Contractor will compile data, create presentations, handouts, and attend a minimum of 3 public meetings. The City anticipates holding a public kick-off meeting by late summer 2020. We will attend community meetings throughout the project year ending with a closeout meeting by late spring-early summer 2022.

Task 3 – Cleanup Action. Total requested EPA funds: \$436,742; Total Project costs: \$524,090; Cost Share: \$87,348. The qualified environmental consultant will lead the efforts to conduct cleanup activities with City personnel oversight. Site cleanup will be conducted in accordance with approved Cleanup workplan. Contractual - \$497,590, has been allocated for cleanup activities as outlined below. This task will include verification sampling after soil removal activities are completed which will be analyzed for lead, cyanide, and 1,2,3-trichloropropane. The analytical results from verification samples will be compared to applicable Part 201 Cleanup Criteria to determine whether the site cleanup objectives have been met. The city will provide quarterly reporting, MBE/WBE reporting, assistance with financial reporting, correspondence with EPA project manager and state agencies, updating ACRES, etc. Based on our estimates the cleanup budget is as follows (contractual):

\$41,470 for site preparation (includes fence \$26,000 and SESC \$5,470), engineering design and permitting (\$10,000); \$15,000 for Excavation Oversight; \$5,000 Excavation mobilization/demobilization/prep; \$72,900 Removal/disposal of asphalt from Parking Lot “hot spots” only, 29,160 SF @\$2.50/CF=\$72,900; \$142,560 for soil removal, transport and landfill disposal (3168 cubic yards [CY] of contaminated soil removal at unit price \$45/CY, including excavation and landfill disposal, and granular material backfill, assuming a Type II landfill for disposal); and waste characterization for disposal (\$5000); Demarcation barrier, 57,024 SF @\$0.38/SF, \$21,641; \$140,027 for Backfill imported low permeability soil for hot spots and uncovered parking area (7,001CY of clean fill material at a unit price of \$20.00/CY, including transport, emplacements, compaction); \$8000 Post-clean up maintenance elevation survey; Post-remediation site stabilization (grading/seeding/mulch) 304,920 SF@\$0.10/SF=\$30,492.00; \$15,500 Overall grant - Project Management. Estimates for soil, excavation, asphalt removal and backfill are assessed a 20% contingency. The total cost share for the Riverside Park Parcel 3 cleanup grant will be for \$87,348 and will be provided from the Detroit Parks General Fund. The full 20% cost share will be expended for this Task and will include the City removing asphalt over the hot spots in the parking lot and stabilizing the site after removal of the hot spots to prevent soil erosion. The schedule for task 3 is anticipated from August 2020 - April 2021 (this allows time for implementation of all activities, up to and including site stabilization and allows for any delays).

Task 4 – Cleanup Reporting and Closeout. Total: \$6,500. This includes the preparation of quarterly, annual financial, final cleanup action, and closeout reports. Following cleanup activities, the selected consultant will update ACRES and will develop a Closure Report. \$3,000 Documentation of Due Care Compliance (DDCC) preparation and submittal to MDEQ; \$3,500 Final grant report and closeout. Close out will include final report, MBE/WBE and financial closeout and will be completed as specified in the cooperative agreement by late May 2022. This also allows time for the DDCC to be reviewed, discussed with DEQ and responses to be addressed.

3c. Cost Estimates and Outputs Cost estimates were developed based on experience with other remediation projects, literature-reported case studies, and contractor-provided estimates.

Budget Categories	Project Tasks for Cleanup				Total
	Task 1 – Cleanup Planning	Task 2 - Outreach Activity	Task 3 – Cleanup Action	Task 4 – Reporting and Closeout	
Personnel					
Fringe Benefits					\$0
Travel	\$3,500				\$3,500
Equipment					\$0
Supplies	\$500	\$500	\$500		\$1,500
Contractual	\$12,000	\$3,000	\$497,590	\$6,500	\$519,090
Other					
Total Direct Costs					
Total Indirect Costs					
Total Fed Funding	\$16,000	\$3,500	\$410,742	\$6,500	\$436,742
Cost Share (20%)			\$87,348		\$87,348
Total Budget	\$16,000	\$3,500	\$498,090	\$6,500	\$524,090

3d. Measuring Environmental Results The park has been closed since 2012 and public demand to re-open incentivizes the city to complete the remediation in a timely manner. BSEED-EA will measure grant progress by participating in regular meetings with the qualified environmental consultant and key city personnel; monthly progress reports will be provided to the city by the qualified environmental consultant and will track percent budget completed against percent schedule completed. BSEED will track and measure number of acres of contaminated area that are cleaned up, amount of money invested into the project and surrounding area, acres of greenspace properties created and/or preserved. BSEED will hold public comment periods during the life of the grant period to allow for community feedback regarding the progress of the grant. Progress will be measured against the outputs and milestones identified in the work plan developed under the cooperative agreement. This will be the key document in identifying outputs and the timing of those outputs. Milestones may include but are not limited to selection of consultant, development of workplan and QAPP, public meetings for project kickoff/closeout, and project closeout report. All of this information will be tracked and documented in quarterly reports to the USEPA Project Manager.

4. Programmatic Capability and Past Performance

4.a Programmatic Capability

4.a.i Organizational Structure Detroit has implemented internal financial control mechanisms in order to meet or exceed all federal and state grant guidelines regarding funding allocation. By utilizing an Oracle-based financial system, we are able to track and manage all fiscal activities. Working with the Office of Finance BSEED will initiate the payment process beginning with the Federal Automated Standard Applications of Payment (ASAP) system and follow it through Oracle to the issuance of a check. Internal controls within the system prevent overpayments and provide various approvals to ensure appropriate spending. BSEED-EA will work directly with an ODG grants program analyst who will routinely track and report the status of the grant. The project manager will provide regular updates to ODG on grant requirements

including reporting, spending and performance based on goals outlined in the cooperative agreement. BSEED's overall organizational structure to manage the grant will include the project manager, project team, a Qualified Environmental Consultant, and administrative staff. Detroit's BSEED-Environmental Affairs project team members are highly trained, technical professionals with many years of experience. Each individual has expertise in environmental sciences or engineering practices and participates in continuous educational opportunities to remain up to date on grant and environmental matters at the local, state and federal levels. The team has extensive experience in managing EPA Brownfield Grants including workplan development, reporting and closeout protocols. Support will be contributed from other members of Environmental Affairs, associated departments and our administrative staff, as needed. Environmental Specialist Anita Harrington will serve as the Project Manager. As Project Manager, Ms. Harrington will ensure the performance of all grant activities, professional contract services solicitation for a qualified environmental consultant, funding, reporting and the include day-to-day operations and project management, budget, scheduling and tracking, community outreach coordination, routine inspections, progress reporting, workplan review and updates to ACRES. Ms. Harrington will develop a programmatic workplan and schedule with other project team members' consultation. Ms. Anita Harrington is an environmental specialist with more than 25 years of professional experience in the management of natural resource protection, environmental compliance, assessment and remediation projects. Mr. Paul T. Max, BSEED General Manager, brings more than 33 years of environmental health and industrial hygiene experience to BSEED. He has an environmental compliance background and was a RCRA compliance specialist for many years. Mr. Max will provide the expertise to assure conformance with current environmental laws, regulations and standards. Mr. Max will provide oversight of this project to ensure that all technical, administrative and financial requirements are complete within the grant timeline.

Ms. Rickelle Winton, Environmental Specialist, will assist with development of workplans, review technical reports and other technical documents, assist with public outreach, quarterly reports and ACRES. Ms. Winton is experienced in reviewing ESAs. Her background is in Chemical Engineering and she has excellent organizational skills. She will be principally responsible for cataloging and maintaining all grant associated documentation.

4.a.ii Acquiring Additional Resources BSEED will select a Qualified Environmental Consultant in accordance with the City's approved procurement process and the competitive procurement provisions 2 CFR 200.317-200.326, as appropriate to conduct assessment activities. The Environmental Consultant will be the lead for the cleanup tasks, will assist with community meetings, and grant reporting.

4.b Past Performance and Accomplishments

4.b.i Currently Has or Previously Received an EPA Brownfields Grant

1. Accomplishments Past grants include two FY2007 Cleanup grants which funded remediation activities at the former Sears Retail Store and Auto Service Center (#BF00E40101-01) and at the former Globe Building site (#BF00E40001-0). The cleanup consisted of soil remediation through excavation and backfilling. As a result of BSEED's cleanup activities, the eastern lot of the Globe Building was redeveloped as the Dequindre Cut Greenway and the Globe Building was revitalized into the Michigan Department of Natural Resources Outdoor Resource Center. The Sears Retail Store project cleanup was completed in less than one year of the grant cycle. BSEED-EA was awarded a \$350,000 FY15 Site-Specific Assessment Grant (BF#001519-0) for Riverside Park Parcel 3. This grant enabled the city to complete assessment work at

Riverside Park in 2018. The outputs for this grant included a Remedial Investigation and Data Gap Technical Memorandum, Response Activity Plan (ResAP), and a Focused Feasibility Study (FFS) that will be used to guide the cleanup at the site. The Riverside Park Parcel 3 was characterized and alternatives for cleanup were analyzed. The public is now more aware of the US EPA Brownfield funds' benefits and the City is closer to remediating and re-opening a major recreational asset for the community.

2. Compliance with Grant Requirements BSEED completed cleanup activities at both FY2007 cleanup sites within the schedule and budget. All submittals were provided on time, accepted and approved by the Region 5 project manager. BSEED expended the majority of the grant funds and achieved the expected results of the grant in a timely manner. The project was updated in ACRES and Property Profile Forms were completed and submitted at the close of the grant. Of the \$200,000 award for the Sear's site cleanup, \$199,610.17 was expended on the project. Site work was complete and the remaining funds in the amount of \$389.83 was returned to EPA. Of the \$200,000 award for the Globe Building site, \$199,843.54 were expended on the project. Site work was complete and the remaining funds in the amount of \$156.46 were returned to EPA.

The FY15 Site-Specific Assessment Grant for Riverside Park Parcel 3 began on 10/1/2015 and is in compliance with all grant requirements, work plan, schedule and all terms and conditions of the current assessment grant including quarterly and ACRES reporting. The City requested and EPA approved an extension to July 31, 2019 to allow for extension requests by MDEQ to review the final ResAP and provide approval. The City met with MDEQ in mid-December to finalize requirements for approval of the ResAP. Because of changes in the review process, MDEQ requested that we provide a third ambient air pathway event using flux chamber sampling which will occur in summer 2019. Given the proximity to the river and associated air currents, we anticipate the results to show non-exceedance of criteria. No additional USEPA funds were requested. Currently, 78% of the funds (\$272,554.95) have been drawn down and an additional 13 % (\$44,527.05) obligated. The additional fieldwork and closeout will exhaust the remaining 9% (\$32,918) of funds by July 31, 2019.



DRAFT
Analysis of Brownfield Cleanup Alternatives – ABCA Riverside Park Parcel #3
(Closed)

3126 W. JEFFERSON AVE
DETROIT, WAYNE COUNTY MICHIGAN
JANUARY 2019
USEPA BROWNFIELDS CLEANUP GRANT APPLICATION

TABLE OF CONTENTS

Acronym List

ASTI – ASTI Environmental
BGS– Below Ground Surface
BTEX – Benzene, Toluene, Ethylbenzene, and Xylenes
COC – Chemical of Concern
COD – City of Detroit
CSM – Conceptual Site Model
DCC – Direct Contact Criteria
DWPC – Drinking Water Protection Criteria
DWSD - Detroit Water and Sewerage Department
FAV – Final Acute Value
FFS – Focused Feasibility Study
GRCC – Generic Residential Clean-up Criteria
GRT – Global Remediation Technologies
GSI – Groundwater to Surface Water Interface
GSIPC – Groundwater Surface Water Interface Protection Criteria
GVIIC - Groundwater Volatilization to Indoor Air Inhalation Criteria
HASP – Health and Safety Plan
ISCO – In-Situ Chemical Oxidation
ISTR – In-Situ Thermal Remediation
IWVS – In-Well Vapor Stripping
MDEQ – Michigan Department of Environmental Quality
MGP – Manufactured Gas Plant
MGPBP – MGP By-Products
NAPL – Non-Aqueous Phase Liquid
NAVD – North American Vertical Datum
PAH – Polycyclic Aromatic Hydrocarbon
Part 201 – Part 201 of Michigan Act 451
POTW – Publicly Owned Treatment Works
PSIC - Particulate Soil Inhalation Criteria
RI/DGTM – Remedial Investigation/Data Gap Technical Memorandum
ResAP – Response Activity Plan
RRD - Remediation and Redevelopment Division (of the MDEQ)
SVIIC - Soil Volatilization to Indoor Air Inhalation Criteria
SVOC – Semi-volatile Organic Compound
TMB – Trimethylbenzene
USACE – U.S. Army Corps of Engineers
U.S. EPA – United States Environmental Protection Agency
VIAP – Volatilization to Indoor Air Pathway
VOC – Volatile Organic Compound
VSIC - Volatile Soil Inhalation Criteria

DRAFT

Analysis of Brownfield Cleanup Alternatives – ABCA Riverside Park Parcel #3 (Closed)

3126 W. JEFFERSON AVE

DETROIT, WAYNE COUNTY MICHIGAN

JANUARY 2019

USEPA BROWNFIELDS CLEANUP GRANT APPLICATION

I. Introduction and Background

This report was prepared in accordance with the requirements of the US EPA for the application of a Brownfields.

The Analysis of Brownfield Cleanup Alternatives (ABCA) is based on a Focused Feasibility Study (FFS) and an additional soil delineation study prepared on behalf of the City of Detroit as part of their U.S. Environmental Protection Agency (U.S. EPA) funded Site Assessment Grant (Grant Number: BF00E01519-1) awarded September 2015 (the Grant). Global Remediation Technologies, Inc. (GRT) was contracted by ASTI Environmental, on behalf of the City, to prepare the FFS for Riverside Park Parcel #3 (the Site), located at 3621 West Jefferson Avenue, Detroit, Wayne County, Michigan (Figure 1). The FFS presents an in depth assessment of potential remediation options that can be implemented to manage environmental contamination present at the Site and is summarized here in the ABCA. Soil, sediment, and groundwater at the Site are contaminated with manufactured gas plant by-products (MGPBPs) and materials of unknown origin that are understood to be present as a result of historical Detroit River sediment deposition and/or filling of formerly submerged land.

The FFS identified remedies that are appropriate for parties required to meet Michigan Natural Resource and Environmental Protection PA 451, Part 201 “due care” requirements related to protection of human health (per Part 201, Section 20107a(1)(b)), therefore, groundwater remedies are not part of the clean-up proposal because the stated goal is for the city to meet due care obligations in order to protect human health and re-open the park.

ASTI also completed an addendum to the Response Activity Plan based on delineation sampling at the Riverside Park Parcel #3 site during June and July 2018 consisting of the advancement of 141 soil borings. The sampling was completed to determine the approximate extent of compounds in the shallow soil (0-1.5') above the current and proposed state Generic Residential Cleanup Criteria (GRCC) for Direct Contact (DC). Delineation sampling was completed for the following compounds and sample locations as seen on Figure 3.

- Total Cyanide: Exceeded the current GRCC DC at RP-SB-GP-29-S and RP-SB-GP-33-S
- Lead: Exceeded the current GRCC DC at DS-15-07 and SP006 and the proposed GRCC DC at SB-14-01, SB-14-03, SP002, DS-15-08, RP-SB-GP-6-S, RP-SB-GP-8-S, RP-SB-GP-9-S, RP-SB-GP-11-S, SP006 and DS-15-07
- 1,2,3-trichloropropane: Exceeded the proposed GRCC DC at SB-14-03 and SB-14-01

a. Site Location

The Riverside Park Parcel #3 (Parcel 3) is located between West Jefferson Ave and the Detroit River and west of 24th Street, Detroit, Michigan (Figure 1). The Site is a closed recreational park, approximately 500 by 1000 feet (10 acres). A concrete walkway is located on the southern portion of Parcel 3 along the Detroit River. A northeastern one-third portion of the site is a paved parking space. The center portion and west portion of the site is the grass lawn with a concrete path through the west-central portion. A dilapidated play structure is located on the southwestern portion of the site.

a.1. Forecasted Climate Conditions

According to the US global Change Research Program (USGCRP), the Midwest region of the United States has an energy-intensive economy with per capita emissions of greenhouse gases more than 20% higher than the national average. Extreme rainfall events and flooding have increased during the last century, and these trends are expected to continue causing erosion, declining water quality and negative impacts on transportation, agriculture, human health, and infrastructure. (See Attachment A)

According to FEMA Flood Zone Maps 26163C0280E (SE portion of Parcel 3) and 26163C0290E (NW portion of Parcel 3) the site is located within Zone X, an area of minimal flood hazard shown on Attachment B. An AE zone runs along the shoreline which is protected by a seawall. A 0.2% annual chance flood hazard area of 1% annual change flood follow the inland contours of the zone AE floodplain along the southern portion of the site running slightly landward in the southwest corner. However, greater storm frequency and intensity in a changing climate may result in more frequent and more powerful floodwaters within the Detroit River, which may result in increased flooding of the site.

The Subject Property's storm water disposal needs are served by the City of Detroit. Site stormwater is managed through a network of shallow catch basins and connecting pipes, which connect to a separate 36-inch diameter storm drain pipe in the northwest corner of the Site. This drain pipe appears to discharge to the Detroit River along the western Site property boundary of the parcel. The storm sewer is 7 to 9 ft deep, which is approximately 2 ft below the average groundwater surface.

Though increased precipitation and extreme weather could result in additional stormwater runoff and soil erosion, due to the seawall and the elevation of the Site, it is unlikely to have a significant impact on the Site.

b. Previous Site Uses and Previous cleanup/remediation

An open embayment predominated most of the Site from 1867 until 1929. The significance of the open embayment is that historically, River flow hydraulics allowed suspended particulate/material to move downstream, periodically settling suspended sediment where quiescent water existed in channel margin areas and adjacent open embayments. The Site is located immediately downstream from a former manufactured gas plant (MGP), and its historical channel margin areas and open embayments were filled with suspended particulates from the MPG site.

The Site has been used as a park more or less continuously since 1929. The Site is part of a larger City-owned park that occupied most of the area along the Detroit River between the Ambassador Bridge and the Detroit News Paper Warehouse property. A former park building (comfort station) was demolished in the 1980s. A mounded fill area currently existing on the west side of the Site appears to be the location of this former building. A number of improvements

were made to the Site in 2003, including placement of fill soil above a former riverfront concrete platform/walkway, construction of a new riverfront walkway above the fill, and construction of the existing vertical concrete riverfront façade, as well as improvements to the Site drainage and lighting.

c. Site Assessment Findings (briefly summarize the environmental investigations that have occurred at the site, including what the Phase I and Phase II assessment reports revealed in terms of contamination present, if applicable.

Previous environmental investigations by various consulting companies from 2002 to 2012 along with the more recent investigation by MDEQ (2014-2016) and ASTI (2017-2018) have identified levels of contaminants above Michigan Department of Environmental Quality (MDEQ) generic residential cleanup criteria.

Between 2002 and 2018, environmental investigation activities were conducted at the site by various environmental consultants.

<u>Source</u>	<u>Title</u>	<u>Date</u>
NTH	Preliminary Environmental Assessment	6/6/2002
TEI	Phase II Investigation	1/17/2012
DTE	Exposure Evaluation Memo	4/12/2012
TEI	Surface Soil Sampling	6/7/2012
GRT	Work Plan and Cost Proposal	11/8/2013
Worksmart, Inc.	Subsurface Imaging Report	2/9/2014
GRT	Remedial Investigation Technical Memorandum	3/10/2014
Stantec	Remedial Investigation	1/20/2015
	DEQ Review of DTE Response Activity	1/20/2015
GRT	Remedial Investigation Data (Soil, GW, UV)	9/8/2015
MDEQ	Sediment Core Sampling Data and Photos	11/4/2015
EA Engineering	Assessment of Contaminated Sediments	June/2016
HMA and GRT	Draft Incremental Sample Methodology Report	12/13/2016
ASTI	Phase I Environmental Site Assessment	10/20/2016
ASTI	Remedial Investigation and Data Gap Tech Memo	5/8/2018
GRT	Focused Feasibility Study	9/18/2018
ASTI	Response Activity Plan	6/4/2018

The results of previous investigations indicate that soil contamination was present at the site that exceeded applicable MDEQ Part 201 Residential Cleanup Criteria for soil and groundwater. As such, the City of Detroit closed the Park for public use in 2012. Appropriate cleanup action will be required in order to reopen the park for public use.

As part of the FY15 USEPA Brownfield Site-Specific Assessment Grant, ASTI performed a Phase I ESA on behalf of the City (ASTI 2016). The RECs that were identified are as follows:

- The Property is a facility due to the presence of volatile organic compounds (VOCs), semi-VOCs (SVOCs), and metals within soil and/or groundwater at various depths. Investigation work is on-going with intentions to resume park operations.
- Offsite migration onto the Property from various historic northerly adjoining and nearby operations described above is likely to have contributed to the impacts identified at the Property.

Shallow Soils investigations completed by various companies between 2002 and 2017 identified the following compounds above the GRCC for DCC, SVIAI, PSI, or VSIC in shallow soils: Arsenic, Lead, Cyanide, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene

Groundwater sampling completed at the Site indicates impacts are present across a majority of the Site and increase closer to the Detroit River, with the highest impacts located in the central portion of the Site. Groundwater was encountered in all deeper borings at depths ranging from approximately 6 to 13 feet bgs. Groundwater is found mainly in upper soil but perched water resulting from surface infiltration from precipitation and surface water runoff events occurs in deeper soil horizons. Groundwater sampling results indicated much the same as soils, with VOCs, PAHs, cyanide and metals detected at levels above DWC and GSIC. Groundwater flow is generally to the south and groundwater is venting to the Detroit River. Groundwater at the Site will not be used for any purpose (potable and non-potable uses, e.g., drinking, sanitation, irrigation, etc.). Soil vapor sampling completed at the Site indicated VOC concentrations in soil gas are generally low (i.e., below GRCC applicable for indoor air inhalation). However, as a precaution based on MDEQ's new vapor intrusion (including ambient air) pathway evaluation, a third round of sampling will occur in summer 2019. Any buildings constructed at the Site will include vapor mitigation system(s). To prevent a potential vapor intrusion condition into the proposed building and any future

building, a vapor barrier and sub-slab vapor collection system will be installed under the slab of any building constructed at the Subject Property. The vapor barrier and sub-slab vapor collection system will be designed by a qualified engineer. The installation of the system will be monitored and documented by a qualified engineer. The effectiveness of the system will be evaluated by placement of a vapor sample port(s) for the monitoring of vapors under the slab. Sampling will be conducted on a quarterly basis for one year. If the concentrations of compounds are below the VSL after one year, the sampling will be completed on a yearly basis thereafter for an additional two years. If no compounds have been reported in the soil gas samples after three years, the sampling frequency will be re-evaluated. In the event analytical results indicate vapors are present exceeding the VSL, the system will be re-evaluated.

ASTI also prepared a soil Delineation Investigation on behalf of the City of Detroit as part of their U.S. Environmental Protection Agency (U.S. EPA) funded Site Assessment Grant (Grant Number: BF00E01519-1) awarded September 2015 (the Grant). The Subject. On June 7, 11, 15, and 21 and July 2 and 3, 2018, ASTI supervised advancement of 14 soil borings (RP-SB-GP-42 through RP-SB-GP-181) at the Subject Property using a direct push Geoprobe® drill rig or stainless steel hand auger. The borings were advanced to depths between 1.5 feet and 12 feet below ground surface (bgs). One soil sample was collected from each soil boring at a sample depth of 0.5-1.5 feet bgs. Results of the sampling delineated the extent of 1,2,3-trichloropropane above the proposed criteria at sample locations SB-14-03 and SB-14-01. The extent of Cyanide above the criteria was delineated at sample locations RP-SB-GP-29-S and RP-SB-GP-33-S.

The extent of lead was delineated in the area of the whale play structure to below the current and proposed DC. The extent of lead below the current cleanup criteria for DC was also delineated at sample locations SP002, DS-15-07, and RP-SB-GP-9. All other sample locations for lead were not delineated to the current DC based on the analytical results. The extent of lead impacts below the current and proposed DC was only delineated at sample location DS-15-08. All other sample locations for lead were not delineated to the current and proposed DC based on the analytical results.

Based on the evaluation of potential relevant pathways for soil and groundwater reported by ASTI in the ResAP and the stated goal for clean-up, the following pathway will be addressed for the remedial activities considered:

- Soil: direct contact (upper 1.5 feet)

d. Project Goal

The COD plans to upgrade and reopen Riverside Park (including the Site and several adjoining parcels). The planned improvements to the Site include construction of an entrance promenade, bike path, outdoor fitness area, restroom/concessions area, playground, splash pad, picnic shelter, paved parking areas, sidewalks, upgrades to the existing riverwalk, and extensive landscaping.

The City's overall objectives for the Site, as related to the environmental conditions, include the following:

- Mitigate unacceptable exposure hazards posed by existing contamination and potential risks to human health and the environment (e.g., for both park users and excavation/utility workers);
- Utilize the available site assessment information during the design and construction phases to reduce the potential impact existing contamination will have on the redevelopment of the Site; and
- Mitigate unacceptable exposure hazards posed by existing contamination to allow for safe re-use of the Site as a public park.

II. Applicable Regulations and Cleanup Standards

a. Cleanup Oversight Responsibility (id entity if any that will oversee the cleanup., e.g., the state, licensed site professional other required certified professional.

Working with a qualified environmental consultant, the City Buildings, Safety Engineering and Environmental Department - Environmental Affairs is the entity to implement a recommended cleanup alternative and oversee cleanup activity. In addition, MDEQ Remediation and Revitalization Division will be consulted as the state Regulatory Agency to provide oversight responsibility for cleanup activity. In addition, MDEQ – Water Resources Division will also be consulted if floodplain regulations are determined to be applicable.

b. Cleanup Standards for major contaminants (briefly summarize the standards for cleanup e.g. state standards for residential or industrial reuse.

- Part 201 of NREPA and MDEQ Generic Residential Cleanup Criteria are Applicable Regulations and Cleanup Standards for discussion of a required cleanup activity at this site. The Part 201 generic residential cleanup criteria (GRCC) are protective of the proposed land use at the Site (i.e., public park). The FFS considers the Part 201 GRCC that are established under both the current (2013) Part 201 Administrative Rules and the

proposed cleanup criteria rules update published in the Michigan Register on December 15, 2017. The FFS identifies remedies that are appropriate for parties required to meet Part 201 “due care” requirements related to protection of human health (per Part 201, Section 20107a(1)(b)).

- Groundwater at the Site will not be used for any purpose (potable and non-potable uses, e.g., drinking, sanitation, irrigation, etc.).
 - Any buildings constructed at the Site will include vapor mitigation system(s).
 - The FFS identifies remedies that are appropriate for parties required to meet Part 201 “due care” requirements related to protection of human health (per Part 201, Section 20107a(1)(b)).
 - This FFS makes reference to certain “due care” requirements that may apply to the City’s use of the Site, but is not intended to address all possible due care requirements under Part 201 or serve as documentation of due care compliance. A separate Documentation of Due Care Compliance will be prepared.
 - Construction and/or subsurface excavation activities at the Site may result in exposures that are not considered in the FFS and will be addressed through preparation of a site-specific health and safety plan (HASP). Potential exposures that may be appropriate for consideration in the HASP include, but are not limited to, construction worker direct contact, dust inhalation, and vapor inhalation.
- c. **Laws and Regulations Applicable to the Cleanup** (briefly summarize any fed state or local laws and reg that apply)

Michigan’s Natural Resource and Environmental Protection Act (NREPA) - PA 451, provides rules regarding the procedures for determining cleanup criteria for contaminants in groundwater, surface water, soils and air. The cleanup action goal to address the contamination is to achieve acceptable contaminant levels in accordance with Part 201 of NREPA. In addition, because a small portion of the site is designated in the floodplain, MDEQ Water Resources Division will be consulted to determine if Executive Order 11998 as amended by EO 13690 regarding floodplain management applies.

GRT notes that Part 201, Section 20120 describes the factors that should be considered when selecting a remedial action; however, Part 201 and the related MDEQ RRD guidance documents do not provide specific requirements for preparing an FFS. In the absence of MDEQ guidance, GRT referred to guidance developed by the U.S. EPA (EPA, 1988) and the Interstate Technology Regulatory Council (ITRC, 2009) to provide a framework for identifying and screening remedial technologies and alternatives. The approach described in these guidance documents and followed in this FFS is considered by GRT to be consistent with Part 201, Section 20120.

As impacts present at the Site may be associated in part with MGPBPs, GRT also referred to U.S. EPA guidance related to MGPBP remediation (EPA, 1999) and various ITRC MGPBP remediation case studies¹.

III. Cleanup Alternatives

The following section presents a discussion of the cleanup objectives, alternative screening process and rationale.

a. Cleanup Alternatives Considered

The City's primary remediation goal is to address contamination at the Site that poses a potential exposure hazard to park users consistent with current and proposed Part 201 residential cleanup criteria. To achieve this remediation goal, the COD will implement a Documentation of Due Care Compliance with certain institutional and engineering controls and remediate soils posing a potential direct contact exposure hazard. The FFS addresses remediation of soils posing a potential direct contact hazard (other due care considerations are to be addressed in the Documentation of Due Care Compliance). Based on the exposure pathway assessment discussed in the FFS, three "hot spot" areas are considered to pose a potential direct contact exposure hazard and require remediation.

The soil direct contact "hot spot" remediation areas addressed are summarized in the table below. The extent of impact in each area is estimated and would need to be verified before implementing a remedy. Sampling locations used to delineate "hot spot" areas are depicted on Figure 3.

To address contamination at the site, three soil remedial alternatives were considered. The alternatives are described as follows:

Alternative 1, No Action Alternative – Site remains as is.

Alternative 2, Exposure Barrier/Cap: This alternative involves excavation of soils posing a potential direct contact hazard and relocation of these soils on-Site beneath the future paved parking area. Excavation areas would be backfilled with clean, imported sand and topsoil following completion of appropriate verification sampling. Soils placed in the future parking subgrade/asphalt as part of the park redevelopment. This alternative requires that the parking lot design be able to accommodate the grade change associated with the excavated soil and also requires that the excavated soils meet applicable geotechnical requirements for the future parking area. This alternative also requires that the parking lot be maintained for the duration of the Site's use as a park (e.g., via a Documentation of Due Care Compliance or deed restriction).

Alternative 3, Excavation with Landfill Disposal: This alternative involves excavation of soils posing a potential direct contact hazard and disposal of the excavated soils at a licensed landfill. Disposal is assumed at a non-hazardous/Type II landfill; however, waste characterization testing would be required to determine the appropriate landfill type. Following removal of contaminated soils and appropriate verification sampling, the excavation would be backfilled with clean, imported sand and topsoil.

b. Evaluation of Cleanup Alternatives Effectiveness.

Alternative 1 - The No Action alternative is not effective because it does not address control or prevention of exposure to users of the park. Therefore, the goal of reopening the park could not be met.

Alternative 2, Exposure Barrier/Cap – Alternative 2 is effective because it reduces the potential exposure to park (recreational) users to contaminated soils. Remedy is expected to have minimal short-term impacts related to construction/implementation. Requires provisions to mitigate impacts to community from trucks/dust during excavation. Requires coordination with other development activities to ensure soils are placed in the correct location and not inadvertently

move/spread during other Site improvements (i.e. before the parking lot subgrade and asphalt are placed. Long-term effectiveness and permanence requires ongoing maintenance to ensure that the asphalt cap/parking lot remains in place. This alternative may have a higher impact on greenhouse gas emissions issues than the no action alternative because it will include higher intensity of construction activity which involves more heavy construction equipment.

Alternative 3, Excavation with Landfill Disposal – Alternative 3 is effective because it completely removes contaminated soils from the site. The residual risk at the landfill is low. Remedy is expected to have minimal short-term impacts related to construction/implementation. Requires provisions to mitigate impact to community from trucks/dust during excavation. Effective in the long-term and permanent as this alternative results in complete removal of the “hot-spot” soils from the site. This alternative may have an even higher impact on greenhouse gas emissions issues than the no action alternative because it will include higher intensity of construction activity which involves more heavy construction equipment for a longer time and will require excavated soil to be hauled longer distances.

Implementability:

Alternative 1: No action is easy to implement because no action will be undertaken.

Alternative 2: Exposure Barrier/Cap – Alternative 2 is readily implementable with local resources.

Alternative 3: Excavation with Landfill Disposal – Alternative 3 is also readily implementable with local resources.

Cost:

1. There are no costs associated with Alternative #1: No action
2. Alternative #2; Costs associated with the Exposure barrier/cap is estimated at \$427,209.
3. Alternative #3; Costs associated with the Excavation with Landfill Disposal is estimated at \$524,090.

c. Recommended Cleanup Alternative

Based on the comparative analysis evaluating effectiveness, implementability and cost, Alternative 3 for soil (excavation with landfill disposal) is considered the most appropriate remedial alternatives since it completely removes the site risk for dermal contact exposure to soils in the hot spot areas. Alternative #1, No Action, is not a viable option because it does not address the site risks and will not meet the goal of the project to re-open the park. Alternative #2, Exposure Barrier/Cap would require long-term maintenance of the asphalt parking lot.

REFERENCES

ASTI Environmental, 2018. Remedial Investigation and Data Gaps Technical Memorandum, Riverside Park Parcel #3, Site ID# 82002473, 3621 West Jefferson Avenue, Detroit, Michigan, April , 2018.

Global Remediation Technologies, Inc. (GRT), 2018. Focused Feasibility Study, Riverside Park Parcel #3, Site ID# 82002473, 3621 West Jefferson Avenue, Detroit, Michigan, April , 2018.

U.S. Environmental Protection Agency (EPA), 1988. *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (Interim Final)*, EPA/540/G-89/004, October 1988.

U.S. EPA, 1999. *A Resource for MGP Site Characterization and Remediation, Expedited Site Characterization and Source Remediation at Former Manufactured Gas Plant Sites*, Office of Solid Waste and Emergency Response (5102G), EPA 542-R-99-005, May 1999.

Interstate Technology Regulatory Council (ITRC), 2009. *Evaluating LNAPL Remedial Technologies for Achieving Project Goals*, December, 2009.

Figures

Figures

Midwest

Key Messages About the [Midwest](#) from the [National Climate Assessment](#)

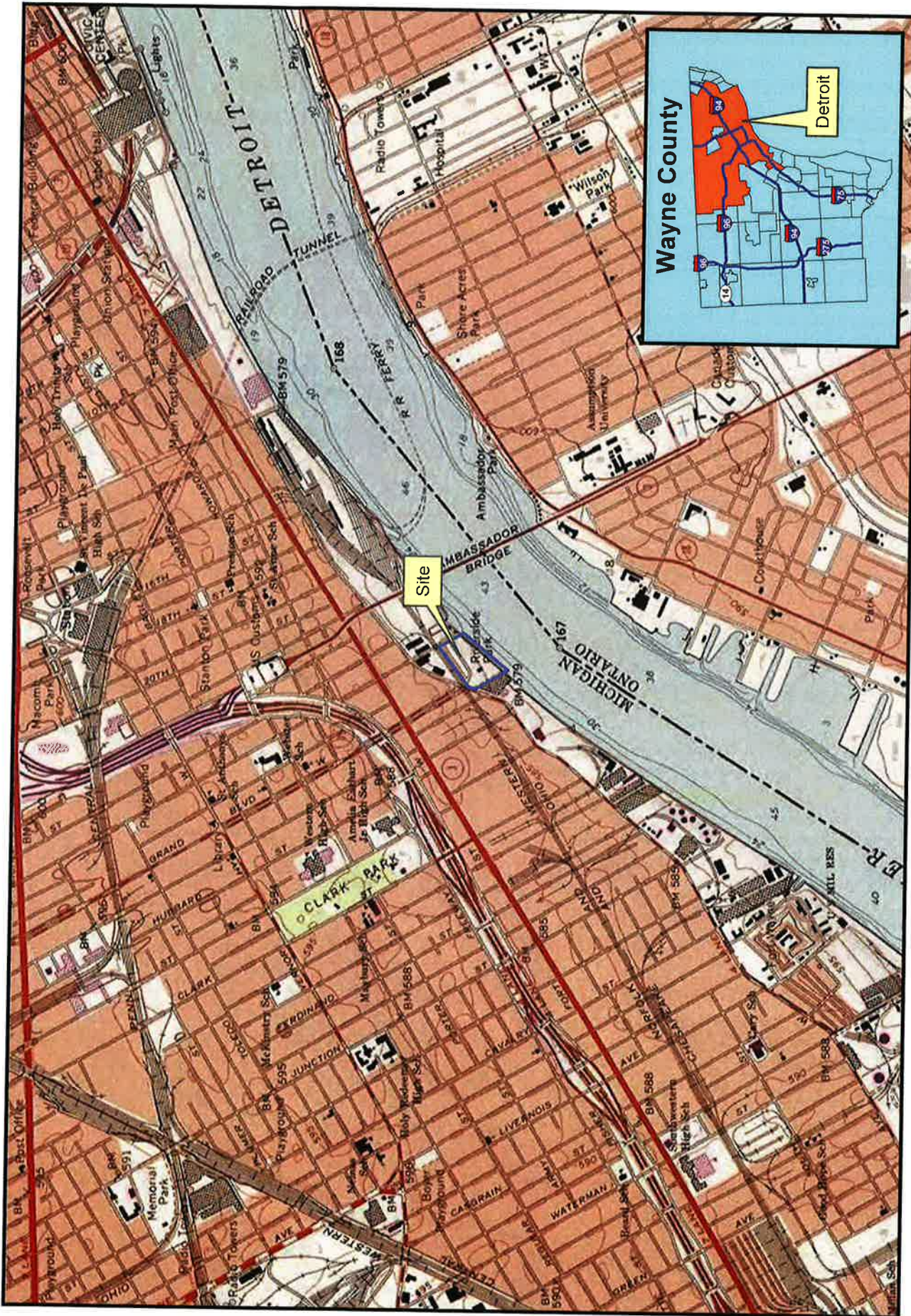
In the next few decades, longer growing seasons and rising carbon dioxide levels will increase yields of some crops, though those benefits will be progressively offset by extreme weather events. Though adaptation options can reduce some of the detrimental effects, in the long term, the combined stresses associated with climate change are expected to decrease agricultural productivity.

The composition of the region's forests is expected to change as rising temperatures drive habitats for many tree species northward. The role of the region's forests as a net absorber of carbon is at risk from disruptions to forest ecosystems, in part due to climate change.

Increased heat wave intensity and frequency, increased humidity, degraded air quality, and reduced water quality will increase public health risks.

The Midwest has a highly energy-intensive economy with per capita emissions of greenhouse gases more than 20% higher than the national average. The region also has a large and increasingly utilized potential to reduce emissions that cause climate change. Extreme rainfall events and flooding have increased during the last century, and these trends are expected to continue, causing erosion, declining water quality, and negative impacts on transportation, agriculture, human health, and infrastructure.

Climate change will exacerbate a range of risks to the Great Lakes, including changes in the range and distribution of certain fish species, increased invasive species and harmful blooms of algae, and declining beach health. Ice cover declines will lengthen the commercial navigation season.



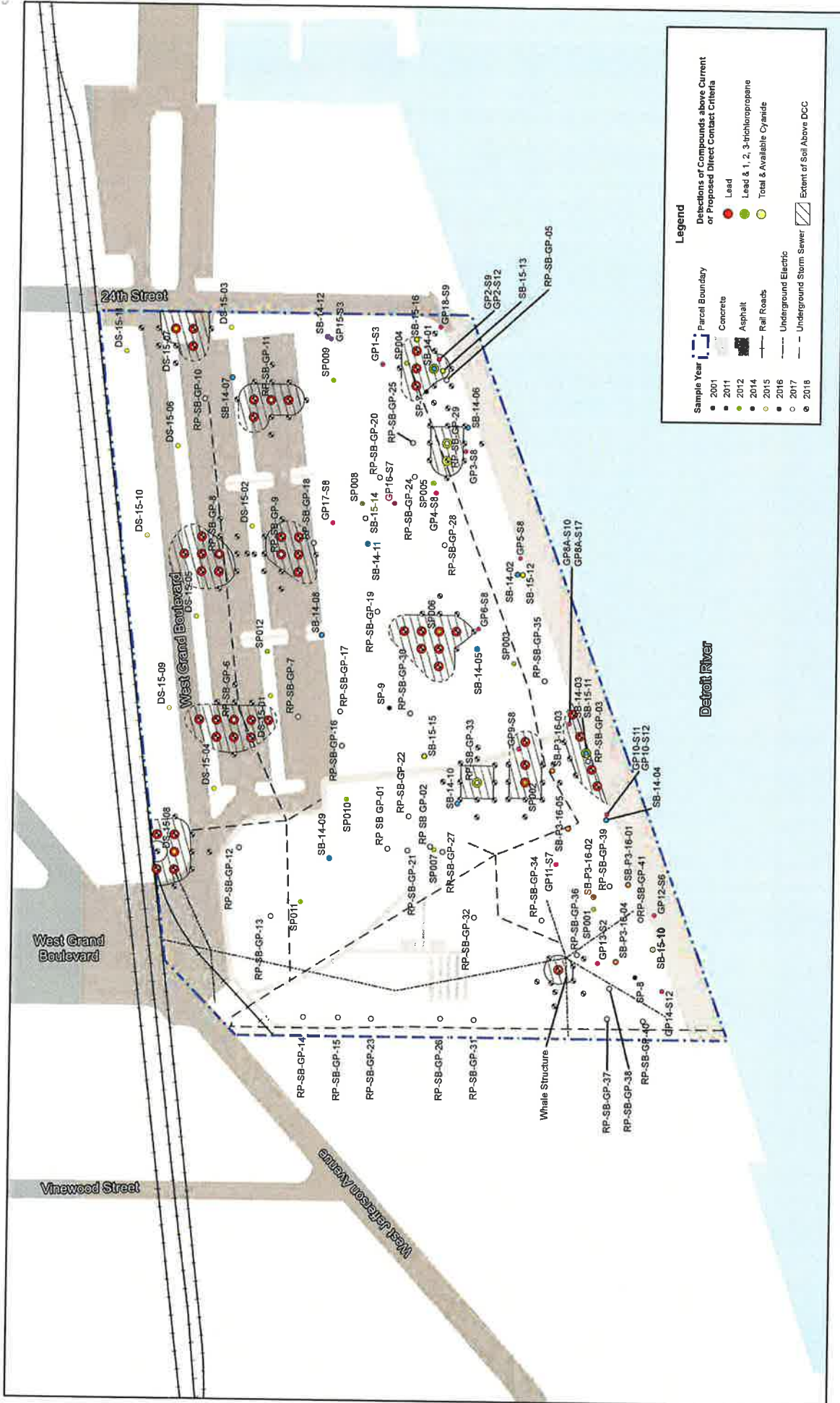
Riverside Park, Parcel #3

Detroit, MI



Client: City of Detroit
 Created by: BJG, August 29, 2018, ASTI Project 9757

Figure 1
 Site Location Map



Riverside Park, Parcel #3

Client: City of Detroit
 Created by: B/JG, August 28, 2018, ASTI Project 9757

Detroit, MI



Figure 3
 Sample Locations & Detections of Compounds Above Current and Proposed DCC

