

RE: FY2024 EPA Brownfield Multipurpose Grant Application

South Dakota Science and Technology (SDSTA) is pleased to submit this proposal for FY2024 Brownfield Multipurpose Grant funding. Below we provide the information requested.

1. Applicant Identification	South Dakota Science and Technology (SDSTA) 630 E. Summit Street Lead, South Dakota 57754		
2. Funding Requested	Grant Type: Multipurpose		
	Federal Funds Requested: \$1,000,000		
3. Location	City: Lead County: Lawrence County State: South Dakota		
4. Target Area and Priority Site/Property Information	<ul style="list-style-type: none"> • List the Target Area(s): <ul style="list-style-type: none"> ○ Sanford Underground Research Facility (SURF) campus – 46081966602 • Proposed Priority Sites: * <ul style="list-style-type: none"> ○ Ellison Boiler Building ○ Foundry ○ Yates Compressor Building ○ The Institute for Underground Science at SURF <p>*All sites are located on the Sanford Underground Research Facility campus at 630 E. Summit Street, Lead, South Dakota 57754</p>		
5. Contacts	Project Director	Chief Executive	
	Name	Pam Hamilton, Project Manager	Mike Headley, SDSTA Executive Director
	Phone Number	(605) 722-5042	(605) 722-8650
	Email Address	pamilton@sanfordlab.org	mheadley@sanfordlab.org
	Mailing Address	630 E. Summit Street Lead, SD 57754	630 E. Summit Street Lead, SD 57754
6. Population (2020) *	Population of Lead, South Dakota: 2,982 * U.S. Census Bureau, 2020 Decennial Census		

7. Other Factors	Page #
Community population is 10,000 or less.	1
The applicant is, or will assist, a federally recognized Indian tribe or United States territory.	N/A
The priority site(s) is impacted by mine-scarred land.	1 & 4
The priority site(s) is adjacent to a body of water (i.e., the border of the priority site(s) is contiguous or partially contiguous to the body of water or would be contiguous or partially contiguous with a body of water but for a street, road, or other public thoroughfare separating them).	N/A
The priority site(s) is in a federally designated flood plain.	N/A
The reuse of the priority site(s) will facilitate renewable energy from wind, solar, or geothermal energy	3
The reuse of the priority site(s) will incorporate energy efficiency measures.	3, 4
The proposed project will improve local climate adaptation/mitigation capacity and resilience to protect residents and community investments.	3
At least 20% or more of the overall project budget will be spent on eligible reuse/area-wide planning activities, as described in Section I.B., for priority site(s) within the target area.	N/A
The target area(s) is located within a community in which a coal-fired power plant has recently closed (2013 or later) or is closing.	N/A

N/A – Other Factor is Not Applicable

- 8. Letter from the State Environmental Authority:** A letter of acknowledgement from the South Dakota Department of Agriculture & Natural Resources (SD DANR) is attached.
- 9. Releasing Copies of Applications:** Not Applicable.



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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523 E CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

October 23, 2023

Pamela Hamilton
Project Manager
Sanford Underground Research Facility
630 E. Summit Street
Lead, South Dakota 57754

Dear Ms. Hamilton,

The South Dakota Department of Agriculture and Natural Resources (DANR) supports the South Dakota Science and Technology Authority (Sanford Underground Research Facility) and your application for a Brownfields Multipurpose Grant. This initiative has all the components for a successful Brownfields project and offers great opportunities to highlight a federal, state, and local partnership.

There is already a firm foundation for a successful Brownfields project in Lead. The state has solid environmental laws and rules in place to ensure the environment and public health are protected.

The South Dakota Science and Technology Authority has demonstrated a commitment to the restoration and redevelopment of the old mine site in lead.

This project is an excellent candidate for a Brownfields Multipurpose Grant, and DANR fully supports your efforts. If you have any comments or questions, please contact me at (605) 773-3296.

Sincerely,

Nayyer Syed
SD Brownfields Program Coordinator

1. PROJECT AREA DESCRIPTION & PLANS FOR REVITALIZATION:

1.a. Target Area & Brownfields: 1.a.i. Overview of Brownfield Challenges & Description of Target Area: First settled in 1876, and incorporated in 1877, the City of Lead (Lead; City), South Dakota (State; SD), population 2,982,¹ is nestled in the Northern Black Hills of SD in Lawrence County (County). The Black Hills consists of 1.2 million acres of forested hills and mountains, named *He Sápa* (Black Mountains) by the Lakota who claimed the land in the 18th century. This area, considered sacred territory by the Native American Tribes including the Arapaho, Cheyenne, Crow, Kiowa, and Sioux tribes who all inhabited portions of the Black Hills into the 1800s.² In 1874 a United States (U.S.) military expedition led by General George Custer discovered gold in the Black Hills and thousands of gold miners from across the U.S. converged on this sacred territory. Fred and Moses Manuel discovered gold in the area that is now Lead, and by 1889 Lead was the largest city in SD with the opening of Homestake Mining Company (Homestake). Homestake, once called the “Richest 100 Square Miles” in the world, extracted 41 million ounces of gold and nine million ounces of silver during its operating years.³ In 2002, low gold prices, high production costs, and smaller underground ore bodies caused the mine to close. With the **world’s oldest continuously operating gold mine for 126 years closing its doors**, the City was devastated and the economy felt the ripple effect. With so much of this mining occurring prior to environmental regulations, issues such as tailings and mine wastes are common on the landscape, with high potential to contain high levels of arsenic, lead, mercury, and cyanide. The presence and perception of tainted soils and groundwater have prevented redevelopment and the recovery of the local economy and pose undue environmental burdens and health risks to the impoverished, indigenous population that still populates this community in high numbers (see 2.a.).

The SD Science and Technology Authority (SDSTA; applicant) is a special purpose unit of government created by the SD Legislature in 2004. The SDSTA was established to accept ownership of the former Homestake gold mine, donated to the state by Barrick Gold Corporation (Barrick), and transform it into the **Sanford Underground Research Facility (SURF; Target Area) in the City of Lead (Geographical Boundary)**. SURF is the deepest underground laboratory in the U.S., and an internationally renowned unique facility built on rich legacies in both gold mining and transformational science. The Target Area encompasses 223 acres on the surface and 7,700 acres underground. Underground operations include 370 miles of shafts, drifts, and ramps and 12 miles for science activities including a science laboratory, supporting major international experiments in dark matter and neutrino research. Recently, construction commenced at SURF on the Long-Baseline Neutrino Facility/Deep Underground Neutrino Experiment (LBNF/DUNE) Project—the largest international science project ever attempted on U.S. soil. **SDSTA is 100% funded by federal, state, and private donations.** SDSTA provides management and administrative support, environment, safety, and health oversight, facility operations and maintenance, science programs and engineering support necessary to host world-leading science experiments at SURF. All grants, State bills, and donations are allocated to keeping SURF operating and science programs moving forward to stay on the forefront of global advancements. With the focus on current operations and scientific advancements, this has left behind structures from Homestake in disrepair and dire need for remediation and redevelopment. SDSTA has selected the below priority sites at SURF, all located on the former Homestake Company mine site in the City of Lead. The priority sites were selected based on immediate need, high potential for reuse, threats to public health and safety, and the ability to address environmental justice issues. Through initial site assessments it is known that **14 of the 28 (50%) aboveground buildings at SURF have asbestos containing materials (ACM)** and other environmental concerns along with the need for reuse planning. This grant will provide assessment and remediation for the redevelopment of properties at SURF (the former Homestake mine), a critical step in addressing environmental health and safety concerns along with socioeconomic challenges in Lead, a disadvantaged community.

1.a.ii. Description of the Priority Brownfield Site(s): In SDSTA’s *Forward Momentum 2025 – The Strategic Plan for Sanford Underground Research Facility*, **infrastructure is the number one priority** of the Forward Momentum 2025 goals.⁴ Below are the priority sites with known or perceived environmental issues, which have been prioritized based on SURF’s needs described above and the high likelihood of reuse once funding is available to address known or potential environmental issues. All sites, priority and others, located in the Target Area that will require remediation are owned by SDSTA but due to the history of the site they not responsible for the historical contamination.

Table 1: Priority Sites

Foundry
Built in 1927, this 13,710 square foot (sq. ft.), two story building, is situated in the heart of the SURF footprint. Despite the name, the building contains several massive air compressors that may have powered the underground drilling equipment (the exact purpose is unknown). Almost a century later, these massive machines are characterized by heavily stained floors from their lubricating oil reservoirs. Additionally, there is concern they were lubricated with polychlorinated biphenyl (PCB) containing oils due to the extreme heat the compressors would have generated, thus lowering the flash point of the oils. Because of the building’s location on a steep slope and lack of previous assessment, it is unknown to what degree any release of contaminants may have impacted the area beneath

¹ [Search Results \(census.gov\)](#)

² [Black Hills | South Dakota, Wyoming, Map, & Facts | Britannica](#)

³ <https://leadhistoricpreservation.org/about-lead/homestake-gold-mine>

⁴ https://sanfordlab.org/sites/default/files/documents/communication/Forward_Momentum.pdf

the building or down slope or to the nearest residence approximately 1,000 feet away. This building is a high priority for renovation and reuse due to its size and location. The building is still in operation and used for corrosive and oil storage as well as office spaces, a hot work area, recycling space, and 1st floor roll up garage doors for large machinery access. Known Environmental Issues: ACM; Potential Environmental Issues: petroleum hydrocarbons, PCBs, volatile organic compounds (VOCs), and Resource Conservation and Recovery Act (RCRA) metals such as lead, mercury and arsenic.

Ellison Boiler Building

This 5,097 sq. ft. building, built in 1929 as an addition to the Ellison Heating Plant, housed two boilers. Due to disrepair and lack of use, the building underwent partial demolition in 2019 over concerns of the possibility of a catastrophic collapse. What was left is a ruin of a building and equipment. Most of the piping and surface left are insulated with friable ACM pipe wraps that are deteriorating exposed to the harsh weather of the Black Hills, possibly resulting in the material contaminating not just the soil, but being blown by the wind to the nearest residence less than 500 feet away. **This priority site has the most urgent need** as it lies in the path of a proposed new entrance into SURF along Ellison Street. This proposed entrance is in *SDSTA's five-year strategic plan*⁵ with a project total of \$9 million with an estimated 2027 start of construction. Demolition of the remaining building is required for this important project. SDSTA's main reason for this new entrance is safety. The current entrance to SURF is via a steep, narrow city street in densely populated neighborhoods. By creating this new entrance for staff, deliveries, and visitors, it would eliminate safety concerns with SURF traffic in the adjacent neighborhoods. Known/Potential Environmental Issues: ACM and aboveground storage tank (AST); Potential Environmental Issues: lead-based paint, petroleum products, PCBs, RCRA metals, VOCs.

Yates Compressor Building

This 8,030 sq. ft. building, built in 1940, is one of the most northerly buildings at SURF and significantly down gradient from the Foundry, Ellison Building, and the rest of SURF and 1,000 feet to the nearest residence. The compressors in the building operated until 2001, but the building now sits unutilized. There is significant petroleum contamination that is visible along the northeast outside wall, visible in the ground outside, and is leaching into the storm sewer sump directly adjacent to the building. The source of the petroleum is unknown as no funding has been made available to assess the area. SURF staff check the sump weekly and pump it regularly to ensure the fuel contaminated storm water is not discharged. Oil booms, typically 1 – 10' boom or 3 – 3' booms, float on the surface of the water and remediate any sheen prior to siphoning. Known Environmental Issues: ACM and petroleum hydrocarbons; Potential Environmental Issues: lead-based paint, RCRA metals, VOCs, and PCBs.

The Institute for Underground Science at SURF

Future redevelopment in the Target Area will balance respect for its inherited legacy with positive emphasis on science and the future. The future location would be in the place of four unused buildings, the Ellison Dry (Paint Shop) a 12,060 sq. ft. building built in 1929; Drill & Bit Shop a 10,924 sq. ft. building built in 1920; the Old Compressor Building 5,811 sq. ft. building built in 1920; and the Old Hoist Room. During the development of the *2016 Facilities Master Plan*, building assessments concluded that these buildings are in poor to moderate condition. The closest residence is less than 250 feet. Known Environmental Issues: ACM; Potential Environmental Issues: lead-based paint, RCRA metals, PCBs, and VOCs.

1.a.iii. Identifying Additional Sites: A site inventory and prioritization list has been created and contains more than a dozen additional sites that are in need of further assessments, reuse planning, and cleanup. In the event grant funds remain after addressing the priority sites, SDSTA, the selected Qualified Environmental Professional (QEP) firm, and the Brownfield Advisory Committee (BAC) will evaluate the redevelopment potential of additional sites based on rankings in four categories from 1-3 with 1 being least likely to 3 being very likely. The categories include: 1. Redevelopment Feasibility; 2. SDSTA Goals; 3. Environmental Concerns; 4. U.S. Environmental Protection Agency (EPA) Priorities. Each category will have 3-4 subcategories (example: level of contamination, ability to leverage funding, promotes equitable redevelopment, and potential for green infrastructure) to be evaluated and rank sites in the direst need.

1.b. Revitalization of the Target Area: 1.b.i. Overall Plan for Revitalization: A revitalization plan for reuse of brownfield sites within the Target Area has not been completed yet. However, these grant funds will enable SDSTA to complete a feasible site reuse strategy for the properties that house the future **The Institute for Underground Science at SURF**⁶ prior to clean up and revitalization. Use of these grant dollars to complete planning for this identified group of priority sites aligns with SDSTA's strategic plan, *Forward Momentum 2025*⁷, to **successfully host current and future generations of SURF and creating opportunities for new research including expansion of the facility footprint to exploit SURF's significant potential**. This plan further aligns with the *City of Lead Comprehensive Plan 2017 Addendum*⁸, which expresses, "The City of Lead Comprehensive Plan establishes that the community desires to maintain its historical nature while reinventing itself for the future as a vibrant and economically viable community that provides world class services to its residents and visitors".

1.b.ii. Outcomes & Benefits of Overall Plan for Revitalization: The *Strategic Plan*⁹ describes how SURF will achieve its

⁵ <https://sanfordlab.org/sdsta/sdstas-new-strategic-plan>

⁶ <https://sanfordlab.org/surf-foundation/institute-underground-science-surf>

⁷ https://sanfordlab.org/sites/default/files/documents/communication/Forward_Momentum.pdf

⁸ [2017-ComprehensivePlanAddendum.pdf \(cityoflead.com\)](https://www.cityoflead.com/2017-ComprehensivePlanAddendum.pdf)

⁹ <https://sanfordlab.org/sdsta/sdstas-new-strategic-plan>

mission: "To advance compelling underground, multidisciplinary research in a safe work environment and to inspire and educate through science, technology and engineering." Redevelopment of the priority sites is expected to generate economic and non-economic outcomes and benefits for those living in Lead, the County, and western SD. SDSTA's revitalization plans are focused on vacant and underutilized sites and the projects proposed will not cause the displacement of residents or businesses. Redevelopment of the priority sites are anticipated to provide the following benefits:

Spur Economic Development: The cleanup of the **Ellison Boiler Building** will make way for the new Ellison Street entrance and future development of the **SURF Institute for Underground Science**. Net economic impact for the state of SD from activities at SURF is expected to total nearly \$2 billion through 2029.

Global Significant Tourist Destination: SURF and the Sanford Lab Homestake Visitor Center (Visitor Center) draws thousands of visitors each year to the region. Based on tourism data, the redeveloped priority sites will assist with SURF's continued growth as leader in the global science world, additional visitors, tourism related jobs, and generating millions in visitor spending.

Non-Profit Purposes: Completion of planning efforts and a feasible site reuse strategy on priority sites encompassing the area that will be redeveloped as **The Institute for Underground Science at SURF** supports the mission of the SURF Foundation.¹⁰ The SURF Foundation, a 501c3, supports the advancement of world-class science and inspiring learning across generations. Established in 2019, the SURF Foundation keeps with their mission by building strong relationships within the community and facilitating opportunities for local students and community members, along with scientists and visitors from around the world.

Workforce Solutions: Redevelopment of the **Foundry** will offer additional office space where the current unused office space is unutilized due to ACM and other potential environmental concerns. Cleanup will also offer critical space as activities at SURF are expected to increase over the next decade with the additional construction of the LBNF and SURF Institute for Underground Science.

Job Creation and Income Tax Revenue: Activities at SURF over the next decade are expected to generate on average 1,178 direct and indirect jobs annually and provide \$21.3 million in state and local tax revenue through 2029. Each dollar spent by SDSTA redeveloping SURF leads to even greater economic impact across SD.

Target Area Catalytic Impacts: Site redevelopment will catalyze new development in the City including residential, mixed use, and hospitality. Continued transformations of SURF will make Lead more attractive to potential residents and businesses.

Sustainable Reuse: Reuse of the **Foundry and Yates Compressor Building** presents a valuable opportunity to showcase sustainable development practices and benefits including adaptive reuse of buildings and structures, green building and infrastructure components, and incorporating renewable energy sources and energy efficiency measures.

Habitat Protection: Cleanup and thoughtful reuse planning will help protect and restore the habitat at SURF that has been degraded by industrial use, age, and lack of additional funding.

All Priority Sites and other Target Area brownfield reuse projects will incorporate energy efficient building upgrades, including high efficiency windows, insulation, and heating/cooling systems. LEED Certified new construction will be considered along with renewable energy, specifically solar panels for power. Reuse will integrate environmental resiliency by additional trees, where possible, to protect local air and water quality. SD has a voluntary "renewable, recycled and conserved energy objective," which sets a goal of obtaining 10% of the state's electricity through renewables, recycled energy, and energy efficiency.¹¹ SDSTA is committed to achieving this goal set by the state while also improving climate adaptation/mitigation capacity and resilience in the Target Area and protect residents and community investments.

1.c. Strategy for Leveraging Resources: 1.c.i. Resources Needed for Site Reuse: SDSTA is fully grant and donation funded by state, regional, and federal funding resources as well as private donations to complement future reuse of priority sites and other identified brownfield sites in the Target Area. **This grant will provide critical funds for brownfield redevelopment that is otherwise unfunded and provide leverage for the following identified funding opportunities:**

Regional Funding: Black Hills Council of Local Governments (COG) – SDSTA in collaboration with the City, can enlist the COG to assist with mapping, economic development activities, and strategies for leveraging additional funding.

State Funding: SD Revolving Economic Development Initiative Loan – low-interest loans for up to 45% of a project's total cost. Projects can include land purchases; site improvements; construction, renovation; or the purchase and installation of equipment. **GROW SD** – No cost business technical assistance and low interest loans. **Local Infrastructure Improvement Program** - grants to construct or reuse public infrastructure associated with an economic development project. **SD Department of Agriculture and Natural Resources (SD DANR) Targeted Brownfields Assessment Program** – grant funding for site assessment, site characterization, and clean-up planning. **SD DANR 128A Grant** - provides \$100,000 towards cleanup costs. Additional state grants/ allocations will be pursued as needed for special projects.

¹⁰ <https://sanfordlab.org/foundation>

¹¹ http://sdlegislature.gov/Statutes/Codified_Laws/DisplayStatute.aspx?Type=Statute&Statute=49-34A-101

Federal Funding: leveraging **Department of Energy (DOE)** funding through application for grant awards. **EPA – Brownfield Cleanup Grants. EPA Region 8 Targeted Brownfields Assessments** – environmental assessment assistance at brownfield properties with applications accepted on an ongoing basis.

Other Funding: Kansas State University Technical Assistance for Brownfields (KSU TAB) – SDSTA can work with KSU TAB on assistance with planning and community outreach efforts.

Private Donations: are a critical part of leveraged funds that SDSTA and the expansion for the vision of SURF depend on. From the very beginning with the donation of SURF from Barrick and \$70 million from T. Denny Sanford SDSTA has received generous private donations. Today the SURF Foundation works hard to secure additional private donations to continue SDSTA’s extraordinary vision.

1.c.ii. Use of Existing Infrastructure: The Target Area and priority sites will largely use existing infrastructure: buildings, roads, water/sewer, utilities, and lighting. A new entrance road for the site is planned with funding pending through state grants allocations. Sites within the Target Area are served by high-speed internet, natural gas, and other public infrastructure. Reuse will allow for opportunities to integrate long-term sustainable energy resources, stormwater management systems, green landscaping, and green construction. With SURF’s location in the Black Hills, a sacred place for thousands of years, SDSTA vows to protect, respect, and understand the indigenous land on which it is located.¹² By pursuing infill development and adaptive reuse with this grant funding while using existing infrastructure whenever possible, SDSTA is able to adhere to this vow.

2. COMMUNITY NEED & COMMUNITY ENGAGEMENT:

2.a. Community Need: 2.a.i. The Community’s Need for Funding: SDSTA was created by the SD Legislature, to accept ownership of the former Homestake gold mine, donated to the state, and has transformed it into SURF (Target Area) within the City of Lead. Many of the western SD’s most vulnerable populations live within the CTs described in Section 1.a.ii. According to the U.S. Census Bureau’s definition, **the County is 100% rural**, with a population of 25,687.¹³ The Climate and Economic Justice Screening Tool (CEJST)¹⁴ has determined that **CT 46081966600 is disadvantaged due to expected population lost rate, toxic concentrations in streams within 500 meters, and low income.** In 2020 and 2021 Lead saw a major decline in population following the mine closure exacerbating the population loss rate. Lead and SDSTA need to spur redevelopment with the reuse of the priority sites to keep new and existing residents in Lead. With 15.7% of jobs in Lead being mining, quarrying, oil/gas extraction jobs, reuse, clean up, and **expansion of the Target Area is vital for Lead’s growth and for SDSTA to remain a science leader.**

This EPA grant funding will allow SDSTA to continue dedicating resources to critical needs at SURF including education, economic development, natural and cultural resource conservation, and health and safety. SDSTA is a non-taxing authority and relies solely on federal and state funding and allocations and donations and has an inability to draw on other initial sources of funding for these proposed projects. The City (geographic area) is unable to contribute due to an extraordinarily low tax base constrained by a low income, rural population. This grant is critical to helping SDSTA steward SURF into the future while observing the history of the region, by bringing the priority sites into healthy and productive use providing economic opportunity for the Target Area and City. Select demographic data is provided below to show need in the Target Area, City, and County. Note that **CT 4608196660 was divided into CTs 46081966601 and 46081966602** after the 2020 U.S. Census. The new CTs share the same geographical area as CT 4608196660.

Table 2: Community Need Data

Demographic Indicators	SURF (Target Area)		City	County	SD	U.S.
CT:	46081966601	46081966602	N/A	N/A	N/A	N/A
Unemployment	2.2%	5.1%	4.1%	2.6%	3.2%	5.5%
Population 65 or Older	34.0%	28.7%	30.5%	22.4%	16.7%	16.0%
Per Capita Income	\$27,011	\$29,997	\$29,001	\$37,180	\$33,468	\$37,638
Poverty Rate	32.0%	13.3%	19.5%	13.3%	12.5%	12.6%
Median Family Income	\$54,091	\$76,488	\$69,014	\$78,750	\$81,756	\$85,028
Homes Built Before 1980	38.1%	88.7%	71.8%	50%	53.1%	52.2%

Note: All data was downloaded from www.policymap.com on 10/30/2022 and are from the 2017-2021 5 Year American Community Survey Estimates from the U.S. Census Bureau. **Bold Font** = data higher % than the % in Lawrence County; *Italic* = data higher % than the % in SD; **Highlights** = data higher % than the % in the U.S.

For all criteria in **Table 2**, clear disparities are evident when comparing the Target Area to the State and U.S. These indicators signify unemployment and the concurrent impoverished conditions of the Target Area. Target Area residents, suffer higher than normal rates of **unemployment, more than double in CT 46081966602, compared to the County**

¹² [Sacred Circle Garden | Sanford Underground Research Facility \(sanfordlab.org\)](http://Sacred Circle Garden | Sanford Underground Research Facility (sanfordlab.org))
¹³ [Search Results \(census.gov\)](http://Search Results (census.gov))
¹⁴ [Explore the map - Climate & Economic Justice Screening Tool \(geoplatform.gov\)](http://Explore the map - Climate & Economic Justice Screening Tool (geoplatform.gov))

(Table 2). Further, as discussed above, the population of the City leads to a lack of financial resources and in-house staff expertise to effectively address brownfields on their own.¹⁵

With an aging population in the City, double the U.S. average and poverty rates in CT 46081966601 more double the City’s poverty rates, the award of a Fiscal Year (FY)2024 Multipurpose Grant to SDSTA will bolster the positive impact on Lead. It will provide critical brownfield services, including assessment, cleanup, planning, and public outreach. Redevelopment on identified priority sites in the Target Area will provide for reduction of underutilized, deteriorating structures, and health threats as well as increased jobs (and benefits), increased tax base, and improved welfare to the Target Area and the City.

2.a.ii. Threats to Sensitive Populations: (1) Health or Welfare of Sensitive Populations: The City (geographic boundary) is an **identified as a disadvantage CT** and is in the **96th percentile for expected population loss rate** according to the CEJST.¹⁶ As shown on Table 2 above, the Target Area includes many of the City’s unemployed and a high proportion of residents who are socioeconomically vulnerable.

Table 3: Health/Welfare of Sensitive Populations Data

Demographic Indicators	SURF (Target Area)		City	County	SD	U.S.
	CT: 46081966601	46081966602	N/A	N/A	N/A	N/A
Children <18 in Poverty	38%	8.8%	18.5%	11.4%	15.8%	17.1%
Adults > 65 in Poverty	12.7%	22.2%	19.0%	9.5%	8.8%	9.6%
American Indian/Alaska Natives in Poverty	98.4%	0.0%	32.8%	60.6%	49.1%	23.4%
Veterans	9.5%	12.6%	11.1%	10.9%	8.2%	6.9%
Disabled	14.6%	18.2%	17%	15.8%	11.8%	12.6%

Note: All data downloaded from www.policymap.com on 10/30/2022 and are from the 2017-2021 5 Year American Community Survey Estimates from the U.S. Census Bureau. **Bold Font** = data higher % than the % in Lawrence County; *Italic* = data higher % than the % in SD; **Highlights** = data higher % than the % in the U.S.

Underserved Communities: Within the County’s American Indian/Alaska Native population, 3.2% live in CT 46081966601 with **98.4 % living in poverty (Table 3)**. With funding from this grant, SDSTA can continue strengthening its presence in the region which will lead to additional job opportunities and affordable housing for many living in poverty.

Children in Poverty: Children <18 in poverty in CT 46081966601 is more than double the SD and U.S. average. Among households in poverty in the Target Area **42.3% are female head of households more than double the average in the County.**¹⁷ Children in homes with high poverty rates are strongly associated with environmental and social determinants of health including a higher risk of exposure to hazardous chemicals, lead-based paint, ACM, and other subpar conditions due to aging homes within the Target Area (Table 1) and proximity of the priority areas to residences. Brownfield redevelopment will provide economic relief by creating jobs and tax-based revenue, increasing local employment opportunities reducing the demand for welfare assistance and aid residents with increased stability and independence.

Disabled and Veterans: 17% of Lead are disabled compared to 11.8% in SD (Table 3), with 10.9% of the Lead’s population over the age of 18 having a veteran status compared with 8.2% of SD. **In CT 46081966602 15.1% of the disabled population live in poverty and 41.4% of the veterans in this CT are unemployed compared to 3.1% in SD.** The high percentage of veterans in the Target Area, is likely attributing to the City’s disabled population. With the redevelopment of the priority sites and spurring economic development, this vulnerable population will have access to jobs and additional opportunities.

Aging Population: The *2019-2023 Black Hills Comprehensive Economic Development Strategy*¹⁸ discusses the significant population increase of residence over 65 years old. **28.7% of CT 46081966602 is 65 or older nearly double the U.S. average and 22.2% of this population is in poverty.** The median age for the region is 42.4 years old; older than the SD median age of 36.8. Redevelopment, economic development, and housing will improve the Target Area and provide the City and SDSTA the ability to showcase Lead as a great place for younger families too.

(2) Greater Than Normal Incidence of Disease & Adverse Health Conditions: Impacts from former mining has left a legacy of environmental and social impacts resulting in economic ups and downs along with long-term adverse health conditions in the Target Area. The age and condition of the priority sites listed on Table 1 are exposing the vulnerable populations of the City to lead-based paint and ACMs. Lead-based paint is associated with a range of serious health effects in children, including anemia, impaired hearing, detrimental effects on cognitive and behavioral development with serious lifetime personal and social consequences. Exposure to ACMs can lead to asbestosis, pleural disease, lung cancer, or mesothelioma.¹⁹ Redevelopment of the sites can reduce the exposure of these harmful historically used products.

¹⁵ www.policymap.com

¹⁶ <https://screeningtool.geoplatform.gov/en/#12.57/44.35248/-103.76295>

¹⁷ www.policymap.com

¹⁸ <https://www.blackhillscouncil.com/>

¹⁹ https://www.atsdr.cdc.gov/asbestos/health_effects_asbestos.html

Cancer – The South Dakota Cancer Registry²⁰ indicates that lung & bronchus cancer has the highest mortality rate in SD with 31.4% of the 1,634 deaths reported in Lawrence County. The highest incidence of cancer is female breast cancer with 33.8% of the 6,328 cases reported in Lawrence County. Environmental factors including exposure to ACM, diesel particulate matter, and heavy metals can be a leading cause for cancer.

Birth Defects – Approximately 370 of the 12,200 babies born in SD each year are born with a birth defect and **1 in 4 infant deaths are due to birth defects**. Due to the rural population and low access to healthcare, 55.1% of women do not see an OB/GYN for regular checkup.²¹ Lack of regular health checkups along with are long term maternal exposure to heavy metals, ACM, lead, and air pollutants can increase the likelihood of birth defects.

Lead – Exposure to lead is associated with a range of serious health effects in children, including anemia, impaired hearing, detrimental effects on cognitive and behavioral development with serious personal and social consequences that may persist throughout their lifetime. **CT46081966601 is in the 73rd percentile compared to the U.S. for lead paint exposure according to EPA’s Environmental Justice Screening and Mapping Tool (EJScreen).**²²

Potential ingestion, inhalation, and dermal contact with contaminated air, soil, and building products poses a public health risk, especially to children and the elderly. SDSTA will utilize this grant to assess, cleanup, and complete reuse planning of the priority sites (Table 1) within the Target Area with the objective to eliminate the potential adverse health conditions that may be caused by the contaminants at these sites.

(3) Environmental Justice: (3.a.) Identification of Environmental Justice Issues: A combination of environmental legacy issues, lack of affordable housing, and shortage jobs have disproportionately impacted the City’s most underserved populations resulting in environmental justice issues in the Target Area. As described in Tables 2 and 3, the Target Area contains sensitive and underserved populations that in turn are disproportionately impacted by negative conditions in the Target Area.

The City, a **disadvantaged CT**, also exceeds the following disadvantaged community thresholds, according to CEJST: 96th percentile for **expected population loss rate**; 90th percentile for **projected wildfire risk**; 72nd percentile **low income**; 95th percentile **lack of indoor plumbing**; 97th percentile for **toxic wastewater discharge**. According to EJScreen, 37.6% of homeowners in CT46081966601 are burdened, and in the 81st percentile in SD for low income and in the 76th percentile in the U.S.

Unemployment rates in CT46081966602 are in the 82nd percentile in SD and the 59th percentile in the U.S. for residents having **less than a high school education. With high unemployment rates, high likelihood of less than a high school education, and in the 85th percentile for limited broadband** the sensitive populations in the City (geographic boundary) are disproportionately in economic despair. As seen above in Table 4, they are also at-risk for being exposed to cumulative environmental impacts from lead paint, soil, wastewater, air, and other sources. The effects of long-term chronic exposures to toxins can causes lung inflammation (which can exacerbate asthma), immunologic changes, and in some cases, cancer with both CTs being in the 89th percentile for lacking health insurance many long-term health issues go unresolved.

(3.b.) Advancing Environmental Justice: SDSTA has strong relationships with Tribal, social, and environmental justice advocacy organizations in SD which will assist with community involvement. Through community involvement SDSTA is committed to serving environmental justice populations that have been disproportionately affected by blight, environmental contamination, economic distress, and adverse health outcomes through the growth of SURF. Through site reuse SDSTA will advance environmental justice and NO displacement of residents or businesses will occur. Direct and indirect job creation will stimulate affordable housing, safer neighborhoods, additional outdoor recreation, and services to increase diversity in the workforce reducing poverty and the impacts on sensitive populations.

2.b. Community Engagement: 2.b.i. Prior/Ongoing Community Involvement: SDSTA is committed to communication activities, transparency, and public opportunities with a strong emphasis to provide rich opportunities for formal and informal education and outreach in support of the public purpose. Science education is central to SURF’s mission! Below are ways SDSTA has/is intentionally engaged with the Community, including underserved residents of the Target Area.

Cultural Advisory Committee (CAC) - advises on policies and initiatives to advance the development of a diverse and inclusive workplace and culture at SURF. The CAC is comprised of members from local communities, including American Indian tribes of the region. SDSTA is committed to raising awareness of the history and the importance of the area to American Indians, as well as educating staff, users and visitors about its cultural significance.

Table 4: Environmental Justice Data

	SURF (Target Area)	
CT:	46081966601	46081966602
Lead Paint	97%	93%
Superfund Proximity	98%	98%
Wastewater Discharge	97%	98%
Limited Broadband	83%	85%
Lack of Health Care	89%	89%
Note: All data is from https://ejscreen.epa.gov as downloaded 10/30/2023. Bold indicates distress factors ≥ 80th %tile. Shaded indicates distress factors ≥ 90th %tile.		

²⁰ <https://www.sdcancerstats.org/>

²¹ https://doh.sd.gov/media/bhnakybh/prams_surveillancedatareport_2020.pdf

²² <https://ejscreen.epa.gov/mapper/>

Sanford Lab Homestake Visitor Center (SLHVC) - tells the story of the area’s earliest inhabitants, the development of Homestake and the evolution of SURF and the science experiments it hosts. SLHVC’s 3,000-square-foot exhibit area also serves to provide an additional public space for communication of SURF activities and outreach functions.

Neutrino Day - SDSTA’s premier public outreach event is free and held every summer on the second Saturday of July. SDSTA partners with the City, SLHVC, numerous local, regional, and state organizations, national laboratories (including Fermilab and LBNL), SD universities and researchers from various experiment collaborations. The event features, hands-on activities, science demonstrations, exhibits, internationally renowned speakers, live video feeds with researchers underground and hoistroom tours. Over 10,000 people have attended this free event since 2008.

Deep Talks Lecture Series - is held on the second Thursday of each month from October through May at the SLHVC. Through this series, SDSTA brings scientific discussions into the public sphere, featuring a host of science topics. On average, 60 people attend each event.

Other important and ongoing community initiatives and engagement includes summer internships, teacher education programs, field trips, school presentations, and K-12 curriculum modulus (17 fully developed units). Through the educational initiatives last school year alone (2021-2022) **19,709** K-12 students were positively exposed to science through SDSTA and SURF.

2.b.ii. & 2.b.iii Project Involvement & Project Roles: SDSTA will form a BAC with representatives from a variety of local groups, entities, and community-based organizations (CBOs). The BAC will be actively engaged throughout the project and have input on key decisions including planning, cleanup, and site reuse. SDSTA plans to convene the BAC on a quarterly basis and has capability to hold meetings in person or virtually when needed. The below list is the anticipated BAC members.

Table 5: List of Organizations/Entities/Groups & Roles

Name	Point of Contact	Specific Involvement
City of Lead	Ron Everett, Mayor; (605) 641-6256; ronalde@cityoflead.com	SDSTA works closely with the City to ensure SDSTA is working in cooperation with the City and providing a safe place of employment. The City will advise on reuse options and zoning approvals that may be needed for redevelopment, as well as promote SDSTA at City Hall and City events.
Cultural Advisory Committee (CAC)	Emily Berry, SDSTA Diversity, Outreach, & Culture Coordinator; (605) 571-2333; eberry@sanfordlab.org	The CAC will inform the BAC on ongoing cultural activities and as serve as a liaison to the Tribes to keep them abreast as this grant is implemented.
Deadwood Lead Economic Development Corporation (DLEDC)	Emma Garvin, Executive Director; (605) 584-1401; director@deadwoodleadedc.com	DLEDC (NPO) is committed to promoting the growth and development of existing businesses; attracting quality new businesses; and creating quality jobs. DLED will assist with workforce housing needs as well and other SDSTA needs that could drive business opportunities in the community.
Fermilab/Fermi Research Alliance LLC	Patrick Weber, SD Services Section Head; (605) 929-1125; pweber@fnal.gov	The U.S. DOE Fermilab is the host laboratory for the DUNE experiment currently under construction in Lead. Fermilab works in partnership with SURF and more than 1,000 scientists from all over the globe to contribute expertise and components which provide economic benefits to each of the partner institutions and countries.
Sanford Lab Homestake Visitor Center	Kelly Kirk, Director; (605) 584-3110; kkirk@sanfordlab.org	The Sanford Lab Homestake Visitor Center will support efforts for community engagement by hosting public outreach events.
SURF Foundation	Michelle Kane, Director; (605) 584-3110; mkane@sanfordlab.org	The SURF Foundation supports community engagement and reuse strategies aligned with environmental justice issues and state initiatives.

SDSTA will work with the County Health Department and the City on a site-by-site basis for assistance with community outreach and advise on health-related issues as implementation of these grant funds proceeds. SDSTA will also offer engagement opportunities to the Tribes throughout the Black Hills not listed in this application.

2.b.iv. Incorporating Community Input: Community engagement is imperative to the success of this project and SDSTA understands the importance of effective communication strategies. Engaging the public, local project partners, the tribes, local environmental groups, environmental justice populations, and the neighborhoods surrounding the Target Area will be the goals of incorporating community input into this project. The intent is to engage stakeholders with traditional, targeted, innovative, and online outreach tools and methods to reach a greater audience. Community members will have the opportunity to learn about critical brownfield details and provide informed feedback to influence the next phase(s) of work.

Public engagement in the event of social distancing or other restrictions is certainly unique but should not be thought of as less important, less creative, or less inclusive. Rather, these instances provide an opportunity to be more innovative and inclusive for those who cannot attend in person. SDSTA, along with the BAC, and a QEP firm, will work to remove barriers, either real or perceived, to engage residents in meaningful dialogue, effectively use participants’ time, and involve people

who are traditionally not/underrepresented in redevelopment projects. The BAC will make strategic use of various communication methods to reach a broad and inclusive audience as well as to respond to community input. Community engagement will include a variety of measures that are traditional, targeted, innovative, and virtual.

Traditional engagement includes conventional public meetings, done virtually or in-person as health restrictions allow; distribution of press releases, fact sheets, and timely communication to community partners as needed.

Targeted engagement involves outreach to specific groups that may not otherwise participate in a planning process. Notable groups include disabled residents, youth, and the elderly. Examples of targeted outreach include listening sessions (virtual or in-person), piggybacking on other meetings or gatherings such as Sanford Lab Deep Talks or Neutrino Days²³, and/or partnering with BAC organizations.

Innovative engagement includes creative and unconventional outreach methods to help gather information, increase awareness of the planning process, and boost participation. Examples are bike or walk audits to collect data by photo or video, pop-up events, demonstration projects, and scavenger hunts. These activities can be socially distanced but still encourage interactions in the Target Area and can capture full-time, busy parents, and business owners.

The Sanford Lab Homestake Visitor Center, free and open to the public, is a creative way SDSTA can gather public participation and boost awareness of work being done under this grant with more than 54,000 visitors each year. In 2022 alone the visitors center welcomed visitors from all 50 states and over 20 countries.

Virtual/Social Media engagement, such as internet-based outreach, can help increase awareness and participation while helping to reach people who may not otherwise participate. As an example, Geographic Information System (GIS) StoryMaps can be used as an “online equivalent” for some public meetings. This online tool guides participants through a story of the project that may include narrative, interactive and static maps, survey questions, videos, infographics, and more. We will also create regular content for SURF’s website which will include any press releases, fact sheets, a fillable Site Nomination form, as well upcoming in-person, and virtual events. Online surveys can be widely dispersed using platforms like SurveyMonkey or Survey 123. We can also use additional virtual tools – such as Facebook Live, TEAMS, or ZOOM for public meetings for further capacity for citizens to be engaged if they cannot attend in person.

3. TASK DESCRIPTIONS, COST ESTIMATES, & MEASURING PROGRESS:

3.a. Description of Tasks/Activities & Outputs: 3.a.i.-3.a.iv. Project Implementation, Anticipated Project Schedule, Task/Activity Lead, Outputs:

Over the last 12 years, SDSTA has transformed Homestake into a unique, internationally recognized research asset hosting world-leading science experiments. SDSTA has the unique knowledge and experience needed to operate SURF and to continue the advancement of the Target Area in support of the public purpose with this grant funding. SURF is critical to U.S. global competitiveness in underground science, and SDSTA is eager to partner with EPA to assess, cleanup and remediate, and plan for the future of priority brownfield sites.

SDSTA is requesting \$1,000,000 of EPA Multipurpose funding to perform at least one Phase II Environmental Site Assessment (ESA) at the Yates Compressor Building, additional supplemental site assessments, cleanup of identified priority sites, and complete reuse planning & community engagement activities. **80% of the requested EPA funds will be allocated to site-specific work.** The scope has been organized into four tasks described below. All Tasks identified below (Task 1-4) are EPA funded activities and align with EPA’s FY 2022-2026 Strategic Plan.²⁴

Task 1: Cooperative Agreement (CA) Management, Reporting, & Other Eligible Activities
<p>i. Implementation: SDSTA will manage all aspects of the project, including coordination with the EPA, QEP firm, and contractor(s). Reporting will include Quarterly Progress Reports (QPRs); ACRES Updates; Annual/Final Disadvantaged Business Enterprise (DBE) and Federal Financial Reports (FFRs); and a Final Performance Report documenting accomplishments, outputs, outcomes, and success stories. SDSTA will procure a QEP firm and contractor(s) in accordance with (2) CFR 200,317-326 requirements and will oversee the QEP firm and all contractors. Two SDSTA staff will also attend state/regional workshops/ conference(s) and a National Brownfield Conference(s). Any proposed changes to this Task will be discussed with and approved by the EPA.</p>
<p>ii. Schedule: Management & Reporting will be ongoing throughout the five-year implementation period. Attending State/Regional Workshop/Conference(s) and a National Brownfield Conference(s) which are anticipated in 2025 & or 2027.</p>
<p>iii. Leads: SDSTA will lead this task including financial management, execution, and compliance with the terms and conditions of the CA. The QEP firm will assist with reporting activities.</p>
<p>iv. Outputs: 20 QPRs; 5 DBE/FFR Reports; ACRES Updates (ongoing); one Final Performance Report; and two Brownfield Workshops/Conferences attended by 2 SDSTA staff.</p>
Task 2: Site Assessments
<p>i. Implementation: Under the direction of SDSTA, the QEP firm will complete Eligibility Determination (ED) request forms to be submitted to EPA (hazardous substances) and/or SD DANR (petroleum). Upon confirmation of eligibility, any additional Phase I ESAs SDSTA deemed needed will be completed in accordance with 40 CFR Part 312, the All-Appropriate Inquiries Final Rule, and</p>

²³ <https://sanfordlab.org/feature/public-outreach>

²⁴ <https://www.epa.gov/system/files/documents/2022-03/fy-2022-2026-epa-strategic-plan.pdf>

<p>the standards set forth in the ASTM E1527-21 Phase I ESA process. The QEP firm under the direction of SDSTA will perform at a minimum 1 Phase II ESA at the Yates Compressor Building, supplemental assessment activities, Regulated Building Materials (RBM) surveys, and/or Response Action Plans (RAPs) on priority sites that meet eligibility requirements. A Quality Assurance Project Plan (QAPP) will be prepared and approved by EPA as part of this grant award prior to conducting any Phase II ESAs or other sampling activities. Prior to initiating any Phase II ESA field work, a Sampling and Analysis Plan (SAP) and Health and Safety Plan (HASP) will be prepared and submitted to EPA. Phase II ESAs will follow standards set forth in the ASTM E1903-19 Phase II ESA process. Nearly all of SURF is listed in the National Register of Historic Places, and Section 106 reviews may also need to be completed prior to cleanup activities. All reports will be provided electronically (e.g., Adobe Acrobat) to SDSTA by the QEP firm.</p>
<p>ii. Schedule: Task 2 activities will be completed throughout the life of the grant. EPA/SD DANR Eligibility Determinations, Site Access Agreements (as needed), conduct Phase I ESAs (as needed): Q4 '24-Q4 '26. Preparation and submittal of QAPP: Q1 '25; ACM/hazardous building material surveys: Q2 '25-Q2 '27; Conduct Yates Compressor building Phase II ESAs: Q2 '25-Q4 '25; Prepare RAPs: Q4 '25-Q3 '27.</p>
<p>iii. Leads: Under the direction of SDSTA, the QEP firm will complete Phase I & II ESA activities and reporting, supplemental assessment activities, RBM surveys, and/or RAPs that meet the eligibility requirements.</p>
<p>v. Outputs: at a minimum 7 EDs, 1 QAPP; 3 HASP/SAP; 1 Phase II ESA; 3 RAPs. If needed, Phase I ESAs and RBM surveys will be completed where deemed necessary for further evaluation on the priority sites.</p>
<p>Task 3: Cleanup</p>
<p>i. Project Implementation: Under direction of SDSTA, the QEP firm and SDSTA procured contractor(s) will finalize an Analysis of Brownfield Cleanup Alternatives (ABCA); implement a cleanup and investigation plan including all permitting and prework submittals, HASP, site setup, and remove and dispose of ACM and investigate petroleum contamination. Preparation by the contractor of a Closure Report documenting aspects of the ACM cleanup project and preparation of Site Investigation report will be completed. Contaminated media to be addressed: ACM - Ellison Boiler Building - 2 boilers, 7'x24' pedestals; Yates Compressor Building – 6' of 3' piping; Foundry Building - 140' of 3" piping & 7 elbows; 90' of 4" pipe and 8 elbows; 120' of 6" pipe and 13 elbows; 40' of 8" pipe and 4 elbows; 2 boilers 8' pedestals and 2 hot water tanks 4' by 12'. Contaminated media to be addressed: Petroleum-stained soils and petroleum sheen on water in cistern Yates Compressor Building. Conduct Site Investigation consisting of 10 soil borings, soil and groundwater sampling, and analysis of samples for VOCs, semi-VOCs (SVOCs), RCRA metals and PCBs. Based on the results of the Site Investigation, a RAP will be prepared to address soil and/or groundwater contaminated exceeding SD DANR/EPA action levels. The RAP may include soil excavation with offsite disposal at an SD DANR approved landfill and treatment of groundwater. Cleanup method: abatement by removal of ACMs. ACM abatement will consist of site setup; permitting; constructing containment areas; removing, packaging, and labeling ACMs for disposal; waste disposal at a certified landfill; post-abatement cleanup; and third-party asbestos clearance monitoring and sampling. ACM waste will be disposed at a landfill authorized by SD DANR to accept non-hazardous, class 9, friable ACM waste.</p>
<p>ii. Schedule: Task 3 activities will be completed throughout the life of the grant. Final ABCA completed by Q2 '25; Site ACM Cleanups, abatement, and remediation Q3' 25 to Q4' 28; Cleanup report submitted by Q2 '29.</p>
<p>iii. Lead: Under direction of SDSTA, the QEP firm and SDSTA procured contractor(s) will complete cleanup activities that meet the eligibility requirements.</p>
<p>iv. Outputs: Final ABCA; Final cleanup/clearance data; Cleanup Closure Report, and RAP.</p>
<p>Task 4: Reuse Planning & Community Outreach</p>
<p>i. Project Implementation: SDSTA with support of the QEP firm, Sanford Lab Homestake Visitor Center, and SURF Foundation will perform a comprehensive community outreach program that will include options for traditional, targeted, innovative, and virtual options for engagement. Including but not limited to meetings and forums, development and distribution of marketing and informational materials, and joint outreach and education efforts. Care will be taken to invite and involve neighbors and citizens, as well as to keep local government and community-based organizations informed. A reuse planning study will be completed within Target Area and more specifically around the properties slated for the future home of the SURF Institute for Underground Science where there is a high probability for substantial redevelopment. These activities are necessary to help determine the feasibility of site cleanup or reuse option(s) that may be completed to better inform SDSTA's implementation strategies.</p>
<p>ii. Schedule: Task 4 will be ongoing on an as warranted basis throughout the duration of the grant implementation. Outreach communications: Q4 '24-Q3'29 and reuse planning studies: Q1 '25-Q3 '27.</p>
<p>iv. Lead: SDSTA with support of the QEP firm, Sanford Lab Homestake Visitor Center, and SURF Foundation will complete this task.</p>
<p>v. Outputs: 8 outreach meetings; Outreach documentation & supplies; Online communications; 1 reuse planning study.</p>

3.b. Cost Estimates: Approximately 80% of grant funding will be allocated for tasks directly related to site-specific work at the Priority Sites within the Target Area, described in Section 1.a.ii. The table below provides a breakdown of estimated costs by task. An average rate of \$150/hour is used for contractual services and \$85/hour is used for SDSTA personnel/fringe (\$60/hour for personnel + \$29/hour for fringe) to administer the grant. SLHVC and the SURF Foundation contributions will contribute their own resources as in-kind services to support the activities described herein.

Table 5 - Budget for Grant Funded Activities

Line #	Budget Categories	Task 1	Task 2	Task 3	Task 4	Total
		Cooperative Agreement (CA) Management, Reporting, & Other Eligible Activities	Site Assessments	Cleanup	Reuse Planning & Community Outreach	
1	Personnel	\$12,000	\$8,400	\$12,000	\$17,400	\$49,800
2	Fringe	\$5,800	\$4,060	\$5,800	\$8,410	\$24,070
3	Travel ¹	\$8,000	\$0	\$0	\$0	\$8,000
4	Supplies	\$0	\$0	\$0	\$500	\$500
5	Contractual	\$15,000	\$82,750	\$20,000	\$55,500	\$173,250
6	Construction	\$0	\$25,000	\$669,380	\$0	\$694,380
Direct Costs		\$40,800	\$120,210	\$707,180	\$81,810	\$950,000
Indirect Costs^{3*}		\$12,500	\$8,000	\$12,500	\$17,000	\$50,000
Total Budget		\$53,300	\$128,210	\$719,680	\$98,810	\$1,000,000

¹ Travel to brownfields-related training conferences is an acceptable use of these grant funds. ³ Indirect administrative costs for SDSTA’s Multipurpose Grant applicant does not exceed 5% of the total EPA-requested funds. * SDSTA has federally approved indirect rates for indirect costs.

The following table provides a summary of the estimated costs for project outputs by task and budget category.

Table 6 - Summary of Task Cost Development and Application of Funding

<p>Task 1: Cooperative Agreement (CA) Management, Reporting, & Conferences: Total Budget = \$53,300 (\$40,800 direct & \$12,500 indirect)</p> <p>Cost Basis and Assumptions: <u>Personnel & Fringe Costs</u> of \$17,800 is budgeted for 100 hours (hrs.) for 2 SDSTA staff (Personnel: 100 hrs. x \$60/hr. x 2 = \$12,000 & Fringe Benefits: 100 hrs. x \$29/hr. x 2 = \$5,800). <u>Contractual Costs</u> of \$15,000 is budgeted for 100 hrs. to be completed by the QEP firm at an estimated \$150/hr. This includes budget for quarterly, annual/final DBE and FFR, and ACRES reporting. <u>Travel Costs</u> of \$8,000 (\$4,000 for airfare and transportation, \$2,500 for hotel accommodations, \$1,000 for meal expenses, and \$500 for registration fees) is budgeted for expenses for two (2) SDSTA staff members to attend two (2) local, regional, and/or state, conferences and/or the EPA National Brownfield Conference(s). <u>Indirect Costs</u> of \$12,500 for administrative costs.</p>
<p>Task 2: Site Assessments: Total Budget = \$128,210 (\$120,210 direct & \$8,000 indirect)</p> <p>Cost Basis and Assumptions: <u>Personnel & Fringe Costs</u> of \$12,460 is budgeted for 70 hrs. for 2 SDSTA staff (Personnel: 70 hrs. x \$60/hr. x 2 = \$8,400 & Fringe Benefits: 70 hrs. x \$29/hr. x 2 = \$4,060). <u>Contractual Costs</u> of \$82,750 is budgeted for the QEP Firm to complete one QAPP (\$10,000); 7 EDs (\$250 each = \$1,750); 3 HASP/SAPs (\$2,000 each = \$6,000); 1 Phase II ESA (\$35,000 each = \$35,000); 3 RAPs (\$10,000 each = \$30,000). Budget for Phase I ESAs, Section 106 Reviews, and RBM surveys, if needed, is not anticipated but will be shifted within Task 2 if the need arises. <u>Contractor Costs</u> of \$25,000 is budget for the Contractor(s) to complete: <u>Yates Compressor Building</u>: \$25,000 for 10 soil borings (\$1,500 /ea. = \$15,000), 20 soil/groundwater sample analysis (\$500/ea. = \$10,000). <u>Indirect Costs</u> of \$8,000 for administrative costs.</p>
<p>Task 3: Cleanup: Total Budget = \$719,680 (\$707,180 direct & \$12,500 indirect)</p> <p>Cost Basis and Assumptions: <u>Personnel & Fringe Costs</u> of \$17,800 is budgeted for 100 hours (hrs.) for 2 SDSTA staff (Personnel: 100 hrs. x \$60/hr. x 2 = \$12,000 & Fringe Benefits: 100 hrs. x \$29/hr. x 2 = \$5,800). <u>Contractual Costs</u> of \$20,000 for the QEP firm to complete one Analysis of Brownfield Cleanup Alternatives. <u>Contractor Costs</u> of \$669,380 is budget for the Contractor(s) to complete: <u>Yates Compressor Building</u>: \$296,580 is budgeted for: 5 permanent Groundwater Wells (\$20,000 each = \$100,000); soil and groundwater remediation of \$120,000; \$2,800 is budgeted for: permit for ACM abatement, mobilization/demobilization, setup (safety, access, utilities), ACM abatement, waste disposal, and reporting; lead-based paint abatement of \$73,780; <u>Ellison Boiler Building</u>: \$82,000 is budgeted for: permit for ACM abatement, mobilization/demobilization, setup (safety, access, utilities), ACM abatement, waste disposal, and reporting for \$60,000; permit for building demolition, mobilization/demobilization, setup (safety, access, utilities), building demolition, debris disposal: 1,200 sq. ft. at \$10/sq. ft. = \$12,000, boiler removal and disposal: 2 boilers at \$5,000/each = \$10,000; <u>Foundry</u>: \$290,800 is budgeted for: permit for ACM abatement, mobilization/ demobilization, setup (safety, access, utilities), ACM abatement, waste disposal, and reporting. <u>Indirect Costs</u> of \$12,500 for administrative costs.</p>
<p>Task 4: Reuse Planning Study and Community Outreach: Total Budget = \$98,810 (\$81,810 direct & \$17,000 indirect)</p> <p>Cost Basis and Assumptions: <u>Personnel & Fringe Costs</u> of \$25,810 is budgeted for: \$4,450 for Outreach Documents (25 hrs. \$60/hr. x 2 = \$3,000 & Fringe Benefits: 25 hrs. x \$29/hr. x 2 = \$1,450); \$7,120 for Online Communications (40 hrs. \$60/hr. x 2 = \$4,800 & Fringe Benefits: 40 hrs. x \$29/hr. x 2 = \$2,320); and \$14,240 for Outreach Meetings (80 hrs. x \$60/hr. x 2 = \$9,600 & Fringe Benefits: 80 hrs. x \$29/hr. x 2 = \$4,640). <u>Contractual Costs</u> of \$55,500 is budgeted for the QEP Firm to complete a Reuse Planning Study (370 hrs. x \$150/hr. = \$55,500). <u>Supply Costs</u> of \$500 includes \$380 for printing (\$280 for boards needed at community outreach events and \$100 for brochure/handouts) and \$120 for mailing costs (200 pieces at \$0.60 apiece). <u>Indirect Costs</u> of \$17,000 for administrative costs.</p>

3.c. Plan to Measure and Evaluate Environmental Progress and Results: When preparing the project work plan, SDSTA will develop a detailed schedule to track, measure, evaluate, and report key project **outputs** such as SAP/QAPP completion, scheduling and holding outreach events, and abatement work. At least monthly, SDSTA will track and evaluate progress in achieving outputs and milestones against the work plan schedule, in addition to regular communication with the QEP firm, contractor(s), SD DANR, and EPA. SDSTA will increase monitoring and communication during the active cleanup phase to act quickly to address any unanticipated changes during this critical period. SDSTA will monitor the project budget concurrent with tracking the schedule, on at least a monthly basis. SDSTA will document project **outputs and outcomes** in the quarterly progress reports to EPA and in EPA's ACRES database. Outcomes beyond the end of the grant term will also be tracked in the ACRES database. Anticipated outputs are described in Section 3b. The following **short- and long-term outcomes** SDSTA will track include but are not limited to square feet of sites prepared for reuse; number of buildings prepared for reuse; number of jobs created; amount of private investment/leveraged funding; increase in property values; reduction in volume of hazardous materials.

4. PROGRAMMATIC CAPABILITY & PAST PERFORMANCE:

4.a. Programmatic Capability: 4.a.i.-4.a.iii. Organizational Capacity, Organizational Structure, Description of Key Staff: SDSTA will be responsible for compliance with all administrative and programmatic conditions under the grant. SDSTA, a South Dakota Body Corporate & Politic, established in 2004 by the SD State Legislature,²⁵ is an experienced federal grantee and has the programmatic processes and procedures in place to successfully manage the implementation of this grant. With 203 employees, SDSTA will work closely with their internal teams including Science; Environment, Safety and Health; Operations; Outreach and Culture; and Business Services SDSTA will also work with the City and local organizations to ensure projects are successful through alignment with needed processes and procedures.

SDSTA will oversee all aspects of the project to ensure timely completion of key milestones. Key staff includes **Project Director – Pamela Hamilton, Engineering Project Manager:** Ms. Hamilton will serve as the Project Director. With over 25 years of experience as an engineer and extensive project management and budget performance management experience, Ms. Hamilton brings leadership and organizational experience to this project. She has experience in financial grant management primarily focused on application development and financial grant management. She has the experience and technical expertise to oversee the QEP and contractors and ensure the project remains on schedule. She holds a Bachelor of Science in Industrial Engineering and an MBA. **Assistant Project Director – William Kelly, Contracts and Procurement Manager:** With over 15 years of grant administration experience, Mr. Kelly will serve as the Assistant Project Director. He has administered more than \$160 million in grant funding and will assist with grant management, compliance, and reporting. Mr. Kelly holds an MS in Business Administration and an MBA in Applied Management. **Technical Director - Bonita Goode, Environmental Manager:** Ms. Goode will serve as the Technical Director. With more than 30 years of experience in the environmental field, she will oversee remediation to ensure compliance with environmental regulations, as well as SURF's ISO14001-certified management system are adhered to. Ms. Goode has a Bachelor of Science in Environmental Engineering and a Master's Degree in Organizational Leadership. She brings extensive experience in surface and underground hard rock and coal mining, cement manufacturing, and combine and diesel engine manufacturing. Her experience also includes characterizing environmental impact, determining regulatory requirements, identifying continuous improvement projects, developing, and implementing environmental management systems, and public affairs.

If Ms. Hamilton can no longer fulfill her duties as Project Director, Mr. Kelly and Ms. Goode along with SDSTA staff will ensure the project continues.

4.a.iv. Acquiring Additional Resources: SDSTA has access to substantial resources throughout its various departments, as well as the State of SD including additional technical and supporting roles to assist with grant implementation activities. SDSTA has proactive staffing succession plans, eliminating project delays and ensuring project staff have appropriate qualifications and experience. SDSTA routinely contracts with consultants and contractors and has established equal opportunity procurement procedures for ensuring a fair bidding process and adhering to 2 CFR 200.317-200.326. SDSTA has not procured a QEP firm, through a competitive RFP process yet, but will if funded to assist with grant implementation activities.

When possible SDSTA will use local qualified contractors and will link qualified community members to potential employment opportunities to complete work under this grant funding. SDSTA is also proud to offer summer internships to college students every year for hands on experience at SURF. SDSTA is also continuously tracking additional opportunities to pursue funding resources that align well with SDSTA's vision for the future of SURF.

²⁵ <https://sdlegislature.gov/Statutes/1-16H>

4.b. Past Performance & Accomplishments: 4.b.ii. Has Not Received an EPA Brownfields Grant but Has Received Other Federal or Non-Federal Assistance Agreements: SDSTA has received and managed millions of dollars in funding from federal and state agencies. The list below depicts snippets of funding managed by SDSTA that are most aligned in size, scope, and relevance to the proposed project.

4.b.ii.(1) Purpose & Accomplishments: From 2004-2005, SDSTA was funded through **the state of SD**. In 2006, SDSTA funding was transferred to the **National Science Foundation (NSF)** which provided millions in funding for SDSTA and the operations at SURF until 2012.²⁶ DOE single year subcontract funding began in 2012 after NSF funding subsided. This funding mechanism was in place for seven years until 2019 again with totals in the millions of dollars of investment.

Operations at SURF are now primarily funded through SDSTA's Cooperative Agreements (CA) with the **DOE Office of Science** (DE-FOA-0001968: FY2019 Continuation of Solicitation for the Office of Science Financial Assistance Program; DE-FOA-0002181: FY2020 Continuation of Solicitation for the Office of Science Financial Assistance Program; DE-FOA-0002414: FY 2021 Continuation of Solicitation for the Office of Science Financial Assistance Program; DE-FOA-0002562: FY 2022 Continuation of Solicitation for the Office of Science Financial Assistance Program; DE-FOA-0002844: FY 2023 Continuation of Solicitation for the Office of Science Financial Assistance Program). The current CA (9/30/2019-9/30/2024) was awarded in the amount of \$130,888,000.²⁷ The CA funds the day-to-day operations of SURF as well as critical infrastructure improvements. Critical infrastructure completed thus far under the CA includes: Recapitalization of the Ross and Yates Complex potable and industrial water distribution systems; Installation of underground water inflow control systems to channel water to collection systems and away from the two shafts and science support areas; Replacement and upgrade of door systems in both the Ross and Yates Headframes and Crusher Buildings to enhance underground logistics movement and better control direct access to the shafts collars; Davis Campus Chillers replacement to address aging equipment and increase chilled water capacity for experiments; Rebuild of the Yates Cage Hoist Motor/Generator sets to support reliable movement of personnel and materials; Installation of a 100% backup ventilation fan to the forty year old American Davison fan which will ensure reliable ventilation can be delivered to support LBNF/DUNE excavation and detector filling and operations; Recapitalization of the underground dewatering system with the rehabilitation of the 3650L pumphouse and replacement of the antiquated pump/motor system; wastewater treatment plant improvements by replacing antiquated circulation pumps with an upgrade to a gravity flow system and replacing obsolete Rotating Biological Contactors with a new Moving Bed Biofilm Reactor system.

SDSTA has also established a strategic advisory committee to provide expert counsel to advance SURF programs in alignment with DOE Office of Science goals. Advisory committees have been formed to drive excellence in Environment, Safety and Health, science user support, facility infrastructure operations, and cultural diversity and inclusion. SDSTA staff have cultivated relationships with partner DOE National Laboratories who provide a shared understanding of each other's missions and capabilities and allow SDSTA to benefit from the institutional depth of these world-class organizations.²⁸

A CA for FY2025-FY2029 is being requested and will be submitted in December 2023 with anticipation of award in FY2024 for \$268 million in funding for the next five years.

SDSTA pursues other experiment supporting subcontracts through DOE outside of the CA. SDSTA currently holds a **DOE grant** (DE-SC0022857) of \$1,670,000 for LUX-ZEPLIN dark matter search experiment.²⁹

State of South Dakota - "The State of South Dakota has invested \$62 million in SURF over the past 15 years That investment has multiplied 15 times, generating \$932 million in Federal and private funds" Mike Headley, Executive Director of SDSTA. Funding from the State of SD is requested and appropriated for special projects. Most recently, during the 2023 legislative session, the State's Commerce and Committee, appropriated \$13 million for SURF. These funds through Senate Bill 35 will begin for the expansion plan of SURF with the construction of a new underground drift. This drift will provide access for a future project to construct two underground laboratory modules to be managed by SDSTA. The drift is in the final design phase and construction is planned for January 2024.

4.b.ii.(2) Compliance with Grant Requirements: For each of these grants, compliance with the terms and conditions of agreements is being/was maintained. SDSTA has/is complying with all work plans, schedules, and terms and conditions of the grants. Outcomes have and continue to be achieved, and all required reporting was/is being completed in a timely manner. SDSTA is committed to supporting all planned grant activities described in this FY2024 EPA Grant proposal and will effectively utilize all grant funds within the allotted period. SDSTA looks forward to partnering with EPA and contributing additional brownfield success stories to its portfolio.

²⁶ <https://www.nsf.gov/awardsearch/simpleSearchResult?queryText=Sanford+Underground+Research+Facility>

²⁷ [Office of Science Awards | Department of Energy](https://www.energy.gov/science/office-science-national-laboratories)

²⁸ <https://www.energy.gov/science/office-science-national-laboratories>

²⁹ [Office of Science Awards | Department of Energy](https://www.energy.gov/science/office-science-national-laboratories)

Threshold Criteria

Threshold Criteria

1. APPLICANT ELIGIBILITY: South Dakota Science and Technology Authority (SDSTA) is a South Dakota Body Corporate & Politic, a State Government, and is an eligible applicant as defined in 2 CFR 200.64.

See *Attachment A* for additional applicant eligibility documentation.

2. COMMUNITY INVOLVEMENT:

Effective community engagement is imperative to the success of this project and SDSTA understands the importance of effective communication strategies. Engaging the public, local project partners, the tribes, local environmental groups, environmental justice populations, and the neighborhoods surrounding the Target Area will be the goals of incorporating community input into this project. The intent is to engage stakeholders with traditional, targeted, innovative, and online outreach tools and methods to reach a greater audience. Community members will have the opportunity to learn about critical brownfield details and provide informed feedback to influence the next phase(s) of work.

Public engagement in the event of social distancing or other restrictions is certainly unique but should not be thought of as less important, less creative, or less inclusive. Rather, these instances provide an opportunity to be more innovative and inclusive for those who cannot attend in person. SDSTA, along with the BAC, and a Qualified Environmental Professional Firm (QEP), will work to remove barriers, either real or perceived, to engage residents in meaningful dialogue, effectively use participants' time, and involve people who are traditionally not/underrepresented in redevelopment projects. We will make strategic use of various communication methods to reach a broad and inclusive audience as well as to respond to community input. Community engagement will include a variety of measures that are traditional, targeted, innovative, and virtual.

Traditional engagement includes conventional public meetings, done virtually or in-person as health restrictions allow; distribution of press releases, fact sheets, and timely communication to community partners as needed.

Targeted engagement involves outreach to specific groups that may not otherwise participate in a planning process. Notable groups include disabled residents, youth, and the elderly. Examples of targeted outreach include listening sessions (virtual or in-person), piggybacking on other meetings or gatherings such as Sanford Lab Deep Talks or Neutrino Days¹, and/or partnering with BAC organizations.

Innovative engagement includes creative and unconventional outreach methods to help gather information, increase awareness of the planning process, and boost participation. Examples are bike or walk audits to collect data by photo or video, pop-up events, demonstration projects, and scavenger hunts. These activities can be socially distanced but still encourage interactions in the Target Area and can capture full-time, busy parents, and business owners.

The Sanford Lab Homestake Visitors Center, free and open to the public, is creative way SDSTA can gather public participation and boost awareness of work being done under this grant with more than 54,000 visitors each year. In 2022 the Visitors Center welcomed visitors from all 50 states and over 20 countries.

Virtual/Social Media engagement, such as internet-based outreach, can help increase awareness and participation while helping to reach people who may not otherwise participate. As an example, Geographic Information System (GIS) StoryMaps can be used as an “online equivalent” for some public meetings. This online tool guides participants through a story of the project that may include narrative, interactive and static maps, survey questions, videos, infographics, and more. We will also create regular content for SURF's website which will include any press releases, fact sheets, a fillable Site Nomination form, as well upcoming in-person, and virtual events. Online surveys can be widely dispersed using platforms like SurveyMonkey

¹ <https://sanfordlab.org/feature/public-outreach>

or Survey 123. We can also use additional virtual tools – such as Facebook Live, TEAMS, or ZOOM for public meetings for further capacity for citizens to be engaged if they cannot attend in person.

3. TARGET AREA:

Sanford Underground Research Facility campus – 46081966601 & 46081966602

Proposed Priority Sites: *

- Ellison Boiler Building
- Foundry
- Yates Compressor Building

*All sites are located on the Sanford Underground Research Facility campus at 630 E. Summit Street, Lead, South Dakota 57754.

4. AFFIRM BROWNFIELD SITE OWNERSHIP:

SDSTA is the sole owner of all priority brownfield sites located within the SURF campus that meets the CERCLA § 101(39) definition of a brownfield.

5. USE OF GRANT FUNDS:

Pages 8 through 11 of the grant narrative contain information on the plan to conduct assessments, remediation, and additional revitalization planning for the priority sites and target area using the grant funds.

6. EXPENDITURE OF EXISTING GRANT FUNDS:

SDSTA does not have an open USEPA Brownfields Multipurpose or Assessment Grant

7. CONTRACTORS AND NAMED SUBRECIPIENTS:

Not Applicable. No contractors or named subrecipients have been procured.

ATTACHMENT A – ELIGIBILITY DOCUMENTATION AND AFFIRMATION OF BROWNFIELD SITE OWNERSHIP