Petroleum Cleanup and Redevelopment Fund Guidebook - 2019

COLORADO
Division of Oil and Public Safety
Department of Labor and Employment

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1.0 BASIS AND PURPOSE

The mission of the Petroleum Cleanup and Redevelopment Fund (Redevelopment Fund) is to promote environmental protection, provide economic development, and support community revitalization through the assessment, cleanup, and sustainable reuse of abandoned and underutilized petroleum storage tank sites.

The Division of Oil and Public Safety (OPS) created the Redevelopment Fund to catalyze the investigation and cleanup of contamination at abandoned and former gas stations and other petroleum storage tank properties. Many of these sites have been unaddressed for decades. These former storage tank sites are generally not eligible for funding from the Colorado Petroleum Storage Tank Fund (PSTF).

This Guidebook assists property owners with the application process. Utilization of the Redevelopment Fund's fiscal and technical resources can help reduce the risk and uncertainty that has complicated the ability to sell, reuse or redevelop a former petroleum storage tank property.

Petroleum contamination presents a risk to human health and the environment. The Redevelopment Fund's primary objective is to reduce the potential for exposure to contaminants for people in proximity to petroleum releases.

Abandoned or underutilized petroleum storage properties, including auto service and gas stations, bulk petroleum facilities, and sites with non-retail underground storage tanks (USTs) exist in most communities throughout the State of Colorado. These properties range in size from several acres to less than a quarter acre, and are located on community Main Streets, neighborhood corners, and in local commercial districts. Although these sites are generally small parcels, they can offer the potential for economically sustainable redevelopment opportunities. Redevelopment can reduce significant blighting influence and other negative economic impacts on the communities where these sites are located.

Redevelopment or reuse of this type of site will reduce the threat of environmental impacts from petroleum contamination and enhance the value of the property for the community.

The value of these parcels and adjacent properties are often depressed and do not realize their full potential for generating tax revenue and creating much-needed employment opportunities. Economic and community development also includes assets such as parks, meeting places, and open space.

Each community's unique vision and planning are incorporated into the redevelopment process.

2.0 APPLICATION PROCESS

Eligibility to the Redevelopment Fund is dependent upon the Applicant's ability to meet the eligibility criteria presented below. The environmental, economic and social benefits of the Applicant's redevelopment/reuse plan to the community are important factors in obtaining eligibility approval. Helpful information and references are included as links in this Guidebook.

The property owner is required to submit an Application to the Redevelopment Fund that contains the following information:

- Evidence of property ownership.
- Current and historic property utilization related to the operation of petroleum storage tanks.
- The property redevelopment/reuse plan.

The Redevelopment Fund – Site Selection Group will review the Application and determine eligibility based upon the description, completeness and merits of the property redevelopment/reuse plan.

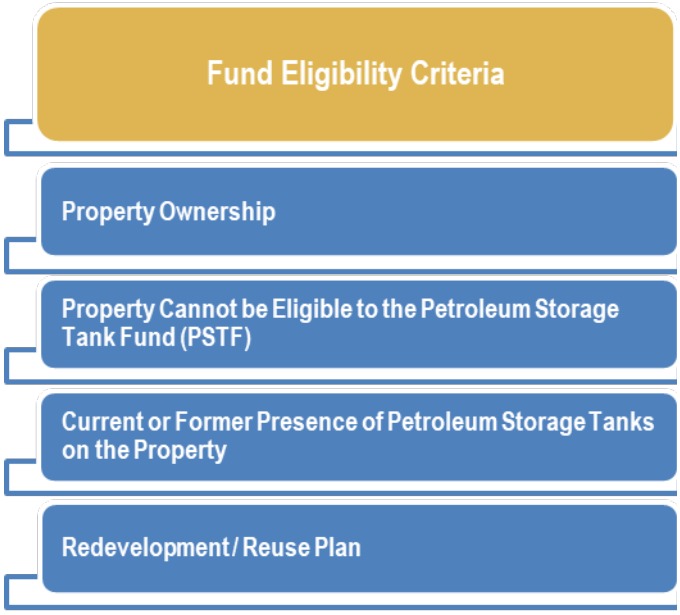
The Redevelopment Fund can provide financial and technical assistance for removal of a petroleum storage tank from the property.

Redevelopment Fund Eligibility Criteria

The following is a more detailed summary of the eligibility criteria and Application questions.

Property Ownership

The Applicant must be the property owner. The property owner is not restricted from developing partnerships with other entities as part of a private-sector arrangement or public-private partnership. The transfer of the Redevelopment Fund eligibility can take place at any time to future property owners, provided that the future property owner agrees to the Terms and Conditions and cleanup objectives.



(Application Question No. 1)

Property Cannot be Eligible to the Petroleum Storage Tank Fund (PSTF)

The Applicant cannot be eligible to the PSTF, as described in Article 8 of the Petroleum Storage Tank Regulations. Please refer to the Eligibility to the Petroleum Storage Tank Fund table to evaluate the property status.

(Application Question No.2)

Current or Former Presence of Petroleum Storage Tanks on the Property

There are several methods for determining the property's petroleum storage tank history:

- **Physical inspection** is a direct determination. Tank filling ports and other manways, footprints of former dispensing island areas, vent pipes attached to the building, and surface cover that has been modified and patched are the most common indications that storage tanks are or were present on the property.
- **Phase I Environmental Site Assessments (ESAs) and real estate screenings** describe the property history and petroleum storage tank utilization.
- **Sanborn Fire Insurance Maps** may show the location of petroleum storage tanks. The largest collection of Sanborn maps in Colorado is located at the University of Colorado at Boulder library.
- **Historic city address directories** compiled by companies like Coles or Polk are available in many public libraries. These directories provide a listing of properties by name and address. Names can indicate tank usage (i.e., service station, gas station).
- **Official property transaction records, environmental database searches and historic pictures** can also provide information pertaining to petroleum storage tank use.

(Application Question No. 3)

This checkbox on the Application refers to whether any historic ESA work has been completed at the property. If work has been performed, please provide a summary of the technical data.

(Application Question No. 4)

This Application checkbox designates the Redevelopment Fund activities requested by the Applicant. These activities are discussed in Section 3 of this Guidebook.

(Application Question No. 5)

Redevelopment / Reuse Plan

Describe the Current Use and Future Redevelopment/Reuse of the Property

Applications should include a comprehensive description of the current and future use of the property and summarize how the redevelopment/reuse of the property will benefit the welfare of the community.

> Project outcomes tied to economic, social, and environmental enhancements will strengthen the eligibility application.

Redevelopment or reuse of existing property promotes sustainable development practices.

Redevelopment is the process of rebuilding a property or area that is in a measurable state of decline, disinvestment, or abandonment. Redevelopment can substantially improve the quality of life and the environment in a community.

Reuse is the repurposing of existing buildings for a new use. Reuse maintains the building as a community asset, respects the historic nature of the structure, and sustains the current community sense of place.

The Town of Milliken successfully redeveloped a former gas station into the Milliken Police Station. The new building improves the effectiveness of the community's policing efforts, which represents a socially sustainable service delivery model.

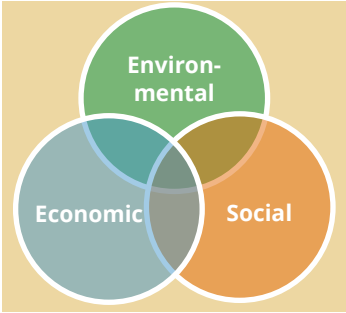
The Source is a 19th century steel refinery that was repurposed to house a group of local Denver breweries, eateries and specialty grocers. The reuse applied sustainable building practices.

Completed Milliken Police Station redevelopment project.

Completed Source reuse project.

(Application Question No. 6)

Describe Current Property Zoning and Prioritized Land Use Areas



The Applicant should provide a discussion of current and future zoning for the property and whether a zoning change is anticipated. Municipal and county zoning requirements must be met. The Applicant should work collaboratively with local governmental agencies to ensure compliance with specific building or zoning requirements and explore funding opportunities. For instance, the property may be located in a prioritized land use area where funding resources and incentives can be leveraged. The State of Colorado has several long-term planning programs to support revitalization.

Many communities have established planning areas, business improvement districts, development and improvement districts, and Urban Renewal and Downtown Development Authorities. Projects within established planning zones may be eligible for tax credits and other financial leveraging opportunities.

(Application Question No.7)

Qualify Value-Added Components (Environmental, Economic and Social) of the Site Redevelopment/Reuse

The Applicant should fully describe the value-added features of the proposed project, as the review process will prioritize funding based on the level of added value provided. The Redevelopment/Reuse Outcomes Worksheet provides a partial list of value-added components for the Applicant to consider. If a value-added component applies to the project, the corresponding box should be checked and a detailed explanation provided.

Environmental Components

The removal of USTs eliminates a risk to public safety and is the first step to improving the environmental quality of a neighborhood.

Conducting an **environmental site assessment** for the existing property is the first step in defining the risk to human health and the environment if a petroleum release has occurred.

Additional **environmental enhancements** proposed for the project should be presented in the Application. Environmental enhancements include but are not limited to:

- ✓ Incorporating Leadership in Energy and Environmental Design (LEED) certified buildings as part of the redevelopment significantly enhances the Applicant's Redevelopment Fund eligibility. If applicable, the Applicant should discuss the proposed LEED standards that the project will achieve and the certification points attained throughout the project.

- ✓ Implementing stormwater structural or non-structural best management practices (BMPs) which reduce the volume and peak rate of runoff from the site into the stormwater system and waterways. Applying design criteria to increase water infiltration and reduce runoff can be incorporated into the project plan. A list of Best Management Practices is provided on the Colorado Water Conservation Board website.
- ✓ Greenspace land is partly or completely covered with grass, trees, shrubs, or other vegetation and is accessible to the public. Parks and community gardens are types of greenspace. The environmental benefits of greenspace include:
  - o Improvement in air quality
  - o Preservation of indigenous ecosystems
  - o Reduction of the urban heat island effect
  - o Stormwater management
- ✓ Siting renewable energy can provide a valuable source of energy for the property. Although former petroleum storage tank sites are relatively small, there are opportunities to incorporate renewables into the property redevelopment. Additional information on this topic is available on the EPA – RE-Powering America's Land website.
- ✓ OPS has published a checklist list of Green BMPs. These BMPs reduce the carbon footprint, conserve natural resources and improve operational efficiency. Applicants should consider implementation of these practices throughout the site assessment, characterization and cleanup phases and attach a completed checklist to the eligibility Application.

Rain gardens are an example of stormwater BMPs.

This pocket park in Boulder is a prime example of a sustainable greenspace.

Utilization of a solar-powered remediation system is an example of a Green BMP.

Economic Components

Economic components provide benefits before, during and after the project for local governments, land developers, and the community.

Redevelopment/reuse can improve local economic growth, increase tax revenue, create temporary and permanent jobs, and serve as a catalyst for surrounding development within neighborhoods. In addition to these tangible property improvements, redevelopment/reuse can enhance surrounding land values and reduce the pressure to develop greenfields by optimizing the use of the existing infrastructure.

The Applicant should quantify the economic value-added components of the proposed project in the Redevelopment/Reuse Outcomes Worksheet (Worksheet Nos. 7-10). The estimated capital expenditures for the future redevelopment should be included in this discussion.

Leveraging available fiscal resources in addition to the Redevelopment Fund is an effective way to augment the financing of revitalization efforts.

The following economic resources and development tools are provided for your consideration:

- Council of Development Finance Agencies
- Tax Increment Financing
- Colorado Brownfields Tax Credit

Social Components

Social components provide benefits throughout the life cycle of the project. The redevelopment/reuse of a property can eliminate neighborhood blight, reduce risks to human health, and enhance the community sense of place.

A community may benefit from the creation of new spaces to hold special events and recreational activities, improve landscape and street views, and reduce crime. These types of enhancements lead to overall improvements in the quality of life.

Removal of blight has a positive impact on a neighborhood. Blighted property is defined in Section 31-25-103(2) of the Colorado Revised Statutes.

An Application that contains blight removal opportunities carries significant weight during the Redevelopment Fund's eligibility approval process.

Rural and urban areas each have unique neighborhood characteristics. Within these towns and cities, effective redevelopment/reuse can improve access to the basic needs of the community, such as food, fuel, household goods, and needed services. The reuse or restoration of existing buildings maintains community heritage. Investment in affordable housing is a very positive outcome. Projects located within a transit-oriented development (TOD) area provide a variety of live/work/play opportunities that are especially attractive.

Blighted rural property in need of redevelopment.

The redeveloped Dahlia Square in Denver's Park Hill neighborhood provides affordable housing and medical facilities.

Expansion of the RTD FasTracks light rail system has created numerous TOD opportunities.

(Application Question No. 8)

Describe the Level of Community Involvement Regarding the Proposed Redevelopment/Reuse Plan

Local community involvement is an important part of the redevelopment process. Engaging the community helps to build public trust and support for the redevelopment/reuse project. Community members have a vision of how their neighborhoods reflect their values and successful projects should respect that vision.

Although petroleum storage tank sites are relatively small, there are many stakeholders directly affected by land use issues and redevelopment outcomes. The Applicant's interaction with stakeholders, local government, and business improvement districts is essential to the successful redevelopment of these former storage tank properties. Some types of redevelopment activities may require the submittal of preliminary site plans to local government, public notices and/or public meetings. The property owner is responsible for engaging the community and should include a discussion of this collaboration in the Application.

OPTIONs – A Community Engagement Workbook

Published by Smart Growth America, this guide will help the Applicant understand the public involvement process, and how to effectively engage local and diverse communities. This workbook provides useful tools to initiate conversations with stakeholders affected by the redevelopment.

3.0 REDEVELOPMENT FUND ELIGIBLE ACTIVITIES

Eligible activities are accepted OPS and industry practices that are implemented during the various project levels. The activities must be conducted by qualified professionals and begin after the Redevelopment Fund eligibility has been approved.

This section summarizes the phases of the Redevelopment Fund process after eligibility has been determined.

Petroleum Storage Tank Removal

Reimbursable activities are those actions associated with the removal of an underground storage tank.
The following is a summary of eligible activities:

- Site safety and control measures (fencing, utility locating, etc.)
- Pumping out and disposal of the tank contents
- Cleaning and inerting the tank
- Excavating and tank removal
- Tank disposal
- Backfill and compaction of the excavation
- Permit payments

The Level I Site Assessment process begins with removal of a storage tank.

Approved Applicants are eligible for reimbursement by the Redevelopment Fund for amounts up to:

- Minimum of $2,000 per UST removed or $1 per gallon of tank capacity, up to a maximum of $10,000 per site.
- $20,000 for Level I Site Assessment work with a 10% match by the Applicant.
- $30,000 in reimbursement for Level II Site Characterization work with a 10% match by the Applicant.
- $500,000 in reimbursement for Level III work. The Redevelopment Fund requires that the Applicant match 50% of the Level III eligible costs of cleanup.

Level I - Site Assessment

The process of measuring for the presence of a petroleum release begins with identifying the location or former location of the tanks, lines and dispensers. This can be accomplished based upon research conducted during Application Question No. 2 or may require shallow remote-sensing investigations such as electromagnetic or ground-penetrating radar surveys. A review of available aerial photography is another effective tool to establish the location of a storage tank system.

During removal of tanks from the property, product lines can be traced from the tanks and often terminate at the dispenser area. Knowledge of where these tank systems are located can focus assessment efforts on the areas where leaks are most prevalent.

OPS requires that an assessment of the tank area, product lines, and dispensers be conducted beneath these potential sources of contamination. To obtain a No Further Action (NFA) status, the initial site assessment must indicate that an environmental impact is below state action levels.

Grab soil sampling from beneath the tanks can be conducted with a backhoe.

The required soil sampling must be conducted in the native soil below the tanks, lines and dispensers. When tanks are removed, two soil samples are required for tank capacities less than 1,000 gallons, and three samples are required for tank capacities of 1,000 gallons or greater. Product lines should be sampled below any known couplings, and where the product flow changed direction (i.e., 90-degree turns and tee sections). Dispenser islands must be sampled below each pump location.

In instances where the tank(s), lines, and dispensers have been removed, a grid of soil sampling locations should be laid out to reflect the size of the tank basin excavation. Three sample locations will be required for a former tank basin with one tank, five locations for tank basins with two or three former tanks, and

Direct-push soil sampling in a former tank basin can be conducted when tanks have been removed.

eight locations for tank basins with more than three former tanks. Soil borings in a former tank basin must be advanced and screened for petroleum impacts to a minimum of twenty feet below the ground surface. The soil borings associated with former product lines and dispensers must be advanced and screened to a depth of ten feet below ground surface. If groundwater is encountered during the site assessment, a sample must be collected and analyzed by a laboratory.

Level I Site Assessment eligible activities include, but are not limited to:

- Review of available information (historic records and/or aerial photography) to refine the location of the tanks, lines, and dispensers
- Work plan preparation
- Obtaining permits and right-of-way access
- Utility locating
- Shallow geophysical investigation
- Drilling and/or direct push sample collection
- Groundwater monitoring well installation
- Sampling and laboratory analysis of soil and groundwater samples
- Investigative-derived waste characterization and management
- Limited soil excavation
- Project reporting
- Site reclamation

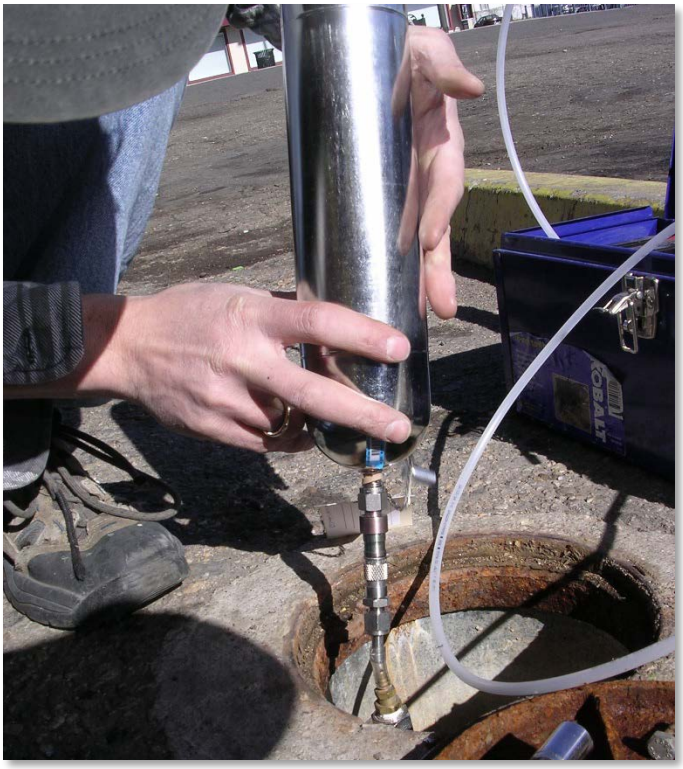
Level II - Site Characterization

The Level II Site Characterization will establish where the contamination is located and evaluate the exposure pathways by creating a conceptual site model that leads to the development of a cleanup plan. When soil contamination is detected above the state standards during the Level I Site Assessment, the horizontal and vertical extent of the contamination must be defined to the Tier I Risk-Based Screening Levels (RBSLs) and the total petroleum hydrocarbon (TPH) threshold limit of 500 mg/kg during the Level II Site Characterization.

If the soil is impacted and groundwater is encountered while defining the vertical extent of the soil contamination, a groundwater monitoring well must be installed and groundwater sampled and analyzed. If a petroleum impact to groundwater exists that exceeds the Tier I RBSLs for benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tert-butyl ether (MTBE), the extent of a groundwater contaminant plume must be established through the installation of a monitoring well network. This network should ensure that the upgradient, crossgradient and downgradient limits of the contamination are defined to below the Tier I RBSLs for the groundwater ingestion exposure pathway.

Hollow stem auger drilling is a standard industry practice used to install groundwater monitoring wells.

When the extent of the contamination has been determined, a receptor survey is completed to identify the points of exposure that could be impacted by the release. These points of exposure include utility corridors, adjacent structures, water wells, surface water, and sensitive environments.



Soil vapor sampling is an eligible Level II activity.

At this point, the extent of contamination is known and the receptor survey has been completed to assist in determining the risk of impact to potential receptors (people and sensitive environments). The remedial goals and timeline can be estimated by evaluating a soil and/or groundwater fate and transport model. The results will indicate what points of exposure have the potential to be impacted by contamination in the future. When models are utilized, a site-specific hydraulic conductivity value must be obtained.

The final step in Level II Site Characterization is to develop a technically feasible approach to clean up the site. This step may require a pilot test of the chosen cleanup method.

If budget remains from the $50,000 allocated to the Level I and II activities additional site work may be conducted upon approval by OPS. The existing Level II work plan must be amended. When the $50,000 is expended, all additional costs will rollover to Level III Site Cleanup.

Pilot testing of cleanup technologies can be conducted during Level II Site Characterization.

Level II Site Characterization eligible activities include, but are not limited to:

- Work plan preparation
- Obtaining permits and right-of-way access
- Utility locating
- Drilling and/or direct push sample collection
- Groundwater monitoring well installation
- Site-specific hydraulic conductivity testing
- Vapor point installation
- Sampling and laboratory analysis of soil, soil vapor, and groundwater samples
- Investigative-derived waste characterization and management
- Limited soil excavation
- Development of a receptor survey and conceptual site model
- Pilot testing of a remedial method
- Project Reporting

Level III – Site Cleanup

Level III Site Cleanup eligible activities are those actions to remediate the petroleum contamination to an acceptable level. When choosing a cleanup method, the technical and economic feasibility of several cleanup alternatives should be considered. This evaluation will help determine the most effective cleanup plan and the associated cost. This information is a fundamental element of the Level III Cleanup Work Plan.

Petroleum impacted soil excavation and disposal is a common Level III remedial activity.

In situ remediation of contamination involves the injection of reagents into the subsurface.

4.0 DEVELOPING A WORK PLAN

The Work Plan is a summary of eligible activities to be performed at the site and must be submitted to OPS for approval prior to beginning the Level I Site Assessment, Level II Site Characterization, and Level III Cleanup.

The basic elements of the project work plan include:

- Scope of work and conceptual site model
- Site map(s)
- Budget estimate of direct costs. The Reasonable Cost Guideline (RCG) unit rates and general guidelines must apply when developing the project budget.
- Schedule for work completion and project reporting submittals
- Qualifications of the primary consultant/contractor

Contingencies that provide flexibility in the scope of work should be included in the work plan.

Amendments to the work plan must be submitted for approval when changes to the scope of work are required based upon unexpected site conditions. Level III Site Cleanup work plans must include a discussion of the technical and economic feasibility of the cleanup technology to be implemented. The Applicant must demonstrate the ability to provide the necessary financial resources required to participate at this level.

Upon approval of a work plan, OPS will issue a Notice to Proceed to the Applicant that serves as authorization to start work and will affirm the Redevelopment Fund's commitment to a certain amount of money to conduct the scope of work.

5.0 ELIGIBLE COSTS AND REIMBURSEMENT

The Redevelopment Fund is a reimbursement program that requires submittal of an Application with supporting documentation of the approved tasks completed and proof of payment for the incurred costs.

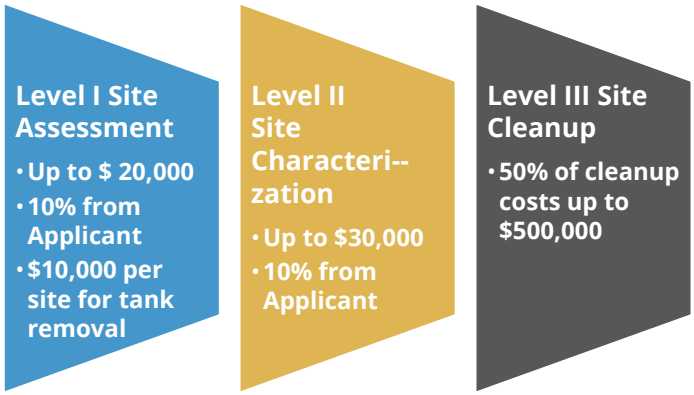
The eligible costs associated with activities included in the Level I & II Work Plans are reimbursable upon completion of the scope of work. Level III Cleanup costs are reimbursed upon completion of milestones established during the work plan approval process. Eligible costs are the proper and reasonable direct costs by the property owner. Work activities conducted by the property owner may also be eligible for reimbursement at fair market value.

Applying for Reimbursement of Eligible Costs

Reimbursement applications must be submitted within six months after tank removal, completion of Level I Site Assessment or Level II Site Characterization scopes of work, or when Level III Cleanup milestones are met.

Tank Removal Reimbursement

Approved Applicants receive reimbursement for tank removal (up to $10,000 per site). The tank removal reimbursement application must be submitted with documentation of the physical removal and payment of the direct costs.



Levels I Site Assessment and Level II Site Characterization Reimbursement

Applicants can receive up to $20,000 reimbursement for Level I work with a 10% Applicant match and up to $30,000 reimbursement for Level II work with a 10% Applicant match.

> The reimbursement application for Levels I and II must reflect the costs associated with the tasks identified in the work plan.

If the Level I Site Assessment work determines that contamination exists at the site, any remaining amount of the Level I budget is applied toward the Level II Site Characterization budget.

Once the Level II Site Characterization is completed, any remaining budget can be applied to completing the following site activities:

- Excavation of petroleum-impacted soils
- Additional groundwater/soil vapor sampling
- Pilot testing of a proposed cleanup technology
- Development of a cleanup work plan

Level III Cleanup Reimbursement

Applicants can receive up to $500,000 reimbursement for Level III work with a 50% Applicant match. The reimbursement for Level III activities is tied to project milestones that are agreed upon by OPS and the Applicant in the work plan. Upon completion of a milestone, a reimbursement application can be submitted for the eligible costs incurred. For example, a milestone may represent the installation of an active remedial system or completion of an in-situ bio-remedial injection into the contaminant plume. Additional milestones may be the operation and maintenance of a remedial system, monitoring of the groundwater plume, or achieving a percentage of the total cost of the cleanup.

Ineligible Costs

Reimbursement applications that contain costs not previously approved in the work plan may be considered ineligible. In addition, costs associated with changes to the scope of work that are not previously approved may also be considered ineligible.

All work activities are considered ineligible until the Applicant provides project reports confirming completion of the work.

> Subcontractor markups that exceed 8% are ineligible for reimbursement.

Reimbursement requests that do not provide proof of payment of invoices for direct costs are considered ineligible.

Costs incurred before the project start date are ineligible as are administrative overhead charges.

Unapproved costs for work completed by the Applicant or employees, including equipment use are not eligible for reimbursement.

6.0 APPENDICES

Appendix A – Resources and Links

Redevelopment Fund Applications and Documents

- Eligibility Application
- Redevelopment/Reuse Outcomes Worksheet
- Tank Removal Application
- Reimbursement Application

Additional Resources and Links

American Society for Testing and Materials E1527-13—Standard Practice for Environmental Site Assessments: Phase I Environment Site Assessment Process

American Society for Testing and Materials E1903-11—Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process

Environmental Protection Agency Petroleum Brownfields Program

Catalyzing Redevelopment: Innovative Approaches and Emerging Best Practices in State, Environmental Law Institute

Colorado Department of Local Affairs Sustainability Planning

Colorado Department of Public Health & Environment Voluntary Cleanup Program

Denver Urban Renewal Authority Redevelopment

Department of Energy Solar Energy Resource Center

Implementing Stormwater Infiltration Practices at Vacant Parcels and Brownfield Sites by Environmental Protection Agency

Petroleum Brownfields: Developing Inventories by Environmental Protection Agency

Petroleum Brownfields: Selecting a Reuse Option by Environmental Protection Agency

Smart Growth America Options: A Community Engagement Workbook

Three New Toolkits for Smart Growth in Rural Places by Smart Growth America

Appendix B – Definitions

Abandoned Property - a property that can be presumed to be deserted, or an intent to relinquish possession or control can be inferred from the general disrepair or lack of activity thereon such that a reasonable person could believe that there was an intent on the part of the current owner to surrender rights to the property.

Adaptive Reuse - changing the use of a property than what it was initially intended.

Blighted Property - an area that, in its present condition and use, substantially impairs the sound growth of the municipality and constitutes an economic or social liability. A blighted property meets four of the following eleven factors:

- Slum, deteriorated, or deteriorating structures.
- Predominance of defective or inadequate street layout.
- Faulty lot layout in relation to size, adequacy, accessibility, or usefulness.
- Unsanitary or unsafe conditions.
- Deterioration of site or other improvements.
- Unusual topography or inadequate public improvements or utilities.
- Defective or unusual conditions of title rendering the title unmarketable.
- The existence of conditions that endanger life or property by fire or other causes.
- Buildings that are unsafe or unhealthy for persons to live or work in because of building code violations, dilapidation, deterioration, defective design, physical construction, or faulty or inadequate facilities.
- Environmental contamination of buildings or property.
- The existence of health, safety, or welfare factors requiring high levels of municipal services or substantial physical underutilization or vacancy of sites, buildings, or other improvements.

Brownfield Site - real property where the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Chemicals of Concern - chemical compounds that have been identified for evaluation due to specific risks to human health and/or the environment.

Complete Application - an application that provides all information necessary for processing, including attachments, demonstrating quantifiable benefits to the environment, economy, and community.

Conceptual Site Model - the current understanding of the site, helping to identify data gaps, summarize the risk associated with a release, and determine the next steps needed to characterize and remediate a release event. The conceptual site model narrative should summarize the release details, all existing site information, environmental data, and corrective action efforts as they lead toward exposure pathway elimination and ultimately release event closure. A conceptual site model is developed when a release is identified and should be updated continuously as new information is gathered.

Appendix B – Definitions (Cont.)

Environmental Professional/Environmental Scientist - a person who has at least 5 years of qualifying experience (experience that is pertinent or related to site assessments, remedial investigations, and corrective actions necessary to remediate water or soil contaminated with petroleum), such as:

- A recognized professional license or certification (e.g., professional engineer/geologist/geological scientist, OPS Recognized Environmental Professional); or
- A degree from an accredited college/university with at least 30 semester (45 quarter) hours of undergraduate work in engineering; biological, chemical, environmental, or physical science; or industrial hygiene.

Exposure Pathway - the course that a chemical of concern takes from a source area to a point of exposure. An exposure pathway describes a unique mechanism by which a person or sensitive environment is assumed to be exposed to a chemical of concern. Each exposure pathway includes a source, an exposure route, and a point of exposure. If the exposure point differs from the source, transport or exposure media (e.g., air, water, dust) are also included. All exposure pathways are assumed to be completed unless exposure pathway is eliminated. Exposure pathway elimination criteria are listed in the OPS Owner/Operator Guidance Document.

Fuel Products - all gasoline, aviation gasoline, diesel, aviation turbine fuel, jet fuel, fuel oil, biodiesel, biodiesel blends, all alcohol blended fuels, gas or gaseous compounds, and other volatile, flammable, or combustible liquids produced, compounded, and offered for sale or used for the purpose of generating heat, light, or power in internal combustion engines or fuel cells, for cleaning or for similar usage.

Gap Financing - the initial funding received for a project that is repaid when a cost share or permanent funding source becomes available.

Level I Assessment - the preliminary assessment of the property to determine if petroleum contamination is present.

Level II Characterization - the full delineation of contamination on a site. The conceptual site model is completed during this level to determine risk to any potential receptors via exposure pathways.

Level III Cleanup - the cleanup of fully characterized petroleum contamination to an acceptable level.

Point of Exposure (POE) - the location at which a person or sensitive environment is assumed to be exposed to a chemical of concern. POEs for benzene, toluene, ethylbenzene, and xylenes are: property boundaries, surficial soils, subsurface utilities, structures, groundwater wells, surface water, and sensitive environments. POEs for MTBE are: water supply wells that are used for human consumption and surface waters that are used for human consumption.

Property Owner - an individual or entity in possession of the title to real property.

Receptor Survey - the identification of potential points of exposure that may be at risk from the petroleum release through the transport of contamination in soil, soil vapor, or groundwater media.

Redevelopment Fund Eligible Costs - associated with activities that adhere to the Level I, II, and III work plans.

Rural - territory, housing, and population not included in an urban area. Colorado rural counties have 50,000 or less people in the entire county. Frontier counties have a population density of six or fewer people per square mile.

Appendix B – Definitions (Cont.)

Site-specific Target Levels (SSTL) - the risked-based remedial action target levels for chemicals of concern developed for a particular site using site-specific geological and hydrogeological data in a predictive model. Acceptable models for the unsaturated zone will be analytical, transient, capable of modeling one dimensional dispersion and degradation, and calculating effective solubility for individual constituents in a mixture. Acceptable models for the saturated zone will be analytical or semi-analytical, transient, and simulate retardation, degradation, one dimensional flow, and three- dimensional dispersion. The completed exposure pathway with the lowest SSTLs for a given media will determine the cleanup goals for the site.

Tier I Risk-based Screening Levels - the default maximum concentrations for chemicals of concern used to determine whether remediation (cleanup) is required.

Urban - territory that encompasses a minimum of 2,500 people, at least 1,500 people of which reside outside of institutional group quarters. Examples of institutional group quarters are college campuses or correctional facilities. Urban clusters are territories that encompass a population of 2,500 to 49,999 people. Urbanized areas are territories that encompass a population of 50,000 people or more.

Work Plan - the summary of eligible activities to be performed at the site. The basic elements of a project work plan are explained in Section 4.0 of this guidebook.

Appendix C – Frequently Asked Questions

Who is eligible to the Redevelopment Fund? Property owners are eligible to the Redevelopment Fund. Partnerships between the current property owner and a third party (i.e., new property owners, developer, nonprofit organization or former tank owner/operator with a pre-1988 release) will also be eligible to the Fund.

Why are large number of former petroleum sites located in our communities? Economic forces in recent years, including the cost of complying with federal UST regulations and the transition of gasoline sales moving from the local neighborhood "Mom and Pop" service stations to high-volume retail chain outlets, are at the forefront of this issue. This trend has left many abandoned petroleum contaminated sites in the true sense of the word - abandoned. These highly visible usually abandoned or underutilized sites can stigmatize a community. Along with possible environmental impacts, it is often difficult or impossible to stimulate development of these sites.

Why is it important that petroleum-impacted properties are investigated and cleaned up? Petroleum contamination is known to present a risk to human health and the environment through a variety of points of exposure. The exposure risk to benzene, a Class A carcinogen, to people living in proximity to petroleum releases and workers exposed to contamination is the primary concern. Releases from petroleum brownfields sites have the potential to impact potable and agricultural water sources, including surface water and water wells, utility corridors that include drinking water supplies, surficial and subsurface soils, and indoor air due to vapor intrusion.

Will the Redevelopment Fund reimburse for petroleum storage tanks closed in place? OPS encourages approved Applicants to remove petroleum storage tanks and will not reimburse for tanks properly closed in place.

How many properties can I apply for Redevelopment Fund eligibility? One per year.

When are the applications reviewed? A minimum of once per quarter.

What activities can I perform as a property owner? Property owners are encouraged to participate in the administration of the project and any eligible activities that they are suitably qualified to perform.

How can the Applicant demonstrate the ability to finance the Level III cleanup costs? The appropriate ways to confirm secured funding include: bank account statements, bank drafts, legally verified funds held in trust, approved loans, audited financial reports and confirmation statements showing that other leveraged funding is available.

What types of petroleum storage tanks are covered by the Redevelopment Fund? In general, tanks that held fuel products.

I would like to remove my unregulated underground storage tanks and I don't know if contamination is present. Would I be eligible to PCRF? Yes, you would be eligible for a minimum of $2,000 per tank or $1 per gallon of tank capacity up to a maximum of $10,000 per site with up to $50,000 for site assessment with a 10% match, because you would not be eligible to the PSTF.

Will subcontractor markup be allowed when applying for reimbursement? Yes, the Redevelopment Fund allows for a maximum 8% markup on pass through charges in project budgets and reimbursement requests. These include such costs as drillers, laboratory, utilities, surveyors, utility locators, etc.

How should eligible costs be submitted for reimbursement? Cost submitted for reimbursement should be presented on the reimbursement application form and include all appropriate documentation. Costs should be submitted according to the four categories of costs as follows: Tank Removal, Level I Assessment, Level II Characterization, and Level III Cleanup according to milestones established in the Level III work plan.

Appendix D – Redevelopment Success Stories

REDEVELOPMENT SUCCESS STORY

VISTA 28, LLC DEVELOPMENT

2400 East 28th Avenue, Denver, CO 80205 ---- (OPS Event ID 12217)

Before Redevelopment

Removal of Underground Storage Tanks

During Construction

SITE SUMMARY

Application Received: 12/30/13

Remediation Status: Closed

Number of Petroleum Underground Storage Tanks: Three

NFA letter issued: 10/5/15

Current Land Use: Residential

REDEVELOPMENT PROCESS

This former gas station was redeveloped by Vista 28, LLC and operated as an automotive repair and gas station for over 60 years. Located in north Denver, this property was considered to be blighted with perceived contamination. The three 6,000-gallon USTs, product dispensers, and piping were removed and a comprehensive site assessment was conducted that did not detect petroleum contamination. Today, this former brownfield is a 3-story, 22,000 square foot boutique apartment building. The Vista 28 contains 22 1-3 bedroom units. As a result, temporary construction jobs were created and a projected 3.5 million capital expenditure was made that resulted in increased tax revenues. Joe Levy, Vista 28 owner, stated that the "Redevelopment Fund acted as part of the team".

Final Redevelopment

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REDEVELOPMENT SUCCESS STORY

University Developments, LLC

2490 South University Boulevard, Denver, CO 80210 ---- (OPS Event ID 12253)

Before Redevelopment

Pre-construction demolition


During Construction

SITE SUMMARY

Application Received: 5/1/15

Remediation Status: Closed

Number of Petroleum Underground Storage Tanks: Three

NAD letter issued: 9/16

Current Land Use: Residential and Commercial

REDEVELOPMENT PROCESS

This former gas station had three 3,000-gallon gasoline underground storage tanks removed in 1989. A comprehensive site assessment was conducted in June 2015. The contaminated groundwater was treated during construction dewatering activities for a two-level below grade parking structure. They also mitigated for indoor air, removed contaminated soil, and followed a materials management plan to take care of old infrastructure as part of the Colorado Department of Public Health and Environment Voluntary Cleanup Program. Today, this former brownfield is a 5-story boutique apartment building with retail space on the ground floor. The Atelier at University Park contains over 100 studio, 1-bedroom, and 2-bedroom units ranging from 566 to 1,520 square feet. Denver University is nearby and the apartment complex is pet friendly with a rooftop swimming pool.


Final Redevelopment

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REDEVELOPMENT SUCCESS STORY

3100 Gilpin Partners, LLC

3100 Gilpin Street, Denver, CO 80205 ---- (OPS Event ID 12586)

Before Redevelopment

Tank Removal

Final Redevelopment

SITE SUMMARY

Application Received: 7/29/16

Remediation Status: Closed

Number of Petroleum Underground Storage Tanks: Four

NFA letter issued: 1/5/17

Current Land Use: Commercial

REDEVELOPMENT PROCESS

An UST was discovered at the property during a Phase I and II Environmental Site Assessment. The UST was removed on 8/30/16 and a Level I and II assessment were completed at that time. Soil impacts were detected during the assessment. The contaminated soil was excavated and disposed of properly. Today, this former brownfield is for lease as a commercial building.

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REDEVELOPMENT SUCCESS STORY

RPDG Tennyson Street, LLC

3860-3868 Tennyson Street, Denver, CO 80212 ---- (OPS Event ID 12252)

Before Redevelopment

Before Redevelopment

During Construction

SITE SUMMARY

Application Received: 3/1/15

Remediation Status: Closed

Number of Petroleum Underground Storage Tanks: Four

NFA letter issued: 2/9/16

Current Land Use: Residential

REDEVELOPMENT PROCESS

This former gas station operated from the 1930s to the 1970s. Located in Northwest Denver, this property was considered to be blighted with perceived contamination. The two 500-gallon, one 2,000-gallon, and one 4,000-gallon gasoline USTs, product dispensers, and piping were removed and a comprehensive site assessment was conducted. The contaminated soil was excavated and disposed of properly. Today, this former brownfield is a 5-story boutique apartment building. The Colewood contains 49 studio, loft, 1-bedroom, and 2-bedroom units ranging from 639 to 1,235 square feet. Natural green space is nearby and bike lanes are located on Tennyson Street.

Final Redevelopment

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REDEVELOPMENT SUCCESS STORY

Town of Mead

15995 Weld County Road 7, Mead, CO ---- (OPS Event ID 12227)

Before Redevelopment


During Tank Removal


Final Redevelopment

SITE SUMMARY

Application Received: 1/6/15

Remediation Status: Closed

Number of Petroleum Underground Storage Tanks: Three

NFA letter issued: 10/29/15

Current Land Use: Greenspace

REDEVELOPMENT PROCESS

This former gas station operated from the 1920s to 1997 and two out of the three USTs were removed in 1998. A Phase II Environmental Site Assessment was conducted in June 2014. Soil and groundwater impacts were detected during the assessment. Approximately one foot of water exhibiting a petroleum sheen was present in the remaining UST on the site. Removal of the remaining UST was conducted on August 24, 2015. Approximately 250 gallons of water was pumped from the UST, which also contained pits, major corrosion, and many holes. Approximately 120 cubic yards of contaminated soil was excavated from the UST pit. The excavated contaminated soil and water were disposed of properly. Today, this former brownfield is now a greenspace at the gateway to the town.

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Division of Oil and Public Safety

Department of Labor and Employment

Petroleum Brownfields Program
633 17th Street, Suite 500
Denver, CO 80202
303-318-8525

cdle_brownfields@state.co.us

ops.colorado.gov/Petroleum/PetroleumBrownfieldsProgram