REPORT ON HAZARDOUS MATERIALS REPSONSE; PROJECTED CAPITAL NEEDS, OBLIGATIONS AND FUNDING RECOMMENDATIONS FOR THE ENVIRONMENTAL CONTINGENCY FUND

2016 Act 157, H.878, Section 32

Submitted to the
House Committee on Corrections and Institutions
House Committee on Ways and Means
Senate Committee on Finance
Senate Committee on Institutions

Agency of Natural Resources
Department of Environmental Conservation

January 3, 2017

EXECUTIVE SUMMARY

The Vermont Legislature, during the 2016 session, directed the Agency of Natural Resources, Department of Environmental Conservation to prepare two reports related to the Environmental Contingency Fund, 10 V.S.A. § 1283.

> Act 157, H.878, Section 32: HAZARDOUS MATERIAL RESPONSE; PROJECTED CAPITAL NEEDS
> On or before January 15, 2017, the Commissioner of Environmental Conservation shall submit a report to the House Committees on Corrections and Institutions and on Ways and Means, and the Senate Committees on Finance and on Institutions, on the following:
> (1) the projected costs in fiscal year 2018, including capital costs, for the Department to investigate and respond to the effects of hazardous material releases to the environment;
> (2) other projected obligations of the Environmental Contingency Fund, established in 10 V.S.A. § 1283; and
> (3) specific recommendations for funding the Environmental Contingency Fund in order to meet the State's obligations with respect to releases of hazardous materials.
>
> Act 154, H.595, Section 10(7) (Toxic Chemicals Working Group Report) ("Evaluate the obligations on the Environmental Contingency Fund established under 10 V.S.A. § 1283 and funding alternatives that would ensure the long-term solvency of the Fund")

During the 2017-2018 biennium, the Department of Environmental Conservation (DEC) projects that the balance in the Environmental Contingency Fund (ECF) will become negative due to the following trends:

- **PFOA/PFOS response**. Fluorocarbon contaminants (PFOA and PFOS) have been found throughout Bennington county at significant levels in drinking water supplies and have been found in groundwater at various locations throughout the state. The Environmental Contingency Fund has funded the state's response to the PFOA/PFOS contamination.
- **10% State Share for Capital Construction Costs at Superfund Sites.** The state has entered into State Superfund Contracts with U.S. EPA (EPA) and is required to contribute 10% to the final site remedy within the next two years at the Elizabeth Mine and Commerce Street Plume sites; and the DEC anticipates contracts to cover Ely Mine by the end of FY18, Jard in FY20 and Pike Hill in FY21.
- **Orphan sites.** Lastly, there are several state lead sites that will also require ECF funding, such as the dry cleaner initiative around child care facilities and the Vermont Asbestos Group site.

In addition to the immediate demands on the ECF for critical hazardous site remediation, DEC recognizes the opportunity to use this fund as a source of state Brownfield funding. Brownfields represent the nexus between vacant, abandoned or underutilized hazardous waste sites in communities that once redeveloped can lead to increased profits for developers, created jobs, reduce environmental health and safety risks, create increased tax revenue for municipalities and reduce sprawl and create or preserve greenspace. Current funding for the brownfields program and funding to assist developers of these properties is currently 100% federally sponsored and declining. As these funds diminish every year, the number of brownfields projects continues to increase. This model is not sustainable.

DEC has investigated ways to maintain ECF solvency while still addressing the needs for critical site work. DEC offers the following recommendations for potential funding sources:

- Utilize state capital funds to cover the state obligations under Superfund;
- Collect sales tax on dry cleaning services and direct these funds into the ECF;

The DEC also looked at additional funding sources that should be considered along with those recommended above. In addition, DEC has identified several long-term funding options for the brownfields program. These additional and long term sources are discussed in the body of the report.

Lastly, DEC recommends raising the statutory spending cap from $100,000 for each of the eleven sections, listed in 10 VSA 1983, or $1.1 million total, to an overall cap of $2.5 million. The proposed cap more appropriately reflects the current ECF obligations and the costs to respond to contaminated sites, and will provide a more efficient and effective means to address these demands. DEC will submit a report on the status of the ECF to the Vermont Legislature each year by January 15.

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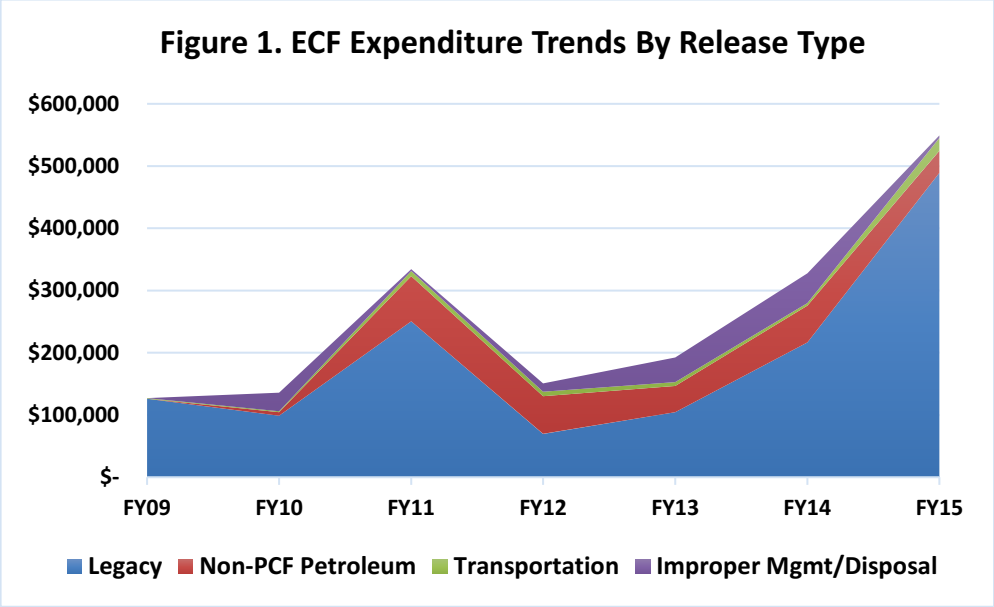
INTRODUCTION

The Environmental Contingency Fund (ECF) was created in 1985 by the Vermont Legislature for controlling, investigating and remediating the release of hazardous materials. The ECF is capitalized through a tax on the generation of hazardous waste as established in 32 V.S.A. Chapter 237. Expenditures from the ECF continue to be related to historic defunct manufacturing operations where there is often no ability to recover expenses. Below, Figure 1. shows recent ECF expenditures by release type, and demonstrates how legacy sites comprise most ECF expenditures. For example, in FY15, 89% of ECF costs were from legacy sites. Such sites included five former drycleaners, defunct manufacturing in Williston, Pownal and Bennington, defunct mining in Strafford, and a former coal gasification plant in Springfield.

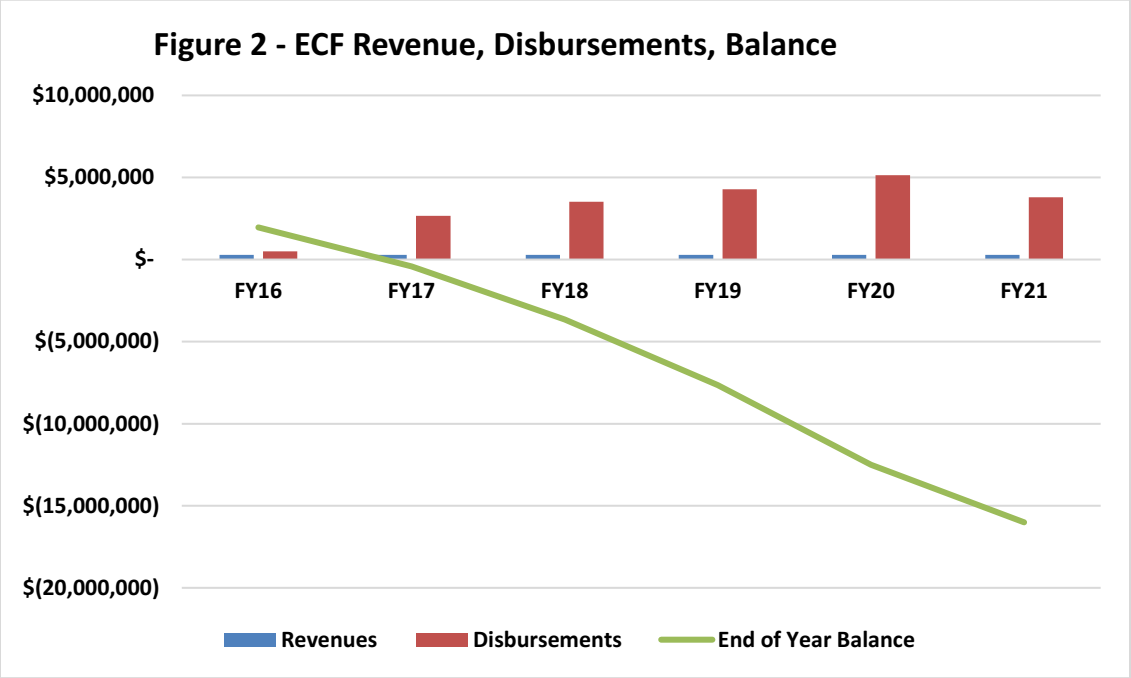


These historic releases, when identified, have a large impact on human health and the environment and in turn a large financial impact on the ECF. The cost of responding to contaminated groundwater and soil at these legacy sites, where the potential to recover against landowners is limited, is anticipated to deplete the ECF during the 2017-2018 biennium.

FUTURE FUND SOLVENCY

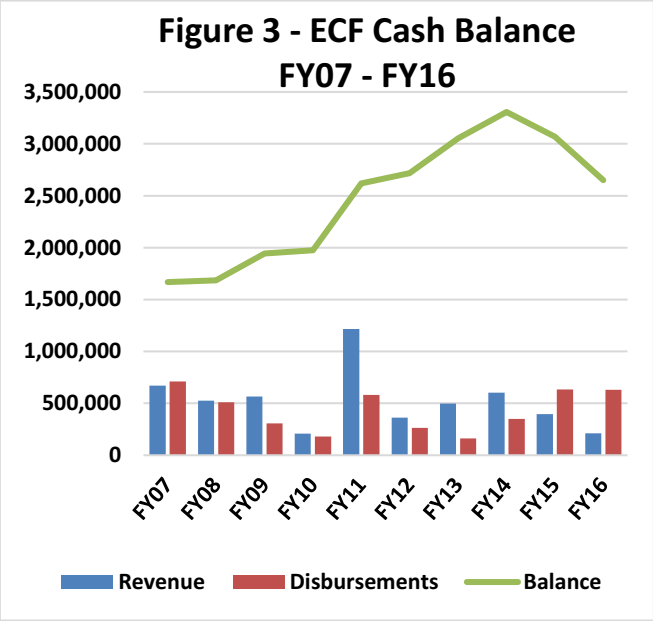
Demands on the fund

There are significant shortfalls anticipated for the Environmental Contingency Fund (ECF) due to critical needs in the state to protect public health and the environment. The needs include costs necessary to respond to the emerging fluorocarbon contaminants (PFOA and PFOS) which have been found throughout Bennington county at significant levels in drinking water supplies and have been found in groundwater at various locations throughout the state. In addition to the fluorocarbon problem, the ECF will also be obligated for state contributions at sites undergoing remediation through the EPA Superfund program. The state has entered into State Superfund Contracts with EPA and will be required to contribute 10% to the final site remedy within the next two years at the Elizabeth Mine and Commerce Street Plume sites. Lastly, there are a number of state lead sites that will also require ECF funding, such as the dry cleaner initiative around child care facilities and the Vermont Asbestos Group site. These demands are expected to deplete the ECF by the end of FY18. Figure 2 summarizes the expected shortfall in the ECF over the next five years; Figure 5 summarizes anticipated costs over the next five years; and Tables 1 and 2 provide detail on the anticipated costs.



Fund Balance – Recent History

The ECF ending cash balance on June 30, 2016 was $2,649,200. The ending cash balances for the past decade are plotted on Figure 3 below. The available balance, after consideration of encumbrances and statutory reserves was $1,942,207.



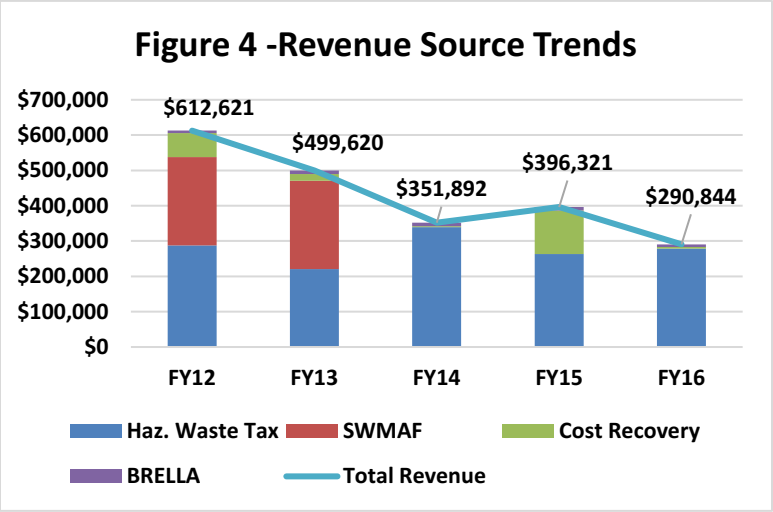
As seen in Figure 3 (at left), the fund cash balance had eight years of stable and increasing trends, followed by a $657,608 balance decrease over the past two years. As highlighted in Figure 2 above, increased demands are expected to deplete the ECF by the end of FY18.

From FY07 through FY14, revenues generally exceeded disbursements due to fewer pressures on the fund coupled with four transfers from the Solid Waste Management Assistance Fund (SWMAF) totaling $1.1M between FY07 and FY14, as well as $600,000 from two large soil disposals in FY11. These revenue infusions helped keep the ECF solvent and able to meet its statutory obligations. The ECF is expected to be fully depleted by FY18 due to declining receipts and increased spending obligations, as described below.

Declining receipts

Receipts to the Fund are primarily derived from the hazardous waste generator tax (32 V.S.A. Chapter 237) on the transport and disposition (disposal or recycling) of hazardous wastes. These receipts are expected to decline as more and more efforts are made by industry to reduce hazardous waste generation.

ECF revenue also includes cost recovery cases and fees from the Brownfield Reuse and Environmental Liability Limitation Act (BRELLA). Historically, there have been transfers from the SWMAF to the ECF under the authority (10V.S.A. §6618 (e)), with the last one occurring in FY14. This option is no longer viable since SWMAF monies are critically needed for implementing the Universal Recycling law. Moreover, given significant fluctuation in cost recovery received from year to year, there is no way to anticipate how much revenue will be repaid into the ECF in any given year.



Revenue trends for the past five years are shown in Figure 4.

Receipts to the ECF in FY16 totaled **$290,844**. The revenue derived from the hazardous waste generator tax (32 V.S.A. Chapter 237), totaled $278,600; cost recovery cases generated $4,244; and the BRELLA Program generated $8,000. Additional cost recovery cases are ongoing, the outcome is unknown.

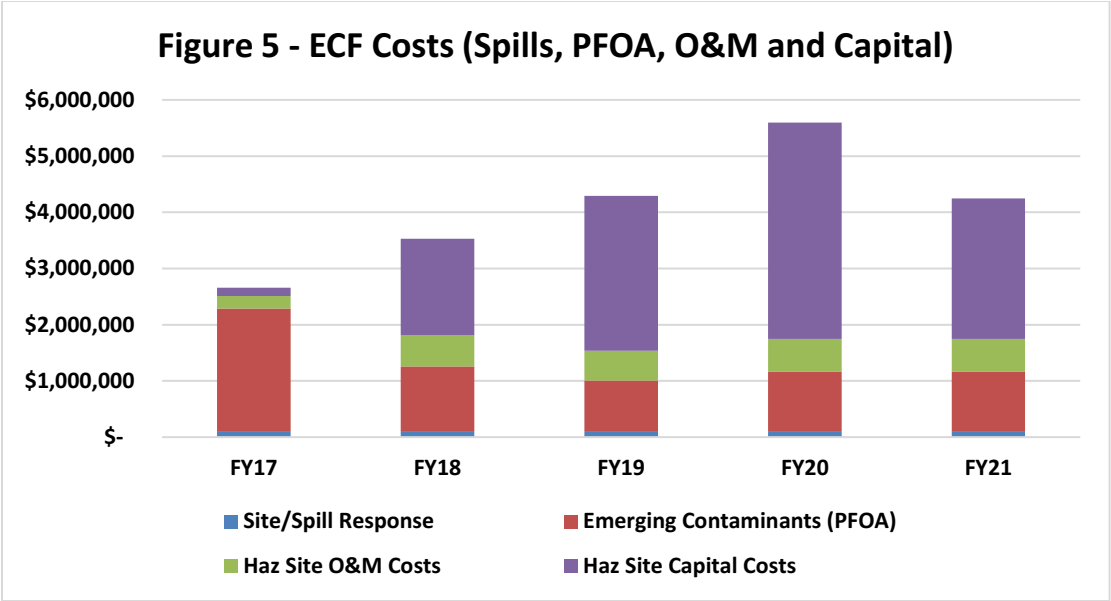
Without a significant increase in revenue, we will be unable to meet critical disbursement needs and obligations, as discussed below.

FY16 Disbursements

Total disbursements from the ECF in FY16 totaled **$713,147.** Of this, $629,964 was for hazardous site and spill work, and the other $83,201 was a transfer to the Hazardous Waste Management Assistance Fund (by statute, one third of ECF receipts are transferred to this fund). Of the hazardous site and spill expenditures, the largest cost was $474,666 for supporting PFOA response in Bennington County. This response used significant ECF funds that may otherwise have been used to cleanup other sites and spills. Disbursements for all other spills/complaints were only $155,280 (down $405,000 from FY15). For details on other site specific investigations and cleanup, see Attachment 2. Notably, ECF allowances for administration continues to represent a small fraction of the total costs needed to support the DEC Spill Team and the Contaminated Sites Section. For FY16, staff and operating costs for ECF work totaled $223,591 (this doesn't include oversight related to PFOA in Bennington County), but only $5,817 of this comes from the ECF. The existing statute, 10 V.S.A. §1283(b)(6), limits program administration to two percent of annual ECF revenues.

Future Demands and Obligations

The state has critical capital and operation and maintenance (O&M) costs at federal Superfund sites and state-lead sites (including those with emerging contaminants). Capital costs at all sites start coming due in FY17 ($150,000) and significantly increase to $1.7M in FY18 and peak at $3.8M in FY20. Total annual ECF projections for spill response, emerging contaminants and capital and O&M obligations are $2.6M in FY17, increase to $3.5M in FY18, and peak at $5.6M in FY20; see Figure 5, below. The projections in Figure 5 are in stark contrast to recent trends, though they continue the sharp rise in costs (see Figure 1). These projections are further detailed in the sections below.



Emerging Contaminants

The ECF will soon be experiencing significant shortfalls due to critical needs such as funding the response to the emerging fluorocarbon contaminants (PFOA and PFOS) found throughout Bennington county at significant levels in drinking water supplies and in groundwater at locations throughout the state. ECF cost estimates for FY17 total $2.2M, subject to potential contributions from Saint-Gobain from settlement negotiations. Major expenditure categories include: engineering design for waterlines in North Bennington and Bennington, sampling private drinking water wells, maintaining point of entry treatment (POET) systems for affected water supplies, investigation into the degree and extent of contamination, and staff oversight costs. For example, we initially encumbered nearly $90,000 for ongoing POET maintenance near Bennington landfill, but with over 100 systems the actual costs are budgeted at $330,000 per year. Also, DEC has agreed to pay $440,000 in engineering design costs for the extension of drinking water lines in Bennington and North Bennington; this will be paid out of the ECF. DEC has requested that Saint-Gobain, the responsible party, reimburse these costs, and continues to negotiate with St. Gobain over this recovery. DEC has also been funding work related to PFOA contaminant issues in Pownal where there is currently no identified responsible party. Costs related to this work have exceeded $100,000 and are expected to increase this spring when additional characterization and potential remediation will be needed.

Superfund

In addition to the fluorocarbon problem, the State of Vermont is also obligated for state contributions at sites undergoing remediation through the EPA Superfund program where there is no viable responsible party. The state contributions include 10% of capital costs for the cleanup remedy, and 100% of operation and maintenance (O&M) costs. The ECF is the funding source used to meet these obligations. The state has entered into State Superfund Contracts with EPA and will be required to contribute 10% to the final site remedy within the next two years at the Elizabeth Mine and Commerce Street Plume sites. In addition, EPA has released the Record of Decisions for Ely Copper Mine where the state's 10% share of the cleanup will be approximately $2.6M. Though there is no Record of Decision yet detailing cleanup costs for the Jard or Pike Hill Mine sites, the DEC estimates that our 10% share of capital costs will be approximately $2.5M and $1.5M, respectively at these sites.

Additional details for each of these Superfund sites may be found in Attachment 1. Pine Street Barge Canal, Parker Landfill, and other Superfund sites are not included as costs at those sites are paid by potentially responsible parties. Pending state costs for Superfund sites are summarized in Table 1 below, which includes both the state's 10% share of capital costs and 100% of O&M costs.

Table 1. SUPERFUND Site Costs by Fiscal Year						
	Capital Costs are shaded to distinguish from unshaded O&M costs					
		FY17 (7/1/16)	**FY18 (7/1/17)**	**FY19 (7/1/18)**	**FY20 (7/1/19)**	**FY21 (7/1/20)**
Elizabeth Mine, Strafford	Capital		$550,000	$555,000	$350,000	
	O&M	$81,200	$300,000	$300,000	$300,000	$300,000
Pike Hill Mine, Corinth	Capital					$1,500,000
Ely Mine, Thetford	Capital		$400,000	$2,200,000		
	O&M			$40,000	$100,000	$100,000
Commerce St., Williston	Capital	$150,000	$768,963			
Bennington Landfill	O&M	$15,000	$15,000	$15,000	$15,000	$15,000
Pownal Tannery	O&M	$15,000	$15,000	$15,000	$15,000	$15,000
Jard, Bennington	Capital				$2,500,000	
Total Capital Total		$150,000	$1,718,963	$2,755,000	$2,850,000	$1,500,000
Total O&M Total		$111,200	$330,000	$370,000	$430,000	$430,000
Grand Total		$261,200	$2,048,963	$3,125,000	$3,280,000	$1,930,000

State Lead Sites

The state lacks resources to adequately address current state lead sites where there is no viable responsible party. Some of the state lead cleanups with known ongoing expenditures are listed on Table 2 below. One example is the Vermont Asbestos Group site in Eden/Lowell, where total cleanup estimates ranged from $136M to $204M. The communities voted against Superfund listing in 2011, to which the Governor deferred. Even if this site were to enter Superfund, the state obligation for capital (10% share) and O&M (100% share) would total between $20M and $26M. EPA did complete interim mitigation work at the site (erosion control measures), which the state is required to maintain moving forward. Within the next five years, we anticipate needing approximately $2M to rebuild the erosion control features installed by EPA.

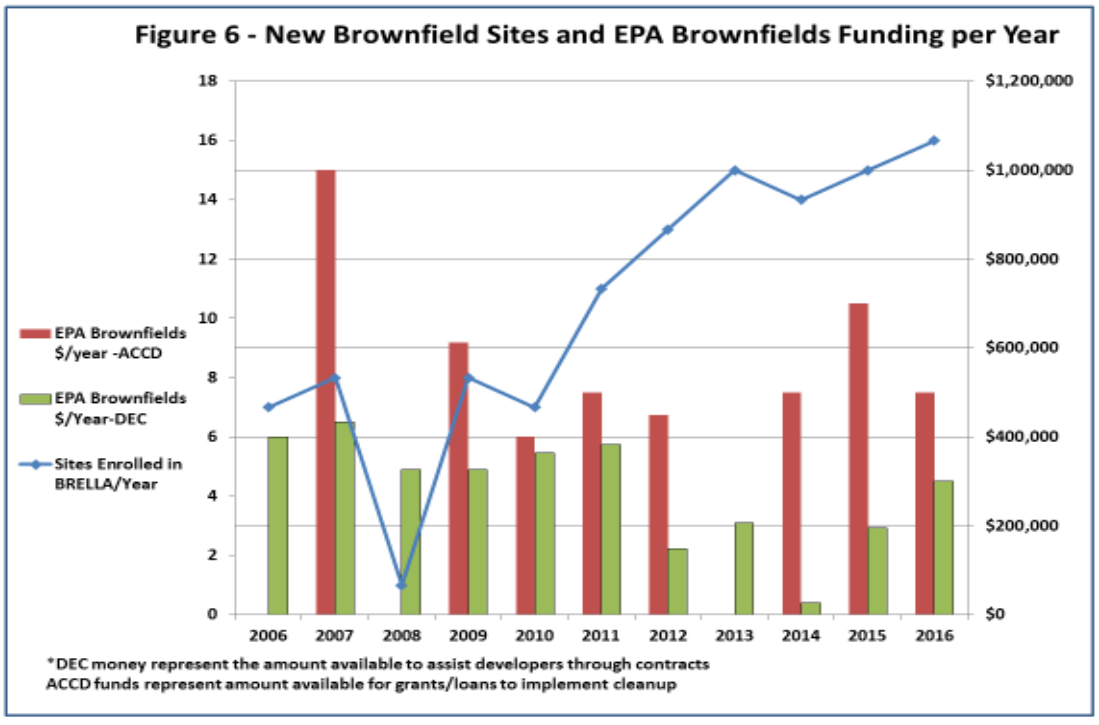
Table 2. State Lead Site Costs by Fiscal Year						
	Capital Costs are shaded to distinguish from unshaded O&M costs					
		FY17 (7/1/16)	**FY18 (7/1/17)**	**FY19 (7/1/18)**	**FY20 (7/1/19)**	**FY21 (7/1/20)**
Barre Coal Tar	O&M	$15,481	$100,000	$50,000	$50,000	$50,000
Fillipo Dry Cleaners	O&M	$15,000	$30,000	$15,000	$15,000	$15,000
Vermont Asbestos Group	Capital				$1,000,000	$1,000,000
	O&M		$75,000	$75,000	$75,000	$75,000
St. Albans Gas Works	O&M	$50,000				
Downtown Windsor	O&M	$26,000	$15,000	$15,000	$15,000	$15,000
Total Capital Costs		$0	$0	$0	$1,000,000	$1,000,000
Total O&M Costs		$106,481	$220,000	$155,000	$155,000	$155,000
Grand Total		$106,481	$220,000	$155,000	$1,155,000	$1,155,000

Dry Cleaner Sites

Another state lead site listed above is Fillipo Dry Cleaners in Rutland. At this site, the state spent $424,146 on cleanup in FY15, and has ongoing annual monitoring costs of $15,000. Dry cleaners are a class of sites that have become recognized nationally as posing a serious risk to human health, particularly from vapor intrusion into buildings from subsurface contamination and the long-term impacts to groundwater and soil that are resultant from minor releases. As a result, Vermont initiated a systematic study of historic dry cleaner use in Vermont and their proximity to sensitive receptors, such as schools, child care facilities and public and private supply wells. In order to continue to move forward with the next phase of the analyses, the DEC would like to conduct site characterization work to determine if the historic dry cleaners are causing a current impact to these sensitive receptors. If there is no responsible party associated with these locations and impacts are occurring the ECF would be used to remedy this situation. Based on the research into the locations of these historic dry cleaners, 406 dry cleaners were identified throughout Vermont. Most of these 406 dry cleaners are located within Vermont's downtown locations where there is the highest risk for impact; see Appendix C for statewide dry cleaner location map. Costs to assist with this evaluation are included in Figure 5.

OPPORTUNITY: BROWNFIELDS

Brownfields in Vermont are defined as real property where real or perceived contamination impacts redevelopment. The Vermont Brownfields Program started in the early 1990s to limit legal liability for a handful of developments happening in the State. The process and the Brownfields definition were drastically different than the current day program. By 2000, the EPA was providing states with funds. The DEC received its first grant from EPA in 2002 and began work on nine Brownfields sites. In 2004, $400,000 of state funds were used to seed the Brownfields Revolving Loan Fund, which is housed in the Vermont Agency of Commerce and Community Development (ACCD). As of today, DEC and ACCD have received $9M and $4.8M, respectively, from EPA. No additional state funds have been used to sustain this program. The State of Vermont Brownfields program is currently a very successful program, but it is unsustainable with the current funding process. Each year DEC and ACCD need to apply to EPA for funds, and the amount awarded is variable and unknown. DEC continues to see increased project enrollment in the Brownfields program while funding continues to decline. Based on projected funding needs for current Brownfields and the historic grant awards from EPA, we anticipate a significant funding shortfall that will impede redevelopment. This information is displayed below in Figure 6.



Over the years, the Vermont Brownfields program has fostered numerous redevelopment projects which are consistent with many state goals, including redevelopment in Vermont's downtowns, providing affordable housing for Vermonters, cleaning up hazardous waste sites and Vermont's environment, increasing property values and tax revenue, and supporting Vermont's municipal and non-profit organizations with access to funding.

The Vermont Brownfields program:

- Leverages $28 in private funds for every $1 of public money invested (analyses is provided in Appendix 4);
- Has cleaned up 1,400 acres of land that is now ready for redevelopment;
- Currently (as of 10/20/16) has 112 projects enrolled in the State Brownfields Reuse Environmental Liability Limitation Act (BRELLA) Program. By Regional Planning Area the number of BRELLA projects are:
    - Addison RPC (4)
    - Bennington County (8)
    - Central Vermont (16)
    - Chittenden County (22)
    - Lamoille County (4)
    - Northwest (7)
    - NVDA (5)
    - Rutland Regional (4)
    - Southern Windsor County (11)
    - Two Rivers-Ottauquechee (10)
    - Windham Regional (21)

A list of projects may be found in Appendix 5, and several success stories may be found in Appendix 6. DEC conducted an informal analysis of potential future Brownfields in Vermont along with associated costs for assessment and cleanup. The analysis looked at the number of sites in different regions of Vermont and applied an assumed cost to each project based on current spending for similar projects. This analysis also assumed that 15 new projects would enter the program/year, which is the current enrollment rate. The projected funding needed annually to support the redevelopment of Brownfields is:

- $2M for assessment, and
- $17M for cleanup

DEC does not believe it is the responsibility for tax payers of Vermont to fund this work 100%. However, these legacy sites are currently a burden to Vermonters and the environment and this is a great way to invest in the future of Vermont. This funding is utilized to assist the investigation and development of brownfields and enable developers and lenders to feel comfortable and understand the risk (financial and legal) they are assuming.

This is a critical time for the Brownfields Program. With demand on the rise, declining revenues threaten the future success of the program. Investing in this program now that there is great momentum can only benefit Vermont communities and the economy. The requested funding would be used to assist developers with the environmental due diligence needed to inform the development. DEC would use a grant of services model and pay environmental professionals to conduct work on behalf of developers. If funding is not provided to assist this program, we are likely to see major stagnation of this type of development and an increased greenfield development which leads to sprawl.

Brownfields redevelopment is a key piece to ensuring that Vermont's settlement patterns continue to be prioritized, that continued development in our downtowns occurs and that cleanups of Vermont's groundwater, surface water, sediments, soils and atmosphere continue.

FUNDING SOURCES

Recommended Funding Sources

Capital Funds

First, DEC proposes that the state's 10% share of Superfund capital construction costs be funded using capital funds authorized under the Capital Bill. State capital funds can provide much needed assistance to the ECF. Vermont has entered into agreements with the EPA to designate fourteen locations as Superfund sites in Vermont. Under federal law, the EPA has authority to designate hazardous waste sites as eligible for Superfund monies and to cost-share 10% of the capital costs for remediation with the State, at sites where there is no viable responsible party. Three Superfund sites in Vermont will be entering the remediation implementation phase during FY18-19, rendering due the state's 10% share. The State's Capital budget is an appropriate allocation for Superfund sites and any other state lead site that requires large expenditures to construct a remedy at the site. Shifting these costs to the Capital Bill will allow the ECF to stay solvent.

Dry Cleaners Service Tax

Second, DEC proposes that the Legislature remove the sales tax exemption on dry cleaner services, and to dedicate those revenues to legacy sites contaminated by the dry-cleaning industry. The Vermont DEC worked with the Vermont Department of Taxes to identify services in Vermont that currently are not taxed and have a nexus to use of ECF funds. The Vermont Department of Taxes 'Sales Tax on Service Study,'[1] submitted January 15, 2016, identified several service industries in Vermont that are currently not taxed. The service industry that has a direct nexus to ECF costs is dry cleaners. Dry Cleaners are one of the industries that leave a large contaminant impact in Vermont and a large financial burden to implement remediation. Based on the analyses in the study, the revenue from a tax on dry cleaners could provide close to $480,000/year. The study also found that 22 other states tax this service.

Additional Funding Sources Evaluated

Hazardous Substance Tax

This tax would be based on the State of Washington model, which assesses an excise tax at the time of sale from wholesaler to distributor for all Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) hazardous substances, Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) pesticides, and petroleum products. For Vermont, we evaluated limiting this tax to CERCLA hazardous substances, pesticides and lubricating oils. Motor fuels and heating fuels already have a one cent distributor licensing fee that provides revenue for the Vermont Petroleum Cleanup Fund. We also looked at administering this tax at both the wholesale and retail level. This tax has a good nexus between users of hazardous materials and the funding mechanism for remediation of releases from these chemicals. The Vermont Department of Taxes has evaluated this tax option and estimates it would produce revenue of $353,000 assuming a 1% excise tax solely on first sale of CERCLA hazardous substances.

Vermont Superfund

This fee would be modeled after the original Superfund tax that was funded by excise taxes on petroleum and chemical feedstocks; and a corporate environmental income tax.

The corporate environmental income tax is a broad-based tax, based on every corporation's modified alternative minimum taxable (AMT) income. In addition to the same chemical and petroleum companies subject to the excise taxes, many different types of companies in all major industrial sectors including, but not limited to mining, insurance, metals, and transportation would pay into the AMT. A tax based on the AMT would affect C-Corporations, but not other businesses such as S Corporations and partnerships and classified small corporations.

[1] http://legislature.vermont.gov/assets/Legislative-Reports/Act-57-Sec.94-Services-FINAL.pdf

A corporate environmental income tax would spread the costs of hazardous waste cleanup to all corporations in Vermont that use chemicals that may cause environmental impacts or are consumers of products that are manufactured with the environmental chemicals that cause these environmental impacts. DEC would need to work closely with the VT Department of Taxes to best understand the process to administer this fee and the overall projected revenue.

Auto Repair Service Tax

This tax would require the legislature to remove the sales tax exemption on auto repair services. The DEC worked with the Vermont Department of Taxes to identify services in Vermont that currently are not taxed and have a nexus to use of ECF funds. The Vermont Department of Taxes 'Sales Tax on Service Study,' submitted January 15, 2016, identified several service industries in Vermont that are currently not taxed. One service industry that has a direct nexus to ECF expenditures is auto service repairs. Site impacts from this industry include waste oil underground storage tank releases, leaking drums of product and wastes, spills and sloppy housekeeping, and floor drains and associated dry well or other discharge impacts. Based on the analyses in the study, the revenue from a tax on auto service repairs could provide close to $6.2M/year. A total of 24 other states tax these services. Alternatively, automotive oil change and lubrication services could provide $1.54M/year, and a total of 25 other states tax these services.

Long-Term Options for Brownfields

Greenfields Fee

This concept needs further evaluation but is based upon a fee when greenfields (***defined as****: lands not previously developed or polluted*) are developed into commercial, industrial or large housing complexes and there is a loss and impact to our natural resources caused by this type of development. This fee has a direct tie to Brownfields redevelopment which encourages reuse of underutilized, vacant and abandoned properties. DEC would need to work closely with the VT Department of Taxes to best understand the process to access this fee and the overall projected revenue.

Tax Increment Financing (TIF)

Several states implement a TIF specifically for Brownfields redevelopment areas. These brownfields redevelopment areas are pre-approved by the State. The approved work could range from demolition, asbestos lead paint abatement to corrective action. The amount of any incremental property tax on the improved value of the brownfield site would be directed to brownfield loan repayments, and the resulting shortfall in property taxes could be filled by the General fund. After the redevelopment loan is satisfied, the incremental property tax would be paid to the municipality and the state education fund. Several analyses have been conducted of pre and post property valuations which indicate a higher property value and tax rate post redevelopment (see information in appendices). Use of TIFs for brownfields can be limited to a certain allocation annually and selection would be through a competitive process. *Additional analyses on additional property tax revenue resultant from brownfields redevelopment should be evaluated to support this funding source.*

Revenue Bonds

Bonding is an option that many other states use to support their brownfields program. Bonding can be a one-time allocation or evaluated every several years to determine if additional allocations should be made. Use of State/Federal money on brownfields sites has shown that for every $1 of public funds invested in a brownfield, $28 of private money are leveraged. State funds through a bond can provide some much-needed financial assistance to the brownfields program and also leverage public money, increase property taxes and help cleanup blighted and contaminated properties. The State would need to identify a source of revenue to support the revenue bond, which could include using the current Brownfields Revitalization Fund and provide loans that incur enough interest to repay the bond

Table 3. Summary of Funding Options

Funding Option	Description	Funds Support	Recommendation
Capital Fund	Use capital funds to pay for State's 10% cost share for Superfund capital construction costs.	Superfund	Proceed
Dry Cleaners Service Tax	Remove sales tax exemption on dry cleaner services, dedicate revenue to legacy sites contaminated by the dry-cleaning industry.	Release from Drycleaners	Proceed
Hazardous Substance Tax	Excise tax at the time of sale for hazardous substances, pesticides and lubricating oils.	Hazardous Waste Sites	Evaluate to proceed
Vermont Superfund	Tax funded by excise taxes on petroleum, chemical feedstocks and a corporate environmental tax.	Hazardous Waste Sites	Evaluate to proceed
Auto Repair Service Tax	Remove the sales tax exemption on auto repair services. Dedicate this revenue to the ECF.	Hazardous Waste Sites	Evaluate to proceed
Greenfields Fee	Fee on development of undeveloped land for commercial/industrial purposes.	Brownfields	Evaluate to proceed
Tax Increment Financing	Use this as a mechanism to support redevelopment of Brownfield Sites.	Brownfields	Evaluate to proceed
Revenue Bonds	Use of a state or private activity bonds to support redevelopment of brownfields sites.	Brownfields	Evaluate to proceed

Amendment of ECF (10 V.S.A. § 1283)

The current statute which establishes the ECF allows for the expenditure of up to $100,000 for each of 11 subdivisions under the statute, unless the Secretary has received the approval of the General Assembly, or the Joint Fiscal Committee. These subdivisions include spill response, site investigations, removal actions, remedial actions, providing alternative water, administrative and field costs, emergency response actions, state oversight costs, capital costs for remedial action, conducting assessments to determine natural resource damages and implementing restoration of natural resources. There is considerable overlap between these subdivisions and often overall contaminated site work will include efforts to address many of these categories. DEC believes it would be able to more efficiently and effectively respond to individual site needs if the monetary cap for each subdivision was replaced with an overall site cap. This will reduce the time and effort required to tracking and account for the costs of each subdivision.

Additionally, DEC recommends that 10 V.S.A. § 1283 be amended to increase the monetary cap for disbursements for use in individual non-emergency situations. Specifically, DEC recommends raising the statutory spending cap from $100,000 for each of the eleven sections, listed in 10 VSA 1983, or $1.1 million total, to an overall cap of $2.5 million. The Department believes the proposed cap more appropriately reflects the current obligations of the Fund. This action would help to provide an efficient means to address anticipated long-term demands, and more accurately reflects the current costs to respond to contaminated sites.

DEC also recommends increasing the allowable percentage of staff costs that can be billed to the ECF. Currently, the statute allows for 2% of annual ECF revenue for staff oversight, which currently is approximately $5,800/year. DEC proposes that this percentage be raised to 6%. With additional funding sources added to the ECF, and an increase in the allowable percentage for staff oversight costs, DEC will better be able to cover staff costs related to emergency and non-emergency oversight.

CONCLUSIONS

- The ECF provides a mechanism for DEC to pay for the investigation and/or remediation at hazardous sites when a responsible party is unwilling or unable to do so, or when the responsible party is unknown.
- The ECF provides critical resources used to fund cleanups at sites where there are threats to public health and the environment. This includes Superfund sites, state lead sites and brownfields. This need became even more evident with the PFOA contamination in Bennington County.
- The ECF will be insolvent by the end of FY18, if not before, given existing obligations.
- The demand on the ECF over the next four years will greatly exceed the fund balance.
- Brownfields are a priority for DEC and to date have not been funded by the State of Vermont.
- Currently all funds for brownfields is supplied by EPA and has been in continuous decline. Current calculations indicate that for every $1 of public funds invested $28 dollars of private funds are leveraged. Requests for funding for future years needs to include a revenue source for brownfields as well.
- Tracking the costs of spill and site cleanup work using the 11 subdivisions as established by the statute is inefficient and increases the administrative burden on the Department.
- The current per site statutory cap of $1.1 million does not reflect the current costs of conducting site remediation.

RECOMMENDATIONS

In order to address current shortfalls and anticipated needs of the ECF identified in this report, DEC recommends that consideration be given to potential funding sources identified herein as mechanisms to help ensure long-term Fund solvency and to enable DEC to continue performing critical investigatory and remedial activities. DEC recommends that the following funding sources be considered:

- Utilize state capital funds to cover the state obligations under Superfund;
- Collect sales tax on dry cleaning services and direct these funds into the ECF; and

DEC also looked at the following additional funding sources for consideration to the recommended ones above:

- A fee assessed at the distributor level for hazardous chemicals used in the state (Washington State Model)
- Vermont Superfund Tax
- Auto Repair Service Tax
- Greenfield Redevelopment to generate funds for a state Brownfield funding source.
- Property Tax Increment Revenue for Brownfields
- Revenue Bond

DEC recommends raising the statutory spending cap from $100,000 for each of the eleven sections, listed in 10 VSA 1283, or $1.1 million total, to an overall cap of $2.5 million. DEC also recommends amending the statutory limit on ECF disbursements for program administration, raising the allowable percent of annual fund revenue from 2% to 6%. DEC will submit a report on the status of the ECF to the Vermont Legislature each year by January 15.

Attachment 1

Superfund and State-Lead Hazardous Waste Sites: Summary of site-specific future needs for ECF monies

<u>Pownal Tannery</u> – Capital Obligation: $0 (DEC already paid). Annual O&M: $15,000 to $30,000, depending on level of groundwater monitoring. The former tannery in Pownal is listed on the federal Superfund, and was the subject of a state court settlement. The remedial work is completed and the state has paid its share of the capital costs using the settlement fund and the ECF. The remediation involved the consolidation and capping of wastes on site and was conducted by EPA. The state is obligated under a State Superfund Contract to insure the long-term operations and maintenance of the facilities constructed by EPA. The current costs for conducting O&M are limited to monitoring costs of approximately $30,000 per monitoring event (actual of $33.5K FY16) that generally occur biennially. This does not include any costs to restore the remedy if the site is damaged by a flood. The facilities are designed to withstand the 100-year flood. The legislature authorized continued spending for the Pownal Tannery site in excess of the $100,000 statutory limit because of the commitment for the state share under Superfund (See 2007 *Act 65, Sec. 298, Authorization for Expenditures at Pownal Tannery*).

<u>Elizabeth Mine</u> – Capital Obligations: $1.45 M capital. Annual O&M: approximately $81,000 for FY17 and $300,000 per year for FY18-FY22. Elizabeth Mine is also listed on the federal Superfund and is the largest of the three former copper mines in Vermont. The Elizabeth Mine has progressed the furthest in the cleanup process so the estimates are more certain than the other two copper mine sites. However, there is still uncertainty for O&M costs because the most appropriate treatment system for the site has yet to be determined. For planning purposes, we used the worst case, i.e., active treatment. It is possible that a Solar Developer will be taking over a portion of the O&M responsibilities. This would likely reduce our annual O&M responsibility by approximately $30K.

The state entered a State Superfund Contract (June 2008) to share costs and long-term O&M for the copperas factories. Our capital cost share is anticipated to be $170,000. This entire obligation was encumbered in 2008. The remedial activities for most of the copperas factory area are complete. We are awaiting the final invoice for this work.

There are additional phases of the remedial work, which primarily consist of cleanup activities within the Lord Brook Watershed. This work is scheduled to begin towards the end of FY17. The state executed a State Superfund Contract in 2015 with EPA. The State obligation for the remediation for the Lord Brook Watershed will be 10% of EPA's remedial cost, not to exceed $1.1M. Actual expenditures from the ECF will depend on the success of the remediation strategies and the available balance in the fund.

The legislature authorized continued spending for the Elizabeth Mine site in excess of the $100,000 statutory limit because of the commitment for the state share under Superfund (See *2016 Act 172, Sec. E.709, Authorization for Expenditures at Elizabeth Mine Superfund Site*).

<u>Ely Copper Mine</u> – Anticipated capital obligations: $400,000 in FY18, and $2.2 M in FY19 for OU1. Annual O&M: approximately $40,000 in FY19 and $100,000 per year starting in FY20. If OU2/OU3 is approved, then we would expect an additional capital obligation of $375,000, and an annual O&M cost of $40,250.

The Ely abandoned copper mine is listed on federal Superfund and is currently under Remedial Investigation. Cost share for the remedial work will eventually be included in a State Superfund Contract, and is expected to be 10% of the capital and 100% of the O&M – no known PRP or insurance mechanism is available to pay for the costs.

EPA has released the ROD (Record of Decision) for Operable Unit 1 (OU1) which details the remedial plan

for a portion of the site (waste piles, surface and sediments in Ely Brook). The current estimated cost of

the cleanup plan for OU1 is $22 million to implement which would result in a cost to the state of 10% or $ 2.2 million. Estimated costs for long-term O&M is $40,000 in FY19 and $100,00 starting in FY20.

This past year, EPA has a final ROD for cleanup of OU2/OU3 for an estimated $3.75 million. The cleanup plan will address the underground workings on the Ely Mine Forest Inc. property. Estimated costs for long-term O&M is $40,250 per year. These costs were not added to Table 1. of this report as there is no guarantee that EPA will move forward with the remedy for this area.

Pike Hill Mine - This site is listed on federal Superfund and is currently under Remedial Investigation. Cost share for the remedial work will eventually be included in a State Superfund Contract, and is expected to be 10% of the capital and 100% of the O&M – no known PRP or insurance mechanism is available to pay for the costs. Although there are no estimates available for remedial work or long term O&M at this time, it needs to be included in future projections. Using Ely Mine as a guide, we are assuming up to $1.5M for our 10% share of the remedy could come due as early as FY'21, which was included on Table 1. of this report.

Bennington Landfill – Bennington landfill is listed on federal Superfund. The site was remediated in 1999 under the oversight of EPA, by a PRP steering committee. As a mixed waste landfill, the municipalities that contributed to the landfill were also PRPs. The state agreed to a mixed funding resolution and is responsible for conducting a portion of the O&M at the site. The state is expected to pay for the costs of monitoring, which will include costs for sampling, laboratory analytical work, and report preparation by the terms of the MOA with EPA. The state is responsible for conducting long-term groundwater monitoring once every 5 years. Given the presence of PFOA, it is possible that the scope of our sampling obligation can increase; however, at this time it is difficult know. We have requested assistance from EPA and have requested at least one potentially responsible parties to perform work. We have not yet received formal responses to our requests. We anticipate that EPA will provide some form of assistance, but likely we will still need expend ECF related to the PFOA response.

Long term O&M is $75,000 each 5-year period, which averages out to $15,000 per year. This estimate does not include PFOA testing. If the state needs to perform PFOA sampling and remediation at Landfill or vicinity of Landfill, ECF costs can be significantly higher. For example, maintaining existing treatment systems (approximately 100) could cost between $300K and $500K ($3,000 to $5,000 per year to maintain and sample).

Commerce Street Plume - Capital Obligation: $150,000 in FY17, and $769,000 in FY 18. The Commerce Street site is a former industrial site in Williston, VT. The responsible party is a bankrupt Canadian company. The property is listed on federal Superfund and is currently under Remedial Investigation. Cost share for the remedial work will eventually be included in a State Superfund Contract, and is expected to be 10% of the capital and 100% of the O&M – no viable PRP or insurance mechanism is available to pay for the costs. In FY17, $150,000 will be spent on vapor intrusion mitigation and contaminated soil removal. For soil removal, $657,000 will be spent on contaminated soil removal, with Vermont's 10% share ~$66,000. By FY18, we anticipate covering up to $769,000 for our 10% share of the $7.69 M remedy.

Jard – The Jard site is a former industrial site in Bennington, VT. The site was proposed and has been accepted into the federal Superfund program. The cost share for the remedial work will eventually be included in a State Superfund Contract, and is expected to be 10% of the capital and 100% of the O&M – no viable responsible party or insurance mechanism is available to pay for the costs. The remedial investigation has not started, but due to human health risks for this site, this site is now on a faster track. Until we have the record of decision (ROD), there are no accurate estimates available for the remedial work or the long-term O&M at this time. As a placeholder, we are assuming up to $2.5M for our 10% share will come due around FY20.

Barre Coal Tar – Given past expenditures at this site, legislative approval will need to be granted for additional work. Future work would include determining the current status of soil and groundwater contamination at the site (Tropical Storm Irene left large amounts of sediments on the site destroying much of the sampling system). Once this analysis is made a better determination of future fund needs can be made.

Fillipo Dry Cleaner Site - **Capital Obligation: $0 (DEC already paid for cleanup). Annual O&M: ~$30,000 in FY18, otherwise ~$15,000 annually.** Fillipo Dry Cleaner, Rutland, required an expenditure of $438,000 in 2014 for the construction of a permeable reactive barrier to intercept and remediate contaminated groundwater migrating towards a residential neighborhood and posing an immediate human health threat. The Attorney General's office is assisting with cost recovery efforts, which include obtaining a lien on the property. Annual groundwater monitoring and treatment performance evaluations are anticipated for future years. FY16 ongoing monitoring costs were ~$15,000, will be ~$30,000 in FY18, and back to ~$15,000 annually thereafter. An additional $677,000 was previously approved (2013) for expenditure from the ECF for source area removal should it be deemed necessary upon evaluation of future annual monitoring events.

Vermont Asbestos Group - The Vermont Asbestos Group (VAG) site is the most difficult site to estimate the state's liability for a number of reasons. A settlement was reached in bankruptcy court in 2009 among one of the Potentially Responsible Parties (PRPs), G1-Holdings, the State of Vermont, and the Federal government. This settlement provided some resources but insufficient to adequately characterize and remediate the site. A settlement was reached with another Potentially Responsible Party (PRP), VAG, which is the current owner of the mine site. The settlement with VAG includes an annual payment to ANR of $5,000 a year for ten years and to continue performing the operation and maintenance (O&M) of the erosion control actions that EPA constructed during a removal action that took place in 2007 and 2008. So far, ANR has received three payments ($15,000) from VAG and VAG is still performing the annual O&M. As part of the settlement agreement, VAG agreed to cooperate with federal and state entities (the Attorney General's office and ANR) to pursue insurance monies. To date, ANR has received a significant payment from insurance settlements. At this time, the state does not anticipate that there are other insurance policies that could lead to further settlement payments. However, the Attorney General's office will continue to investigate along with EPA to determine if there are other insurance policies. Even with the recent insurance settlement, the magnitude of the cleanup costs exceeds the resources available.

The State had desired to pursue Superfund listing of this site; however, the communities of Lowell and Eden voted against Superfund in March of 2011, and the Governor deferred to the community votes. It is clear that the state does not have the resources to address the environmental contamination from this site without federal assistance. Even with federal assistance, the state will be required to enter a State Superfund Contract, and will bear a 10% share in the capital costs of remediation, and 100% of the long-term O&M. Cost estimates developed for the bankruptcy claim indicate that the state share for remediation and long-term O&M under the Superfund remedial program could range from approximately $20 million to $26 million. However, without federal assistance the potential obligation could range from $136 million to $204 million. EPA has completed interim mitigation work at the site (erosion control measures) for which the state bears no financial obligation for capital costs, but is required to ensure the maintenance of the erosion control systems installed. Vermont Asbestos Group (the responsible party) has been performing the O&M since 2009 and is expected to continue this work. If the PRPs discontinued O&M, a distinct possibility, DEC estimates annual O&M would be $75,000 per year. Also, lacking a permanent long-term remedy at the site, DEC anticipates that interim erosion control measures constructed by EPA will need to be re-done and that this will cost approximately $2M.

Perfluorinated Compound (PFC) Sites - Currently, our largest potential obligation relates to the emerging PFC contaminants that have been found contaminating hundreds of private drinking water wells and a public water system in Bennington County, as well as contaminating groundwater at additional sites in Chittenden County and Pittsford. Below are just two examples of potential liabilities to the ECF. First, there are planned water extensions (primarily in North Bennington to replace impacted supply wells) that could cost approximately $31M. The responsible party (RP), Saint-Gobain, is litigating this matter and it is unclear what costs will be borne by the RP, and what may fall to ANR (and the ECF). Another example is the ongoing maintenance cost for over 100 point of entry treatment (POET) systems near Bennington Landfill that Saint-Gobain has stated they will not cover. Annual estimated POET costs could approach $500,000.

Attachment 2

FY16 Specific Disbursements at Spills/Sites

Site Name	Site/Spill Number	Town	Amount Spent	Description of Activity
Pownal Tannery	19770066	Pownal	$1,111.24	Ongoing groundwater monitoring as part of long-term O&M of permanent site remedy
Saxton's River	19770135	Rockingham	120.00	Sample analysis
Elizabeth Mine	19770186	Strafford	$8,000.00	Drain cleaning
Former Steamtown U.S.A. Property	19770200	Rockingham	$260.00	Well abandonment
Fillipo Dry Cleaners	19972194	Rutland City	$22,536.81	Ongoing monitoring & corrective action
Bruno's Auto Repair	20154601	Rutland City	$34,828.89	Initial Site Investigation
Dube Residence	S2014621	Weathersfield	$4,586.38	Suspected petroleum in water supply
Residence	S2015250	Rutland City	$17,510.71	Became Site # 20154601 above
Lamoille River	S2015293	Fairfax	$3,178.79	Three drums in river
VAST Trail	S2015562	Marshfield	$205.00	Drum found in woods
Roadside spill – RT131	S2015642	Weathersfield	$809.00	Release of anti-freeze and motor oil to roadside. No RP. FD cleaned up and DEC paid for disposal
Dorr Dr.	S2016049	Rutland City	$17,377.13	Vehicle accident. Release to Otter Creek
VT Soil Background Study		Statewide	$1,674.00	Soil samples collected throughout State to establish background concentrations for the new Investigation & Remediation of Contaminated Properties Rule. Remaining balance of $1,674.00 of $3,348.00 total cost initial reimbursement received from EPA in FY16.
VGS Sandplain Property (FWVTGAS)	20164669	Colchester	$7,467.97	Remaining balance to be reimbursed from $25,361.85 total spent as of the end of FY16 for a Dept of F&W property that Sites Management Section helped facilitate Phase I & II for.
Misc. Spills			$3,403.86	
SUBTOTAL Site/Spill Specific - Program 53716			**$123,070**	
RT 123 Spill	S2015298	Westminster	$5,050.92	Oil spilled on road. RP unknown at first
Hollow Rd	S2015454	Hinesburg	$706.00	Drum found on side of road
Mallett's Creek	S2015636	Colchester	$778.00	Drum with unknown contents found in creek
Pownal Tannery	19770066	Pownal	$25,675.22	Ongoing groundwater monitoring as part of long-term O&M of permanent site remedy
SUBTOTAL: Spills - Program 53743			**$32,210**	
TOTAL: Non-PFOA Site & Spill Expenditures			**$155,280**	
PFOA Related Costs for Contaminant Response			**$474,666**	
GRAND TOTAL: ECF Expenditures			**$629,946**	Does not include $83,201 to HWMAF

Attachment 3

Historic Dry Cleaner Location – Clustering Map

Attachment 4
Leveraged Funding

Site Name	Location	DEC Brownfields Funding used	ACCD BRF Funding Used	Total Project Cost	Leveraged Funding per $1 invested per project	Project Description
Enterprise Alley	Barre City	$44,072.60		$3,900,000	$88.49	Location of a former drycleaner. Barre City is the developer. Final project is enhanced parking, bike path, green space and flood control.
247 Pearl Street	Burlington	$5,000	$375,000	$6,319,931	$16.63	This is a location of a former dentist, and historic urban fill. Redstone is the developer. Development will be mixed use (commercial/housing)
453 Pine Street	Burlington	$156,000		$29,000,000	$185.90	This is a location of a former MGP site. Redstone is the developer. The redevelopment will be commercial office/retail
Alcaro Motors	Bennington	$57,000	$107,850	$450,000	$2.74	This is the location of a former auto and sales garage. Contamination present was petroleum, PAHs, chlorinated solvents and asbestos. Peter Laflamme is the developer. This is the location of a new furniture store.
Arthur's Department Store	Morrisville	$50,000	$125,000	$4,636,000	$26.49	This is the location of a former retail store and commercial drycleaner. Housing Vermont is the developer. Development consists of mixed use (commercial/affordable housing)
Camisa Properties	Richford	$42,000		$394,855	$9.40	This is the location of a former house impacted with PAHs from dumping. REAC is the developer. The development is the creation of a new town park.

Attachment 4
Leveraged Funding

Site Name	Location	DEC Brownfields Funding used	ACCD BRF Funding Used	Total Project Cost	Leveraged Funding per $1 invested per project	Project Description
City Place	Barre City	$60,000	$200,000	$16,100,000	$61.92	This location was impacted by uses from historic drycleaners and urban fill. DEW is the developer. The development is retail and office space
Crawford's Auto Land	Royalton	$10,000	$180,000	$968,000	$5.09	This is the location of a former auto garage and gravel pit. The Town of Royalton is the developer. The development is a new Town office.
Old Dairy Queen	Burlington		$400,000	$5,490,406	$13.73	This is the location of a former dairy queen. The property was impacted by a former industrial drycleaner. The developer is Redstone. The development is mixed use (commercial/residential)
100 River Street*	Springfield	$146,000	$165,000	$13,000,000.00	$41.80	This is the location of a former tooling mill. The property contaminants included with PCBs, chlorinated solvents and petroleum. 100 River Street, LLC is the developer. The development is commercial along and includes the Springfield Medical Center.
Vermont Tissue	Bennington	$104,000	$194,000	$2,694,425.83	$9.04	This is a former Paper Mill. Past operations left behind dioxin and PCBs. Bill Scully is the developer. The development includes a new hydro facility and a brewery.

* Costs listed are "Costs to date", additional development is expected to occur at this property

Investment Totals

Total investment from VTDEC Brownfields Program	**$1,156,770.60**
Total investment from ACCD Brownfields RLF	**$1,746,850**
Total Investment in Brownfields	**$82,953,618**
Leveraged Funding per $1 invested	**$28.57**

Attachment 5

List of Brownfield Sites Enrolled in the Brownfields Reuse Environmental Liability Limitation Act (BRELLA) Program

Site#	Site Name	Site Address	Site Town	Priority	Owner Name
20083890	10 West Second Street	10 West Second Street	Barre City	COC	David Ayer (10 West Second Street LLC)
20144500	12 Keith Ave.	12 Keith Ave.	Barre City	MED	City of Barre
20114142	16 Enterprise Alley/Merchants Row	16 Enterprise Alley/ Merchants	Barre City	MED	City of Barre
20124324	Blanchard Block	14 North Main Street	Barre City	LOW	Granite City Developers
20124328	City Place	219 North Main Street	Barre City	COC	DEW/City of Barre
20164648	Ernie's Garage	561 & 567 North Main Street	Barre City	LOW	David Ayer
20093892	Former Twin Cities Custom Sandblast	32 Granite Street	Barre City	COC	Jim Crowley
20104038	Gable Place	10,11-15,19, 22 Gable Place	Barre City	COC	Paul Demers
992683	Johnson and Dix Bulk Plant	572 North Main St.	Barre City	COC	David Ayer
20134353	Summer Street Project	22 Keith Avenue	Barre City	LOW	CVLT
20104061	Alcaro Motors	239 Main St	Bennington	COC	LaFlamme
951896	Bennington County Industrial Corp	Water St	Bennington	COC	Bennington County Industrial Corp
20073684	JARD/BCIC	Bowen Road	Bennington	COC	Town of Bennington
770032	Vermont Tissue	Route 67 A	Bennington	COC	Bill Scully
20144479	Vermont Tissue North	Route 67A	Bennington	MED	Mcleod
2014-4484	Former Twins State Fertilizer	Route 25	Bradford	COC	Farm-way

Sites Enrolled in BRELLA

Low=low level of contamination present **med**=sensitive receptors are threatened by contamination
High=Sensitive receptors are impacted by contamination
COC=Certificate of completion **SMAC**=Site Management Activity Complete

Site#	Site Name	Site Address	Site Town	Priority	Owner Name
20134425	Green Mountain Power Bradford Service	399 Waits River Road (VT Route	Bradford	MED	Skip and Carol Metayer
770035	Dowty Electronics	West Prospect Street	Brandon	NFAP	Dowty Electronics Comp.
20114193	118 Elliot Street	118 Elliot Street	Brattleboro	COC	Stone Fence Realty Company
20083836	26 Depot Street	26 Depot Street	Brattleboro	MED	Town of Brattleboro
20134455	464 Canal Street	464 Canal Street	Brattleboro	LOW	Steve Bonnet
20083834	48 Elm Street	48 Elm Street	Brattleboro	LOW	New England Youth Theatre
20104099	56 Elm Street	56 Elm Street	Brattleboro	LOW	New England Youth Theater
20164654	Brattleboro Reformer	62 Black Mountain Road	Brattleboro	LOW	Town of Brattleboro
982372	Country News Distributors-Thermal House	19 Bennet Drive	Brattleboro	MED	Thermal House
20134405	Custom Laundry	14 Church Street	Brattleboro	COC	Sonic Properties
20104028	CVPS Arch St. Brattleboro Substation	Arch Street	Brattleboro	LOW	Central Vermont Public Service Corporation
20144466	Estey Organ Bldgs 25-26	132 Birge St	Brattleboro	LOW	Barbara George
20083845	Former Archery	0 Depot Street	Brattleboro	LOW	Town of Brattleboro
20083846	Former Scale House	0 Bridge Street	Brattleboro	LOW	Town of Brattleboro
20114209	New England Youth Theater Campus	100 Flat Street	Brattleboro	LOW	New England Youth Theater

Sites Enrolled in BRELLA

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High=Sensitive receptors are impacted by contamination
COC=Certificate of completion **SMAC**=Site Management Activity Complete

Site#	Site Name	Site Address	Site Town	Priority	Owner Name
20063471	Planet Gas	570 Western Ave	Brattleboro	MED	Pinto LLC
20144478	112-114 Archibald Street	112-114 Archibald Street	Burlington	LOW	Champlain Housing Trust
20083882	14 Browns Court	14 Browns Court	Burlington	LOW	Champlain College
20033098	151 South Champlain St. - Blinn House	151 South Champlain St.	Burlington	MED	South River, LLC
20093899	157 South Champlain Street	157 South Champlain Street	Burlington	LOW	South River, LLC
20144554	194 St. Paul	194 St. Paul Street	Burlington	LOW	Champlain College
20164619	207 Flynn Ave	207 Flynn Ave	Burlington	MED	Redstone
20154573	230-242 North Winooski Avenue	230-242 North Winooski Avenue	Burlington	MED	Redstone
20144553	247 Pearl Street	247 Pearl Street	Burlington	LOW	Redstone
20134351	27 Bright Street	27 Bright Street	Burlington	LOW	Champlain Housing Trust
20154612	34, 44, 50 Lakeside Avenue	Lakeside Avenue (34,44,50)	Burlington	LOW	Malone
20124261	35-39 & 47 Bright Street	35-39 & 47 Bright Street	Burlington	LOW	Champlain Housing Trust
20124348	351 Pine Street	351 Pine Street	Burlington	LOW	VRS
20043192	453 Pine Street	453 Pine Street	Burlington	LOW	Derrick H. Davis
20154578	9 Lakeview Terrace & 85 North Avenue	9 Lakeview & 85 North Ave,	Burlington	LOW	Redstone
20164618	Barrett's Trucking	16 Austin Drive	Burlington	MED	Barrett's

Sites Enrolled in BRELLA

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High=Sensitive receptors are impacted by contamination
COC=Certificate of completion **SMAC**=Site Management Activity Complete

Site#	Site Name	Site Address	Site Town	Priority	Owner Name
20124337	Former Bushey's Auto	256-262 North Winooski Avenue	Burlington	COC	Redstone
20134364	Former Q-Tee's	237 North Winooski Ave.	Burlington	MED	Redstone
20124279	Jolley Property	Route 15 and Route 108	Cambridge	LOW	Village of Jeffersonville
20164664	County Apartments	Ethan Allen Avenue	Colchester	LOW	Redstone
20093978	3030 US Route 2	n/a	East Montpelier	COC	Town of East Montpelier
20114192	Washington Electric	110 VT Route 14	East Montpelier	COC	Town of East Montpelier
20083867	Parcel 3 - Friends of Algiers	Mill Road	Guilford	COC	Housing Vermont
20144473	Former Dayco	37 Harper Savage Lane	Hartford	COC	Town of Hartford
20022984	Old Saw Mill	19 Ferry Road	Hartland	MED	Hartland Wood Resources LLC
20053458	VEC	182 School Street	Johnson	COC	Vermont Housing
20134380	38 Pond Lane	38 Pond Lane	Middlebury	COC	Vermont Canopy
20114164	Connor Homes	1741 Route 7 South	Middlebury	MED	Connor Homes
20144503	David Page's Cotton Mill	34-42 Main Street	Middlebury	LOW	Town of Middlebury
911170	Parkers Service Station	1 South Street	Middletown Springs	COC	Town of Middletown
20023024	Carr and Sons (former)	Taylor Street	Montpelier	SMAC	City of Montpelier
20154615	Mowatt Property	12 Main Street	Montpelier	LOW	City of Montpelier

Sites Enrolled in BRELLA

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COC=Certificate of completion **SMAC**=Site Management Activity Complete

Site#	Site Name	Site Address	Site Town	Priority	Owner Name
20124268	St Michaels School	46 Barre Street	Montpelier	COC	Center for Arts and Learning in Montpelier
20114181	Arthur's Department Store	63 Lower Main St	Morristown	COC	Housing Vermont
20114207	Morrisville Water and Light	56 & 36 A Street	Morristown	MED	Garret Hirchack
20073651	Adams Paper Mill	Mill Street (route 302)	Newbury	MED	Julie and Gene Eastman
20073648	Moot Wood Turning	98 Mill Street	Northfield	COC	Stawicki
20124325	Plainfield Auto Parts	252 High Street	Plainfield	LOW	Black Bear
20063537	Barlow Gravel Pit	536 Dean Road	Pownal	MED	Maxon Trucking
20154606	Pownal Dam	n/a	Pownal	LOW	Town of Pownal
20134378	52 Main Street	52 Main Street	Proctor	LOW	Preservation Trust of Vermont
20053445	Salisbury Street	Salisbury Street	Randolph	COC	Randolph Area Community Development Corp.
20124293	Camisa Properties	111 and 113 Main Street	Richford	LOW	REAC
20083835	Richmond Creamery	74 Jolina Court	Richmond	LOW	Buttermilk, LLC
890415	King Residence	Saxtons River	Rockingham	low	Village of Saxtons River
20063480	Penta (Wyman Flint)	Mill Street	Rockingham	MED	Bellows Falls Historical Society
20134394	Robertson Paper Mill	21 Island Street	Rockingham	MED	BFADC
770135	Saxtons River	Saxtons River	Rockingham	COC	Main Street Arts
20033091	Saxtons River Mill	n/a	Rockingham	LOW	Village of Saxtons River

Sites Enrolled in BRELLA

Low=low level of contamination present **med**=sensitive receptors are threatened by contamination
High=Sensitive receptors are impacted by contamination
COC=Certificate of completion **SMAC**=Site Management Activity Complete

Site#	Site Name	Site Address	Site Town	Priority	Owner Name
20114190	Crawford's Autoland	89 Crawford Autoland Ln	Royalton	COC	Town of Royalton
951900	H-our Mart Inc	257-263 West St	Rutland City	LOW	City Of Rutland
20073732	Butterfield Property	300 Route 7 North	Rutland Town	COC	Roberta Butterfield
770073	Eagle Square (Old Stanley Tools)	Route 67	Shaftsbury	COC	Bernstein Display
20154572	27 Green Mountain Drive	27 Green Mountain Drive	South Burlington	LOW	Redstone
20104085	49 Main St.	49 Main St.	Springfield	LOW	North School Preservation Society, Inc
20093906	Edgar May Health and Recreation Center	140 Clinton Street	Springfield	LOW	Southern Vermont Recreation Center Foundation
20134373	J&L Cidery Building	200 Clinton Street	Springfield	MED	SRDC
770122	Jones And Lamson	160 Clinton St	Springfield	HIGH	SRDC
20063608	Lucas Industries	201 Clinton Street	Springfield	COC	Town of Springfield
20154616	Muckross Estate	26-28 Muckross Road	Springfield	LOW	State of Vermont
972235	Precision Valley Development	Pearl St	Springfield	MED	100 River Street
20083815	Brickyard Tavern Building	29-33 Federal Street	St Albans City	SMAC	City of St Albans
20083777	Former Fonda Container Company	15-21 Lower Newton Street	St Albans City	LOW	City of St Albans
20134400	Moose Lodge	43 Lake Street	St Albans City	LOW	City of St Albans

Sites Enrolled in BRELLA

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High=Sensitive receptors are impacted by contamination
COC=Certificate of completion **SMAC**=Site Management Activity Complete

Site#	Site Name	Site Address	Site Town	Priority	Owner Name
20083818	St. Albans Municipal Parking Lot No.1	Lake, Federal. Kingman Streets	St Albans City	LOW	City of St Albans
770077	Eveready St. Albans	Route 7, Box 671	St Albans Town	LOW	Malone
20134370	85 US Route 2W	85 US Route 2W	St Johnsbury	COC	RL Vallee
20124326	Former St. Johnsbury Rec. Center	1249 Main Street	St Johnsbury	LOW	Town of St.Johnsbury
20124308	KNTT Investments	195 Bay Street	St Johnsbury	COC	Town of St.Johnsbury
20104075	St J Recreation Dept	1249 Main St	St Johnsbury	SMAC	Town of St Johnsbury
20043209	Hamelin Property	South Street	Troy	LOW	Town of Troy
20144550	Gevry Mobile Home Park	Gevry Park	Waltham	MED	ACLT
911013	Russell's Autobody	4192 ROUTE 106	Weathersfield	MED	UVLLC
982443	Mt. Ascutney Maintenance Garage/Ski Area	Route 44	West Windsor	LOW	Town of West Windsor
20134414	130 Route 100	130 Route 100	Wilmington	COC	Town of Wilmington
20083803	Vermont Barnboard	Mill Street Extension	Wilmington	MED	DVTA
20073638	Parcel 251001.000 Railroad Ave	Railroad Ave	Windsor	COC	Town of Windsor
20164620	Key Bank	70 Main Street	Winooski	LOW	Redstone
20083784	A & B Motors	25 South St.	Woodstock	COC	William Lamb

Sites Enrolled in BRELLA

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High=Sensitive receptors are impacted by contamination
COC=Certificate of completion **SMAC**=Site Management Activity Complete

Site#	Site Name	Site Address	Site Town	Priority	Owner Name
870023	Gerrish Motors (Woodstock East)	Rt 4	Woodstock	LOW	Kurt Gerrish, Gerrish Corp

Sites Enrolled in BRELLA

Low=low level of contamination present **med**=sensitive receptors are threatened by contamination
High=Sensitive receptors are impacted by contamination
COC=Certificate of completion **SMAC**=Site Management Activity Complete

Attachment 6

Vermont Brownfield Success Stories

Vermont Brownfield Success Stories

Archibald Street Community Gardens

Property History

The property is comprised of a 0.17 acre parcel located in the City of Burlington, Vermont. It was first developed in 1941 and was used as an automotive sales and service facility until the mid-1990s. In 2004, The Visiting Nurse Association of Chittenden and Grand Isle Counties bought the property. The same year, the City of Burlington Planning and Zoning office issued a demolition permit for the on-site building. In 2008, a community garden group established a community garden on the property, including raised beds and a small shed on the eastern portion of the property.

Redevelopment Work

As the prospective purchaser, the City of Burlington received multiple rounds of assessment funding totaling $28,475 from CCRPC. A Phase I Environmental Site Assessment (ESA) conducted in 2013 revealed the likely presence of environmental contamination on the property from past uses including auto sales and repair. The subsequent Phase II ESA, completed in early 2014, indicated that soils on the site contained levels of Polycyclic Aromatic Hydrocarbons (PAHs), Lead, and Arsenic in excess of the residential Vermont Soil Screening Values (SSVs). Perchloroethene (PCE), a type of Chlorinated Volatile Organic Compound (CVOC), was also detected on shallow soil vapor on portions of the property. Construction of a new building on the property may result in exposure to VOCs, but no permanent structures were included in the property redevelopment.

Property Details	
Property Address:	28 Archibald St, Burlington, VT 05401
Property Size:	0.17 acres
Former Uses:	Auto dealership and repair facility
Contaminants:	PAHs, arsenic, lead, PCE
Current Use:	Community garden
Current Owner:	VNA of Chittenden & Grand Isle Counties

Project Partners
City of Burlington Dept. of Parks, Recreation, and Waterfront
VNA of Chittenden & Grand Isle Counties
Chittenden County Regional Planning Commission
VT Department of Environmental Conservation (DEC)
VT Agency of Commerce and Community Development (ACCD)
United States Environmental Protection Agency
KAS, Inc. of Williston Vermont

Funding Sources	
Brownfields Revolving Loan Fund	$45,000
Chittenden County Regional Planning Commission	$28,475

VERMONT
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

For additional information, contact Trish Coppolino
[phone] 802.249.5822
[email] patricia.coppolino@vermont.gov

Vermont Brownfield Success Stories

Archibald Street Community Gardens

The City of Burlington enrolled the property in the VT DEC's Brownfields Reuse and Environmental Liability Limitation Act (BRELLA) program in January 2015, and was able to access $45,000 in support of site cleanup activities from the VT ACCD's Brownfields Revolving Loan Fund. Site remediation work began following the April 2015 approval of the Corrective Action Plan. During site remediation, approximately 320 cubic yards of contaminated soil were removed and disposed of at an appropriate facility. Following removal, a clean soil and filter fabric cap was installed over the entire property surface.

Site work was completed in May 2015. To protect future construction and utility workers, site users, and new property owners from exposure to residual subsurface soil and gas contaminants, a Deed Restriction will be filed with the Registry of Deeds for the property. On March 22, 2016, the VT DEC awarded the City of Burlington with a Certificate of Completion for the property.

Project Results

Over 90 community volunteers came together, committing more than 500 hours of service to provide the finishing touches to the garden. Now complete, the property provides fenced gardening space for 24 households and several youth groups, as well as a new water system for the gardeners. The remediation and redevelopment of this property has created a space to strengthen community bonds, which will only continue to grow with the garden as residents of all generations learn to produce nutritious food together.

Project Timeline	
October 2013	Phase I ESA Completed
January 30, 2014	Phase II ESA Completed
February 4, 2014	Additional Soil Sampling Completed
May 2015	Remediation Completed
June 12, 2015	Garden Grand Re-Opening

VERMONT

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

For additional information, contact Trish Coppolino
[phone] 802.249.5822
[email] patricia.coppolino@vermont.gov

Photo courtesy of DEWCorp.com

Vermont Brownfield Success Stories

City Place

Property History

The property is comprised of approximately 0.76 acres located in the City of Barre. Prior to redevelopment, the property was occupied by a gravel parking lot, a park, and two apartment buildings. Development information regarding the property dates back to the late 1800's and indicates that the parcels were used for a variety of commercial and residential purposes, and included a livery, an auto garage, furniture sales, clothing and jewelry sales, produce sales, a drug store, and a restaurant.

Redevelopment Work

In 2009, the City of Barre took advantage of a unique opportunity to purchase the parcels of land comprising the 219 North Main Street property, so it could be redeveloped and improve the city's downtown area. Located in the center of the city, the site is in a prime location for access to amenities including restaurants, retail, art studios, museums, and more. The City of Barre pursued a Neighborhood Stabilization Program Grant, which allowed the property to be prepped for redevelopment. In 2010, the City was awarded a $1.7 million grant, $700,000 of which was set aside for acquisition and demolition of the on-site buildings.

Property Details	
Property Address:	213, 219, & 225 North Main St., Barre VT
Property Size:	0.76 acres
Former Uses:	Commercial/Residential
Contaminants:	CVOCs, VOCs, PAHs, Arsenic, and Lead
Current Use:	Mixed Commercial
Current Owner:	DEW properties, LLC

Project Partners
City of Barre
VT Department of Environmental Conservation (DEC)
VT Agency of Commerce and Community Development (ACCD)
Central Vermont Regional Planning Commission (CVRPC)
The Johnson Company, Inc.
Environmental Compliance Services, Inc.

Funding Sources	
CVRPC	$23,000
VT DEC 128(a) Funding	$60,000
VT ACCD Brownfields Revolving Loan Fund	$200,000

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For additional information, contact Trish Coppolino
[phone] 802.249.5822
[email] patricia.coppolino@vermont.gov

Vermont Brownfield Success Stories

City Place

Photo courtesy of ECS

In 2012, DEW Properties, LLC (DEW) purchased the property, with the intent of completing the redevelopment project. A variety of environmental investigations were subsequently conducted on the property; these investigations concluded that past on- and off-site activities had contaminated soil and soil gas with chlorinated solvents, polycyclic aromatic hydrocarbons (PAHs), arsenic, lead, and naphthalene in select locations on the property.

Following the completion of environmental assessment work, the City of Barre received a $260,000 in grants from the VT DEC and the VT ACCD to implement remedial activities. Cleanup activities at the site included the excavation of 661 tons of contaminated soil, the installation of a sub-slab depressurization (SSD) system, and capping of remaining contaminated soils. An environmental easement was also placed on the property in order ensure the SSD and cap are maintained over time. Following the successful completion of remedial activities, the VT DEC awarded DEW a Certificate of Completion on May 24, 2014.

Project Results

Ultimately, a 4-story, 78,000 square foot building was constructed on the site by DEW Properties, and was officially opened for business in March 2014. The new Barre City Place provides a vibrant downtown space for the community, and includes office space for Vermont Agency of Education employees, plus private commercial business such as the RehabGYM and Positive Pie. Redeveloping the site in City Place encourages entrepreneurs to look to open shops in the other empty storefronts on North Main Street, and provides citizens access to necessary amenities.

Project Timeline	
September 2012	Limited Phase II ESA Completed
October 2012	Phase I ESA Completed
November 2012	Phase II ESA Completed
February 2014	Remediation Completed
May 2014	City Place Ribbon Cutting

Photo courtesy of DEWCorp.com

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DEPARTMENT OF ENVIRONMENTAL CONSERVATION

For additional information, contact Trish Coppolino
[phone] 802.249.5822
[email] patricia.coppolino@vermont.gov

EPA's Brownfields Success in New England
• Land and Community Revitalization •

FORMER SALT SHED & TURNTABLE PROPERTIES, MONTPELIER, VERMONT

Property Details

Address:	Stone Cutters Way Montpelier, VT 05602
Size:	1.40 acres (1.13 acres; 0.27 acres)
Former Use:	Salt shed, indoor ice skating rink, art & performance center, storage; rail yard
Contaminants:	Asbestos, pentachlorophenol (PCPs), petroleum-related compounds, chlorinated volatile organic compounds (VOCs), metals, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), perchloroethene (PCEs), trichloroethene (TCEs), lead, arsenic
Current Use:	Office space; pocket park
Owner:	Connor Brothers Stonecutters, LLC; City of Montpelier

Partners

Central Vermont Regional Planning Commission (CVRPC); City of Montpelier; Central Vermont Economic Development Corporation (CVEDC); Vermont Agency of Natural Resources; Vermont Agency of Commerce & Community Development (ACCD); Pyralisk Arts Center

Funding Details

Salt Shed	
EPA Community-Wide Hazardous Substances Assessment Grant:	$31,750
Private Developer:	$2,150,000
Turntable	
EPA Community-Wide Hazardous Substances Assessment Grant:	$38,200
VT Community Development Program (VCDP) Grant:	$194,336
Vermont Downtowns and Village Centers Tax Credit:	$71,223
State Downtown Transportation Grant:	$74,961
City 5% Match:	$13,977
City Funds:	$36,000
City Sales Tax Reallocation:	$33,000
City Capital Improvement Plan:	$7,345

Highlights

- The new office building is projected to have capacity for approximately 65 employees.
- Connor Brothers Stonecutters received a tax benefit which equals approximately $3,800 per year for 7 years. Potential to extend the contract by demonstrating the creation of at least 25 net new full time livable wage jobs

Motivation for Redevelopment: In 1993, the City of Montpelier, located in central Vermont, launched an aggressive strategy to improve the economic vitality of its downtown and riverfront areas. A large component of this effort was the redevelopment of a large state-owned derelict rail yard in the heart of downtown along the Winooski River. This project was seen as the key mechanism to spark community engagement across the city as well as satisfy the need for retail and office space. After nearly a century of industrial use occupying the riverfront, residents are finally able to gather together to eat, shop, enjoy the riverfront, and appreciate the City's heritage.

Property History: The adjoining Salt Shed and Turntable properties are owned by Vermont Agency of Transportation (VTrans), who lease the Salt Shed property to Connor Brothers Stonecutters, LLC and the Turntable property to the City of Montpelier. Between 1894 and 1973, both properties were owned by various railroad companies. After its construction between 1909 and 1915, the Turntable facility discontinued operations between 1957 and 1980. Meanwhile, in 1973, Twin State Sand & Gravel bought the Salt Shed property and constructed the shed (11,500 sf) for road salt storage. In 1980, the State (VTrans) took the entire railroad property along the river. In 1997, the City leased a majority of it apart from the Turntable property, which was included in an amendment in 2004. Central Vermont Skating Association bought the Salt Shed building in 1983 and converted it into a skating rink. Pyralisk Arts Center bought it in 1999, selling it to Connor Brothers in 2010.

Testing determined that both sites were filled with waste from surrounding granite businesses in existence during the early 20th century. A coal shed, engine house, and machine shop constructed near the turntable may have also contributed to contamination on site. On the Turntable property, maintenance and repair of locomotives and railcars resulted in contamination in the soil directly below. Clean up efforts included excavation and removal of hazardous materials as well as the installation of indicator fabric and monitoring wells. Additionally, the desire for cohesiveness between both designs led the City to encounter difficulty in funding retention. Differing timelines led the City to devise a tax reallocation system by which state sales tax from 535 Stonecutters Way would fund Turntable Park's construction.

Project Results: Now completed, the unique Turntable Park is dedicated to the late Garth Genge (pictured above) who propelled the project forward for the City. The park celebrates Montpelier's rail industry heritage by retaining the turntable itself as a central focus around which salvaged granite blocks are repurposed as seating. Construction is nearing completion on the Salt Shed property with a new office building to replace the deteriorating shed. When it is complete, the entire redevelopment will incorporate connecting pedestrian and bike paths to the downtown from the riverfront. Together, these projects conclude redevelopment along this section of the Winooski River.

Timeline

Feb. 2004	City leases Turntable property
July 2004	Phase I ESA completed
Sept. 2004	Phase II ESA completed
Jan. 2005	Additional Phase II ESA completed for Salt Shed property
Aug. 2010	Private developer leases Salt Shed property
Dec. 2010	Turntable property cleanup completed
Sept. 2011	Turntable Park opened
Dec. 2011	Salt Shed property cleanup completed
Aug. 2012	Lessee projected to occupy Salt Shed office building

Local Contact: Jennifer Mojo, Central Vermont Regional Planning Commission ● (802) 229-0389● mojo@cvregion.com

EPA's Brownfields Success in New England
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VERMONT TISSUE SOUTH, BENNINGTON, VERMONT

Property Details

Address:	1514 North Bennington Road Bennington, VT 05257
Size:	2.32 acres
Former Use:	Paper manufacturing and processing facility
Contaminants:	Polychlorinated biphenyls (PCBs), dioxin,furans, polycyclic aromatic hydrocarbons (PAHs)
Current Use:	Vacant
Owner:	AOE, Inc.

Partners

Bennington County Regional Commission (BCRC); Vermont Agency for Commerce and Community Development (ACCD); Vermont Department of Environmental Conservation; Town of Bennington

Funding Details

EPA Brownfields Assessment Grant:	$73,975
EPA Section 128(a) Assessment Funding (from VT DEC)**:**	$85,000
EPA Revolving Loan Fund (from ACCD):	$60,000
Property Purchase Price:	$200,000
Owner (estimated redevelopment cost)**:**	$2,500,000

Highlights

- Transformed a run-down mill and contaminated land into an energy resource, residential asset, and public open space.
- Utilized local contractors in remediation efforts.
- Retrofitting existing dam may generate up to meet half of Bennington College's energy needs.

Motivation for Redevelopment: Surrounded by natural beauty, the former Vermont Tissue South property lies within the rural town of Bennington, Vermont. Just three miles from the downtown and two hundred and fifty yards from Bennington College, this former mill sits on the north bank of the Walloomsac River. The site is bisected by the river, which converges with the Hoosic River six miles downstream to later join the Hudson River fifty miles west.

The private developer, William Scully of AOE, Inc. and Carbon Zero, LLC, sees this property as the first in a series of projects that can bring a greater amount of cheaper renewable energy to the area while also cleaning up contaminated land. The mill building will be repurposed into residential units after establishing a successful hydroelectric facility on site. Its picturesque setting alongside a waterway and proximity to a covered bridge make it a highly desirable residential location. Already, a series of covered bridges make this stretch of road a popular tourist attraction.

Additionally, in its contaminated condition, the property could have potentially caused public health issues as well as impacted sensitive environmental receptors. An island in the center of the Walloomsac was impacted by unauthorized dumping, collecting everything from tires to broken refrigerators. Community members expressed concern over how this property was influencing quality of life in Bennington and that this site created blight in the community.

Property History: Since the 1790s, this site hosted commercial operations. Vermont Tissue Paper Corporation operated a paper manufacturing and processing facility until it was abandoned in 1986. Built in 1887, the paper mill, the second in this location, is thought to be the state's oldest. It is approximately 12,000 square feet with 20 foot high ceilings and is constructed from concrete, brick, and glass. The building's original character will be retained in the redevelopment.

Environmental site assessments found polychlorinated biphenyls (PCBs), dioxins, furans, and polycyclic aromatic hydrocarbons (PAHs) in soil, concrete, and plumbing. Similar surface contamination was found on the interior surfaces of the building.

Project Results: In 2009, AOE, Inc. purchased the property and began cleanup work. The island located in the center of the Walloomsac was cleaned up through community action and is newly available to the public as open space. Although it required additional training for the contractor, the developer made it a priority to hire locally. The redevelopment is expected to generate at least one full-time property management position and a few full-time hydroelectric-related jobs. The project also sparked the future need for a streamlined permitting process for hydroelectric facilities as well as innovation in air quality testing methods at the state level.

Other benefits include the preservation of a historic building and ecological improvements that have enhanced habitat functioning of the Walloomsac River and reduced a potential public health threat. Apart from the man-made concrete dam that will house two energy-generating turbines, a secondary bedrock dam addresses environmental concerns related to fish migration pathways, water oxygenation, and water temperature.

By capitalizing on a public-private partnership and leveraging local resources, this formerly degraded property will transform into a clean energy source and highly-desirable residential asset

Timeline

June 2009	Phase I site assessment completed
June 2009	Property purchased by AOE, Inc.
Aug. 2010	Phase II site assessment completed
Jan. 2012	Supplemental Assessment
Nov. 2011	Cleanup completed
Apr. 2012	Corrective Action Sum. Report completed
Nov. 2012	Projected project completion

Local Contact: Jim Henderson, Bennington County Regional Commission ● (802) 442-0456 ● jhenderson@bcrcvt.org

Land & Community Revitalization

BROWNFIELDS SUCCESS IN NEW ENGLAND

COMMONWEALTH DAIRY

BRATTLEBORO, VT

Property Details

Address:	3 Omega Drive, Brattleboro, VT
Size:	5.9 acres
Former Use:	Automobile salvage yard
Contaminants:	Lead, arsenic, total petroleum hydrocarbons (TPH)
Current Use:	39,000-square foot dairy processing facility
Owner:	Commonwealth Diary

Partners

Vermont Department of Environmental Conservation (DEC), Vermont Economic Development Authority (VEDA), Vermont Economic Progress Council, Vermont Community Development Program (VCDP), Windham Regional Commission, Town of Brattleboro

Funding Details

EPA Brownfields Assessment Grant:	$86,500
Federal Grant:	$0
New Market Tax Credit Equity:	$6,250,000
Vermont DEC:	$12,460
VEDA Loan:	$1,300,000
Vermont Employment Growth Incentive:	$1,201,154
VCDP (CDBG Funds):	$639,920
Wainwright Bank & Trust Company:	$10,000,000

Highlights

- Fast tracked project took just 15 months from site selection to grand opening.
- Created quality jobs and supports Vermont dairy industry.
- Model for sustainable industrial development.

Motivation for Redevelopment: Brattleboro is located in southeastern Vermont, an area that has suffered from industrial decline due to shifting economic patterns, reduced need for manufacturing to be near water, and a shrinking rail industry. Per capita income in Brattleboro is significantly lower than the county, state, and national levels. Given these circumstances, the region has been eager to attract industry that provides living wage jobs, such as the new Commonwealth Dairy facility.

Commonwealth Dairy began looking for a site to build a state-of-the-art manufacturing facility in the late 2000s and identified the Omega Drive site in Brattleboro as a potential location. The site, part of a 133-acre mixed-use campus, was ideal because of its proximity to milk suppliers, grocery wholesalers, and major highways. The location also allowed the project to qualify for New Market Tax Credits, a critical piece of the project's financing structure.

Property History: Initially a farm, the site was used as an automobile salvaging operation from 1960 to the mid-1990s. This use resulted in soils contaminated by oil, gas, and diesel fuel. Some soil remediation took place in the late 1990s, after the salvage business was shut down. Remediation activities consisted of removal of free phase petroleum product from onsite wetlands and a nearby brook as well as soil excavation, stockpiling, and sampling. The extent of excavation and testing was incomplete, however, leaving a potential for residual contamination that could affect the site's redevelopment.

The Windham Regional Commission stepped in to provide $86,500 in EPA Brownfields Assessment grant funding to conduct Phase I and Phase II assessments for the parcel. The Phase I Environmental Site Assessment (ESA) identified stained soil areas, uncontrolled drum storage, areas of debris related to the salvage operations, and stockpiles of previously excavated contaminated soil. Testing conducted as part of the Phase II ESA confirmed the presence of lead, arsenic, and total petroleum hydrocarbons (TPH) in the soil and groundwater.

Project Results: Having assurance about the extent of contamination present, Commonwealth Diary moved forward with the purchase, cleanup, and construction of a dairy processing facility on the site. In late March 2011, just 15 months after the Phase I assessment, the Commonwealth Dairy facility held its grand opening. The fast track schedule was necessary given the importance of the project to the regional economy and was achieved through the collaboration of several partners and priority responses to tight schedules.

In addition to cleaning up a contaminated site, the Commonwealth Dairy project has contributed to economic development and sustainability objectives. All of Commonwealth Dairy's research and development, warehousing, shipping, and management is located in Brattleboro, creating 35 new jobs. The LEED-compliant plant uses alternative energy sources to produce 70 million pounds of yogurt annually. This production level requires over 100 million pounds of milk per year. As a new buyer with a high demand for local milk, the plant directly benefits Vermont dairy farmers, helping to preserve the state's agricultural economy and historical sense of place. Commonwealth Dairy further supports the local dairy industry by returning a portion of the plant's net profits directly to farmers.

The new Commonwealth Dairy facility is a success on many levels, turning a contaminated, underused lot into an ultra-modern, environmentally sustainable dairy processing facility that creates high-quality jobs, supports the Vermont dairy industry, and helps diversify the local economy.

Timeline

Late 1990s	Partial site remediation
Nov. 2010	Phase I ESA complete
Feb. 2010	Phase II ESA complete
???	Commonwealth Diary purchases property
Mar. 2011	Grand opening

Local Contact: Susan McMahon, Associate Director, Windham Regional Commission ● (802) 257-4547x114 ● susan@sover.net

Land & Community Revitalization

BROWNFIELDS SUCCESS IN NEW ENGLAND

FORMER LEADER EVAPORATOR SITE

NORTHWEST REGIONAL PLANNING COMMISSION, VERMONT

Property Details

Property Address:	N25 Stowell Street, St. Albans, VT 05478
Property Size:	2.48 acres
Former Uses:	Woodworking, Fuel storage and sales, Clothing Manufacturing, Maple syrup production
Contaminants Found:	Petroleum, Polycyclic Aromatic Hydrocarbons (PAHs), Lead-based paint, Asbestos, Mold
Current Use:	27-unit apartment complex
Current Owner:	Champlain Housing Trust

Project Partners

Northwest Regional Planning Commission, City of St. Albans, Franklin County Regional Chamber of Commerce, Franklin County Industrial Development Corporation, VT Department of Health, VT Department of Environmental Conservation, VT Department of Economic Development, Housing Vermont, Champlain Housing Development Corporation, Conner Contracting, Inc., banks, non-profit o ganizations

Drivers for Redevelopment: The site is of historical importance within downtown St. Albans, having been home to several industrial/commercial occupants over the course of 120 years. Its most recent occupant was Leader Evaporator, which sold the property in April 2006 to Housing Vermont and the site was acquired in September 2006 by Champlain Housing Trust, the current property owner. The Northwest Regional Planning Commission (NRPC) was approached by the Connor Group, who in 2004 partnered with Housing Vermont, Champlain Housing Trust and NRPC in an effort to restore the two story factory for affordable housing. The building's layout for residential reuse was considered perfect, given that it was already equipped with elevators and had ample parking space. With limited housing available within downtown St. Albans, NRPC wanted to create a housing complex that would be affordable to residents based on income levels rather than property values. NRPC, Champlain Housing Trust and its project partners recognized that redeveloping the site would assist in boosting the area's economic vitality while maintaining the site's historic character.

Property History: In 1884, the site's two buildings were owned the W.B. Fonda and Co., a woodworking company with a fuel storage house/ shop/garage, and the Willard Clothing Manufacturer Co. The site was purchased by Geo. H. Soule Co. and Fairfield Farms Maple Co. in the 1930s and eventually by Leader Evaporator, another maple syrup manufacturer, in 1964. Leader Evaporator decided to move and expand in the early 2000s; prior to their move in 2006, they paid for an initial environmental assessment that was completed in 2003. The results confirmed the presence of lead-based paint, asbestos, evidence f an underground storage tank that had been removed, oil-filled above gro nd storage tanks, and a concrete vault for heating oil. The property attracted the attention of the NRPC, which provided $84,000 from its 2003 EPA Brownfields Assessment grants to further evaluate and delineate areas of contamination.

Funding Details

Brownfields Hazardous Substances & Pet oleum Assessment Grants (2003):

$84,000	From a total of $400,000 from these Assessment grants ($200,000 each)

Leveraged Funding:

$6,100,000	*(approx.)* From Housing Vermont and Champlain Housing Trust for remediation and construction
$505,000	For redevelopment
$92,000	For remediation from the Vermont Community Development Block Grant Program provided by the City of St. Albans

Project Highlights

- Residential reuse of a historic property once used for industrial/ commercial purposes.
- NRPC's partners, Housing Vermont and Champlain Housing Trust, spent $6.7 million to remediate, restore, and revitalize the former Leader building, which included funding from the City of St. Albans and private donors.
- Created an economically efficient 27-unit housing complex, of w ich 24 units are designated as affordable. All of the units were leased before the complex opened.

Project Results: Following the assessments funded by Leader Evaporator and the NRPC's EPA Brownfields grants, a cleanup e fort began, funded by a Community Development Block Grant awarded to the City of St. Albans. The assessments demonstrated that the contamination issues predated Leader Evaporator, and that the soil and groundwater had indeed been compromised by the site's above-ground oil storage tanks. The site's buildings, meanwhile, were found to have asbestos and lead paint contamination. The property's soils were contaminated with lead, PAHs, and petroleum products, which were excavated and capped; the lead-based paint and asbestos were removed; and petroleum contaminants in groundwater were naturally attenuated to safe levels. The site's heating oil concrete vault was drained, cleaned, and sealed, and mold was removed from tainted locations within the main building. Following cleanup, construction began in December 2006. The fully leased, 27-unit, Willard Apartment complex, equipped with energy efficient features and exposed the historic original beams, opened to its residents in February 2008.

Project Timeline

1884	Site occupied by woodworking and clothes manufacturing operations
1930s	Site purchased by Geo. H. Soule Co. and Fairfield Farms Maple Co.
1964	Site purchased by Leader Evaporator Company
2003	Initial environmental site assessments conducted
2006	Site purchased by Housing Vermont; St. Albans city council unanimously votes to approve the apartment complex; cleanup is completed and site ownership is transferred to Champlain Housing Trust
2008	Construction of Willard Apartments is completed

Local Contact: Greta Brunswick, Northwest Regional Planning Commission • (802) 524-5958

Land & Community Revitalization

BROWNFIELDS SUCCESS IN NEW ENGLAND

OLD NORTH END RESIDENTIAL PROPERTIES

BURLINGTON, VERMONT

Property Details

Property Address:	1322 Saint Paul St.; 299 N. Winooski Ave.; 27/31 Peru St.; 22/36 Johnson St.; 52-56 N. Champlain St.; 57-63 N. Champlain St.; 73-75 Sherman St.; 104 Intervale Ave.; 221 Pine St.; 194 Hickok St.; 88 Sherman St.; 36 Convent Square; 112-114 Archibald St.
Property Size:	2.18 acres
Former Use:	Multi- and single-family residential homes constructed mostly in the late 1800s and early 1900s
Contaminants Found:	Lead and asbestos in some units
Current Use:	Affordable residences
Current Owner:	Champlain Housing Trust

Project Partners

Champlain Housing Trust, Housing Vermont, City of Burlington

Funding Details

EPA Brownfields Assessment Grant (2009):	$9,126
used of a $200,000 Hazardous Substances Assessment grant	
Vermont Housing and Conservation Board:	$1,157,400
Burlington HOME Program:	$325,000
NeighborWorks:	$500,000
Vermont Weatherization Program:	$225,000
Burlington Lead Program:	$140,000
Tax Credit Equity:	$2,175,919
Bank Loan:	$700,000

Project Highlights

- Concerns about endemic contamination in the area were alleviated by Phase I Environmental Site Assessments, which revealed cleanup was not required except for lead and asbestos mitigation during renovations
- Energy efficiencies will be up to the standard of new housing, whil maintaining the historic structures
- Renovations will provide affordable housing, improvement of the neighborhood and quality of life
- Historically appropriate renovations to maintain and enhance the existing character of the neighborhood

Drivers for Redevelopment: The Champlain Housing Trust (CHT) has owned and managed these 13 properties in the Old North End (ONE) neighborhood for over 15 years. Due to the age of the structures (most are over 100 years old) and small size they have not been operated very efficiently or in a manner that would allow their ongoing capital needs to be adequately funded. The CHT assembled these buildings and is in the process of selling the properties to a new tax credit partnership, City Neighborhoods, in order to bring an infusion of capital for energy conservation and historic rehabilitation upgrades and to realize the benefit of managing the properties as one project. CHT expects the sale of the properties to City Neighborhoods to be finalized in November 2010.

Property History: All of the properties are occupied residences located in the ONE neighborhood of the City of Burlington. ONE is the lowest income, most diverse and most densely populated neighborhood in Vermont. Most of the structures are over 100 years old, and vary widely in architectural style and physical condition. The properties have been used as single- and multi-family residences since the late 1800s and early 1900s.

Project Results: EPA Brownfields Assessment Grant funding was used to assess these thirteen properties, which revealed that cleanup was not necessary except to mitigate lead and asbestos during property renovations. When renovation and construction activities are completed in spring 2011, all thirteen properties will include energy efficiency upgrades. Approximately 195 construction jobs will be leveraged for the project. During the development phase, a relocation plan will be implemented to ensure that any costs incurred by temporarily displaced residents will be covered by the project.

All properties, when renovated, will be used for affordable rental housing in perpetuity. While all of the apartments will be reserved for households earning less than 60 percent of median income, one-third will be further restricted to be affordable to households earning less than 50 percent of area median income. In addition, the CHT will retain the affordable housing restrictions in place for current tenants, most of whom are earning below 30 percent of area median income.

Project Timeline

Fall 2009:	Phase I assessments conducted
Spring 2010:	Development of project scope, design and cost estimate
Summer 2010:	CHT applies for project funding to Vermont Housing and Conservation Board, Vermont Housing Finance Agency for low-income housing tax credits and tax-exempt bond financing, and the Burlington HOME program
Fall/Winter 2010:	Construction begins
Spring 2011:	Construction complete

Local Contact: Nick Warner, City of Burlington, VT • (802) 865-7173 • nwarner@ci.burlington.vt.us

Land & Community Revitalization

BROWNFIELDS SUCCESS IN NEW ENGLAND

GOSSE COURT ARMORY

BURLINGTON, VERMONT

Property Details

Property Address:	126 Gosse Court, Burlington, Vermont
Property Size:	1.0 acre
Former Use:	Farm, Vermont Army National Guard Facility
Contaminants Found:	Lead, Asbestos
Current Use:	Robert Miller Community & Recreation Center, Sarah Holbrook New North End Teen Center
Current Owner:	City of Burlington, Vermont

Project Partners

Amy Tarrant Foundation, Burlington Department of Parks and Recreation, Burlington residents, City of Burlington, R.E.M Development Company, Sarah Holbrook New North End Teen Center, Vermont Army National Guard, Vermont Department of Environmental Conservation

Funding Details

EPA Brownfields Assessment Grant:	$63,000
Vermont Army National Guard:	$20,000
Public and Private Donors:	$1,200,000

Project Highlights

- Assessment and cleanup activities removed the fina barrier to sustainable reuse allowing a community-driven and led project to move forward
- Leveraged $20,000 for cleanup activities from Vermont Army National Guard and over $1.2 million for redevelopment through fundraising, private donors and public dollars
- Transformed the Gosse Court Armory building into a community-wide asset and demonstrated Burlington's commitment to sustainable practices through adaptive reuse as a community and recreation center and incorporation of green infrastructure elements such as a separate stormwater treatment system including swells and natural wetland area, and pervious concrete walkways.

Drivers for Redevelopment: The Gosse Court Armory is located north of the central business district and between Burlington's New North End, one of its most affluen communities, and the Old North End, one of its oldest, most densely populated and diverse communities. The Old North End is characterized by low-income and affordable housing – as a Vermont Refugee Resettlement Community, many global refugees call the Old North End home.

In 2004, with the closing of the Gosse Court Armory, several state, local and community leaders engaged in conversations with the Vermont National Guard over the potential repurposing of the Armory as a needed community recreation center. From 2005-2007, the Burlington Parks and Recreation Department, Citizen Advisory Groups, state and local governments, nonprofits, and neighborhood residents engaged in a community-driven process to develop and design a plan for the center recommending the Armory be repurposed for a multi-use community and recreation center. In 2008, long-time Burlington resident Robert Miller, President of R.E.M. Development Company, graciously agreed to donate his time and labor to manage the entire renovation project.

Property History: In 1958, the 42,558-square feet Gosse Court Armory was built by the State of Vermont on a former farm. For the past 14 years, the nonprofit organization Sara Holbrook North End Teen Center provided programs for at-risk youth out of the Armory. After the Armory's closure, the state transferred the building and its land to the city allowing the Teen Center to stay open. Due to age and prior training activities, such as the firing range, there were concerns of possible onsite environmental contamination.

The City of Burlington utilized funding from an EPA Brownfields grant to conduct assessments which revealed lead paint and asbestos contamination of the building and the soil closest to the building was contaminated with lead. With funding assistance from the Vermont National Guard, cleanup activities were completed by ATC Associates in August 2008 and included the removal of: asbestos and lead dust from the building, an underground storage tank, and lead contaminated soil—which was restored with clean material.

Project Results: The former Gosse Court Armory was fully renovated as a 20,000-square foot community and recreation center outfitted with high energy efficien heating and lighting systems designed to reduce the center's carbon footprint and long-term operating costs. This $1.2 million project includes a full size gymnasium, 130-person community room, children's space, teen center, fitness room, programs for seniors, arts and crafts room, warming kitchen and other multi-purpose rooms. The center helps meet the demand for indoor recreation in Burlington, and already attracts thousands of users from all ages and interests. The Sarah Holbrook New North End Teen Center continues its invaluable services from the center. In addition, there is space for lease with a separate entrance to an organization in the business of child care, health care or government. The city and its citizens renamed the Armory, the Robert Miller Community and Recreation Center as a tribute to his contribution to it and other projects in Burlington. Through shared vision, philanthropy and community leadership, a brownfiel was transformed into a community asset offering something of interest to everyone and creating life-long value and opportunities for generations to come.

Project Timeline

December 3, 2004	Phase I Assessment Completed
February 2, 2005	Phase II Assessment Completed
June 28, 2005	Additional Soil Sampling Completed
August 2008	Cleanup Completed
November 2008	Amory Renovation Completed
January 5, 2009	Robert Miller Community & Rec Center Opened

Local Contact: Nick Warner, Burlington Community and Economic Development • (802) 865-7173

Land & Community Revitalization

BROWNFIELDS SUCCESS IN NEW ENGLAND

BUTTERFIELD PROPERTY

RUTLAND, VERMONT

Property Details

Property Address:	Lincoln Ave & US Route 7 North
Property Size:	1.86 acres
Former Use:	Residential/Automotive
Contaminants Found:	Lead
Current Use:	Plant nursery
Current Owner:	Pratico's Landscaping and Fence Co.

Project Partners

Town of Rutland, Vermont; Rutland Regional Planning Commission

Funding Details

EPA Brownfields Assessment Grant, Phase I:	$2,160
EPA Brownfields Assessment Grant, Phase II:	$17,852
Private redevelopment funding:	$180,000

Project Highlights

- Environmental assessment gives long-vacant property a clean bill of health for redevelopment
- Assessment results in sale of property and redevelopment as a nursery and landscaping business, revitalizing an important gateway area to the City of Rutland

Motivation for Redevelopment: The 1.86-acre Butterfiel site near Rutland, Vermont had been vacant for more than 40 years, creating a long-standing eyesore in the neighborhood. A highly visible location on US Route 7 and access to infrastructure and services made the property a prime candidate for redevelopment. However, numerous attempts to sell the property failed due to concerns about its past use and debris on the site that indicated possible contamination. After the original farmhouse on the site burned down in the 1960s, the property hung in limbo as it passed through the hands of the original owners' descendants without being redeveloped.

In 2006, a successful landscaping and fence business was outgrowing its location approximately one half mile south of the property on US 7. The underutilized Butterfiel property was a logical fi for the business' expansion in terms of its size and location. Due to the site's past use, however, the potential buyers suspected potential environmental contamination and contacted the Rutland Regional Planning Commission (RRPC).

Through a cooperative agreement with the RRPC's Rutland Region Brownfield Reuse Program, EPA Brownfield funding finance Phase I and II assessments at the site. The assessments resolved concerns over contamination, giving the property a clean bill of health for redevelopment.

Property History: The site is located in a mixed commercial, agricultural and residential area. East Creek, known for its covered bridges, borders the site. The property was used for agricultural purposes from the mid 1800s until the 1920s. The original farmhouse was built during this era, and an existing onsite barn dates from 1885. From the 1920s through the 1940s, the site was used as an automotive service garage, fillin station and store. In the 1950s, the widening of US 7 restricted the usefulness of the site for commercial purposes, and the business closed. In 1967, the farmhouse was damaged by fir and the property was abandoned. Since then, significan debris (old drums, car parts, etc.) was present at the site related to the fir and the property's previous use.

Project Results: Through EPA Brownfield funding, a property that sat vacant for more than 40 years at the gateway to the Rutland city center has been transformed into a successful commercial enterprise.

Financed by a $200,000 EPA Brownfield Assessment grant awarded to Rutland RPC in 2003 for regional brownfield projects, Phase I and II assessments of the site began in January 2007. Assessment of the property revealed that while there was some lead in the soil, the contamination was localized and likely related to building demolition. No other contaminants of concern were found.

Resolved concerns over contamination of the property led to its immediate purchase by Pratico's Landscape and Fence Company. Limited site remediation in fall 2007 involved removing debris, after which construction of the new facility began. Pratico's opened its new facility on the site in spring 2008, offering a plant nursery and fencing store. The company invested $180,000 for redevelopment in addition to the sale price of the property. Relocation and expansion at the site created seven new jobs, and provided much-needed economic vitality on the edge of Rutland's urban core.

Project Timeline

January 17, 2007	Phase I Assessment Completed
July 25, 2007	Phase II Assessment Completed
August 2007	Property Sold
October 2007	Redevelopment Begins
May 2008	Redevelopment Completed

Local Contact: Ed Bove, Regional Planner, Rutland Regional Planning Commission • (802) 775-0871 x208 • EBove@rutlandrpc.org

Land & Community Revitalization

BROWNFIELDS SUCCESS IN NEW ENGLAND

BOCCELLI'S CAFE AND AUCTION HOUSE

BELLOWS FALLS, VERMONT

Property Details

Property Address:	46 Canal Street, Bellows Falls, VT 03061
Property Size:	.13 acres
Former Uses:	Electric motor manufacturing, clothes manufacturing, truck garage, fuel storage, machine shop, storage
Contaminants Found:	Petroleum, Asbestos, Lead and other heavy metals, PAHs, PCE, TPHs, VOCs
Current Uses:	Café, Auction House
Current Owner:	S. Boccelli

Project Partners

Vermont Department of Environmental Conservation

Funding Details

EPA Brownf elds Assessment Grant:	Of a $200,000 grant, $33,806 was used on this site
Private Owner:	Spent $370,000 on cleanup and redevelopment

Project Highlights

- Removed approximately nine tons of contaminated soil from the property
- Removed and disposed of three 55-gallon drums
- Created seven new jobs in the Village of Bellows Falls
- Returned a contaminated, underutilized property to productive use
- Continued the revitalization momentum begun by the Waypoint Visitors' Center project

Drivers for Redevelopment: This property is located directly across the historic Bellows Falls Canal from the area's most successful brownf eld project—a former rail yard that, after EPA Brownf elds grant-funded assessments and a $1.26 million redevelopment, became a Visitors' Center and home to the local Chamber of Commerce. This award-winning project has become a source of community pride and catalyzed other area brownf eld projects, including the .13-acre site across the canal. The former industrial property was purchased by a businesswoman who planned to turn the underutilized site into a new café.

Property History: This property has had a variety of uses dating back at least as far as 1885. From that time until 1901, the site had a residence along with a small, commercial building that was used for clothes manufacturing, electric motor construction, a gasoline stove shop, and a harness/carriage shop. A f re in 1920 destroyed both structures. The building that stands there now, a single story, brick structure of approximately 3,200 square feet, was built in 1927 by the White Brothers Milk Company, and used as a garage and washing facility for milk trucks. The company also installed an underground storage tank (UST) on the site for truck fuel. From the 1940s through the 1970s, the property was used as a woodworking and machine shop. It was operated as a scrap metal production and storage facility from 1980 through 1987, and after that was used to store nuts and bolts. These uses left contaminants including petroleum, total petroleum hydrocarbons, heavy metals, perchloroethylene, volatile organic compounds, lead, and polyaromatic hydrocarbons in the property's soil. The site was used to store nuts and bolts for nearly 15 years, until being purchased by Sharon Boccelli in 2004. That year, she enrolled the site into the Windham Regional Brownf elds Reuse Initiative (WRBRI), which performed environmental testing on the property using EPA Brownf elds grant funds, with guidance and support from both EPA and the Vermont Department of Environmental Conservation.

Project Results: Cleanup involved the removal of contaminated soil, as well as the property's long-dormant UST, and the site's original building was restored and refurbished. In May 2006, the property's owner opened "Boccelli's on the Canal," which offers Italian specialty dining and gourmet foods on an eat-in or take-out basis. The store also sells antiques and collectables, and uses half of the building as an auction house that opened in October 2006. This $370,000 cleanup and redevelopment project, funded by the property's owner, created seven jobs.

Project Timeline

1989	Property last used for industrial activity
2003	Visitors' Center, built on a former brownf eld, opens across the canal
2004	Property purchased and enrolled in the WRBRI
2005	Assessments completed; cleanup begins
2006	Boccelli's Café opens; auction house opens later that year

Local Contact: Susan McMahon, Windham Regional Commission, at (802) 257-4547 x114 or susan@sover.net

Barre City, Vermont Accounts for Climate Change within a Brownfield Redevelopment Plan

Graphic representation of proposed Central Vermont Community Land Trust Remediated brownfields campus.

The Summer Street Housing Limited Partnership, a partnership between the Central Vermont Community Land Trust (CVCLT) and the non-profit Housing Vermont, sought to redevelop a brownfield site in Barre, Vermont. The site was the former location of an automobile servicing station and a paint shop, and previously contained several underground petroleum storage tanks.

To guide the redevelopment efforts, the partnership conducted an Analysis of Brownfields Cleanup Alternatives (ABCA). As part of its analysis – and to build in climate resiliency and adaptation – the partnership used available regional climate projections to anticipate current and future risks; namely flooding and extreme temperatures. The partnership then considered the vulnerability of potential cleanup remedies to the identified climate risks.

By including current and future climate threats in its analysis, the partnership was better able to understand potential vulnerabilities associated with its planned brownfields investment. For example, the increasing frequency and intensity of storms projected for the region may lead to flooding that could compromise potential remediation fixes such as engineered caps. By its explicit consideration of projected climate threats, now and in the future, the Partnership's final remedy selection is designed to safeguard public health even as the climate changes.

How Did They Do It?	Applicable EPA Tools
Identified climate risks • Reviewed NOAA Technical Report Regional Climate Trends and Scenarios for the United States National Climate Assessment: Climate of the Northeast United States to identify anticipated regional climate risks. • After identifying anticipated climate risk, the Partnership used local knowledge of the site to determine primary climate vulnerabilities. Specifically, more frequent and intense storms may lead to flooding which could result in potential contamination releases beyond the site. More extreme temperatures could also exacerbate the risk of soil gas exchange and maintaining healthy indoor air quality.	Review the National Climate Assessment regional projection to better identify projected climate risks. National Climate Assessment
Considered climate risk and vulnerability when evaluating cleanup alternatives • The site's Analysis of Brownfield Cleanup Alternatives stated, "Climate change concerns for site-wide soil gas contamination include: drought conditions could lower the surficial groundwater table, leading to a larger vadose zone for soil gas migration [for more on Vadose Zone Leaching see EPA VLEACH]; and the loss of a winter frost layer could alter soil gas contaminant migration pathways to indoor air in unknown ways." • While several cleanup options were identified, several were rejected because they would not have reduced climate vulnerability. (E.g capping the contaminated soil was not selected because while it may have reduced current exposure, it would have been vulnerable to future flooding events anticipated as a result of projected increased precipitation).	Use the EPA's Analysis of Brownfields Cleanup Alternative checklist to help consider anticipated climate changes in your Corrective Action Plan. EPA's Analysis of Brownfields Cleanup Alternative checklist
Selected a Brownfield Cleanup Alternative that they identified as having Adaptive Benefits • A cleanup that included a soil management plan (SMP) and targeted excavation was adopted. Excavation was selected due to the level of uncertainty on how climate change could "alter soil gas contaminant migration to indoor air in unknown ways" (as identified in the Analysis of Brownfield Cleanup Alternatives).	Use EPA Brownfield Revitalization in Climate-Vulnerable Areas to help inform selection of appropriate adaptation option. EPA Brownfield Revitalization in Climate-Vulnerable Areas

How Did They Do It?	Applicable EPA Tools
• For additional safety, a "sub-slab depressurization (SSD) system and vapor barrier to mitigate exposure to indoor air via the vapor intrusion pathway in the future buildings" was included in the Corrective Action Public Notice to attain "land use restrictions (LURs) to protect any potential future construction/utility workers or new property owners from exposure to site contaminants.	

brownfields at-a-glance

EPA-560-F-08-304
October 2008

Northwest Regional Planning Commission, VT
Assessment Grant

FORMER LITCHFIELD PROPERTY

Habitat for Humanity Sees a Former Gas Station in Swanton, Vermont as a Perfect Fit for Residential Reuse

Address:	134 Grand Avenue, Swanton, VT 05488
Property Size:	0.90 acres
Former Use:	Gasoline/service station; rental unit
Current Use:	Duplex constructed by Habitat for Humanity

EPA Grant Recipient:	**Project Partners:**
Vermont's Northwest Regional Planning Commission (NRPC) received two $200,000 Brownfields Assessment grants from EPA in 2003: one for hazardous substances and one for petroleum.	[Former property owner] David Litchfield; Green Mountain Chapter of Habitat for Humanity

For additional data and geographic information for this and other Brownfields Grants, please visit EPA's:
Envirofacts - www.epa.gov/enviro/html/bms/bms_query.html
Enviromapper - www.epa.gov/enviro/bf

Project Background:

This property operated as a gasoline and service station until the early 1960s, after which the owner converted it to a duplex rental unit. The property changed hands several times, but continued to operate as a residential rental until 2003. That year, the Town of Swanton put the site up for sale to offset tax liens. The property was purchased by David Litchfield, who hoped to remodel the existing structure and continue to operate it as a rental unit; however, the building's condition was determined to be too poor, and the existing structure was demolished. Now looking to resell the property, Mr. Litchfield was contacted by the Green Mountain Chapter of Habitat for Humanity, which was itself looking for residential property in the area. Research about the property uncovered its former use as a service station, as well as a lack of records indicating whether the site's fuel storage tanks had ever been removed. To resolve these contamination uncertainties, Habitat referred Mr. Litchfield to the NRPC's Brownfields Program. Brownfields Assessment grants awarded to NRPC in 2003 funded assessments of the property.

Key Accomplishments:

- The NRPC used $37,712 of the Brownfields petroleum grant and $5,844 of the hazardous materials grant to perform assessments, which confirmed that the station's underground storage tanks had been removed.
- While confirming the presence of some contaminants, assessments determined that no cleanup would be required prior to reuse.
- Habitat for Humanity leveraged more than $83,000 for the purchase and redevelopment of the property, through donations and in-kind services.
- The site is now home to a duplex unit occupied by two families.

Habitat for Humanity's new duplex on the former Litchfield property, with construction nearly complete.

Outcome:

A series of assessments, funded by the NRPC's 2003 EPA Brownfields Assessment grants, confirmed the presence of petroleum and some volatile organic compounds (VOCs) in the site's soil and groundwater. However, it was also confirmed that these contaminants were reducing through "natural attenuation," were not migrating, and would require no cleanup. These assessments also removed the uncertainty as to whether the former gas station's underground storage tanks had been removed, as no tanks were found. Habitat for Humanity purchased the property in 2006, leveraging more than $83,000 in donations and in-kind services to build a residential duplex on the property. These homes are now occupied by two families.