OKLAHOMA
DEPARTMENT OF COMMERCE

The Economic Impact of Oklahoma's Brownfields Program

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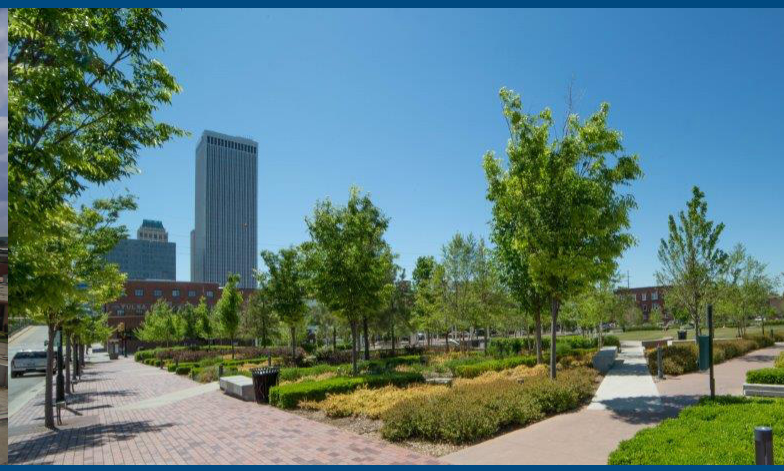


Executive Summary

Current environmental protections are the result of environmental contamination that occurred over several decades, which caused public health concerns in the 1960s and 70s. Some of the environmental regulations enacted in the last forty years addressed these concerns, but others raised unforeseen consequences. Chief among these was the liability associated with brownfield contamination and the urban blight and sprawl to which it contributed.

"It has been 20 years since the Oklahoma Legislature passed the Oklahoma Brownfields Redevelopment Act with strong bipartisan support. Since that time, there have been numerous new housing, retail, industrial and service-based businesses investing in previously unused or underused properties. These properties have generated ad valorem, sales and income tax revenue for our schools and public services."

Governor Mary Fallin

June 2016 marks the 20th anniversary of the passage of Oklahoma's Brownfields Voluntary Redevelopment Act, and as such, provides an appropriate opportunity to look back on the impact of the Oklahoma Brownfields Program since that time. While brownfield assessment and remediation are an environmental issue, brownfields are also an important real estate issue. The uncertainty associated with the liability from contamination negatively impacts real estate and economic development wherever brownfields are found but especially in urban centers. Participating in Oklahoma's Brownfields Program is one way to address this liability. The positive impact that Oklahoma's Brownfields Program has had in the last 20 years has been tremendous, not only for the brownfield properties themselves, but also the bordering properties which had previously suffered from their association with contamination from their proximity to a brownfield.

For the purposes of this study, the Oklahoma Department of Commerce examined 44 sites that either received Brownfields Program certificates or participated in the Brownfields Program through a Revolving Loan Fund or subgrant. We gathered economic data on the businesses located on Brownfields properties and surrounding areas before and after remediation. We also reviewed the property values associated with brownfield sites, and estimated tax collections as a part of the economic impact.

Findings

Brownfield remediation in Oklahoma has returned high-value property, including both high-traffic downtown metropolitan areas and rural zones, to productive use. This has significantly increased economic activity, employment, property values and taxes for both the remediated properties as well as bordering properties. By returning land to productive economic use, Oklahoma's Brownfields Program direct impacts associated with the brownfield properties include:

- **Employment:** Employment increased 55% since 1998 on remediated properties, which is a rate that is more than three times Oklahoma's employment growth rate more than four times the national employment growth rate over the same time period.
- **Employment and Payroll:** Employment growth totaled 2192 jobs with an associated payroll of $116.611 million since 1998 on remediated properties.
- **Property Values:** Remediated properties in Oklahoma account for more than $178 million in property value, as well as over $5 million in property taxes.

- **Retail Sales and Sales Taxes:** Total retail sales increased $85.465 million on remediated properties since 1998, which resulted in $8.015 million in new sales tax collections for state and local governments.
- **State Income Taxes:** Oklahoma's Personal and corporate income taxes associated with properties participating in the Brownfields Program increased $6.240 million since 1998.
- **Federal Income Taxes:** Federal Income taxes are estimated to have increased $27.510 million between 1998 and 2015, which was a 114% increase.
- **Federal Return on Investment (ROI):** Federal expenditures on Oklahoma's Brownfields Program totaled $9.5 million (inflation-adjusted) between 2001 and 2015. Since federal income taxes would have been collected in each of the years between 2001 and 2015, the Return on Investment from the spent by the federal government is greater than 1680%. Or stated differently, for every $1 the federal government spent, an estimated $17.87 was returned to it in the form of federal income taxes.

Further, as previously mentioned, addressing the actual contamination or the perception of contamination on brownfield properties has an impact beyond the direct properties themselves. When properties participate in Oklahoma's Brownfields Program, the assessment and/or remediation has an impact on the economic activity on bordering properties as well. The process addresses blight and either returns properties to productive economic use or prepares them for future use. Combining the economic impact of remediated properties in addition to the bordering properties has the following total impacts:

- **Employment and Payroll:** Including properties that border brownfields, the employment growth totaled 10,763 jobs with an associated payroll of $624.828 million.
- **Output:** Economic activity, as measured by output, on remediated and bordering properties has increased more than $2 billion since 1998.
- **Retail Sales and Sales Taxes:** Including bordering properties, retail sales increased $262.033 million and sales tax collections increased $22.536 million.
- **State Income Taxes:** Oklahoma's Personal and corporate income taxes associated with remediated and bordering properties participating in the Brownfields Program increased $25.760 million since 1998.

Clearly, Oklahoma's Brownfields Program has a substantial economic impact on the state by returning properties to productive use. Further, this impact includes reducing urban blight and extends beyond the properties themselves to increase economic activity on bordering properties. Addressing liability associated with actual or perceived contamination by participating in Oklahoma's Brownfields Program reduces uncertainty. And this in turn attracts private capital to invest in the properties and returns economic activity to blighted areas.

The following report provides a brief history of national and state environmental regulations, societal benefits of remediating contaminated properties, details of Oklahoma's Brownfields Program and the economic impact of returning properties to productive use when these properties participate in Oklahoma's Brownfields Program.

Background and Context

Industrial and economic development brings jobs, payroll, improved quality of life, enhanced scientific and engineering capacity, as well as the increase in material wealth and capital which can be invested in various ways for the advancement of society. While these are all positive effects of development, the nature of industrial activity has changed since the beginning of the Industrial Revolution.

Early industrial activity was more focused on the production process and neglected addressing the side-effects such as pollution and environmental degradation. Left unaddressed, hazardous waste from some industrial activities can contaminate the environment including the air, groundwater, and surface water. Not only can this affect citizens' health, but it can also complicate urban and regional development from the liability concerns associated with the hazardous waste. Ultimately, the contamination and the uncertainty associated with the resulting liability can even go as far as placing a damper on future economic development – not only for the original property, but via seeping and spreading contamination for surrounding properties and the broader community as well. There are reasons for environmental regulations and this section provides historical context leading up to the development of the Brownfields Program.

Following several decades of uninterrupted economic growth and industrial expansion in the United States, by the 1960s, many harmful environmental effects began to accumulate, producing badly polluted areas around the country. Though the roots of environmental awareness began in the early 20th century with Theodore Roosevelt's creation of the National Park Service, continued with the work of the Civilian Conservation Corps during the Great Depression, and even included state efforts such as Oklahoma's first Republican Governor Henry Bellmon's efforts to conserve water and soil, the turning point in the national environmental condition was the 1969 incident in which the Cuyahoga River near Cleveland, Ohio, burst into flames as a result of years of accumulated petrochemicals and industrial waste.

Cuyahoga River on Fire

Prior to government intervention, the costs associated with environmental degradation, and the resulting problems for health and economic productivity, were born collectively by society, with little incentive on the part of polluters to reduce their emission of pollutants – a classic example of the so-called "tragedy of the commons". In an effort to reduce this trend of environmental destruction and social harm, the US federal government, as well as states, began efforts to control pollution through comprehensive legislation. Federally, these included the Clean Air Act (1970) and Clean Water Act (1972 amendments to the 1948 Federal Water Pollution Control Act), which placed limits on acceptable levels of pollutant emissions, thereby forcing businesses to include the production of such substances in their cost/benefit analyses and thus avoid thoughtless pollution. These regulations were extended with the Resource Conservation and Recovery Act of 1976, which empowered the EPA to oversee "generation,

transportation, treatment, storage, and disposal of hazardous waste," or so-called "cradle-to-grave" control of contamination.

Sweeping and critical though they were, the environmental legislation of the 1970s tackled only the *emission of new pollutants*, leaving largely unaddressed any *existing contaminated* sites, many of which continued to pose hazards to human health long after the initial contamination. Like the Cuyahoga River fire, the seminal event forcing further government action on the matter was public awareness of the Love Canal disaster, in which a Niagara Falls, NY neighborhood, built atop a former hazardous waste disposal site, developed catastrophic rates of health problems including Leukemia, miscarriages and birth defects. As a result of public outcry over the Love Canal and contemporaneous Three Mile Island meltdown, Congress and the Carter Administration passed the 1980 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Love Canal Waste and Protester ca.1978
(Credit: EPA and Associated Press)

Administered by the Environmental Protection Agency (EPA), CERCLA's main function was to hold the polluter responsible for the contamination, thus establishing the "polluter pays" principle. In addition to the main function, CERCLA also created the "Superfund" trust to support the mission of remediating and cleaning up pollution on some of the most badly contaminated locations in the country. However, if EPA held an entity responsible for the cleanup, that party had to pay for the cleanup conducted under EPA's oversight. If either (1) the responsible party could not pay for the cleanup or (2) there were no identifiable responsible parties (including corporate successors), then the Superfund trust could be used to pay for the cleanup of some of the most highly contaminated sites. The Superfund trust, initially of $1.6 billion, was used to remediate nearly 400 of the 1,323 sites on the National Priority List before 2003. In 1995, Congress allowed petroleum and chemical feedstock taxes, a primary source of CERCLA's general fund, to expire, and by 2003 the general fund was empty; the Superfund program has been reliant on annual congressional appropriations since that time, reducing its overall funding, and thus ability to remediate sites, to a fraction of mid-1990s levels.[1]

CERCLA was passed in 1980, and while there have been many successfully remediated Superfund sites, there were unintended consequences of CERCLA. Chief among them were the legal liabilities placed on contaminated sites, whether they were designated on the National Priority List or not. The potentially onerous legal liability tainted industrial and commercial properties and new economic development projects shunned using a site that was even rumored to have been previously contaminated. This

[1] http://www.nationalgeographic.com/superfund/

contributed to urban blight, urban sprawl, and the higher environmental, infrastructural, and human costs associated with them.

In the mid-1990s states approached the EPA about the legal liability and began working with it to resolve these negative impacts. During this time the Oklahoma Legislature passed the Oklahoma Brownfields Voluntary Redevelopment Act, which defined brownfields in state law and established authority for DEQ to administer the remediation process in Oklahoma and relieving state liability. In 1999, the Oklahoma Department of Environmental Quality signed a Memorandum of Agreement (MOA) with the EPA that recognized Oklahoma's program and included EPA's assurance it would not pursue CERCLA enforcement activities on a property that has been relieved of state liability by DEQ. Oklahoma's law, coupled with the MOA, enabled properties to receive liability release lacking in CERCLA.

Congress incorporated EPA's experience from both its pilot grant program and state Brownfields Programs and amended CERCLA by passing the *2002 Small Business Liability Relief and Brownfields Revitalization Act*, referred to in short as the Brownfields Law. The Brownfields Law clarified liability, set up a grant program for assessment, cleanup, and revolving loan funds, and codified a process by which states could create a state Brownfields Program and acquire EPA approval for it. This EPA approval is not superficial but rather instrumentally important, for when the state relieves a property of state liability while under EPA approval, EPA is barred from pursuing CERCLA enforcement activities on the property. And, while Congress codified this in the 2002 Brownfields Law, Oklahoma already had its MOA established with EPA. Eliminating the legal liability reduces risk and business uncertainty, and ultimately, allows communities to encourage development on sites that were previously contaminated.

Though future environmental contamination remains a possibility, the regulations passed in the past forty years make it far less likely that serious environmental issues will arise with current industrial activity and development. And while currently operating facilities must ensure they follow the law, for the most part, it is the historical industrial sites that remain the bigger problem since there were relatively few controls on hazardous waste disposal or defined practices when contamination occurred from spills. The Brownfields Program is one tool to address problems resulting from contaminated sites and the potential legal liability associated with them.

Timeline

1905	Theodore Roosevelt Creates National Parks Service, setting precedent for federal protection of the environment
1933	Civilian Conservation Corps established temporary mechanisms for federal funding for environmental remediation
1933	The Great Depression reaches its worst point; the following decades represent long periods of unprecedented economic growth and industrial expansion, leading to prosperity but with largely unaddressed environmental degradation
1940s	Niagara Falls and a local electrochemical company began dumping chemicals in Love Canal; total contamination would amount to 21,000 tons of chemical waste
1948	Water Pollution Control Act and 1955 Air Pollution Control Act, provided assistance for state enforcement of pollution control, signed into law by Truman and Eisenhower, respectively
1950s	Neighborhoods and two schools constructed over the former Love Canal dumpsite
1969	Cuyahoga River Fire
1970	Clean Air Act, the first iteration of the name being signed by President Johnson in 1963, was substantially amended and signed by President Nixon in 1970 to give broad enforcement powers to the soon-to-form EPA to develop regulations limiting emissions.
1970	Environmental Protection Agency formed in December by executive order of President Nixon, combining numerous executive bodies into one organization.
1972	Clean Water Act empowers federal enforcement of water standards; Nixon's pocket veto was overridden by overwhelming bipartisan support in the House and Senate
1978	Catastrophic rate of birth defects, cancer, and other disease near the Love Canal become publicized
1979	The Three Mile Island meltdown, combined with Love Canal news, adds to growing public outcry about environmental contamination, prompting the Carter Administration to push for federal funding for environmental cleanup
1980	CERCLA, or Superfund, creates funding and authority for remediating contaminated sites and holding those accountable responsible for damages
1990s	Seeking mechanisms to responsibly self-remediate and avoid massive CERCLA liability, states and cities push for what was in 1993 first called a Brownfields Program. The EPA began testing pilot programs and compiling state standards and practices
1993	Oklahoma establishes the Office of the Secretary of Environment along with the Oklahoma Department of Environmental Quality
1996	The Oklahoma State Legislature empowers the Department of Environmental Quality to set up a voluntary Brownfields Remediation Program
1999	The Oklahoma Department of Environmental Quality and the EPA sign a Memorandum of Agreement recognizing Oklahoma's program and providing a mechanism for EPA to provide assurance that it would not pursue CERCLA action at a site in Oklahoma's program
2002	Small Business Liability Relief and Brownfields Revitalization Act clarifies liability and allocates funding for brownfields assessment and cleanup

Societal Benefits of the Brownfields Program

In Oklahoma statutes, a brownfield is:

> *"an abandoned, idled or underused industrial or commercial facility or other real property at which expansion or redevelopment of the real property is complicated by pollution;"*

Similarly, EPA defines a brownfield as:

> *"a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."*

It should be noted that there does not need to be actual contamination for a site to be a brownfield. The perception that the site is contaminated causes properties to lose value as well and be classified as brownfields. EPA estimates that there are more than 450,000 Brownfields in the U.S. and cleaning up and reinvesting in these properties increases local tax bases, facilitates job growth, utilizes existing infrastructure, takes development pressures off undeveloped land, and both improves and protects the environment.

Brownfield *remediation* is very important, but equally as important are brownfield *assessments* that can show that no remediation is necessary. The simple perception that a property is contaminated introduces the uncertainty associated with potential legal liability, which negatively impacts property values, investment and employment. In terms of impacts on economic development, having tools to address perceptions through brownfield *assessments* is equally as important as addressing actual contamination through brownfield *remediation*.

The Brownfields Program has transformed sites across our state, creating economic opportunities for Oklahomans and increasing economic development. The program also has a positive effect on the community – by improving health, the environment, and quality of life, the program promotes a more positive perception of the entire area.

Michael Teague, Oklahoma Secretary of Energy and Environment

The effects of brownfield assessment and remediation will obviously vary enormously depending on the economic, social, and geographic nature of the community in question, but some of the biggest advantages include the following:

- **Improves Health and the Environment:** Remediation improves a community's environment and benefits the safety and health of residents by ensuring they have safe places to live and work
- **Improves Quality of Life:** Remediation and assessment raises quality of life by removing blight associated with abandoned buildings and properties from surrounding communities (which because of the nature of many brownfield sites are often low-income/minority communities)
- **Limits Urban Sprawl:** Remediation and assessment limits urban sprawl by returning land closer to city centers to beneficial reuse rather than turning to new development of distant parcels[2]
- **Improves Property Values:** Brownfield remediation and assessment raises land values and property attractiveness to investors, allowing it to be more readily repurposed to reach its maximum economic potential
- **Improves Government Finances:** Remediation and assessment improves the financial capacity of communities as higher tax revenues are generated from sites that are being productively used

[2] According the EPA, 4.5 Acres of unused green space is preserved for every acre of reused brownfields.

and expenses associated with city services (such as police, fire and utility maintenance) become more efficiently utilized

- **Improves Infrastructure Utilization:** Remediation and assessment improves efficiency associated with infrastructure utilization since an undeveloped site typically requires more infrastructure to be built than an existing brownfield
- **Improves Economic Outcomes:** Remediation and assessment can revitalize historic districts, improve tourism and generate employment when businesses locate on a brownfield

Through each of its positive effects, especially the last one, remediation can often directly and indirectly increase tax revenues more than covering the cost of the remediation itself.

Several of the above benefits associated with remediating and assessing brownfield properties, including property values, health impacts, fiscal and economic impacts will be addressed later in the report.

EPA as a Partner

The primary focus of this report is the Oklahoma Brownfields Program administered by the Oklahoma Department of Environmental Quality. However, the EPA should be mentioned in the role it too plays in brownfield remediation. The US EPA partners with state, tribal, and local governments as well as private institutions around the country to facilitate brownfield remediation as well as other forms of environmental revitalization support.

The main form of assistance from the EPA is via "Brownfields Grants." Through these grants, EPA directly supports the establishment or enhancement of state or tribal response programs via a non-competitive grant of up to $50 million nationally specifically intended to supplement and enhance, not replace, state or tribal funding. In order to qualify for a brownfield Grant, an entity must, among other requirements, maintain and make publicly available records relating to its site remediation efforts.

Since 1996, more than $1.2 billion in grants have been distributed to more than 1,900 different entities across the country. More recently during Federal Fiscal Year (FFY) 2015, the EPA distributed more than $62 million in brownfield grants to programs in areas such as Assessment, Area-Wide Planning, Cleanup, and Job Training. Oklahoma entities received $600,000 for cleanup programs and $192,300 for job training programs.

Overview of the Oklahoma Brownfields Program

To varying degrees, three key documents guide the administration of Oklahoma's Brownfields Program by the Oklahoma Department of Environmental Quality. They are Oklahoma's statutes, regulations, and the federal law.

- In 1996, the Oklahoma Legislature passed, and Governor Keating approved, HB 2972, which is known as the Oklahoma Brownfields Voluntary Redevelopment Act (Oklahoma Brownfields Act)
- In 1999, the Oklahoma Department of Environmental Quality signed a Memorandum of Agreement (MOA) with the EPA whereby EPA agreed that Oklahoma's program provided a cleanup equivalent to Superfund and provided assurances that it would not pursue CERCLA enforcement activities on a property that has been relieved of state liability by DEQ[3]
- In 2002, Congress enacted the Small Business Liability Relief and Brownfields Revitalization Act and, with the MOA signed in 1999, indicates that Oklahoma has an approved Brownfields program and authority under Superfund

While the Oklahoma Department of Environmental Quality (DEQ) and the EPA can partner on cleanup sites, and the EPA provides some funding to DEQ for brownfields projects, the EPA is not the driving force for cleanups under the Oklahoma law.

There are two Brownfields Programs administered/managed by DEQ that have been included in this economic impact report. Briefly:

- **Voluntary Remediation**: As the Brownfields Program is a voluntary cleanup program rather than an enforcement program, properties are encouraged to self-identify as a brownfield and undergo voluntary remediation procedures. Since the inception of the Voluntary Brownfields Redevelopment Program in 1996 (6 years before the federal program), 33 Properties have undergone the voluntary brownfields remediation process, and 16 properties are currently in the voluntary remediation process.
- **Revolving Loan Funds**: The Brownfields Revolving Loan Fund is a mechanism to help brownfield properties pay for the costs of self-remediation. Generally requiring a 20% match, these funds are dispensed in the form of an 80% loan. The Skirvin participated in a Pilot Revolving Loan Fund (RLF) from DEQ before passage of the federal law that created the grant portion of the program. The Pilot RLF did not require a match.
    - **Subgrants**: Subgrants are a specific implementation of **Revolving Loan Fund** program. Oklahoma DEQ administers a subgrant program, funded by the US EPA, to dispense grants to high-impact, local government and non-profit cleanup projects. The program also gives special consideration to projects of an environmentally sustainable nature. Thus far, the program has dispensed subgrants to 9 recipients, totaling $1.9 million.

[3] The MOA and Federal Brownfields Law contains recognition that properties listed on the National Priorities list do not apply and that there must be mechanisms in place ensuring meaningful opportunities for public participation and mechanisms for approval of a cleanup plan and verification and certification that cleanup is complete.

Voluntary Remediation

Under both state and federal law, responsibility for environmental cleanup – and thus liability in the case of harm resulting from lack of cleanup – rests with many different parties associated with a property, including owners, operators, lessees, and those who engage in improper disposal. This responsibility is not abrogated upon the transfer of property; rather it transfers with the deed. Further, responsible parties that are non-cooperative can be fined up to three times the cost of cleanup under CERCLA authority. Therefore, remediation (or settlement) must be conducted at some point in order to erase state or federal liability for environmental contamination or hazard. In Oklahoma, this can be accomplished by successfully completing DEQ's Brownfield cleanup program. The Certificate resolves the environmental liability for the participant and associates of the property.

"The Brownfields program has been a terrific opportunity for Tulsa to greatly improve many areas of our city that were on never ending spiral of neglect and eventual abandonment and destruction. Without a doubt, the Guthrie Green is a showcase for the great result of the collaboration between public and private interest with Brownfields being the catalyst."

Tulsa Mayor Dewey Bartlett

The voluntary remediation program is the largest component of DEQ's brownfields efforts, and certification through the program is one way that liability can be released. Parties might also choose to directly settle with EPA and DEQ as a separate path to address liability to the state and federal government. However, for the purposes of explaining the impacts of the Oklahoma Brownfields Program, additional detail regarding the statutes, rules and the process involved helps explain how liability is released from the state and federal government through voluntary remediation.[4] The Oklahoma Brownfields Voluntary Redevelopment Act is in Title 27A of the Oklahoma statutes at O.S. §2-15-101 through O.S. §2-15-110, and rules (Oklahoma Administrative Code §252:221) associated with the program may be found on DEQ's website.

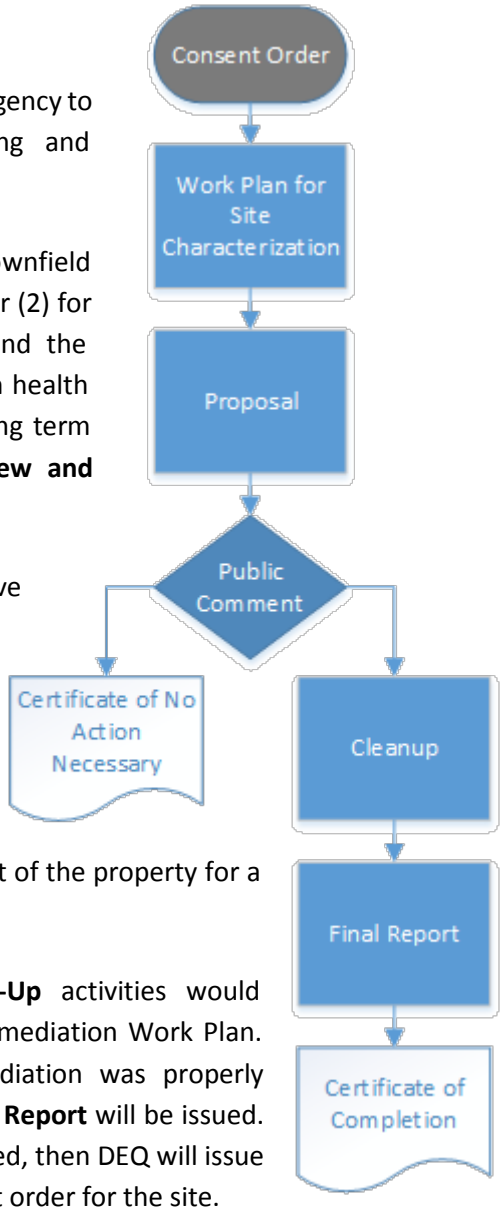
The flowchart on the following page depicts the typical process for brownfield assessment and remediation. To begin the process, all participants of the Brownfields Program must enter into a Consent Order with DEQ.[5] A "Consent Order" is a voluntary agreement between DEQ and one or more participants to resolve the legal liability associated with a brownfield. The parties are bound to specific requirements during the process.

After a Consent Order has been signed, then a Work Plan is developed for **Site Characterization**. This process includes:

[4] A responsible party may still have liability to a third party associated with hazardous waste or unsafe work practices.

[5] A participant is defined as "any person or entity which: has acquired ownership, operation, management or control of site; or possesses a written expression of interest to purchase a brownfield and the ability to implement a brownfield redevelopment proposal; or is the legal owner, or is a tenant, or lessee, or is undertaking the remediation of a brownfield site"

- The participants summarize what is known about the site including former uses and existing sampling data
- The participants discuss how additional data will be gathered to adequately delineate environmental contamination on property to DEQ's satisfaction and support the risk-evaluation and decision-making by DEQ
- DEQ must approve written Work Plan prior to sampling
- Use risk-based remediation procedures as determined by the agency to establish cleanup levels; evaluate the use of engineering and institutional controls for protection and performance



After the site characterization is completed, participants will submit brownfield **Proposals** for either (1) a risk-based remediation of a brownfield site or (2) for a Certificate of No Action Necessary determination. When DEQ and the participant are satisfied that the Proposal will be protective of human health and the environment and that the Proposal adequately addresses long term stewardship, then the proposal is made available for **Public Review and Comment.**

After Public Comments are completed, DEQ prepares a responsive summary for all public comments received. After consideration of the comments, DEQ may require the participant to revise the Proposal in a manner that satisfies the public's concerns or may accept the Proposal.

If the approved Proposal recommends a determination that no remediation is deemed necessary (for the expansion or redevelopment of the property for a planned use), then DEQ will issue a **Certificate of No Action Necessary**.

If the approved Proposal recommends remediation, then **Clean-Up** activities would commence under the requirements set forth by DEQ, including a Remediation Work Plan. After clean-up has occurred and DEQ is satisfied that the remediation was properly implemented and the site is safe to use for a planned use then a **Final Report** will be issued. If all of the requirements set forth in the Consent Order were completed, then DEQ will issue a **Certificate of Completion**, which lists the use specified in the consent order for the site.

The Certificate of No Action Necessary and the Certificate of Completion issued by the Oklahoma Department of Environmental Quality absolves current and future entities associated with the property of any environmental liability associated with contamination that was addressed during the cleanup/assessment. Under O.S 27.A § 2-15-106(G), DEQ is permitted to issue either a Certificate of Completion or a Certificate of No Action Necessary. The Certificate of Completion certifies that the participant "has successfully completed the requirements" of a consent order, and a Certificate of No Action Necessary certifies that "no remediation action is deemed necessary for the site". Both certificates

exempt "all lenders, lessees, and successors and assigns" from any civil (i.e., state and federal) liability relating to the environmental contamination or brownfield status. As without this process the threat of civil liability could deter any future purchasing or leasing of the property, the ability of a state body to issue these certificates is vital for brownfield properties to be purchased or rented and thus returned to productive economic use.

Pursuant to (§ 2-15-109), DEQ may require the participant to reimburse the agency for reasonable costs associated with the review and oversight of any remediation, reports, field activities or other services that it performs prior to the issuance of the Certificate of Completion or the Certificate of No Action Necessary. As a part of routine compliance, DEQ will audit completed projects to ensure the sites are being used according to their certificates. This ensures that the current use of the site is safe and in compliance with the use specified in the Certificate. For example, this will ensure that residential property will not be constructed on sites that were only cleared for industrial use.

Need for Future Remediation

Oklahoma is home to industrial businesses that have the potential to pollute if not managed properly. The current regulatory framework for the businesses is designed to ensure that air, water and land are not polluted. Many businesses may have legacy or unknown issues that are not identified until discovered at property sale. In the absence of a brownfields program, opportunities to repurpose land would be less and there would be more blighted land and urban sprawl. Brownfields services provides continued opportunities for businesses, real estate developers, and property owners to discover and cleanup contamination and resolve perceived or real environmental liability. These opportunities ensure that state and local brownfields programs remain a relevant and vital public service.

Economic Impact of Oklahoma's Brownfields Program

An interesting aspect in evaluating the cost-benefit ratio of any brownfields project is the extent to which it can reverse the blight that has developed in areas targeted by brownfields remediation. In studies conducted, there is unanimous agreement that unremediated sites constitute a nuisance to people, neighborhoods, and local government. Unremediated sites take both an economic and aesthetic toll on the areas in which they are present.

A study published in 2013 by the Steel River Council of Governments, identified the exorbitant cost of blight in Southwestern Pennsylvania. The study identified three main costs that blight affects in local areas: additional municipal services, direct loss of real estate tax revenue, and direct loss of earned income tax. Quantifying these numbers, the Council found that blight creates a $40 million annual loss on their community.

The reduction of blight, in conjunction with economic development, makes the Brownfields Program an economic and social boon in communities throughout the country. Oklahomans in Oklahoma City, Tulsa, Okmulgee, Midwest City, and other locales have a chance to see the positive impacts of brownfield remediation on a daily basis in their cities and towns.

"Economic development relies on a myriad of factors to be successful – from workforce availability to quality of life. Oklahoma's Brownfields Program improves quality of life by returning land to productive use and provides our citizens places to work, shop and play. This in turn, attracts a talented workforce to live in our communities and provide the skills our businesses need to thrive."

Deby Snodgrass, Oklahoma Secretary of Commerce and Tourism

To assess the economic impact of Oklahoma's Brownfields Program, the Oklahoma Department of Environmental Quality provided a list of over 40 properties (see Appendix A) that either participated in the Voluntary Remediation Program, participated in DEQ's brownfield Revolving Loan Fund, or received a subgrant from DEQ for a brownfield project. These properties participated in the Brownfields Program between 1997 and the present. Properties currently participating in the Brownfields Program but have not received a Certificate were not included in the economic impact.

The economic impact of Oklahoma's Brownfields Program was chiefly performed comparing employment and payroll at two points in time – 1998 and 2015. The 1998 date is at a point in time when the Brownfields Program was beginning and represents the furthest date for which we have data associated with the physical locations of the brownfields. Tying employment to the actual properties at two points in time allows a before/after comparison associated with the assessment and remediation activities for most properties.

Therefore, the economic impact of the assessment and remediation of properties participating in Oklahoma's Brownfields Program is the difference between 2015 and 1998 as well as the activity occurring in 2015. Quarterly Census of Employment & Wages (QCEW) data were compiled for each of the 44 brownfield properties. However, given that this source of data requires confidentiality of identifiable business information, we must present the results in aggregate for the state. This ensures that identifiable business information, which requires confidentiality by the Bureau of Labor Statistics and the Oklahoma Employment Security Commission is maintained.

Further regarding the economic impact analysis, this is an economic impact of the Oklahoma's Brownfields Program. It is not an impact of businesses located on brownfields. Certainly, they too have an economic impact, but the most concrete way of communicating the impact of returning land to productive use through brownfield assessment and remediation is by comparing actual levels of employment and payroll at two points in time.

Lastly, there are a couple data points that were unavailable for most properties and as a result have been excluded in the economic impact. Specifically, the expenses associated with remediation and investment associated with site development and new construction were excluded from this economic impact. As a result, the impacts presented are conservative. Certainly, the millions of dollars spent on site development and new construction, as well as brownfield assessment/remediation expenses, would have had a sizable impact in Oklahoma's construction and service sectors had they been included.

Employment, Payroll and Sales

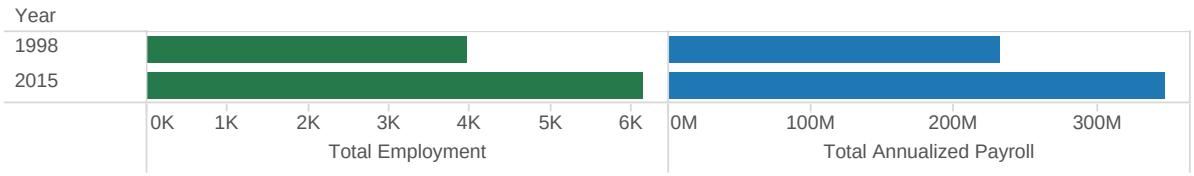
From the list of properties, we used GIS as well as the QCEW information to compile and compare employment and payroll records for the businesses located on the brownfield properties between 1998 and 2015. For sales, we used EMSI's industry sales for Oklahoma to estimate sales associated with businesses located on remediated properties.

It should be noted that the brownfield properties include the former GM facility, which in 1998 bordered Tinker AFB, and has since become a part of the Tinker Aerospace Complex as Building 9001. In 1998, the QCEW employment at the GM facility was too high to report in conjunction with the employment/payroll associated the other brownfield properties. Therefore, any 1998 employment associated with GM in the table below is employment that was publicly reported as close to 1998 as could be found. And GM's payroll was estimated using automotive industry wages for the same time period. This is the best alternative that incorporates GM data while it was operating and still maintains confidentiality of GM. Therefore, this report assumes that the reported employment and industry average wages are accurate.

Impacts on Economic Activity for Brownfield Property Businesses

	1998	2015	Impact	% Change
# of Establishments	21	57	36	171%
Total Employment	3,961	6,153	2,192	55%
Total Payroll Annualized (inflation-adjusted $)	$231,437,611	$348,048,704	$116,611,093	50%
Net Output (Inflation-adjusted $)	$1,048,765,342	$1,081,504,662	$32,739,320	3%

Employment and Payroll at Establishments within a remediated Brownfield



As may be seen in the above table, Brownfield remediation/assessment has had a positive impact on the business activity (including employment, payroll and output/sales) of the businesses that were associated with the properties between 1998 and 2015. Total employment on properties that participated in Oklahoma's Brownfields increased 55% between 1998 and 2015. For comparison, Oklahoma's employment grew 14.7% and the national employment grew 12.4% over the same time period.

Given that GM accounted for the majority of this employment and payroll in 1998, the impact is much more pronounced if GM were excluded from 1998 employment. That single site alone accounted for 3,380 jobs according to public reports, which means that total employment of the 20 other establishments that operated on brownfield properties in 1998 equaled 581 jobs with $20.2 million in payroll and an estimated $74.6 million in output/sales. Eliminating the most productive brownfield site is an indication of the relatively anemic economic activity occurring on most brownfield sites in 1998.

Further, the comparison year for this economic impact is 1998, when GM was still operational. When GM was closed, it was vacant for a period of time before the county and city implemented the plan associated with Tinker AFB. Before it was possible to have any aerospace activity or the USAF would accept it, the property had to participate in Oklahoma's Brownfields Program. Without its participation in the Oklahoma Brownfields Program, the aerospace operations would not be occurring.

Impact on Bordering Businesses

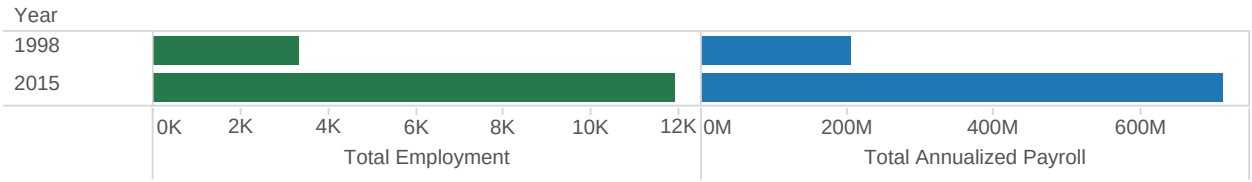
Additionally, using GIS, we identified businesses that bordered the brownfield properties within a tenth of a mile and then compiled the employment and payroll for those businesses in 1998 and 2015. Not only has the impact that has occurred on sites remediated through the Brownfields Program been sizeable, but it has also been substantial on bordering properties. Quarterly Census of Employment and Wages (QCEW) data indicate there were 91 establishments on properties bordering brownfield sites in 1998. By 2015, after the property was remediated, there were 527 establishments.

Employment on bordering properties increased 256% between 1998 and 2015; growing from 3,345 jobs in 1998 to 11,916 jobs in 2015. The payroll associated for these businesses grew 247% over the same time period. Oklahoma's employment grew 14.7% and national employment grew 12.4% over this same time period. Clearly, brownfield remediation has had an impact on bordering properties.

Impacts on Economic Activity for Businesses Bordering Brownfield Properties

	1998	2015	Impact	% Change
# of Establishments	91	527	436	479%
Total Employment	3,345	11,916	8,571	256%
Total Payroll Annualized (inflation-adjusted $)	$205,485,515	$713,703,060	$508,217,545	247%
Net Output (Inflation-adjusted $)	$467,368,929	$2,469,411,469	$2,002,042,540	428%

Employment and Payroll at Establishments within .1 Miles of a Remediated Brownfield



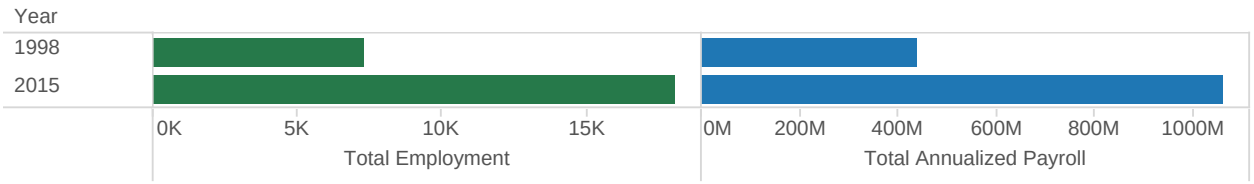
Combined Impacts

Properties that have participated in Oklahoma's Brownfields Program have been returned to productive use and have contributed to significant growth of economic activity on the brownfield properties as well as properties that border the remediated brownfields. Combined economic activity was greater than $3.5 billion in 2015, which was an increase of over $2 billion (134%) since 1998.

Combined Impacts on Economic Activity on Brownfield Properties and Bordering Properties

	1998	2015	Impact	% Change
# of Establishments	112	584	472	421%
Total Employment	7,306	18,069	10,763	147%
Total Payroll Annualized (inflation-adjusted $)	$436,923,126	$1,061,751,764	$624,828,638	143%
Net Output (Inflation-adjusted $)	$1,516,134,270	$3,550,916,130	$2,034,781,860	134%

Employment and Payroll at Establishments in, or within .1 Miles of, a Remediated Brownfield



The Health Effects of Remediating Brownfield Sites

Exposure to hazardous chemicals/pollutants on brownfields sites has been linked to higher incidents of non-communicable diseases in addition to other health issues such as low birth weight, higher rates of infant mortality, and lower life expectancy.[6] Chronic diseases such as asthma, cancer, cardio vascular disease, hypertension, stroke, depression and diabetes can all be caused by environmental exposure to hazardous compounds and materials.

Cleaning up land that has been polluted with toxic waste has obvious positive health effects and remediation programs play a significant role in protecting the well-being of the public. Remediation programs can also help reduce costs associated with future incidents of chronic disease associated with exposure. Oklahomans with chronic diseases shoulder billions of dollars in medical bills and absenteeism costs due to chronic diseases.

Cancer is a disease that can be linked to a variety of factors, including factors unrelated to exposure to pollution, as well as factors associated with some of the pollutants often found at brownfields locations. The CDC estimates that Cancer cost Oklahoman's $1.7 billion in medical costs and $96 million in absenteeism in 2010.

According to the National Cancer Institute, Oklahoma's incidence of cancer is 450.8 people per 100,000 population, which is lower than the national incidence of cancer at 453.8 people per 100,000 population. Higher incidences of cancer occur in the rust belt and in the Northeast US. Historically, these states had early and high levels of industrial activities. For example, the incidence of cancer per 100,000 is 489.8 in Pennsylvania, 475.6 in Illinois, 469.8 in Michigan, 487.7 in New York and 483.1 in Massachusetts.

Again, while cancer can be linked to factors unrelated to exposure to pollution and contamination, if Oklahoma simply had an incidence of cancer at the same rate as the nation (three more people per 100,000 population), then there would be higher costs associated with this higher incidence of cancer totaling $1,240,320 in medical bills and $168,264 in absenteeism.

While estimating the cost of contaminated sites on Oklahomans' health is difficult, it is likely that a portion of the total costs in the accompanying table can be cut by remediating additional brownfield locations throughout the state.

Cost of Chronic Diseases – Oklahoma

	Cost Per Treated Person	Total Cost (in Millions)	Cost per Patient in Absenteeism	Total Cost of Absenteeism (in Millions)
Asthma	$1,960	$326	$389	$39
Cancer	$10,880	$1,720	$1,476	$96
Congestive Heart Failure	$9,070	$256	$1,694	$7
Coronary Heart Disease	$7,310	$1,247	$1,168	$58
Hypertension	$2,030	$1,454	$223	$75
Stroke	$16,100	$826	$5,967	$62
Other Heart Disease	$6,850	$715	$386	$11
Depression	$3,560	$777	$696	$81
Diabetes	$6,160	$1,635	$496	$60

(Source: Center for Disease Control's Chronic Cost Calculator - Version 2)

[6] http://www.jyi.org/issue/brownfield-remediation-for-urban-health-a-systematic-review-and-case-assessment-of-baltimore-maryland/

Fiscal Impacts

Sales Taxes

Using industry sales estimates from EMSI at the level of activity occurring on properties that participated in Oklahoma's Brownfields Program, we can estimate sales tax generated by simply applying the appropriate sales or excise tax rate to the establishments in the remediated properties. Most retail establishments require a sales tax; however, gasoline and new car sales require the appropriate excise tax and hotels have a lodging tax in addition to the sales tax.

Estimated retail sales in 2015 exceeded $88.173 million at businesses on remediated brownfields. The largest components of these sales were in grocery, supercenter and warehouse stores ($27.4 m) followed by restaurants ($23.5 m) and hotels ($22.1 m). These sales generated $8.239 million in total sales tax, of which $3.933 million was state sales and excise tax.

Industry	Estimated Sales	Total Sales & Excise Tax (est.)	State Sales & Excise Tax (est.)	Local Sales Tax
New Car Dealers, Auto Parts, Auto Accessories and Gasoline Stations	$8,066,086	$493,339	$328,623	$94,102
Supermarkets, Grocery, Warehouse Clubs, and Supercenters	$27,467,537	$2,272,664	$1,236,039	$1,036,625
Nursery, Garden Center, Farm Supply, Pharmacies, Hobby Stores & Cinemas	$7,058,606	$584,029	$317,637	$266,392
Full Service Restaurants and Limited Service Restaurants	$23,461,482	$1,941,203	$1,055,767	$885,436
Hotels	$22,119,350	$2,948,654	$995,371	$1,953,283
2015 Total Brownfield Retail Sale:	**$88,173,061**	**$8,239,889**	**$3,933,437**	**$4,235,838**
1998 Retail Sales on Brownfield Properties (1998$)	$1,862,097	$154,554	$83,794	$70,760
1998 Retail Sales on Brownfield Properties (Inflation-Adjusted $)	**$2,707,660**	**$224,736**	**$121,845**	**$102,891**
Impact:	**$85,465,401**	**$8,015,154**	**$3,811,592**	**$4,132,947**

People shop as a part of an experience, and urban blight, which contaminated properties in close proximity contributes to the blight, is not an experience that attracts people to retail attractions. Comparing 2015 retail sales with the retail sales of the same properties before they participated in the Oklahoma Brownfields Program provides a stark example of the positive impact that assessment and remediation can have on development and sales tax revenues.

In 1998, the same properties that particpated in Oklahoma's Brownfields Program generated $2.707 million in retail sales (inflation-adjusted to 2015 $), which would have only generated $224,000 in total sales tax revenues. Given that retail sales actually grew to $88.173 million in 2015 (a 3156% growth rate associated with the $85.465 million increase) and retail sales taxes generated were $8.239 million (a

growth of $8.015 million), the impact is substantial on the remediated properties retail potential. Of the $8.015 million in total sales tax collection growth, 47.5% is state, 51.6% local, and the remainder associated with federal fuel excise taxes.

Further, the impact is not limited to the brownfield properties themselves. As was evident in the employment, payroll and sales section, properties that participate in Oklahoma's Brownfields Program also have an impact on bordering properties. In the accompanying bordering properties, total retail sales were $9.056 million on bordering properties in 1998. This grew to $185.624 million by 2015 (1950% growth rate). As would be imagined, the resulting impact on sales tax collections was sizeable growing from $990,000 in 1998 to $16.277 million in 2015 (1544% growth).

Bordering Property Retail Sales	Estimated Sales	Total Sales & Excise Tax (est.)	State Sales & Excise Tax (est.)	Local Sales Tax
Bordering Property 2015 Retail Sales	*$185,624,766*	*$16,277,121*	*$8,317,847*	*$7,959,274*
Bordering Property 1998 Retail Sales (1998 $)	$6,228,100	$680,991	$392,479	$221,545
Bordering Property 1998 Retail Sales (Inflation-Adj. $)	*$9,056,231*	*$990,224*	*$570,701*	*$322,148*
Impact:	**$176,568,535**	**$15,286,897**	**$7,747,146**	**$7,637,126**

The difference between the 2015 sales and the inflation-adjusted 1998 sales represents the impact on bordering properties. These properties benefit from properties in close proximity participating in Oklahoma's Brownfields Program, and the impact of this participation has resulted in an increase of $176.568 million in retail sales and a resulting increase of $15.286 million in sales tax collections.

The table below represents the combined impact of remediated and bordering properties on retail sales between 1998 and 2015. Assuming that the retail sales would not have occurred elsewhere, the combined economic impact of Oklahoma's Brownfields Program results in an increase of $262.033 million in retail sales and an increase of $23.302 million in sales taxes.

Combined Brownfield and Bordering Property Retail Sales	Estimated Sales	Total Sales & Excise Tax (est.)	State Sales & Excise Tax (est.)	Local Sales Tax
Combined 2015 Retail Sales	*$273,797,827*	*$24,517,010*	*$12,251,284*	*$12,195,112*
Combined 1998 Retail Sales (1998 $)	$8,090,197	$835,545	$476,273	$292,305
Combined 1998 Retail Sales (Inflation-Adjusted $)	*$11,763,891*	*$1,214,959*	*$692,545*	*$425,039*
Impact:	**$262,033,935**	**$23,302,051**	**$11,558,738**	**$11,770,073**

One aspect of the retails sales in the tables on previous pages are hotel developments. Oklahoma's brownfield remediation efforts have led to more hotels in the State, including the Skirvin Hotel as a notable example of a property that participated in Oklahoma's Brownfields Program. In addition to bringing in outside money to other businesses, hotels/motels generate tax revenue for the state, cities and counties, and in addition to sales taxes, many local areas also have a lodging tax. The estimates for hotels in the accompanying tables estimate sales tax collections based on an average occupancy rate of 70% for Bricktown hotels and 62% for hotels outside the Bricktown development. The nightly price are based on off peak weekly rates at each individual establishment, which ensures conservative estimates as higher room rates during peak seasons would generate additional sales tax revenues.

Total sales taxes attributable to the hotels located on properties that participated in Oklahoma's Brownfields Program totaled $2.948 million, of which nearly $1 million would be state sales taxes.

Establishment	# Rooms	Avg Rate
Residence Inn Bricktown-400 East Reno	151	$209
Holiday Inn Express Sand Springs	65	$95
Holiday Inn Express Okmulgee	60	$91
Skirvin	225	$199

Compared to 1998 inflation-adjusted figures, retail businesses located on properties that participated in Oklahoma's Brownfields Program generated $85.465 million more in sales. Further, the remediation of the brownfield properties had an impact on bordering properties with an additional $176.568 million in retail sales on the bordering properties. Combining the brownfield properties and the bordering properties, returning prime land to productive use by participating in Oklahoma's Brownfields Program has generated an additional $262.033 million in retail sales in Oklahoma and an additional $22.536 million in sales and excise taxes ($11.109 of this is state collections).

Going into the future, any additional retail development occurring on remediated brownfield properties, will only increase these sales and the resulting sales tax collections beyond the reported figures in the table.

Impact on Property Values

Brownfields tend to have widespread positive impact on communities that have had real property remediated. In addition to improving public health and turning environmental liabilities into assets, participation in a Brownfields Program reverses the negative perceptions that accompany previously blighted areas. This includes, but is not limited to, decreased property values, decreased local employment opportunities, and decreased tax revenues.

"Brownfields redevelopment is a win-win for everyone involved, across the political spectrum. It creates jobs, it cleans up the environment and it's pro-business and pro-community."

Oklahoma City Mayor Mick Cornett

Nationwide, studies have quantified the positive impact remediated brownfields projects have on property values. A Duke University study in 2012 found that increases in property values accompanying brownfields remediation range from 5.1% to 12.8%. The study's authors concluded that the impact on property values they found may actually be on the low end; meaning the property value impact may be even higher than what they could quantify.

From the list of properties, we used resources such as Xcelligent and accessed county assessor reports for each available business located on a remediated property to compile property values and ad valorem taxes. Given the limitation of record availability dating back to 1997-98, only the most recent year available was compiled.

Type	Property Value	Ad Valorem Property Tax
Certificate	$126,244,195	$5,217,673
Revolving Loan and Subgrants	$52,287,399	$619,827
TOTAL	$178,531,594	$5,837,500

Remediated properties contribute $178.531 million dollars to real estate value in the state, as well as over $5.8 million in property taxes to local government entities. Public records facilitated the gathering of property and tax values for most, but not all, remediated properties, and thus the actual property and tax values should be estimated to be higher than what is presented here for properties that could not be obtained. One such property that is not included in the above is the former GM facility. Since it is now owned by an exempt entity, it is not subject to ad valorem taxes. The last time it appeared on the tax rolls was 2007 when it had a market value of $102,563,290, an assessed value of $11,281,961, and likely property taxes of $1,469,000.

State Income Taxes

Income taxes are confidential, however they can be estimated. For the purposes of this report, we used IMPLAN to estimate the corporate income taxes for the direct activity occurring in 1998 and 2015. Only the aggregate figure associated with 34 separate simulations is reported. These do not include income taxes associated with indirect activity or induced activity in the IMPLAN model. For personal income taxes, we used income tax brackets in each of the years and IRS data associated with total collections to estimate personal income taxes associated with each of the jobs in 1998 and 2015. We did this for the brownfield properties as well as properties bordering brownfields.

Properties that participated in Oklahoma's Brownfields Program sustain economic activity that is estimated to directly generate $11.990 million in Oklahoma's corporate and personal income taxes in 2015, which is $6.240 million more in state corporate and income taxes than was sustained in 1998. If the increase over the intervening years is assumed to be linear, then the state has benefitted from $56.160 million in corporate and personal income taxes from 1998 to 2015.

State Personal and Corporate Income Tax Estimates 1998 to 2015

	1998 (Inflation-adjusted $)	2015	Difference
Oklahoma Personal Income Taxes			
Jobs on Brownfield Properties	$5,090,000	$10,490,000	**$5,400,000**
Jobs on Bordering Properties	$4,800,000	$22,240,000	**$17,440,000**
Combined	*$9,890,000*	*$32,730,000*	***$22,840,000***
Corporate Income (IMPLAN estimated)			
Businesses on Brownfield Properties	$660,000	$1,500,000	**$840,000**
Businesses on Bordering Properties	$600,000	$2,680,000	**$2,080,000**
Combined (est.)	*$1,260,000*	*$4,180,000*	***$2,920,000***
Total State			
On Brownfields	$5,750,000	$11,990,000	**$6,240,000**
Bordering Brownfield	$5,400,000	$24,920,000	**$19,520,000**
Total State	*$11,150,000*	*$36,910,000*	***$25,760,000***

Including activity on bordering properties provides an even greater impact with state income taxes increasing $19.520 million between 1998 and 2015 when it grew from $5.400 million in 1998 to $24.920 million in 2015. These are not static data points. Including the values in the intervening years, results in state income tax collections of $175.680 million.

Properties that have participated in Oklahoma's Brownfields Program have had an impact on economic activity located not only on the brownfield sites, but also on bordering properties. Combining the income taxes attributable to economic activity located on brownfields and bordering properties has yielded an increase of $25.760 million in state income taxes between 1998 and 2015. Summing these combined income taxes in the intervening years yields an estimate greater than $200 million in state income taxes.

Federal Income Taxes

Just as the economic activity occurring on properties that participated in Oklahoma's Brownfields Program generates state income taxes, it generates federal income taxes as well. Total federal income taxes supported by the economic activity occurring on Oklahoma's Brownfield locations is estimated to be $51.53 million in 2015, which is an increase of $27.510 million from 1998.

While not represented in the table, the cumulative gain in federal income taxes for all years between 1998 and 2015 is estimated to have been $247.590 million (inflation-adjusted $) for brownfield properties.

"The Brownfields program has been an ongoing success in Oklahoma through the creation of jobs and increased economic development in local communities…The Brownfields program also allowed for the cleanup of the historic and popular Skirvin hotel in Oklahoma City, a frequent stop for NBA teams traveling through and getting beat by the Thunder. I'm pleased to see the great work of this program reaching not only Oklahoma, but small communities throughout the country as well."

Senator Jim Inhofe

For bordering properties, the economic activity is estimated to generate $101.740 million in federal income taxes, which is an increase of $80.440 million from the federal income taxes supported in 1998. Again, it is this difference that represents the impact of remediating properties.

When the federal income tax impact of increased economic activity on brownfields is combined with the federal income tax impact on bordering properties, the result is $107.950 million in 2015 federal income taxes.

Federal Personal and Corporate Income Tax Estimates 1998 to 2015

	1998 (Inflation-adjusted $)	2015	Difference
Federal Personal Income Taxes			
Jobs on Brownfield Properties	$22,260,000	$40,290,000	**$18,030,000**
Jobs on Bordering Properties	$19,760,000	$82,680,000	**$62,920,000**
Combined	*$42,020,000*	*$122,970,000*	***$80,950,000***
Corporate Income (IMPLAN estimated)			
Businesses on Brownfield Properties	$1,760,000	$11,240,000	**$9,480,000**
Businesses on Bordering Properties	$1,540,000	$19,060,000	**$17,520,000**
Combined (est.)	*$3,300,000*	*$30,300,000*	***$27,000,000***
Total Federal			
On Brownfields	$24,020,000	$51,530,000	**$27,510,000**
Bordering Brownfield	$21,300,000	$101,740,000	**$80,440,000**
TOTAL FEDERAL	*$45,320,000*	*$153,270,000*	***$107,950,000***

Federal Return on Investment

The majority of the assessment/remediation expenditures are from the private sector, and it is the private sector that spends money for site development, renovation and new construction. The millions of dollars spent by the private sector are necessary for new activity to occur on the site. However, without the liability relief provided by Oklahoma's Brownfields Program, the private sector would not likely take on the risk associated with uncertainty.

Having stated the above, local government, state government and the federal government all benefit from the activity occurring on the sites from the economic activity, employment and the associated tax collections generated. While each of the levels of government benefit from increased tax revenues, Oklahoma's Brownfields Program does not receive any state appropriations. Most of the operational expenditures are from the federal government, and the only state expenditures associated with the program equaled $12,536, which was a state match for the Revolving Loan Fund (RLF).[7]

Cumulatively from 2001 through 2015, the federal government contributed $8,456,444 to Oklahoma's Brownfields Program. The Revolving Loan Fund and subgrant programs account for about $3.9 million of the federal expenditures. And of the $3.9 million, approximately $1 million is associated with the Revolving Loan Fund with the remaining funds distributed as subgrants. Adjusting for inflation, the 2015 equivalent dollars spent by the federal government was $9,506,624.[8] Over the same 2001-2015 time frame, employment and economic activity of properties participating in Oklahoma's Brownfields Program is estimated to have generated $169.914 million in federal income taxes over the amount of 2001 federal income tax levels.

Return on Investment (ROI) is a measure of profitability/earnings and is expressed as a ratio of net income to the amount of capital employed. Using the federal expenditures as the amount of capital it has employed, the ROI for the Oklahoma Brownfields Program has been tremendous. If the activities occurring on 44 brownfields properties would not have occurred elsewhere, then the federal government has had a return on its investment of 1687%, calculated as:

$$\frac{\textit{(New Federal income taxes collected between 2001 and 2015 – Total Federal Expenditures)}}{\textit{Total Federal Expenditures between 2001 and 2015}}$$

This means that for every $1 the federal government spent on Oklahoma's Brownfields Program, an estimated $17.87 was returned to it from federal income taxes. A more conservative ROI would be calculated if private sector dollars were available to be included in the expenditures. However, as noted at the beginning of the economic impact section, this information is not required to be reported and is not available for the properties.

[7] The loans are expected to be paid back; however, this dollar amount represents the portion of the RLF that covers DEQ salaries, which are recouped via interest and fees on the loans.

[8] While there were federal brownfield expenditures before 2001, the data are not available since accounting systems changed around that time and the federal Brownfields Law was passed in 2002.

Demographics

Properties that have participated in the Oklahoma Brownfields Program not only benefit the 18,069 people employed on the remediated and bordering properties, but they also benefit the people who live close by. The most recent 2014 American Community Survey indicates that there are 141,881 people living in Census Tracts that contain one of the remediated properties.[9] Every Census Tract is different and many times changes in demographics over time may be impacted by other factors especially in geographically large Census Tracts. However, remediation affects quality of life and the desirableness of a location.

Given the span of time, the information that is available is in 2000 and 2014. Over that time, there were 14 Census Tracts associated with the 44 brownfield properties that that were redrawn from 2000 to 2014. In most cases, these tracts became geographically smaller. Unfortunately, this means that the data are not directly comparable. However in general, when Census Tracts become smaller, it usually means that populations are increasing. Each Census Tract would need to be reviewed with bordering Census Tracts to determine the exact cause of the changes over time.

Having stated the above, the populations associated with the Census Tracts have changed over time.

- Median household income for the populations that include a remediated brownfield grew 6% higher than would have been expected had median incomes risen at the rate of inflation.
- Educational attainment associated with these Census Tracts has improved with both high school and bachelor's degree levels of attainment increasing over time.
- While poverty rates have increased *the absolute number of residents in poverty in these areas decreased.*

Lastly, perceptions change over time. And while a brownfield may be remediated, it does not mean that residential housing investments occur instantaneously. The development after remediation takes years, which means that the resulting demographic shifts would take years to show up in the data. Ultimately, each Census Tract is unique and its changes over time would be better analyzed individually rather than in aggregate.

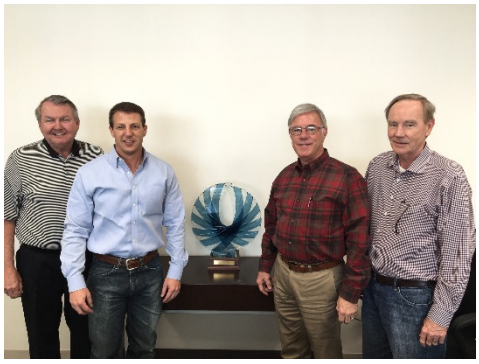
Demographic Category	2000	2014
Population	172,294	141,881
Median Household Income	$28,719	$41,958
Poverty Rate	17%	20%
High School Attainment	74%	83%
Bachelor Attainment	13%	18%

[9] Census Tracts vary in size with some rural Census Tracts spanning most of the county in which it is located while some urban Census Tracts only cover a few blocks.

Case Studies

About the Phoenix Awards™

Most of the following cases were awarded Phoenix Awards. Created in 1997, The Phoenix Awards are a 501 (c) (3) non-profit organization that recognizes outstanding achievement in remediating old, contaminated commercial and industrial areas and putting them back into productive use. Awarded to developers that see potential in brownfield properties where most people only see negatives, the Phoenix Awards are widely recognized as the most prestigious honor a brownfields project can attain. One winner is selected in each of the EPA's ten regions and one from the international category. Although the awards are not sponsored by the EPA, they are presented biannually at the EPA's National Brownfields Conference.



Nevyle Cable, President of 1st National Bank & Trust Co of Okmulgee, Congressman Markwayne Mullin, Fred Harlan of Harlan Ford Inc., and Paul Abbott of Covington Aircraft Engines stand beside a Phoenix Award Trophy

Bricktown

Oklahoma City, OK

Prior Use

The area of Bricktown that went through the Brownfields Program served a variety of industrial purposes; railroad property, petroleum bulk storage, and gas stations. It was also part of the old Oklahoma City oil field, where well blowouts were frequent and uncontrolled. The area is directly adjacent to downtown Oklahoma City, less than one quarter mile from the business district and Oklahoma City's main convention center. The site's location is also two miles from the Oklahoma State Capitol and at the confluence of several major interstates and thoroughfares, making it a prime target for remediation and economic development.

Bricktown, Before Canal Construction and Remediation

Assessment and Remediation

Oklahoma City voters passed the Metropolitan Area Projects (MAPs) ballot initiatives in December of 1993. MAPS levied a temporary one-cent sales tax in order to raise funds for improving the target area and constructing civic, entertainment, cultural, sports, and other facilities to enhance the appeal of the Oklahoma City downtown area. This included the canal, Bricktown Ballpark, Chesapeake Energy Arena, and river improvements.

After MAPs, the Oklahoma City Urban Renewal Authority (OCURA) initiated the process of acquiring land within the designated area, to oversee what type of development occurred around the public investments. OCURA began underground storage tank cleanups and oil well

"The Oklahoma Brownfields Program helped these projects overcome one of their biggest challenges -- the initial funding gap. Brownfields demonstrates an immeasurable environmental and economic impact that can be seen clearly only when you witness the enormity of the transformation achieved by these projects."

Kirk Humphreys; former Mayor OKC, 1998-2003

pluggings pursuant to the jurisdiction of the Oklahoma Corporation Commission (OCC). Some asbestos removal, soil and groundwater remediation, and waste disposal was also necessary. The soil removed from the canal was bio-remediated and a groundwater remediation system was installed under Department of Environmental Quality (DEQ) authority. The complete cost of remediation, including environmental consultation, was $3,023,516 at the time (over $4,000,000 today).

The Oklahoma Corporation Commission is also involved in Brownfield remediation, particularly with underground storage tanks. In the Bricktown area, there were several former gas stations cleaned up with OCC's Leaking Underground Storage Tank funds and they also participated in cleaning-up fuel contamination at the COTPA bus terminal (present-day Chickasaw Bricktown Ballpark).

Development

MAPS directly lead the city to plan an urban revitalization of the downtown and Bricktown areas. Over the 66 months in which the sales tax was operative, the city collected a total of $363 million. The majority of these funds were used for projects outside the brownfield remediation area. The process of survey and design began in 1994, with the first construction in the remediated area beginning in 1996 with the groundbreaking of the Bricktown Ballpark, complete in June 1998. In May 1998, the city opened the bidding process for the Bricktown Canal which was complete in 1999.

MAPS projects	Total Costs (millions)
Bricktown Ballpark	$34.2
"Oklahoma Spirit" trolley service	$5.3
Bricktown canal	$26.1
Chesapeake Energy Arena	$87.7
Civic Center Music Hall Renovation	$53
Oklahoma City Downtown Library	$21.5
Cox Convention Center Upgrades	$60
State Fairgrounds	$14
Oklahoma River	$53.4 (estimated)

Current status

The Bricktown remediation combined with the MAPS investments is often credited with completely altering the trajectory of Oklahoma City, helping to draw tourists and business investments from around the country and world. The Greater Oklahoma City Chamber of Commerce recorded over $3 billion in downtown investment during the years 1995-2008. Today the area is home to a vibrant commercial and entertainment district. The Oklahoma City Thunder NBA Team draws enormous activity to the downtown and Bricktown areas with average attendance over 18,000 per home game. The team has a 2016 Forbes estimated value of $950 million, and in 2013 it was estimated that each Thunder home game had a $1.5 million impact on the city.

Bricktown Canal, Today

Chickasaw Bricktown Ballpark, which is in the remediated area, and is home to the Pacific Coast League's Triple-A Oklahoma City Dodgers, drew nearly half a million attendees during the 2015 season, with the team valued at $21 million as of 2013. Other major attractions within the remediated area include Harkins Bricktown Cinema, Toby Keith's I Love This Bar and Grill, Sonic Drive-In Corporate Headquarters, Kevin Durant's Southern Cuisine, and an array of additional restaurants and nightlife attractions, many of which are locally owned.

Impact of Remediation

Prior to the MAPS projects the Oklahoma City downtown area demonstrated severe urban blight, to the extent that erstwhile city councilman I.G. Purser proclaimed in 1988 that "Downtown is dead and we helped kill it." Of the $3.1 billion in public-private partnership investments into downtown Oklahoma City between 1995 and 2008, nearly $400 million was in the form of hotels, retail and entertainment, and river projects, implying substantial growth in the number of tourists, visitors and shoppers in the city center. From minimal property values and essentially no employment in the early 1990s, the remediated Bricktown tracts today boast roughly $40 million in property value and $50 million in annual wages. Census tract data presents a picture of stark improvement:

Oklahoma County Tract 1038		
	2000 Census	**American Community Survey 2014**
Population	155	679
Med. Household Income	$7,864	$73,077
Poverty	100%	12%
HS Attainment	69%	98%
Bachelor's Attainment	18%	56%

1995

2015

Though many other investments were necessary to achieve the turnaround, brownfield remediation was a necessary precondition for much of the subsequent work. The liability relief the Brownfields Program provided was a key incentive to attracting initial investors to the area. By 2009, the remediation project had earned both a Phoenix Award and a Renewal Award for Economic Impact.

Cimarron Center

Sand Springs, OK

Prior Use

In one of the first brownfield redevelopments in Oklahoma, a Super Walmart was built on the site of a former zinc smelter. The area was a smelter for 60 years and after closure in 1985, the site remained vacant for another 14 years. The site was a prime location near the only bridge over the Arkansas River for miles.

Assessment and Remediation

In Oklahoma, four different cleanup programs have been used to oversee smelter cleanups. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA aka Superfund), The Resource Conservation and Recovery Act (RCRA aka Hazardous Waste law), Voluntary Cleanup Program, and Brownfields Program. Federated Metals and Kucharski Development Co worked with the State of Oklahoma's Department of Environmental Quality to voluntarily clean up the area and prepare the site for what would eventually become the commercial Cimarron Center, anchored by a Walmart Supercenter. Approximately 61,300 cubic yards of contaminated soil was removed and contained onsite in a disposal cell under the new development. The site, which was located in an underserved area, has become a commercial and economic asset for the community. The project was awarded the Region 6 2004 Phoenix Award for brownfield redevelopment.

Clean-up of the Cimarron Center Site

Current Status

The site is anchored by a Walmart Super Center which has helped lure other retail outlets as well as restaurants and two insurance agencies. The former vacant land has led to a boom of sales tax revenues and has helped to influence even more development in the area.

"The Oklahoma Brownfields Program redeveloped an area that was long considered defunct and to have no value to our community. Where there was once a smelter, there is now a thriving retail zone anchored by a Walmart Supercenter that brought hundreds of jobs to Sand Springs along with $3.5 million in tax revenue every year. The Oklahoma Brownfields Program has been a sure and steady partner during this process and has helped Sand Springs to grow in so many ways. The impact on this community is incalculable,"

Mike Burdge; Mayor of Sand Springs

Impact of Remediation

Super Walmart, Anchor Business of the Cimarron Center, Today

The Cimarron Center remediation has led to the creation of 597 new jobs with total wages in excess of $14 million per year. In addition to the direct economic impact of the remediation site, the Cimarron Center remediation has had other positive effects on the local area. The remediation of the thriving Cimarron Center business area was very successful because the responsible party covered the cost of the cleanup and the developer worked with the responsible party in the design of the disposal cell under his project. The development itself, the foundations, and parking lot are part of the cleanup plan and function as a cap over the disposal cell. The remediation also contributed to the adjacent Keystone Corridor's development, an area that was formally a blighted residential neighborhood contaminated by waste from the same smelter.

With the Cimarron Center thriving, the incentive to remediate the Keystone Corridor became even more important and has helped launch the Keystone Corridor Redevelopment Plan: 2025

Tulsa County Tract 93		
	2000 Census	**American Community Survey 2014**
Population	4,422	4,196
Med. Household Income	$26,897	$33,833
Poverty	21%	19%
HS Attainment	71%	72%
Bachelor's Attainment	8%	11%

1995

2015

Guthrie Green

Tulsa, OK

History

In 2008, the George Kaiser Family Foundation (GKFF) purchased a 2.7-acre square-block in the Brady Arts District in downtown Tulsa with the vision of creating a central gathering place with an emphasis on the arts. Formerly a truck terminal and home to multiple industrial and commercial businesses, such as Vinson Supply, DX and Central Freight, the land was largely polluted with fuel tanks and soil contamination. The GKFF committed $8 million to help revitalize the block and was the project's primary funder. Other funds received for the project included $2,580,000 from the American Recovery and Reinvestment Act (ARRA), an Energy Demand Reduction grant and a $200,000 ARRA petroleum sub-grant from the Oklahoma Department of Environmental Quality Brownfields Program. Public funds dedicated to the project totaled $12,580,000.

"When we started construction on Guthrie Green, we knew we would need to clean up a few underground storage tanks. What started at 2 tanks - ended up being 12 tanks. It's hard to believe that a site with such a long legacy of industrial use could have been transformed into what it is today. Repurposing industrial sites in the Brady Arts District continues with support from ODEQ. Reclaiming these old abandoned properties for the city and transforming them into residences and workspaces for artists and entrepreneurs helps lay the groundwork for future growth and prosperity in Tulsa. "

Stanton Doyle, Sr. Program Officer, George Kaiser Family Foundation

In 2009, the GKFF worked with Creative Community Builders to engage local Brady Arts District stakeholders to help guide the project. The area aimed to serve as a green, central location in the District and also encourage mixed-use growth and development. SWA Group of Sausalito, CA designed the park, and plans were unveiled to the public in 2010 with remediation and construction work commencing thereafter.

Guthrie Green During Construction

Contaminants/Process of Remediation

The GKFF applied for and received a $200,000 Petroleum brownfield grant from DEQ to cover the remediation costs. At first assessment, the team noted the presence of two fuel tanks, but during excavation found ten additional tanks. The tanks and their contents were recovered and disposed of, yielding a total of 35,000 gallons of fluid total petroleum hydrocarbon (TPH) contamination, including free product and groundwater present in the tank pits. 90 cubic yards of TPH-impacted soil and 95 tons of contaminated sand were removed. Among the most notable contaminants were carcinogens benzene, toluene, ethylbenzene, xylenes and TPH, as well as lead. All of the materials and contaminants discovered were disposed of at a DEQ-approved facility.

Current Use

Guthrie Green, named in honor of Oklahoma-native Woody Guthrie, was completed in 2012 and is now one of Tulsa's most popular parks. Its main feature is an 11,000 square-foot cafe pavilion with solar panels built on a former loading dock, which also houses a cafe. The space has an outdoor stage, interactive

fountains, and unique gardens featuring native plants, and hosts free concerts, movies, fitness classes, food truck rallies, festivals, and craft and produce markets throughout the year. It has also hosted marathons, bike races, fundraisers and celebrations. The land below the park is environmentally beneficial, with 120 solar-powered geothermal wells 500 feet deep that generate 600 tons of low-cost heating/cooling to surrounding buildings, reducing their heating and cooling costs by approximately 60%. In 2015, Thrillist.com named Guthrie Green the fifth coolest urban space in America.

Brownfields Program Impact

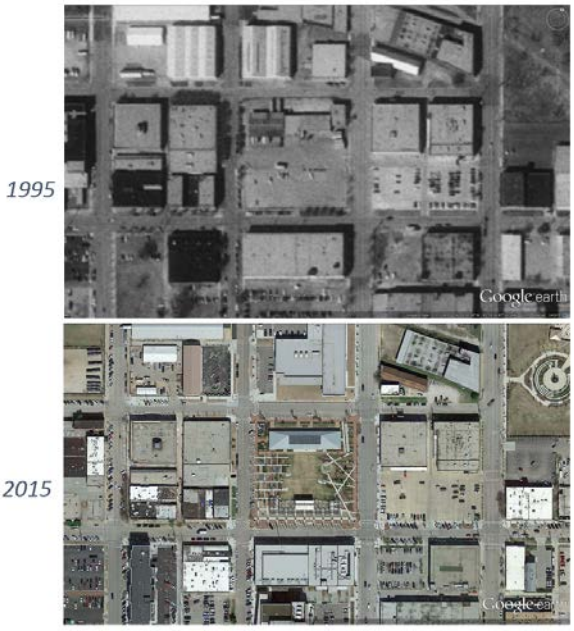
Guthrie Green, Today

Guthrie Green has had a striking social and visual impact on the Brady District. The park is often described as the District's "town square" and its "living room". Guthrie Green's public programming has helped develop a stronger sense of community by offering a wide range of free public events in the park and by serving as a central hub that pulls the urban area together. The park encourages the use of local transportation and has access to nine bus lines, a trolley and a bike share system - which increase access to the area.

The influx of park visitors on the weekends and evenings has prompted local businesses to expand their work hours. The park has also breathed life into other redevelopment projects in the District. New restaurants, bars, boutique shops, and residential areas have popped up near the park, growing the local economy and adding to the overall quality of life.

Guthrie Green has won numerous awards, most notably the brownfield Renewal Award in 2013 for its positive environmental, economic and social impacts. The park also won the Excellence in Construction Award in 2012 from the Oklahoma chapter of ABC (Associated Builders and Contractors), the Henry Bellmon Award for Sustainability in 2013 and the Center for Active Design: Excellence Award in 2015.

Tulsa County Tract 25		
	2000 Census	**American Community Survey 2014**
Population	3506	3245
Med. Household Income	$20,587.00	$33,438.00
Poverty	46%	33%
High School Attainment	76%	77%
Bachelor's Attainment	11%	19%



Okmulgee Business Complex

Okmulgee, OK

Prior Use

The Okmulgee Business Complex was created from a highly polluted refinery site. The former Okmulgee refinery is located west of U.S. Highway 75 on the north side of the City of Okmulgee. The site, under various owners, operated as a petroleum refinery and storage facility from 1906 to 1982. The site produced gasoline, lube oils and asphalt. A mixture of residential, commercial/industrial and recreational areas, including Creek Nation Tribal grounds, currently bound the site. Phillips Petroleum Company (Phillips 66) acquired the site in 1930 and operated the refinery until 1966. In June 1997, the property was deeded to the Okmulgee Area Development Corporation to turn the site into an industrial/commercial park after more than 14 years of being a dormant blight to the community.

"The Okmulgee Business Complex was the site of an old refinery and a real eyesore for our community. Redeveloping this area was a major undertaking for the Oklahoma Brownfields Program, the City of Okmulgee, Phillips 66, Okmulgee Area Development Corporation, Okmulgee County, Muscogee (Creek) Nation, and the Public Service Company of Oklahoma and because of their hard work and dedication, the site is now home to several businesses, and it is an economic success story. I know this project wouldn't have been possible without the assistance of the Oklahoma Brownfields Program, and I am so proud that our business calls this site home,"

Fred Harlan, owner of Harlan Ford

Assessment and Remediation

The remediation addressed the contaminated soils, sediment, wastes, ground water and surface water at the site. Phillips 66 is the former owner of the site and conducted and contributed millions of dollars for the remedial action. The first necessary step at the site included the purging of the vessels and lines, asbestos abatement of the Superstructure and the demolition of the refinery, followed by the assessment and remediation of the property.

The Phase I site characterization field activities were conducted from August 9, 2000 through June 19, 2002 and addressed stream water, stream sediment, on-site surface water, impoundment waste/sediment, non-impoundment waste/soil and groundwater. The initial Phase II site characterization field activities were conducted from March 31, 2003 through September 29, 2003. The objectives of the characterization were to more fully identify the affected media and to delineate and quantify the volumes of waste, sediment and soil materials that were to be considered for remedial action. Remediation included the treatment and on-site disposal of wastes and contaminated soil in an engineered disposal cell.

Current Status

The remediated site currently contains three businesses (Tractor Supply, Harlan Ford and a Holiday Inn Express). The businesses employ 50 people with total annual wages exceeding $1 million. Municipal leaders project an additional 350 jobs when the remaining commercial, industrial, and retail land is sold. The Holiday Inn

Harlan Ford is one of the three current businesses that occupy the remediated site

Express contains 60 guest rooms with an average off-peak rate of $91/night. Okmulgee has a 4% lodging tax; assuming 60% occupancy rate, the Holiday Inn Express on the remediated land generates approximately $48,000 in lodging tax revenues. The Okmulgee Area Development Corporation was awarded the 2013 Region 6 Phoenix Award and the 2015 National Award at the National Brownfields Conference in Chicago.

Tractor Supply is another current businesses that occupies the remediated site

Impact of Remediation

The impacts of remediation are in its infant stage as land is still being developed, but to this point three businesses have located on the site including a Ford dealership, a Tractor Supply and a Holiday Inn Express.

Okmulgee County Tract 2		
	2000 Census	**American Community Survey 2014**
Population	3,649	4,196
Med. Household Income	$23,050	$33,833
Poverty	24%	19%
HS Attainment	74%	80%
Bachelor's Attainment	7%	7%

1995

2015

Skirvin Hotel

Oklahoma City, OK

History

The Skirvin Hotel sits on a 1.45 acre site in the heart of Oklahoma City. It opened to the public in 1911. It originally consisted of two 10-story towers and 225 rooms. In 1926, a third tower was added and all three towers were leveled to its current-day 14 stories. In its heyday, the Skirvin hotel was the largest hotel Oklahoma City and hosted an array of oil-barons, dignitaries, and celebrities, including six presidents.

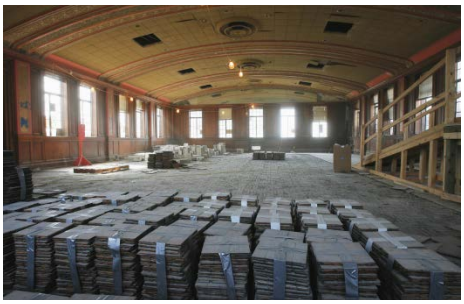
After the founder of the hotel, William Balser "Bill" Skirvin, died in 1945, ownership of the hotel passed through the hands of many different owners until it closed its doors during the oil bust in 1988. The hotel sat vacant for 19 years. During its closure, the hotel was a haven for vandals, the homeless, and pigeons. Parapets were loosened by the wind and fell through the roof, letting water and animals in and encouraging mold growth. Asbestos became friable as the building fell into severe disrepair.

In 1992, Preservation Oklahoma put the hotel on its list of the state's most endangered historic properties. After MAPS was approved in 1993, public enthusiasm over redevelopment of the Skirvin was palpable. Yet, the deterioration of the building hampered action as interested developers could not shoulder the enormous financial burden associated with clean-up. The City of Oklahoma City stepped in to acquire the hotel in 2002 at a cost of $2.726 million using Federal grant-in-aid funds. Later that year, Oklahoma City authorized the Oklahoma City Urban Renewal Authority (OCURA) to seek proposals for redevelopment.

Assessment and Remediation

Oklahoma City's final funding plan for construction and remediation was of $56,413,586, which included $22,000,000 in public funds. The Oklahoma Department of Environmental Quality provided the project with a $780,000 Brownfield Cleanup Revolving Loan Fund (only $719,000 was used). This loan was integral in helping the City deliver a fully remediated building to the developer to move the project forward.

Site assessments revealed multiple sources of waste and contaminants in the hotel – much of which was asbestos. Other waste materials removed included batteries, lead paint, mercury thermostats, drums of industrial chemicals, mold, fluorescent light fixtures that contained PCBs and pigeon droppings (which possibly contained a fungus causing histoplasmosis in humans).



Renovation of the Skirvin's Grand Ballroom, 2006 (Credit: The Oklahoman)

Asbestos was located throughout the building in a variety of materials from pipe insulation and fittings to ceiling textures and floor tiles. Asbestos was the most costly material to remove from the building. Over 125,750 square feet and an additional 3,410 linear feet of friable asbestos containing materials were removed throughout the abatement process.

Current Status & Impact of Remediation

The hotel is often described as a symbol of the city's rebirth. It was carefully restored to its original grandeur and reopened as the Skirvin Hilton Hotel with 225 rooms in February of 2007. Among many other elements, the lobby's arched entryway and 29 hand-carved Bacchus busts were painstakingly repaired and rehabilitated. The hotel now has 18,500 square feet of meeting space, a Grand Ballroom, a grill and a bar. It celebrated its 100th birthday in 2011.

Skirvin Hotel Today (Credit: The Oklahoman)

The Skirvin was an essential key to the revitalization of the downtown Oklahoma City Area. It is located within walking distance of many MAPs projects including the renovated Cox Convention Center, the Bricktown Canal, the Myriad Botanical Gardens, and the Chesapeake Arena. The hotel employs an estimated 300 people according to business data provider Avention OneSource Solutions. Skirvin also contributes to the community by generating sales taxes. Assuming a 70% occupancy rate, the Skirvin generates $11,440,013 in annual lodging tax revenues.

"The Skirvin Hotel and the Dell campus are two award-winning redevelopments that wouldn't have been possible without the [Brownfields] programs."

Oklahoma City Mayor Mick Cornett

The Skirvin Hilton Hotel has garnered many awards and recognitions. In August 2013, AAA Inspectors named the Skirvin Hilton as a Favorite Historic Hotel, noting that "beautiful aspects of the architecture and ornately carved pillars in the lobby have been restored and the hotel now boasts modern conveniences and luxury." The Skirvin was named one of the best hotel meeting destinations in 2013 and received a prestigious Pinnacle Award from SuccessfulMeetings.com. In February 2014, US News and World Report ranked Skirvin as a Top 10 hotel in the US, out of a list of 2,500 evaluated hotels. In October 2015, the Skirvin was named by Conde Nast Traveler's Readers' Choice Awards as one of the top hotels in the US.

Oklahoma County Tract 1091		
	2000 Census (Census Tract 1031.02)	**American Community Survey 2014 (CT 1091)**
Population	0	209
Med. Household Income	N/A	$8,710
Poverty	N/A	76.6%
HS Attainment	N/A	67.9%
Bachelor's Attainment	N/A	21.5%

Note: Census Tracts changed in 2010 Census for Skirvin Hotel. There was not any population in 2000 associated with the Census Tract that contained the Skirvin Hotel.

Tinker Aerospace Complex

Midwest City, OK

History

In 1973 General Motors (GM) announced they would build a major assembly plant in Oklahoma City, the three-million-square-foot facility began in 1974, and was completed in 1979. The first automobiles produced at the facility rolled off the assembly line in 1979; they were the Chevrolet Citation and Pontiac Phoenix.

GM Plant, Before (Credit: News 9/The Oklahoman)

Between 1979 and 2000 the plant produced more than five million passenger cars of various makes and models. In 2001, the plant was temporarily closed to convert the facility from a passenger car production plant to a sports-utility-vehicle (SUV) production plant. Due to a variety of economic factors, in particular the rising price of gasoline, production of SUV's at the facility was severely curtailed in 2003. Continuing economic headwinds for GM forced the plant to be closed in early 2006.

Oklahoma County purchased the facility from GM in 2008 using a voter funded $55 million bond. After the County purchased the facility, they proceeded to lease it to the U.S. Air Force on a 50 year low cost basis, with the Air Force having the option to purchase.

In September 2008, Tinker and Oklahoma County personnel began demolition and renovations on the facility. Initially spending $22 million, new lights, reflective floor coatings, updated bathrooms, and new break rooms were added to the facility. Additionally, they removed roughly 14,000 tons of steel. Aerospace work began in Building 9001 at Tinker officially in 2009. With approximately 2.5-million-square-feet of industrial floor space, this new building centralized several activities at Tinker that were still being conducted in WWII-era Quonset huts. These old Quonset huts did not have central air. Given the heat of many Oklahoma summers, moving the work to a facility with central air improved working conditions for many employees.

"To ensure the success of a redevelopment project, you must work with partners who will be there every step of the way, and the Oklahoma Brownfields was that partner for the Tinker Air Force Base revitalization effort. The collaboration with the Oklahoma Brownfields Program paved the way for this outstanding project to become what it is today. "

Ray Vaughn, Oklahoma County Commissioner

Contaminants/Process of Evaluation/Result

Contaminants at the location included both polycyclic aromatic hydrocarbons (PAHs) and elevated metals. PAHs are found in fossil fuels and in tar deposits, and are produced, generally, when insufficient oxygen or other factors result in incomplete combustion of organic matter (e.g. in engines and incinerators). They are considered pollutants and have been identified as carcinogenic to humans.

Given these concerns, all interested parties engaged in a cooperative data sharing process to ensure the land would be suitable for purchase by the County and subsequent leasing to the Air Force. Tinker hired Weston Solutions, Inc. to perform an Environmental Baseline Survey. Using data supplied by GM

consultant Haley and Aldrich, Weston completed the survey and hired Real World Management Solutions, Inc. to guide the assessment of possible health risks and to work with the Oklahoma Department of Environmental Quality (DEQ) to acquire consensus that the property could be used as is.

After these steps were taken and reviewed by DEQ, it was determined that no action was necessary to clean up any potential environmental concerns. However, the liability relief the Brownfields Program provided became important to all parties, especially to the Air Force, due to federal land acquisition policies. It was only after the property was entered into the Brownfields Program the County, the Department of Defense and the U.S. Air Force come to a final agreement on both the purchase and the subsequent leasing of the facility.

Maintenance Work Inside Tinker Building 9001, Today (Credit: The Oklahoman)

Current Use

Since 2008, the US Air Force has invested $211.3 million in the former GM facility. The Tinker Aerospace Complex has grown to employ nearly 3,000 employees after opening in 2009. These employees are mainly U.S. Air Force employees, with civilian defense firms such as Boeing having additional employees working at the facility. Most of the work done at the facility is performed by aerospace engine specialists.

Brownfields Program Impact

The certificate process started in December 2010 and was approved by the DEQ and the Oklahoma County Board of Commissioners in June 2012. The program has had an immediate and quantifiable impact on the Oklahoma City metropolitan area, including Midwest City, Harrah and other communities surrounding the Air Force Base. The construction and rehabilitation process alone created an impact of $216 million dollars, or 1,702 jobs in construction and related supplier industries.

These results drove the Tinker Aerospace Complex to earn the Phoenix Award in 2011 for Region 6. This is the first facility in the U.S. Air Force to receive a brownfields certificate on a former industrial site.

Oklahoma County Tract 1074.03		
	2000 Census	**American Community Survey 2014**
Population	4162	5810
Med. Household Income	$45,245	$66,380
Poverty	9%	13%
HS Attainment	85%	89%
Bachelor's Attainment	23%	25%

Future Site Projects

The Oklahoma Brownfields Project through the Department of Environmental Quality (DEQ) continues to clean up and remediate many communities and former business sites across the state. A few of these projects are outlined below.

Sheridan Oklahoma City Urban Renewal Authority (OCURA)

This site is in the eastern area of Oklahoma City's Bricktown, covering the 100 N. Lincoln Blvd. block and the blocks of 401-505 E. Sheridan Ave. A Certificate of Completion was issued by the DEQ in September of 2014 for the western portion of the property, and the site has been cleared for commercial use and two hotels are planned on the site. The middle portion of the property has been through the Brownfield process and will receive a Certificate of Completion once the remediation is shown to be functional; this will house the planned Steelyards residential development. The development of the eastern portion of the property is still in the planning stage.

Proposed Steelyard Apartments (Credit: The Oklahoman)

For years, east Bricktown sat dormant, developers fearing the high costs of remediation resulting from years of heavy industrial use. After encouragement from the city, we began a strategy to purchase the seven acre site and complete the remediation utilizing the Brownfields program. We are currently under construction on a $100 million mixed use project consisting of 400 apartments, 280 hotel rooms, and 28,000 square feet of commercial space. Additionally, our project, made possible by the Brownfields program, has been the catalyst for another $70 million of projects under construction in east Bricktown, transforming and activating this vital area of downtown Oklahoma City.

Gary Brooks; Cornerstone Development

Prior to entering the Brownfields program, the site was used for industrial purposes, specifically a steel mill. Contaminants identified during the remediation process included oil, polycyclic aromatic hydrocarbons, and heavy metals.

Developments included in this Brownfields project include a dual hotel/apartment complex consisting of a Hyatt Place and the Steelyards, a 250 unit apartment building. These developments are expected to be completed beginning in 2016.

Oklahoma Industries Authority

This location at SE 59th and Air Depot in Oklahoma City is immediately west of Tinker Air Force Base. This facility was leased by the Oklahoma Industries Authority to Boeing. Boeing has had a steadily growing presence in the Oklahoma City metropolitan area, announcing in 2014 that they would be adding around 900 jobs in Oklahoma City.

Prior to entering the Brownfields program, this site had been used for county storage and as a pipe threading business. Chlorinated volatile organic compounds were found in the groundwater and continue to be investigated. Groundwater can be investigated and remediated without disrupting development activities, so Boeing could move forward with its plans. Boeing broke ground on this location in July of 2015, as they

Boeing's Planned Expansion (Credit: Boeing)

announced that Oklahoma City would become the new headquarters of Boeing's Aircraft Modernization and Sustainment division. Jobs housed in this facility will be engineering, research & development positions with a few support roles. The average wage is expected to be $90,000 per year, with the total Boeing expansion expected to have a $637.7 million impact on Oklahoma City during its first four years.

MAPS 3 Upper Park

MAPS 3 Upper Park is a park planned for a 40-acre area immediately north of Interstate-40 between S. Robinson Ave. and S. Walker Ave. in downtown Oklahoma City. It is part of Oklahoma City's "Core to Shore," effort to build and connect a series of neighborhoods, parks and economic opportunities that will reinvent downtown Oklahoma City, leading to new jobs and a higher quality of life for residents.

The area where the park will be located had historically been used for a myriad of industrial purposes. However, over the decades, this area had turned into what many considered to be urban blight. During the remediation process, the contaminants removed from this site included chlorinated volatile organic compounds and oil.

Proposed MAPS 3 Upper Park (Credit: City of OKC)

MAPS 3 Upper Park has been dubbed, "A Great Urban Park," expected to include a lake, promenade, and new boathouse; over 560,000 unique visitors are expected on a yearly basis according to the park's design team at Hargreaves Associates.

The park will include multiple locations for food trucks, food carts, and a café. The expenditures devoted to build the park have an approved budget of $59.6 million. The park will be built in a three-phase manner with Phase 1 having begun in 2015, while Phase 2 began in early 2016. Phase 3 is expected to start in late 2016.

Former Downtown Airpark – Wheeler District

The approximately 150 acre Wheeler District is envisioned as a mixed-use commercial and residential neighborhood. Located primarily to the south of the Oklahoma River, Wheeler District is complementary to the MAPS 3 Upper Park "Core to Shore" redevelopment zone on the north side of the Oklahoma River.

"With the help of the Oklahoma Department of Environmental Quality, we have been able to transform a former brownfield into Wheeler District - Oklahoma City's next great urban neighborhood. The site has been reborn with new connections to the Oklahoma River recreational trails, a new public space featuring the former Santa Monica Ferris Wheel, and construction of mixed-use housing and retail set to begin in the fall of 2016."

Blair Humphreys; Developer, Wheeler District

Originally opened in 1947, Oklahoma City's Downtown Airpark's longest runway was 3200' and was used by private aircraft owners. Additionally in five large hangars, the Downtown Airpark had a major service center, including aircraft painting operations, for Aero Commander Aircraft. While the airpark was in a central location, the size of its runway and the proximity to downtown's high rise buildings were barriers to larger and faster aircraft using the airpark. The Downtown Airpark closed in 2005 and was purchased in 2006 by Humphreys Partners 2006, LLC.

Since residential use was desired for the site, ensuring the health of future occupants was especially important. To allow residential use, there were extensive assessment and remediation tasks necessary. This included removing tanks of used solvent and petroleum from underground storage tanks, removing and selling buildings from the site, and investigating the soil and groundwater.

The former Santa Monica Ferris Wheel (without gondolas) after it was erected in the Wheeler District. Photo courtesy of James Ward, DEQ

While concerts and food trucks have recently used the site for events, the future development will incorporate the former Santa Monica Pier's Ferris Wheel that will be integrated with the Oklahoma River's watersports and will include a residential development that includes a recreational bike trail connected to downtown Oklahoma City.

Recommendation

One recommendation associated with Oklahoma's Brownfields Program would be to gather/incorporate additional investment and remediation data in the administration of the program. Presently, very limited information is available about how much money is spent by private companies to assess and remediate the properties. Additionally, limited information is available regarding any investment private companies spend to renovate, perform site development and/or construct buildings or infrastructure on the brownfields. This activity has an economic impact.

By incorporating the data requirements in the administration of the program, future studies assessing the economic impact of Oklahoma's Brownfields Program will have additional data to incorporate in the study. For the purposes of this report, any expenditures on assessment and remediation as well as any investment associated with construction and renovation were excluded from the economic impact. This means that the economic impacts are conservative.

Conclusion

Brownfields Programs enjoy bipartisan support nationwide, and by addressing blight and limiting sprawl, their benefits extend beyond the properties themselves. Oklahoma balances it's land between residential, agricultural and an industrial uses. Remediating Brownfields sites encourages the productive reuse of land instead of undeveloped and agricultural sites, which has the impact of taking some of the most productive farmland out of production.

"This report provides concrete evidence that environmental protection and economic development go hand in hand. The Oklahoma Department of Commerce has produced important metrics showing that Brownfields cleanups create jobs, improve property values and drive in regional revenues."

Marianne Lamont Horinko, former Acting Administrator of the U.S. Environmental Protection Agency

Jobs, payroll, output and taxes are all positively impacted by returning land to productive use. Focusing solely on the direct impact of properties that participated in Oklahoma's Brownfields Program, the state has benefited from the creation of 2162 jobs, payrolls increasing $116.611 million, retail sales increasing $85.465 million and state sales and income taxes increasing $10.051 million since 1998.

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For questions or comments about this economic impact report, contact Jon_Chiappe@okcommerce.gov

Appendix A

Brownfield Certificates					
Project Name	**Location**	**Brownfield Certificate Issued**	**Start Date-Issue Date**	**Cleanup**	**Before Use/End Use**
Duralast Rubber Products, Inc.	Tulsa	Certificate of Completion	12/13/1994-7/25/1997	oil product and oil contaminated soil	Rubber Product/Tulsa Habitat for Humanity
Electronic Chemicals Inc.	Tulsa	Certificate of Completion	8/31/1993-9/23/1997	Metals & pH	Sulfuric Acid Manufacturing/ Chemtrade Refinery and Hugg & Hall Equipment Co.
National Institute for Petroleum Energy Research	Bartlesville	Certificate of No Action Necessary	9/9/1997-11/30/1999	Metals & PAHs	Research Laboratory/currently vacant
Flint Industries	Tulsa	Certificate of No Action Necessary	2/24/1999-2/14/2000	Hydrocarbons and Metals	Manufacturing/ Warehouse & Repair Shop
Rafferty Property	Cushing	Certificate of Completion	3/29/1996-12/1/2000	Hydrocarbons and Metals	Abandoned Refinery/Commercial & Residential Oil pipeline off-loading and tankage
Asphalt Technology	Claremore	Certificate of No Action Necessary	5/9/2000-12/15/2000	Metals	Asphalt Laboratory/Offices and Warehouse space
Ozark-Mahoning Company Phosphogypsum Stack	Tulsa	Certificate of Completion	7/21/1994-2/2/2001	Phospho-gypsum	Fertilizer Manufacturer/Closed Landfill
Blackwell Industrial Park, Tract 9 West	Blackwell	Certificate of Completion	12/17/1992-10/4/2002	Metals	Former Smelter/Industrial Park
Oklahoma Steel Castings	Tulsa	Certificate of No Action Necessary	10/9/2001-8/8/2002	Hydrocarbons and Metals	Former Foundry/Brainerd Chemical
Blackwell Industrial Park, Tract 20	Blackwell	Certificate of Completion	12/17/1992-10/28/2003	Metals	Former Smelter/Industrial Park
Federated Metals	Sand Springs	Certificate of Completion	10/7/1994-2/11/2004	Metals	Former Smelter/Walmart and retail center

Brownfield Certificates					
Project Name	**Location**	**Brownfield Certificate Issued**	**Start Date-Issue Date**	**Cleanup**	**Before Use/End Use**
Oklahoma City Urban Renewal Authority, Bricktown Phase I	Oklahoma City	Certificate of No Action Necessary	11/20/1998-12/1/2005	Oil and Metals	Mixed-use Commercial Retail/Bricktown Canal, Harkins Theater, Toby Keith's I Love this Bar and Grill, KD's Southern Cuisine, Starbucks, Fuzzy's Taco Shop, Sonic Headquarters, Sonic Drive-in, Texadelphia, Red Pin Bowling Lounge, Bolero Bar and Grill, House of Bedlam, and Earl's Rib Palace
Summit Machine Tool & Little Giant	Oklahoma City	Certificate of Completion	8/26/2002-1/4/2007	Hydrocarbons	Manufacturing/Climate Master Heating and Cooling
Blackwell Industrial Park, Portion of Tract 10	Blackwell	Certificate of Completion	12/17/1992-12/29/2008	Metals	Former Smelter/Industrial Park
Oklahoma City Landfill/Dell Property Transfer	Oklahoma City	Certificate of No Action Necessary	6/7/2006-4/22/2009	Volatile Organics	Landfill/Dell Call Center
Oklahoma City Urban Renewal Authority, Bricktown Phase IA	Oklahoma City	Certificate of No Action Necessary	11/20/1998-9/28/2009	Oil and Metals	Oil Field bulk storage/ Residence Inn
Blackwell Industrial Park, Tracts 8 & 9 West, Blackwell Smelter	Blackwell	Certificate of Completion	12/17/1992-10/1/2010	Metals	Former Smelter/Industrial Park
Sand Springs Railway	Sand Springs	Certificate of No Action Necessary	4/12/2010-10/27/2010	Volatile Organics & Metals	Historical Petrochemical Complex/Never Developed
Shadow Lake Park	Collinsville	Certificate of Completion	12/17/1992-12/21/2010	Metals	Former Smelter/Residential
Blackwell Industrial Park, Portion of Tract 10	Blackwell	Certificate of Completion	12/17/1992-12/21/2010	Metals	Former Smelter/Industrial Park
Claremore Regional Hospital Expansion	Claremore	Certificate of Completion	8/25/2003-8/24/2011	Volatile Organics & Metals	Landfill/Medical Office

Brownfield Certificates					
Project Name	**Location**	**Brownfield Certificate Issued**	**Start Date-Issue Date**	**Cleanup**	**Before Use/End Use**
Blackwell Industrial Park, Tracts 14 & 15	Blackwell	Certificate of Completion	12/17/1992-9/15/2011	Metals	Former Smelter/Industrial Park
City of Sand Springs Keystone Corridor Redevelopment – Area A	Sand Springs	Certificate of No Action Necessary	10/6/2010-12/2/2011	Metals	$14.5 million dollar initiative to revitalize declining Residential & Mixed-use Area/Retail & Commercial: CVS, Holiday Inn, O'Reilly Auto Parts, IHOP, McDonalds, Starbuck's, and a church
Mimosa Tree Capital Investments	Tulsa	Certificate of No Action Necessary	10/12/2009-12/15/2011	TPH & Metals	Warehouse/Bowling Alley
Okmulgee Refinery	Okmulgee	Certificate of No Action Necessary	11/26/1997-2/13/2012	Hydrocarbons and Metals	Abandoned Refinery/Industrial Park
Tinker Air Force Base Aerospace Complex (former General Motors Assembly Plant)	Oklahoma City	Certificate of No Action Necessary	6/30/2009-6/13/2012	Hydrocarbons	Former GM Plant/Tinker Aerospace Complex
Habitat For Humanity, Ardmore Chapter	Ardmore	Certificate of No Action Necessary	5/25/2011-9/26/2012	Hydrocarbons and Metals	Abandoned Refinery/Habitat for Humanity "Hope" Subdivision
Lillard Pipe/Absentee Shawnee Tribe	Tecumseh	Certificate of No Action Necessary	2/23/2010-10/1/2012	Hydrocarbons	Former Pipe Manufacturing/Proposed Commercial Space and Offices
Downtown Airpark (Hangar Four Property, LLC. & Humphreys Partners 2006, LLC.)	Oklahoma City	Certificate of No Action Necessary	3/18/2009-11/28/2012	Hydrocarbons	Aircraft Maintenance/Planned Mixed-use Residential (Wheeler District)
Tulsa Community College Warehouse	Tulsa	Certificate of No Action Necessary	6/13/2012-12/16/2013	Hydrocarbons	Automobile Maintenance/College Warehouse
Sheridan OCURA West	Oklahoma City	Certificate of Completion	3/4/2013-9/18/2014	Oil, PAHs, Metals	Manufacturing/ Planned Hotels & Mixed-use Residential
JM Assets LP, Tracts 1 & 3	Broken Arrow	Certificate of No Action Necessary	3/24/2009-12/8/2014	Hydrocarbons and Metals	Mining & Landfill/Tractor Supply

Brownfield Certificates					
Project Name	**Location**	**Brownfield Certificate Issued**	**Start Date-Issue Date**	**Cleanup**	**Before Use/End Use**
Shawnee Gun Club	Shawnee	4/16/2016	2/22/2013-	Metals	Shooting Range/Planned Residential

Some of the sites currently in the Brownfields Program				
Project Name	**Location**	**Start Date**	**Cleanup**	**Before Use/Planned Use**
Sheridan OCURA East & MFP Parcel	Oklahoma City	3/14/2013	Oil, PAHs, Metals	Industrial/Planned Mixed-use Residential
Oklahoma Industries Authority	Oklahoma City	6/9/2015	Chlorinated VOCs	County Storage/Planned Boeing research center
MAPS 3 Upper Park	Oklahoma City	1/19/2016	Chlorinated VOCs & TPH	Industrial/40 acre park, with lake, walking paths, garden, & outdoor stage

Subgrants					
Grantee / *Project Name*	**Location**	**Funding Amount**	**Awarded-Completed**	**Cleanup**	**Before Use/End Use**
OKC Urban Renewal Authority / *East Sheridan Site*	Oklahoma City	$350,000	Mar 2013 - Sep 2013	Petroleum, ground-water	Former Oklahoma City oil field and steel manufacturing/ Planned mixed-use residential and parking
Eastern Oklahoma State College / *Veterans Monument*	Wilburton	$178,425.42	Jan 2012 - Jul 2013	Asbestos	Former E.T. Dunlap Student Union/ Building has been demolished to prepare for future Veterans Monument & Nature Park
Kiowa, Comanche & Apache Intertribal Land Use Committee / *Fort Sill Indian School*	Lawton	$200,000	Jan 2012	Asbestos	Former Fort Sill Indian School/ no redevelopment has occurred, the Comanche Nation College may locate there in the future

Subgrants					
Grantee / *Project Name*	**Location**	**Funding Amount**	**Awarded-Completed**	**Cleanup**	**Before Use/End Use**
Oklahoma Municipal League / *Pink Building*	Oklahoma City	$192,600.55	Feb 2011 - May 2012	Asbestos	Historic Pink Building/ building has been demolished, currently a vacant lot
George Kaiser Family Foundation - / *Park on Bradyaka Guthrie Green*	Tulsa	$160,301.27	Feb 2011 - Sep 2012	Petroleum - removal of 12 USTs	Former Truck Terminal Site/ Community Park with subsurface geothermal well field to provide heating and cooling to new museum and arts center
City of Tulsa / *Morton Medical Center*	Tulsa	$327,778.66	Feb 2011 - Sep 2013	Asbestos and UST	Former Medical Center/ currently vacant, Mixed-use Development planned for future
Love Link Ministries/ *NuWay Laundry Facility*	Oklahoma City	$197,724.55	Mar 2011 - Sep 2013	Vapor Intrusion Mitigation	Former Dry Cleaner & Laundry/ Ministry Center for the homeless
Town of Seiling / *American Legion Building*	Seiling	$81,505.62	Feb 2011 - May 2012	Asbestos	Historic American Legion Building/ Vacant lot, no redevelopment has occurred
Ardeneum / *OKLA Theater*	McAlester	$183,984	Jul 2012 - Apr 2015	Asbestos	Former Theater/ vacant theater, future plans include restoring the theater

Current Subgrants					
Grantee / *Project Name*	**Location**	**Funding Amount**	**Awarded**	**Cleanup**	**Before Use/Planned Use**
Ki Bois Community Action Foundation / *The Oaks*	McAlester	$200,000	Aug 2015	Asbestos and lead paint	Drug & Alcohol Treatment Center/ Planned Expansion of Residential Treatment Facility
City of Pawnee / *Pawnee Hospital*	Pawnee	$170,000	Aug 2015	Asbestos	Former Hospital/ Planned Low-Income & Senior Housing or Medical Center
Greer Economic Development Authority / *Hotel Franklin*	Mangum	$140,000	Aug 2015	Asbestos	Former Historic Hotel/ Planned Mixed-use Residential & Retail

Revolving Loan Fund – Loans					
Grantee / *Project Name*	**Location**	**Funding Amount**	**Awarded**	**Cleanup**	**Before Use/End Use**
OKC Urban Renewal Authority/ *The Skirvin Hotel*	Oklahoma City	$717,911	Oct 2004	Asbestos	Historic Hotel/ Hilton Hotel in downtown OKC
The City of the Village/ *former Vintage Lakes Apartments*	The Village	$254,000	Jul 2008	Asbestos	Foreclosed apartment Complex/ residential community and a Community Center
Interstate Metals Site	Oklahoma City	$740,000	Feb 2016	Metals	Former metal wholesaler and scrap yard/ Developer plans to build a hotel/commercial space