New York State Brownfield Cleanup Program and Tax Credit Analyses
January 28, 2014

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Sponsored by NYC Brownfield Partnership
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Executive Summary

This study was undertaken by the New York University (NYU) Schack Institute of Real Estate, at the initiation of, and with support from, the New York City Brownfield Partnership. The study provides objective data regarding the impact and effectiveness of the NYS (NYS) Brownfield Cleanup Program (BCP) and especially the Brownfield Tax Credits (BTC).

This study has four sections: the first section discusses the number of environmentally-challenged sites and databases in New York; the second section details BTC projects in terms of number, size, geographic distribution, costs, and credits, aiming to provide usable data; the third section provides brief information regarding other programs; and the final section, using metrics suggested by brownfield researchers, looks briefly at the range of environmental and remediation issues, as well as liability and eligibility concerns, but primarily focuses on the tax credits in terms of community and economic impact.

The NYS Brownfield Tax Credit was first signed into law in 2003 and amended on June 23, 2008. When data is available from before and after the 2008 amendments, each is presented distinctly in order to enable understanding of the program as it is both today and from its inception.

Key Findings:

Brownfield Tax Credits

- The 2008 amendments to the BTC changed the program. While only 21 projects accepted after the 2008 changes have received tax credits to date; they are smaller, make less use of tangible tax credits and more of site preparation (including remediation) credits, are more geographically diverse - only two in New York City (NYC), with several small industrial projects in the Buffalo area - and averaged $1 million in tax credits as compared to $14 million prior to the amendments.
- Projects “in the pipeline” (accepted in the program but not yet receiving tax credits) remain at 35% in NYC, but there is greater diversity amongst other regions. Since Certificates of Completion (COC) have not yet been issued, their cost and credits are not known, but the proportion in New York City and lengthy time some have been in the program indicates a substantial number of larger, complex urban projects and supports the significance of eligibility, tax credit “caps,” and targeting of credits considerations.
- Since inception, $1.14 billion has been issued in BTC, based just under $8 billion in direct incurred costs. Overall, the BTC shows a ratio of $7.01 of direct investment costs for every $1.00 of tax credit (14.02%), predominantly tangible (development costs) credits. Using the New York State multiplier for induced activity from a recent NAIOP study, the estimated total economic effect for the BCP through 2012 is roughly $15.53 billion.
- The bulk of eligible costs and, consequently, tax credits claimed via the program over its history is for the 20 largest projects. All were accepted in the program prior to June 2008, receiving large amounts of tangible credits, mostly in NYC and Westchester and more than half for residential projects.
- The BTC has been of significant benefit to housing developments with all affordable units ($46 million) and also several mixed income (80/20) housing developments.
Brownfield Cleanup Program

- The number of NYS sites noted in databases and reported potentially environmentally challenged is substantial, more than 60,000, making a robust brownfield redevelopment program important.
- The number of applications for the BCP remains relatively consistent at 30-40 per year, fluctuating with policy, court decisions and market conditions.
- As of the end of 2013, 146 projects received COCs, with six more projects receiving COCs in early January 2014, and 94 projects projected to receive COCs in the remainder of 2014.
- The average time from Brownfield Cleanup Agreement (BCA) to COC is 3.77 years.
- The percentage of projects in EN-Zones (high unemployment areas) was 22% before the 2008 amendment, 37% after.
- 15% of cleanups are to an “Unrestricted” or “Residential” Remediation Standard.
- Liability protection under the BCP is well-recognized and the primary objective of some applicants, and there has been consistently strong interest in both NYS and NYC voluntary cleanup programs. Being directly subject to Federal Income Tax hampers the economic benefit for the fully refundable BTC.
- Other strategies utilize small up-front grants, voluntary programs, liability protections, accelerated processing, Licensed Site (or Environmental) Professionals, and coordination with federal tax policy, to increase impact on more sites.
- A significant part of the fiscal concerns involves how projects, especially larger projects accepted before the 2008 amendments, are treated, and the fact that eligibility for the program is determined based solely upon environmental site conditions.
- The mix of end-uses results in a range of economic benefits; residential projects provide housing and construction jobs; retail follows markets and often generate jobs; and since the amendments, more job-producing industrial projects have entered the program.
- The BCP and BTC have limited reporting requirements; better reporting by applicants would allow the impact of this program to be more readily understood.

This report presents data in as clear, accurate, straightforward and comprehensive format as possible. The goal is to have the data speak for itself, and be as useful as possible.
I. Brownfields in NYS

There is no official inventory of “brownfields” in NYS. The Comptroller’s report of 2013 noted NYS Department of Environmental Conservation (DEC) references to thousands of sites in New York, and there are many known examples of environmental challenges impacting economic development, as well as housing and open space projects throughout the state. To provide some sense of the dimensions of the brownfields issue in New York, the following table shows different types of environmentally-challenged sites from various federal, state, and city environmental databases and reports.

Table I-A: Environmentally Challenged Sites in New York State

<table>
<thead>
<tr>
<th>United States Environmental Protection Agency (USEPA)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Superfund Sites</td>
<td>87</td>
</tr>
<tr>
<td>RCRA Sites</td>
<td>104</td>
</tr>
<tr>
<td>Brownfield Grants</td>
<td>76</td>
</tr>
<tr>
<td>EPA Tracked Sites (Enviromap)</td>
<td>58,269</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New York State DEC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary Cleanup Program</td>
<td>212</td>
</tr>
<tr>
<td>Environmental Remediation program</td>
<td>180</td>
</tr>
<tr>
<td>Brownfield Cleanup Program</td>
<td>389</td>
</tr>
<tr>
<td>Environmental Site Remediation Database</td>
<td>4,362</td>
</tr>
<tr>
<td>Spill response program incidents 10.1.2011 to 9.30.2012</td>
<td>74</td>
</tr>
<tr>
<td>Brownfield Opportunity Areas</td>
<td>129</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New York City</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New York City Brownfield Program</td>
<td>160</td>
</tr>
<tr>
<td>SPEED Database of Vacant Industrial/Commercial Sites</td>
<td>3,150</td>
</tr>
</tbody>
</table>

Sources: US EPA, OSWER, Office of Land Revitalization, EnviroMapper. NYSDEC Environmental Site Database NYCOER Brownfield Cleanup Program

Each of these programs and databases has its own criteria. While some sites may be listed in more than one database, some designations, such as the Brownfield Opportunity Areas, include numerous specific properties.
The Federal and NYS statutes similarly define a brownfield as a property “whose redevelopment or reuse is complicated by the presence or potential presence of contamination”\(^1\). There are many sites that have some level of contamination and could be considered a brownfield but are not listed in any database.

It is clear that NYS has no shortage of contaminated sites, many of which fall into the broad category of brownfield. There appear to be at least 60,000 properties in NYS that have come to the attention of a governmental environmental agency. The USEPA now estimates between 450,000 brownfield sites and one million brownfield sites nationwide\(^2\).

II. Review of the Brownfield Cleanup Program (BCP) and Brownfield Tax Credits (BTC)

The purpose of this review is to provide data that illuminate how the BTC program has operated from inception, both before and after the June 23, 2008 amendments. As of this writing, the NYS BCP continues to attract applications reflecting the need for a robust brownfield program. It should be noted that the BCP is a multi-step process: application and BCA, remediation, COC from DEC, development, and the filing of a tax return(s) and issuance of the actual tax credit by the NYS Department of Taxation and Finance.

Tax Credits are awarded based upon actual costs for site preparation (remediation and other site costs), groundwater, environmental insurance, and “tangible” (construction) costs. Base tax credits are 12% (10% for individual taxpayers) of costs but increase following formulas based upon the project being in an “EN-Zone” (low income area determined by Empire State Development Corporation), the cleanup track, and or in a designated Brownfield Opportunity Area. The June 2008 amendments capped tax credits as follows:

- Non-manufacturing projects capped at $35 million or three times the site preparation costs, whichever is less.
- Manufacturing projects capped at $45 million or six times the site preparation costs, whichever is less\(^3\).

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\(^1\) USEPA: The Brownfields Site definition: Public Law 107-118 (H.R. 2869) - “Small Business Liability Relief and Brownfields Revitalization Act”, 2002, 42 U.S.C. 9601(39) and ECL § 27-1405(2)) and NYS DEC Subpart 375-3: Brownfield Cleanup Program

\(^2\) USEPA Brownfields Office of Land Revitalization

\(^3\) New York State Department of Environmental Conservation Guidance
A. Brownfield Projects over Time

Projects officially enter the NYS BCP upon the execution of a BCA. Chart II-A1 shows that 385 projects have been accepted in the NYS BCP both before and after the 2008 amendments. The number of sites in program each year reflects DEC policies and court decisions, as well as real estate market conditions.

![Number of Projects Before and After 06/23/2008](chart.png)

**Chart II-A1: BTC Projects by Year of BCA, Prior and After 2008 Amendment**
Source: DEC

Projects enter the program upon execution of a BCA, but may not claim tax credits until DEC has issued a COC. DEC has reported that it takes an average of 3.77 years for a project to move from BCA to COC\(^4\). The site preparation tax credit may be claimed in the year following issuance of the COC, while the tangible property tax credit may be claimed after the property is placed into service for a period of up to ten years after issuance of the COC. The actual tax credit is received after the filing of the following year’s tax return.

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\(^4\) DEC Brownfield Sites Certificates of Completion, December, 2013
The following Chart II-A2 shows NYS Brownfield Tax Credit projects by year of receipt of COC from 2005 to 2013 and anticipated receipt of COC from 2014 to 2017 based upon DEC and existing BCAs.

![Chart II-A2: BTC Projects by Year of Certificate of Completion](chart.png)

**Chart II-A2: BTC Projects by Year of Certificate of Completion**
Source: New York State Department of Environmental Conservation Brownfield Sites Certificates of Completion, December 2013. As shown on the DEC database, some multi-phase projects have more than one COC and years 2014-2017 are shown as anticipated.

Of 385 projects that have been accepted into the program, 146 have received COC as of the end of 2013. This raises various issues concerning projects that are already in the process, as well as projecting new applications should the program be extended. As many as one-third of projects hoping to obtain COCs by the end 2013 were delayed until 2014⁵.

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⁵ Schnapf Environmental Law Report, January 2013
B. Type and Amount of Project Costs and Brownfield Tax Credits (BTC) Issued

The Brownfield Tax Credits have been utilized in developments representing more than $77 billion of investment, shown by Type of Project Cost per year in Chart II-B1 below:

Chart II-B1: Project Costs by Type and Year of BCA
Source: New York State Department of Taxation and Finance Report Years 2007-2012

Chart II-B2 shows $1.14 billion of Brownfield Tax Credits actually issued in years 2008 through 2012 (all available data at this time), indicating the credits by type; with tangible credits clearly dominant (93%) followed by site preparation, and then groundwater, insurance, real property, and other credits are small and shown together on the chart. NYS Tangible tax credits are based upon the total development cost of a project including construction. Final costs have been reported for relatively few projects accepted into the program after the 2008 amendments.
For projects that entered the program before June 2008, 93% of tax credits received was for tangible tax credits, as noted by the November 2013 NYS Commission Tax Credit study. The remainder was for site preparation (soil remediation, demolition, excavation, and other costs), groundwater remediation, real property and insurance tax credits. For the projects accepted into the program from after the amendments through 2012, relatively few have received tax credits so far but of these 74% were for site preparation.

The distribution of BTC projects by size is shown in Chart II-B3, both before the 2008 amendments. Prior to the amendment there is an almost inverted distribution; more projects at the extremes, either large or small amounts, and fewer in the middle. After 2008, there were no projects over the $35 million tangible credit cap, and others appear to have been constrained by the “soft” cap on tangible credits no greater than three times the site preparation credits. The mean, median and standard deviation have been reduced, the average size has been reduced, and there are more projects in the lower middle ($2-5 million) ranges.

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6New York State Tax Reform and Fairness Commission Tax Credit Study, 2013
The average or mean of tax credit is the total tax credits divided by the number of projects; the median is the number at which half the projects are smaller, half larger. The standard deviation shows the dispersion from the average. As shown in Chart II-B4, there is a very large standard deviation by project size prior to the amendments, reflecting the high proportion of extremely large (over $20 million in credits) and rather small (under $2 million in credits) projects. After 2008, the standard deviation is lower, reflecting that more projects are in the middle range.

It should be noted that there are projects that have to date only claimed site preparation tax credits, but may be able to make future claims for tangible tax credits.
The ten projects that received the highest amount of NYS BTC claimed $582 million or 57% of the total of $1.14 billion claimed under the program since its inception. All of these projects were accepted in the BCP before the 2008 amendment, and all but one completed remediation after 2008. Six of the top ten projects are in NYC, with two in Westchester. These projects involved over $4.1 billion in total development costs. The top 20 projects listed in Chart II-B6 received over $850 million, or 74% of all tax credits.
Chart II-B6: Twenty Largest Brownfield Tax Credit Projects:

<table>
<thead>
<tr>
<th>Date of BCA</th>
<th>DEC Number</th>
<th>Project Name</th>
<th>Executed Before 6/23/2008</th>
<th>DEC Region</th>
<th>County</th>
<th>Acreage</th>
<th>En-Zone</th>
<th>Total Costs</th>
<th>Total Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/10/2008</td>
<td>C442035</td>
<td>South 40 Site</td>
<td>1</td>
<td>4</td>
<td>Rensselaer</td>
<td>34.00</td>
<td>0</td>
<td>1,449,231,929</td>
<td>173,907,832</td>
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<tr>
<td>12/23/2004</td>
<td>C360073</td>
<td>221 Main Street</td>
<td>1</td>
<td>3</td>
<td>Westchester</td>
<td>2.60</td>
<td>1</td>
<td>569,214,327</td>
<td>113,842,864</td>
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<tr>
<td>01/04/2005</td>
<td>C231012</td>
<td>River Place II West 43rd St. Gas Works</td>
<td>1</td>
<td>2</td>
<td>New York</td>
<td>1.10</td>
<td>1</td>
<td>566,644,394</td>
<td>101,995,991</td>
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<tr>
<td>06/14/2005</td>
<td>C241078</td>
<td>Flushing Town Center, L.P.</td>
<td>1</td>
<td>2</td>
<td>Queens</td>
<td>6.99</td>
<td>0</td>
<td>800,673,419</td>
<td>80,067,342</td>
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<tr>
<td>06/15/2005</td>
<td>C231045</td>
<td>East River Plaza</td>
<td>1</td>
<td>2</td>
<td>New York</td>
<td>4.50</td>
<td>1</td>
<td>333,957,875</td>
<td>65,175,708</td>
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<td>2004</td>
<td>C374104</td>
<td>Oil City/Central Park - Phase 1</td>
<td>1</td>
<td>7</td>
<td>Onondaga</td>
<td>10.13</td>
<td>1</td>
<td>561,431,141</td>
<td>56,143,114</td>
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<td>02/10/2005</td>
<td>C231011</td>
<td>Clinton Green Development Project</td>
<td>1</td>
<td>2</td>
<td>New York</td>
<td>1.48</td>
<td>1</td>
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<td>47,896,344</td>
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<td>01/27/2008</td>
<td>C231040</td>
<td>West 17th Street and 10th Ave.</td>
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<td>2</td>
<td>New York</td>
<td>1.21</td>
<td>0</td>
<td>244,858,437</td>
<td>24,485,844</td>
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<td>05/09/2007</td>
<td>C231043</td>
<td>West 61st Street Site</td>
<td>1</td>
<td>2</td>
<td>New York</td>
<td>1.09</td>
<td>0</td>
<td>195,904,362</td>
<td>23,519,205</td>
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<td>05/31/2008</td>
<td>C360071</td>
<td>Queens Parcels A and C</td>
<td>1</td>
<td>3</td>
<td>Westchester</td>
<td>4.45</td>
<td>1</td>
<td>117,619,776</td>
<td>21,171,559</td>
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<tr>
<td>07/14/2004</td>
<td>C231017</td>
<td>West 19th Street Development Site</td>
<td>1</td>
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<td>New York</td>
<td>0.68</td>
<td>0</td>
<td>174,223,088</td>
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<td>01/11/2005</td>
<td>C241043</td>
<td>U.S. Dredging Shipyard Site</td>
<td>1</td>
<td>2</td>
<td>Kings</td>
<td>48.06</td>
<td>1</td>
<td>165,423,615</td>
<td>19,850,834</td>
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<tr>
<td>08/08/2005</td>
<td>C315194</td>
<td>Former Buffalo Service Station</td>
<td>1</td>
<td>9</td>
<td>Erie</td>
<td>4.90</td>
<td>1</td>
<td>93,934,229</td>
<td>18,786,846</td>
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<td>06/28/2005</td>
<td>C241049</td>
<td>Queens West (Hunter's Point) Parcel 9</td>
<td>1</td>
<td>2</td>
<td>Queens</td>
<td>1.79</td>
<td>0</td>
<td>154,813,570</td>
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<td>05/31/2007</td>
<td>C231047</td>
<td>Astor Substation</td>
<td>1</td>
<td>2</td>
<td>New York</td>
<td>0.60</td>
<td>0</td>
<td>119,537,952</td>
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<td>09/14/2004</td>
<td>C203041</td>
<td>Courtlandt Corners II</td>
<td>1</td>
<td>2</td>
<td>Bronx</td>
<td>0.16</td>
<td>1</td>
<td>84,603,892</td>
<td>15,228,701</td>
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<tr>
<td>06/14/2007</td>
<td>C241051</td>
<td>Flushing Industrial Park (Eastern) Parcel 1</td>
<td>1</td>
<td>2</td>
<td>Queens</td>
<td>5.42</td>
<td>0</td>
<td>109,047,396</td>
<td>10,904,740</td>
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<td>12/05/2007</td>
<td>C224126</td>
<td>Foundation for Torah Studies</td>
<td>1</td>
<td>2</td>
<td>Kings</td>
<td>0.22</td>
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<td>09/12/2005</td>
<td>C447037</td>
<td>College Park Site</td>
<td>1</td>
<td>4</td>
<td>Schenectady</td>
<td>8.36</td>
<td>1</td>
<td>37,733,844</td>
<td>6,792,092</td>
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<tr>
<td>11/05/2005</td>
<td>C231048</td>
<td>Club East</td>
<td>1</td>
<td>2</td>
<td>New York</td>
<td>0.42</td>
<td>0</td>
<td>67,867,833</td>
<td>6,786,783</td>
</tr>
</tbody>
</table>

Source: New York State Department of Taxation and Finance Reports 2007 -2012
Column “Executed Before 5/23/2008”. 1 indicates yes, 0 indicates no.
C. Geographic Distribution

Distribution by Number of Projects and DEC Region before and after 2008 Amendment

Charts II-C1 and II-C2 below illustrate while Region 2 – NYC - continues to receive a large proportion of BTC projects; there is greater diversity of distribution among regions since the 2008 amendments, with Region 9 (Western NYS) rivaling Region 2.

Chart II-C1 Number of Projects by DEC Region Before 2008 Amendment
Chart II-C2 Number of Projects by DEC Region After 2008 Amendment
Source: New York State Department of Environmental Conservation

Charts II-C3 and II-C4 show how the distribution of project costs by county has changed before and after the 2008 amendments; counties with less than 1% of costs are not shown. While NYC counties are significant participants both before and after, upstate counties, especially Erie, show an increase in activity.

Chart II-C3 Percentage of Total Costs of Projects by County before 2008 Amendment
Chart II-C4 Percentage of Total Costs of Projects by County after 2008 Amendment
Source: New York State Department of Environmental Conservation Brownfield Certificates of Completion, 2013
Number of Projects
Source: New York State Department of Environmental Conservation Brownfield Database, 2013

Number of Projects by County After 6/23/2008

Number of Projects
Source: New York State Department of Environmental Conservation Brownfield Database, 2013

Number of Projects by County Before 6/23/2008

Number of Projects
Source: New York State Department of Environmental Conservation Brownfield Database, 2013
Roughly two-thirds of the value of NYS BTC prior to the 2008 amendment was awarded downstate jurisdictions, defined as the five counties of New York City, Nassau and Suffolk counties on Long Island, and Westchester County. This can be seen as a result of the stronger development market, the larger cost and scale of projects downstate, and the nature of the tangible tax credit. Since the 2008 amendments there has been more geographic dispersal across the state, with the Buffalo-area having a significant number of projects, though mostly smaller in costs and credits.

D. Community

The relationship of the BTC upon low and moderate income communities can be discussed in terms of EN-Zones, Brownfield Opportunity Areas (BOA) and Affordable Housing. Built into the statute are incentives, increased in 2008, for projects that are within EN-Zones. EN-Zones are census tracts designated by New York Empire State Development Corporation (ESDC) as having 125% of the NYS average unemployment rate or a poverty rate of 20%.

Of projects accepted into the BCP before the amendments, 40, or 22% of those known, were in EN-Zones. Of projects accepted after the amendments, 63, or 37% of those known, were in EN-Zones, qualifying for higher tax credits. Of the 20 largest projects by size of credits, nine (9), or 45%, were in EN-Zones.

Chart II-D1: Projects in EN-Zone, before and after 2008 Amendments
Source: New York State Department of Taxation and Finance Annual Brownfield Tax Credit Reports 2007-2012

New York State Brownfield Opportunity Areas

At the same the BPC was created, NYS also created the Brownfield Opportunity Area (BOA) Program, which provides planning grants to communities with numerous brownfield sites. To date, 129 communities have received such grants and have conducted planning studies. The BCP now provides incentives of 2% higher tax credits for projects within BOAs. At this time, several BOAs are close to achieving official designation. While the tentative BOA boundaries are known, they are not official, nor are the incentives available, until official designation. A preliminary review of the 385 projects in the program indicates that approximately 20% are within the proposed boundaries of Brownfield Opportunity Areas. Both the EN-Zone and BOA additional credits are intended to target brownfield redevelopment to low income areas.
Affordable Housing

Another way to evaluate the BTC impact is to consider those projects that have received credits and are primarily affordable housing projects, which typically have tight budgets and lower developer returns. There have been a dozen such “all affordable housing projects” (all units subsidized), both downstate and upstate, which have received a total of $46 million in credits. Another smaller group of projects are partially affordable housing, (80% Market Rate, 20% Affordable) pro-rating the credits results in an additional $14 million in tax credits. These include several large residential projects in Manhattan. In total, $60 million in BTC, or 5.26% of total credits, has gone to affordable housing development.

III. Other Programs

A. Other States

The range of approaches to brownfields among the states is quite varied, making comparisons difficult. New York is one of several states that utilize tax credits; most states give grants or tax credits based upon remediation costs but not tangible (development) costs; relying on federally tax-advantaged economic development incentives such as Industrial Development Bonds or Tax Increment Financing to assist with development costs. The 2013 NYS Comptroller’s report pointed out some states such as New Jersey and Massachusetts have been able to provide smaller assessment or cleanup assistance to as many as twenty thousand properties. Table III-B1 that summarizes several large, northeastern state programs is found as Addendum B.

B. New York Voluntary Programs

NYS Voluntary Cleanup Program

The New York State Voluntary Cleanup Program (NYS VCP) was created in 1994 and was superseded by the BCP in 2003. Sites had the option of transitioning into the BCP or remain in the NYS VCP. The NYS VCP accepted 414 sites, and 212 cleanups were completed during its decade of existence. The NYS VCP did not have the legislative authority and did not provide the level of liability protection that the BCP provides; it was a cooperative program between public regulators, developers, and environmental professionals. The NYS VCP did not offer any financial incentives.

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7 NYS Controllers Office, Brownfield Restoration in New York State: Program Review and Options, 2013
New York City Voluntary Cleanup Program

The New York City Voluntary Cleanup Program (NYC VCP) was inaugurated in 2010 in connection with a Memorandum of Understanding negotiated with DEC. The NYC VCP is focused on lightly contaminated properties, including the many NYC sites that have “urban fill.” To date, the NYC VCP has approved remediation plans for 160 sites, mostly in the outer boroughs and nearly half associated with affordable housing projects. Administered by the New York City Office of Environmental Remediation (formerly the Mayor’s Office of Environmental Remediation), which also administers EPA Brownfield grants, this program has different entry requirements and processes but aims to provide a relatively quick turnaround, usually under three months, dealing with generally smaller, less seriously contaminated sites and using a set of innovative matrixes to speed application and review. A level of liability protection is provided in part by agreement with NYS. Smaller - $50,000 or less - grants are available for some applicants.

C. Federal Brownfield Program

The USEPA Brownfield programs provide grants to municipalities and qualified non-profits, mostly for assessment and cleanup in the $100,000-250,000 range, and also for revolving loan and training grants of up to $1,000,000. The EPA Brownfield program began in 1993 and has disbursed roughly $1.5 billion in 20 years; last year’s budget was $167 million. The EPA Brownfield program mandates that recipients report annually on cleanups, private investment and development costs, job creation, and tax generation. Based upon those reports, EPA claims that $17.79 of total spending for each $1.00 in grants, and 7.3 jobs have been created for each $100,000 in grants.9

IV. Analyses: Environmental, Eligibility, Community and Economic Metrics

Brownfield programs are about many things: environmental remediation and liability concerns, community revitalization, smart growth, and economic development. The academic community has developed criteria for evaluating Brownfield programs. Most recently, Prof. Richard Hula of the University of Michigan10 put forth appropriate measures of Brownfield program effectiveness:
- remediation (quantity and quality);
- liability protection;
- public participation;
- eligibility; and
- financial incentives.

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8 New York City Office of Environmental Remediation
9 USEPA Brownfield Program Benefits, June 2013.
A. Remediation and Liability Protection

As of the end of 2013, 385 projects have been accepted into the Brownfield Cleanup Program since the inception. According to DEC\textsuperscript{11}, a total of 146 out of these projects have received a COC. Applicants also have four potential cleanup tracks with incentives such as site remediation credits as high as 50% of costs for highest-level cleanups.

The distribution of COCs by Highest Allowable Future Use is shown below:

<table>
<thead>
<tr>
<th>NYS BCP COCs by Highest Allowable Future Use</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unrestricted/Residential</td>
<td>21</td>
<td>15%</td>
</tr>
<tr>
<td>Restricted Residential</td>
<td>45</td>
<td>31%</td>
</tr>
<tr>
<td>Restricted Commercial</td>
<td>61</td>
<td>41%</td>
</tr>
<tr>
<td>Restricted Industrial</td>
<td>19</td>
<td>13%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>146</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: New York State Department of Environmental Conservation Brownfield Certificates of Completion, December 2013

In general, Brownfield Cleanup Program requirements follow established DEC regulations and guidance. There has consistently been an emphasis on high-quality cleanups, including newly-revised vapor intrusion guidelines. There has been relatively little criticism of the BCP in terms of quality of remediation, and the BTC has helped decrease the stigma of a brownfield designation and encouraged infill redevelopment.

The statutory liability provided by the BCP has been found to be useful, especially in comparison to earlier administrative protections. In fact, there are applicants who are primarily interested in the liability protection, which raises the question of whether NYS should offer an option for applicants seeking only liability protection. While presumably clean-up standards would remain, an applicant for such an option would not need to provide financial or cost data, simplifying the process.

B. Eligibility

Eligibility for the NYS BCP and BTC are based upon a property being considered a brownfield; highly restrictive criteria imposed by DEC in 2006 was overruled by the Court of Appeals in 2010\textsuperscript{12}. Applicants still have to show contamination from prior on-site use (e.g., contaminated fill and off-site vapor migration may not qualify a site for the BCP). Even though BTCs include significant economic development incentives, eligibility for the BCP is based on solely environmental criteria.

\textsuperscript{11} New York State Department of Environmental Conservation, Brownfield Sites Certificates of Completion, December 2013.

\textsuperscript{12} Lighthouse Pointe Property Associates LLC v. NYSDEC, 2010
Eligibility has become a key concern, as the NYS Comptroller’s office has estimated as much as $3.3 billion in possible future costs to the state from the projects already in the program. There are numerous ways, including eligibility requirements, to control costs and provide more certainty for the state budget as the future of the BTC is considered. A related issue is the continued eligibility and treatment of projects that have been accepted into the BCP, especially those prior to June 2008 that were “grandfathered” so that the 2008 amendments did not apply.

From inception until June, 2005, Class 2 State Superfund sites were eligible for the BCP Program, but only one site was entered in the program. As all environmental funding is reviewed carefully, a possibility is to again allow Class 2 sites into the BCP as a tool that requires private as well as public investment in remediation and redevelopment of more contaminated sites.

C. Community

In order to engage communities, the NYS BTC statute has extensive public participation requirements with as many as seven opportunities for public input as projects move through the process. While sometimes there is great interest, other times public participation is limited in what can be a long, complex technical process. As noted above, the proportion of projects in EN-Zones has increased, and a total of $60 million toward affordable housing projects is significant.

In addition, the companion BOA Program has disbursed nearly $40 million in planning funds, predominantly in low-income communities. There are not yet any officially recognized Brownfield Opportunity Areas, but several are likely to be designated in 2014, with more in following years. This would add a new factor to the BCP.

D. Economic Impact

The economic impact of the BCP has been broad and diverse, involving different categories of business in many communities throughout the state. While the tax credit format provides a clear measure of direct expenditures, projecting induced or multiplier effects is very difficult. The lack of information required from applicants, such as job creation and taxes paid that are routinely required by financial incentive programs, further hampers analysis of the NYS BCP and BTC.

There are efforts to measure the financial impact of the NYS BTC, one by the NYS Business Council in 2013, and at least two other efforts, one currently by Evans Paull using the IMPlan economic impact software. There are other similar programs, including the US Bureau of Economic Affairs RIMS II; this study does not duplicate those efforts.

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13 New York State Comptroller Brownfield Restoration in New York State: Program Review and Options, April 2013
14 New York State Business Council, New York State Brownfield Cleanup Program, 2013
Overall Economic Impact: Multiplier for Induced Economic Activities

It is possible to make a rough estimate of induced impacts using multipliers developed by others. The recently released “How Office, Industrial and Retail Development Contributed to U.S. Economy in 2012”\(^\text{15}\), by Stephen S. Fuller, PhD of George Mason University, supported by the NAIOP Foundation and with access to McGraw Hill Construction data, provide multipliers by state as well as nationally. This report is particularly well matched as it focuses on commercial real estate development (including apartments) and includes site preparation as a soft cost as well as hard (construction) costs, but not tax implications. Using the New York state multiplier for total soft and hard costs for induced economic activity, the BTC since inception in 2005 through 2012, has contributed $15.53B to the New York State economy.

Federal Tax Implications

Under the current BTC law, fully refundable tax credits received by taxpayers are directly subject to Federal Income Tax. While individual tax situations vary, these tax implications are significant and need to be considered in evaluating the BTC program’s economic impact. A November 2013 Tax Commission study on Tax Credits\(^\text{16}\) discusses an option of making the Brownfield Tax Credits nonrefundable. This approach could push the BTC to be more fungible, hopefully similar to NYS Low Income Housing Tax credits that are sold and used for equity in projects. As shown in Addendum B, other states structure their brownfield programs to shield benefits from federal income tax, and use other tax exempt funding, such as Industrial Revenue Bonds, to finance tangible development. However, the refundable tax credit is what makes the BCP so attractive. If the tax credit becomes rollover to following year until fully used up, it is not clear that program would remain as attractive.

Direct Leverage

Tax credit programs have the advantage of state funds only being spent when the project is complete and the credit is due. Since inception, the Brownfield Tax Credits have totaled $1.14 billion; however, the projects that received tax credits total more than $7 billion in total investment costs, a 14% ratio, translating to investment costs of over seven dollars for every dollar of tax credits ($7.06 spent for every $1.00 in tax credits for the ten largest projects, and $7.01 overall).

Chard IV-D1 illustrates aspects of the NYS BTC program; the relationship between project size in direct expenditures (costs) and the ratio of tax credit to those direct expenditures.

\(^{15}\) Fuller, Stephen S, How Office, Industrial and Retail Development Contributed to the U.S. Economy in 2012, NAIOP Foundation, 2013,

Chart IV-D1 Total Costs Claimed, Tax Credits and Credit to Cost ratio before and after 2008 Amendment

<table>
<thead>
<tr>
<th></th>
<th>Total Cost</th>
<th>Total Credit</th>
<th>Credit to Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCA Before 6/23/2008</td>
<td>6,636,245,479</td>
<td>923,714,586</td>
<td>13.92%</td>
</tr>
<tr>
<td>BCA After 6/23/2008</td>
<td>62,753,897</td>
<td>15,281,002</td>
<td>24.35%</td>
</tr>
<tr>
<td>Total All Projects</td>
<td>6,698,999,376</td>
<td>938,995,588</td>
<td>14.02%</td>
</tr>
</tbody>
</table>

Source: New York State Department of Taxation and Finance
Total Costs claimed by applicants, basis for total credits issued bases upon BTC formula

The projects that have received Brownfield Tax Credits have involved nearly $8-Billion in direct investment costs, a ratio of $7.01 for each $1.00 of tax credits. This does not include induced development or multiplier effects. Similarly, a quantitative analysis cannot fully address whether or not a project would have been undertaken “but for” an incentive.

Tax Credit Ratios after 2008 Amendments

For the 21 projects with BCAs after June 2008 that have actually received tax credits, 10.53% of the tax credits\(^{17}\) were for tangible tax credits, as compared to 93% prior to the amendment. Increased use of the site preparation and bonus incentives tax credits were goals of the amendments, but they do lower the leverage cost-to-credit ratio.

Prior to 2012, the Federal Income Tax Section 198 remediation cost expensing for brownfields was in effect and letters to apply were requested by roughly a dozen large BTC projects making it less likely that these early projects would use NYS site preparation tax credit, accounting in part for the limited use of NYS BTC site preparation credits. More recently, Section 198 has not been available, which may have contributed to the recent increase in the use of NYS site preparation tax credits and the declines in the percentage use of tangible tax credits and credit-to-cost ratio.

\(^{17}\) Real Estate Board of New York, New York State Brownfields Tax Credit Report, 2013
Analyses of Economic Impact

The chart below shows the number of projects, tax credits, and average tax credit for various broad categories of end users. This provides useful information in considering the economic impact of the BTC.

### Chart IV-D2 New York State Brownfield Tax Credits by End User Type

<table>
<thead>
<tr>
<th>End Use Type</th>
<th>Projects</th>
<th>Tax Credits</th>
<th>Average Per Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordable Housing</td>
<td>10</td>
<td>$46,225,245</td>
<td>$4,622,525</td>
</tr>
<tr>
<td>Residential</td>
<td>17</td>
<td>$271,640,775</td>
<td>$15,978,869</td>
</tr>
<tr>
<td>Office</td>
<td>8</td>
<td>$48,214,312</td>
<td>$6,026,789</td>
</tr>
<tr>
<td>Industrial</td>
<td>14</td>
<td>$206,628,722</td>
<td>$14,759,194</td>
</tr>
<tr>
<td>Commercial</td>
<td>24</td>
<td>$358,038,150</td>
<td>$14,918,256</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>$930,747,204</td>
<td>$12,749,962</td>
</tr>
</tbody>
</table>

Source: New York State Department of Environmental Conservation, Brownfield Tax Credits 2008-2012

### Chart IV-D3 Distribution of Projects by End Use Type before 2008 Amendment

### Chart IV-D4 Distribution of Projects by End Use Type after 2008 Amendment

Source: New York State Department of Environmental Conservation Database
An important indication of economic impact is the types of development projects that have received Brownfield Tax Credits. Over one third of the value of all BTCs went to predominantly market rate residential development, which generate construction jobs, relatively few on-going jobs, but provides long term physical assets for a community. While ultimately taxable, a significant proportion of residential projects also received local real estate tax abatements. Since the 2008 amendments, the number and costs of market rate residential projects has decreased, while affordable housing has increased.

Commercial and industrial developments were another third of BTC credit, about 15% for retail projects, 10% for offices and institutional, and just under 10% for industrial. Commercial and industrial projects generally result not only in construction and physical assets but also long term jobs.

Since the 2008 amendments, there have been fewer New York City major market-rate residential projects but more industrial, especially in the Buffalo region and other parts of upstate New York. In addition to providing building assets and construction jobs, commercial and industrial projects generate long-term jobs.

Overall, the BCP structure results in a one-to-seven ratio of credits to total investment costs. Induced economic activity and specific benefits, such as long-term job creation, impact on low-income communities, and overall economic growth can only be inferred and case examples may provide some insights.
Brief BTC Smart Growth Community Case Examples

Hudson Park Yonkers Waterfront: The three phase Hudson Park project is playing a key role in the redevelopment of this urban waterfront neighborhood, directly adjacent to the Metro-North train station and downtown Yonkers. The initial public investment in an historic pier and other public works initiated the transformation, but the development of Hudson Park’s first two phases of 294 and 266 market rate residential units on former brownfield sites created a community. The project, which is in an EN-Zone, had total costs of $185 million; it received $21 million in brownfield tax credits, which was significantly utilized for the installation of public amenities and infrastructure, supporting the proposed 188 unit third phase, for which further BTCs are sought. This “smart growth” project directly on the Hudson was undamaged by Superstorm Sandy. In addition to apartments, first floor retail, restaurants, offices, as well as an esplanade, all contribute to a new vibrant neighborhood.

Source: Courtesy of Collins Development

Buffalo Industrial Developments: The Buffalo area has been highly active in brownfield redevelopment, including major projects such as the new Blue Cross/Blue Shield building, which was the first major downtown building in decades, and Steelwinds, which transformed a former steel plant into a still-growing wind energy farm; both received Brownfield Tax Credits.

Recently the Buffalo area has seen numerous industrial and commercial re-developments, such as Buffalo Lakeside Commerce Park, that have in particular utilized the site preparation brownfield tax credits. This business park was formerly the Hanna “pig iron” plant and heavily contaminated. Three companies now occupy 100 acres of this space: CertainTeed, Cobey, Inc., and Sonwill Distribution. Public investments included $1.5 million for site preparation from the Buffalo Urban Development Corporation, $2 million in city bond funds for demolition, $6
million in brownfield cleanup fund; thus far, this has resulted in $35 million in private investment. This type of project exemplifies many in upstate New York that have applied for BTC after the 2008 amendments.

Another noteworthy example is the Buffalo Color Corporation, a 70-acre property where numerous dyes and chemicals were invented and used. The site is being remediated and redeveloped for mixed use, including a Railroad History Museum. Portions of this site were among those that received BCA both before and after the amendments. The most recent projects, with BCAs after the amendments that have received Tax Credits, are all site remediation credits, reflecting geographic and credit use trends since the amendments.

**Via Verde ("the Green Way"):** This is one of several affordable housing projects located in the Bronx that is in the brownfield programs. Via Verde received $2.1 million in primarily site remediation tax credits, is in an EN-Zone, and was formerly a gas station and railroad facility. This project provides 222 affordable units, a mix of townhouses and apartments, both owned and rented. A LEED certified Gold project, Via Verde features a range of green amenities, from rooftop gardens to energy saving appliances. Via Verde has won numerous awards as an outstanding brown to green affordable housing development.

Source: Jonathan Rose Co
Addendum A. New York State Brownfield Tax Credit Database 2005 to 2013. This is a large (1.1KB) Excel database and is available upon request from the authors.

Addendum B. Other State Brownfield Programs (Table III-A1)

<table>
<thead>
<tr>
<th>State</th>
<th>Tax Credit/Tax Grant</th>
<th>Incentives/Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>Brownfield and Voluntary Cleanup Program</td>
<td>Offers tax credits, as incentives—but eligibility for the tax credit is not as-of-right in admission to the program. A revenue impact analysis is conducted and determines that the tax credits that accrue to the project will not exceed projected project revenues. Connecticut also delays eligibility for the credit for four years and requires project sponsors to take the credit in increments over a six year time period. Limits annual liability to $500 million. Source of funding: State funds=65% Federal Grants = 35%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Brownfield Redevelopment Fund</td>
<td>Projects that are located in designated Economically Distressed Areas (EDAs) are eligible to receive up to $100,000 for site assessment and characterization and remediation funding of up to $500,000. Projects designated as priority projects are eligible for up to $2 million in assistance</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Hazardous Discharge Site Remediation Fund  Brownfields and Contaminated Sites Remediation Reimbursement Program Brownfield Development Area (BDA) initiative</td>
<td>Municipal grants are available to fund 100 percent of site investigation activities up to $3 million per municipality per calendar year. Grants for remedial actions matching between 75 percent and 25 percent are available for sites where the sites are used for selected uses such as public housing or recreation, and where unrestricted cleanups or innovative remediation techniques are employed. Developers can recoup up to 75% of remediation costs based on collections of sales, business use and corporate taxes from the businesses located on the remediated site. There is no cap on the amount of reimbursement. Maintains Brownfield SiteMart, searchable database. Developers may receive up to 75% of remediation costs based upon redevelopment agreement related to tax revenues generated at the site. Municipalities may apply for remediation grants and loans up to $5 million per year for investigation and cleanup activities from the Hazardous Discharge Site Remediation fund.</td>
</tr>
<tr>
<td>State</td>
<td>Tax Credit/Tax Grant</td>
<td>Incentives/Cap</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Land Recycling Program</td>
<td>Job Creation Tax Credit Program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A tax credit equal to $1,000 per job is available to firms that increase</td>
</tr>
<tr>
<td></td>
<td></td>
<td>employment by 25 jobs or 20 percent within three years.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Industrial Sites Reuse Program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Provides loans and grants to municipalities and private entities for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>site assessment and remediation; maximum of $200,000 for site assessment, or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$1 million for remediation per year; all require a 25% match; loans carry a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2% rate for terms up to 5 years (for assessments) or 15 years (for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>remediation).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infrastructure Development Program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Provides public and private developers with grants and loans for site</td>
</tr>
<tr>
<td></td>
<td></td>
<td>remediation, clearance, and new construction, up to $1.25 million per</td>
</tr>
<tr>
<td></td>
<td></td>
<td>project at 3% interest for 15 years.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brownfield Inventory Grant (BIG) program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Grants up to $50,000 to cities and development authorities to carry out</td>
</tr>
<tr>
<td></td>
<td></td>
<td>brownfield inventories</td>
</tr>
<tr>
<td>Vermont</td>
<td>The Brownfields Reuse and Environment</td>
<td>100% Federal Funds</td>
</tr>
<tr>
<td></td>
<td>Liability Limitation Act (BRELLA)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>State</th>
<th>Yr Start</th>
<th>Number of Projects</th>
<th>Projects Completed</th>
<th>$ spent</th>
<th>$/project (Avg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>1995</td>
<td>460</td>
<td>34</td>
<td>$64,551,416.00</td>
<td>$1,898,571.06</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>40,780</td>
<td>35,360</td>
<td>$97,937,323.00</td>
<td>$2,769.72</td>
<td></td>
</tr>
<tr>
<td>Michigan</td>
<td>1989-1999</td>
<td>62</td>
<td>55</td>
<td>$54,355,019.00</td>
<td>$988,273.07</td>
</tr>
<tr>
<td>New Jersey</td>
<td>1994</td>
<td>339</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>1995</td>
<td>1,227</td>
<td>3,636</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vermont</td>
<td>2008</td>
<td>25</td>
<td>14</td>
<td>$29,812,155.00</td>
<td>$2,129,439.64</td>
</tr>
</tbody>
</table>

Sources: State Brownfield Programs Official Websites
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