

Center for Applied Demography & Survey Research
University of Delaware

**Economic Impact on Delaware's Economy:
The Brownfields Program**

by

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Economic Impact Studies

Introduction

This report quantifies the benefits of the brownfield program by analyzing its property values. In addition, changes in employment and wages are obtained for businesses found to be in a brownfield or its immediate area. The Delaware Division of Natural Resources and Environmental Control (DNREC) provided information on brownfields. Property values were obtained from county tax assessment records. Employment and wage information was obtained from the Delaware Department of Labor.

Property Values

This section analyzes the change in property values that occurred with the Delaware brownfields. Theoretically, market value reflects all relevant characteristics of a property, including any negative effects from pollution. However, market values are unavailable, so assessed values will be used instead. Assessed values provide each county with a base from which to levy property taxes.

The first step in assigning property values is to define the relevant brownfield area. For most brownfields this is trivial since they are already identified by tax parcels. However, parcel definitions can change over time, so some brownfields are no longer identified by their original identification. Therefore, each of the original 120 brownfields was manually updated to the current parcel definition that most closely identifies the original area.

The second step tabulates the change in the brownfield's assessed value over time.

Unfortunately, parcels are not assessed periodically. In fact, the last county wide assessment in New Castle occurred in 1983. Moreover, assessment values do not reflect current market conditions, but market conditions as of 1983.¹ Therefore, assessed values must be inflated to capture current market value.

Assessment-to-Sales (AS) ratios inflate assessed values to current market prices. These ratios are created for each school district by applying statistical and sampling techniques to recent sales in the district. Separate ratios are calculated for businesses, residences, farms, and open lots. The average 2008 AS ratio for New Castle County was 0.2499, implying that assessed values are approximately a quarter of their 2008 market value.

Table 1 shows the 10 year change (1998-2008) in assessment values for selected New Castle County brownfields. Brownfields in this list have received DNREC's certification that remediation is complete. The chart lists the change in assessed values (in 1983 \$) as well as the 2008 market value of that change.² The total change in property values for these brownfields is \$443 million. Four of the five highest valued improvements are on the Wilmington Riverfront.

Table 1 also indicates that eight brownfield's assessed values did not change and eleven actually declined in value. The most relevant explanation is incomplete development. Declines in assessed values mostly reflect the demolition phase prior to any construction. For example, the Howard St. Redevelopment Project in Wilmington intends to replace abandoned factories and automotive shops with new commercial offices and retail stores. As of 2008, demolition and remediation were both complete, but construction had not yet begun (see Figure 1). The assessed value for this project declined because five large buildings were demolished.

¹ For Sussex and Kent counties, county-wide assessments last occurred in 1974 and 1986 respectively. Assessments reflect market prices in those years.

² The proper AS ratio depends on the property's school district and zone type.

Table 2 reports the change in assessed values for New Castle County brownfields that began the remediation process, but have not yet received certification. The Deemer Steel project had the biggest gain with a \$12.6 million improvement, which was exceptional for these brownfields.³ Only four other brownfields with incomplete remediation increased in value, but their improvements were small in comparison. Twenty-one brownfields did not change and fourteen declined in values between 1998 and 2008. Such patterns are expected given their remediation status.

Table 3 reports the change in assessed values for brownfields in New Castle that have stopped reporting to DNREC. These inactive brownfields show a pattern similar to incomplete brownfields. Only one brownfield increased substantially in its assessed value, while most of the other properties saw either no change or a decline.

³The Deemer Steel project replaces a large abandoned steel plant in Wilmington with townhomes. Because townhomes are sold off as single units, remediation could potentially be complete on some of the properties.

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Table 1 – Change in Assessed Values for Remediated Brownfields in New Castle County

List	DE - #	Brownfield Name	Δ Assessed Value (1983 \$)	Δ Market Value (2008 \$)	Type of Development
22	1228, 1247, & 1224	Christina Landing Towers & Townhomes	\$36,159,800	\$177,951,771	Res.
54	1385, 0131, & 1331	Christina Crescent	\$15,226,100	\$74,931,594	Bus.
51	1377	Justison Landing Project	\$14,667,900	\$72,184,547	Bus. & Res.
8	163	Del Chapel Place	\$8,885,700	\$37,673,902	Res.
27	1309	Riverfront Headquarters/AAA	\$6,475,300	\$31,866,634	Bus.
25	1310	Basher Lane	\$5,872,600	\$22,859,478	Bus.
2	1206	920 French St.	\$3,642,500	\$17,925,689	Bus.
16	1291	320 "A" St.	\$1,638,100	\$8,061,516	Bus.
33	1347	Speakman Townhomes	\$1,753,600	\$6,844,488	Res.
9	84	Dureco	\$895,800	\$4,040,595	Bus.
88	1429	97 Vandever Property	\$881,800	\$3,695,725	Bus. & Res.
7	1147	Peninsula Park	\$728,700	\$3,286,874	Bus.
26	1281	Petrillo Property	\$381,500	\$1,720,794	Bus.
13	1068	DE Compressed Steel	\$308,200	\$1,516,732	Bus.
45	1372	Habitat for Humanity - New Castle	\$144,700	\$412,719	Nonprofit Res.
89	1426	Dureco Landfill	\$82,300	\$371,222	Bus.
18	1206	900 French Street	\$57,700	\$283,957	Lot
10	1277	Former BABS Real Estate	\$17,100	\$77,131	Bus.
20	1181	Cobra Machine	\$0	\$0	Bus.
37	270	Budd Metal	\$0	\$0	Bus.
63	1397	1101 East 8th St.	\$0	\$0	Bus.
77	1418	Limestone Shopping Center	\$0	\$0	Bus.
93	1417	300 Greenhill Avenue	\$0	\$0	Bus.
96	339	Kalmar Nyckel Challenge Program	\$0	\$0	Nonprofit Bus.
59	1394	0 Miller Road Property	\$0	\$0	Res
97	1083	Sunday Breakfast Mission	\$0	\$0	Nonprofit Res.
50	1382	38 Vandever Avenue	(\$1,700)	(\$5,966)	Bus.
108	1450	A & Townsend St.	(\$8,200)	(\$35,186)	Nonprofit Res.
28	1322	Ion Power	(\$10,300)	(\$40,424)	Bus.
5	1237	Riverfront Office Building	(\$47,500)	(\$233,760)	Bus.
62	1395	Pavilion Project	(\$78,500)	(\$305,567)	Res.
40	1359	DelSteel	(\$83,600)	(\$353,073)	Res.
92	1431	1020 Christiana Avenue	(\$199,200)	(\$898,512)	Bus.
71	1057 / 1401	Howard St. Commercial Redev.	(\$421,800)	(\$2,075,787)	Bus.
39	324	Wiley Cork	(\$774,500)	(\$3,246,018)	Bus.
32	1332	Madison Garden	(\$1,099,000)	(\$4,180,297)	Res.
94	1434	Delaware Children's Museum	(\$2,395,600)	(\$11,789,370)	Nonprofit Bus.
New Castle County Total			\$92,699,500	\$442,541,408	

- Source: DNREC, New Castle County Tax Assessment, and Center for Applied Demography and Survey Research

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Figure 1 - Howard Street Redevelopment Project Before and After Remediation (source: Google Maps and Bing Maps)

Before Remediation

After Remediation



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Table 2 – Change in Assessed Values for Partially Remediated Brownfields in New Castle County

List	DE - #	Brownfield Name	Δ Assessed Value (1983 \$)	Δ Market Value (2008 \$)	Type of Development
4	1087	Deemer Steel	\$3,040,800	\$12,547,009	Res.
17	1294	Peninsula Ventures	\$398,900	\$1,799,278	Bus.
72	1408	SIP, Inc. Property	\$31,700	\$133,054	Bus.
41	325	Burns & McBride	\$1,500	\$7,382	Bus.
102	1446	829 N. Church Street	\$600	\$2,282	Nonprofit Bus.
6	197	Harper Thiel	\$0	\$0	Bus.
15	1198	Wilmington Rolling Mills	\$0	\$0	Bus.
31	1293	Christina Marina	\$0	\$0	Bus.
43	1248	5th & Tatnall	\$0	\$0	Bus.
44	1369	Naga Foods	\$0	\$0	Bus.
46	1374	NVF Wilmington Property	\$0	\$0	Bus.
52	1384	Up the Creek Restaurant	\$0	\$0	Bus.
53	1389	Schwartz Property	\$0	\$0	Bus.
57	1376	Delaware Humane Association Property	\$0	\$0	Bus.
64	1367	Cleveland Heights Development	\$0	\$0	Bus.
68	1383	600 A Street Property	\$0	\$0	Bus.
73	45	Deemer Landfill Property	\$0	\$0	Nonprofit Bus.
75	1412	Former Milford Fertilizer Property	\$0	\$0	Bus. & Res.
82	1158	Former P&C Roofing Property	\$0	\$0	Bus. & Res.
84	1397	Former Carney Harris Property	\$0	\$0	Bus. & Res.
86	1423	Panella Ski Shop Property	\$0	\$0	Bus. & Res.
98	1421	Former Pack & Processing Property	\$0	\$0	Lot
99	1442	B Street Pack & processing Property	\$0	\$0	Lot
100	1444	605 Vandever Avenue Property	\$0	\$0	Lot
104	281	Diamond State Salvage	\$0	\$0	Res.
105	1153	Curtis Paper Company	\$0	\$0	Res.
87	1428	Crozier Center Property	(\$1,600)	(\$7,874)	Bus.
55	327	Bell Funeral Home Property	(\$2,000)	(\$8,382)	Bus. & Res.
58	328	12th and Brandywine Streets Garden	(\$2,700)	(\$13,287)	Lot
30	1328	Marina Overlook	(\$18,100)	(\$81,642)	Bus. & Res.
61	1396	New Castle Avenue and B Street Lots	(\$34,100)	(\$129,707)	Res.
49	1329	707 S. Market Street	(\$52,800)	(\$259,843)	Bus.
103	1304	Wilmington Piece Dye	(\$96,500)	(\$372,443)	Bus.
90	1430	Lippincott Project	(\$143,700)	(\$707,185)	Bus. & Res.
85	1109	Brandywine Fibre Property	(\$186,100)	(\$915,846)	Bus. & Res.
36	1345	Former New Arc Welding	(\$283,900)	(\$1,448,770)	Bus.
78	71	NVF Yorklyn Property	(\$417,300)	(\$1,610,575)	Bus. & Res.
60	1392	Railroad Crossing Project Property	(\$408,100)	(\$2,008,366)	Res.
109	1452	Ministry Row Property	(\$543,200)	(\$2,066,185)	Res.
83	1425	Former Star Building Property	(\$571,200)	(\$2,811,024)	Bus.
New Castle County Total			\$712,200	\$2,047,876	

- Source: DNREC, New Castle County Tax Assessment, and Center for Applied Demography and Survey Research

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Table 3 – Change in Assessed Values for Inactive Remediated Brownfields in New Castle County

List	DE - #	Brownfield Name	Δ Assessed Value (1983 \$)	Δ Market Value (2008 \$)	Type Of Development
14	199	NVF-Newark	\$2,713,300	\$13,383,586	Bus.
29	1324	Riverwalk at Deemers Beach	\$473,700	\$2,136,671	Bus. & Res.
66	1405	Heald Street Concrete Plant Property	\$73,500	\$331,529	Bus.
79	1420	Former Kershaw Construction Property	\$44,100	\$198,917	Bus.
3	1169 & 1203	Hessler Property	\$0	\$0	Bus.
70	1404	1000 East 12th Street Property	\$0	\$0	Bus. & Res.
74	1410	1190 East 7th Street Property	\$0	\$0	Bus.
101	1445	Sears Distribution Center	\$0	\$0	Bus.
107	1449	2440 Red Lion Road Property	\$0	\$0	Bus.
110	1173	Former Domino Auto Salvage Property	\$0	\$0	Bus.
113	1455	4001 New Castle Ave (a/k/a Dixon Auto)	\$0	\$0	Bus.
114	1458	900 S. Franklin Street	\$0	\$0	Bus.
117	1462	Consolidated Fabrication	\$0	\$0	Bus. & Res.
118	326	512 South Claymont Ave	\$0	\$0	Bus.
119	1464	Former Classic Image Site	\$0	\$0	Bus. & Res.
120	1464	925 North Church St	(\$46,800)	(\$200,815)	Bus.
111	1453	222 Maryland Ave	(\$72,100)	(\$354,823)	Nonprofit Res.
80	1419	Delaware and Van Buren Avenue	(\$278,800)	(\$1,076,032)	Bus.
34	1300	Russell-Stanley	(\$931,200)	(\$4,200,271)	Nonprofit Res.
New Castle County Total			\$1,975,700	\$10,218,762	

- Source: DNREC, New Castle County Tax Assessment, and Center for Applied Demography and Survey Research

Table 4 shows the 2000-2008 change in assessed values (in 1974 \$) for all Sussex County brownfields. After inflating this change to reflect current prices, a pattern similar to New Castle County emerges. Most of the gains are concentrated in a few brownfields (Cannery Village and Former Timmons Marina), while the remaining brownfields saw little improvement in assessed values.

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Table 4 - Change in Assessed Values for All Brownfields in Sussex County

List	DE - #	Brownfield Name	Δ Assessed Value (1974)	Δ Market Value (2008 \$)	Type of Development	Status
1	1252	Cannery Village*	\$1,342,100	\$9,473,446	Bus. & Res.	Complete
42	1360	Former Timmons Marina	\$1,079,800	\$6,873,797	Res.	Complete
116	149	Former Jackson Pit	\$90,400	\$632,168	Res.	In Progress
67	151	Donovan Property	\$31,500	\$465,976	Res.	Complete
12	1167	Lewes Boat Yard	\$0	\$0	open space (park)	Complete
115	1460	Milton Rails to Trails	\$0	\$0	open space (park)	Inactive
106	1417	Former Wilson Baker Bulk Plant	\$0	\$0	open space (lot)	Inactive
35	1342	Sussex Materials	(\$800)	(\$11,182)	Bus.	Complete
76	1414*	Pep Up/Calhoun Property	(\$9,600)	(\$63,872)	Bus.	In Progress
65	287	Former Peninsula Plating Facility	(\$251,300)	(\$2,386,515)	Res.	In Progress
Sussex County Total			\$2,282,100	\$14,983,818		

* Tax parcel acreage changed substantially due to redistricting

- Source: DNREC, Sussex County Assessment Dept., and Center for Applied Demography and Survey Research

Table 5 - Change in Assessed Values for All Brownfields in Kent County

List	DE - #	Brownfield Name	Δ Assessed Value (1986 \$)	Δ Market Value (2008 \$)	Type of Development	Status
69	1334	Former Chesapeake Supply	\$478,400	\$1,670,975	Bus.	In Progress
47	1357	Lexington Avenue Property	\$35,200	\$125,445	Res.	In Progress
24	66	ACE	\$22,000	\$76,842	Bus. & Res.	In Progress
81	1424	Mt. Vernon Street Property	\$15,700	\$54,838	Bus.	In Progress
38	1110	Dover Ice House	(\$32,200)	(\$112,469)	Bus.	In Progress
19	1171	Capitol Scrap	(\$37,700)	(\$131,680)	Bus.	In Progress
95	1438	Delaware Civic Center	(\$73,000)	(\$254,977)	Nonprofit Bus.	In Progress
48	1427	Chem-Solv Property	(\$100,800)	(\$352,078)	Res.	In Progress
112	1451	680 Forest Street property	(\$111,700)	(\$390,150)	Bus. & Res.	In Progress
91	1314	Former Dover Machine Works	(\$143,500)	(\$501,222)	Bus. & Res.	In Progress
Kent County Total			\$52,400	\$185,524		

- Source: DNREC, Kent County, and Center for Applied Demography and Survey Research

Table 5 shows the change in assessed values for Kent County brownfields between 2001 and 2008. All brownfields in Kent County are currently in progress. Consequently, more than half show a decline in assessment values.

Across all three counties, the assessment values for brownfields have increased by \$455 million. As of January 2009, the brownfield and HSCA programs have spent \$14.8 million and \$14.7 million (nominal \$) respectively. Ignoring inflation, this implies that every dollar spent towards the brownfield program has created approximately \$15.42 of property value. This figure will rise as more projects finish construction and are reassessed.

There are three issues one should consider in this analysis. First, properties are only assessed when material changes happen to the property. Changes in could be sensitive to the assessment in the first or last year. Second, Delaware law mandates that tax assessors ignore pollution and other factors that characterize a brownfield. This implies that the reported benefits may understate the actual gain in market value. Finally, the benefits of remediation are not distinguished from those of development. In a sense, the gain in property value should be credited to development, not the brownfield program. However, if brownfield certification is necessary to encourage development, the program is indirectly responsible for development and all of its benefits. This report views the brownfield program from the latter perspective.

Employment and Wages

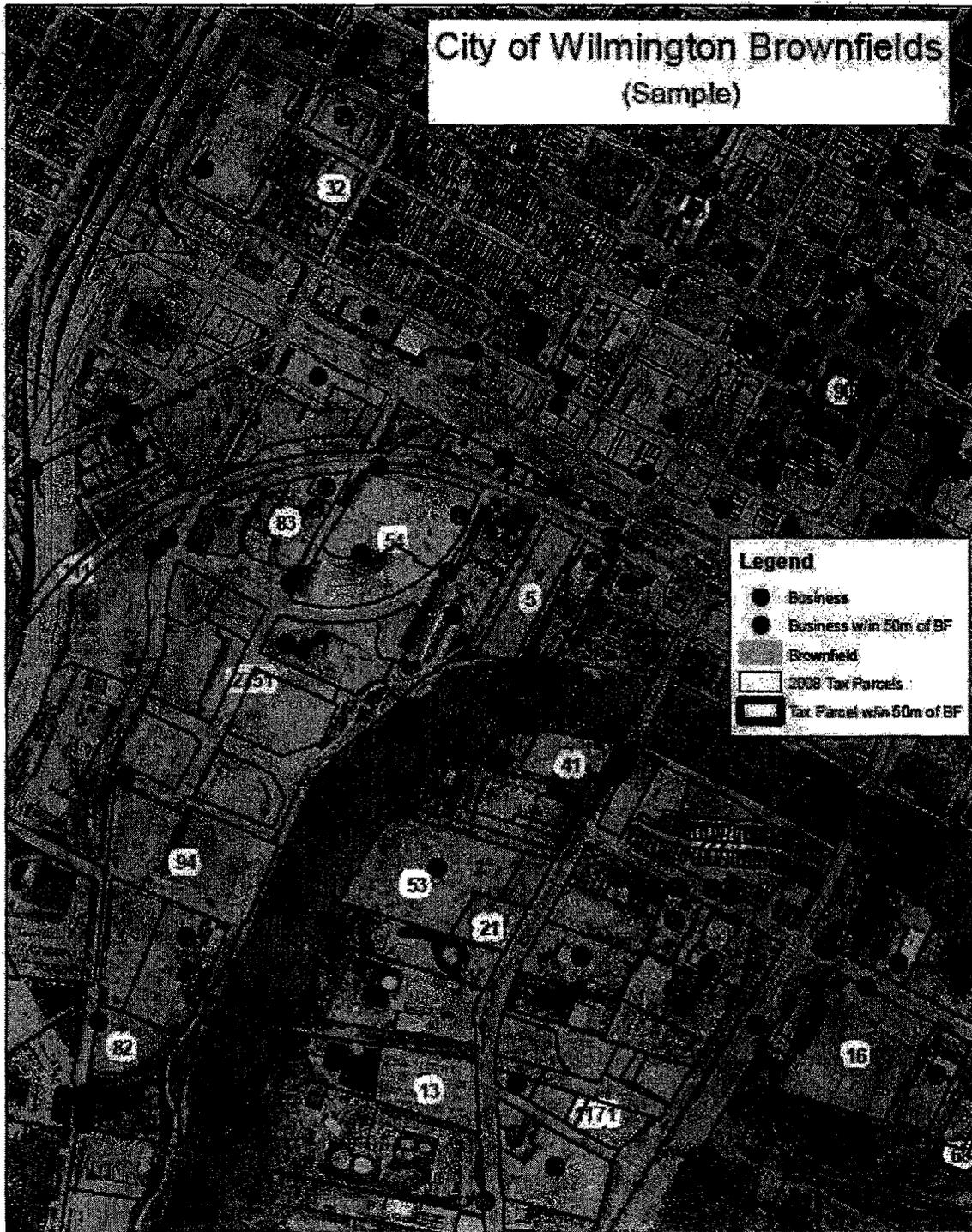
This section analyzes the change in employment and wages for brownfields and their immediate area over time.⁴ Any tax parcel within a 50 meter radius from a brownfield was defined as the “immediate area”.

Employment and wage data was obtained from the Delaware Department of Labor for all businesses in the state that pay unemployment insurance. Between 2000 and 2008, information is available for 62,000 establishments with separate addresses. Approximately 85% of these businesses were successfully mapped into a GIS platform given their reported addresses. 1,200 businesses were found to be in brownfield’s tax parcel or its immediate region. Figure 2 shows a snapshot of the brownfields on the Wilmington Riverfront and the location of businesses that had successfully mapped to the area.

Table 6 lists the quarterly employment and wage information, and Figures 3 and 4 plot the information across time. Employment in the brownfield tax parcels actually fell by 1.8%, though the changes were highly variable. Quarterly wages, on the other hand, declined at first but later increased by 30.6%. A different pattern emerges for businesses within a 50 meter radius from the brownfield. Employment in the brownfield area increased by nearly 2,500 jobs since 2000 (31.4%) and wages increased by 87.6%. Considering that employment and wages in the state increased by only 2.8% and 33.7% respectively, the relative economic gain coming from brownfields is substantial.

⁴ Currently, only New Castle County brownfields are complete. The Crozier Center was excluded given the overwhelming effects of large operations in the area.

Figure 2 – Riverfront Brownfields and Businesses in area



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- Source: Delaware Department of Labor and Center for Applied Demography and Survey Research

Table 5 - Employment and Wages in Brownfields and Surrounding Area (New Castle County)

Time	Jobs in Bf only	Jobs in Bf and Area	Wages in Bf only	Wages in Bf and Area
2000 Q1	740.3	6693.0	\$5,925,682	\$60,949,493
2000 Q2	712.0	7274.3	\$5,813,968	\$60,780,289
2000 Q3	638.7	6767.3	\$5,179,075	\$59,666,013
2000 Q4	689.0	7014.3	\$6,480,423	\$69,038,774
2001 Q1	1028.0	7880.0	\$8,414,805	\$71,801,122
2001 Q2	748.7	6989.3	\$6,811,810	\$58,605,397
2001 Q3	763.7	7005.7	\$5,971,290	\$56,542,089
2001 Q4	760.3	6697.0	\$6,104,832	\$60,244,779
2002 Q1	679.0	6703.0	\$5,691,605	\$56,217,610
2002 Q2	668.7	7221.0	\$5,394,517	\$63,232,182
2002 Q3	601.7	7206.3	\$4,384,376	\$62,682,867
2002 Q4	553.0	6960.0	\$4,914,726	\$67,806,697
2003 Q1	708.0	6573.7	\$4,788,790	\$59,935,225
2003 Q2	651.3	6875.3	\$4,224,076	\$61,709,365
2003 Q3	601.7	6941.3	\$3,805,169	\$65,693,631
2003 Q4	597.3	6644.3	\$4,143,636	\$64,899,369
2004 Q1	646.7	6742.7	\$6,145,978	\$66,341,716
2004 Q2	642.3	7085.3	\$6,011,753	\$70,688,320
2004 Q3	579.7	7111.3	\$5,333,909	\$72,564,256
2004 Q4	699.7	7408.3	\$6,847,631	\$84,352,450
2005 Q1	742.7	7235.3	\$6,943,777	\$80,289,572
2005 Q2	857.0	7669.7	\$8,024,917	\$72,680,962
2005 Q3	732.3	7928.0	\$7,545,755	\$80,127,779
2005 Q4	783.7	8900.7	\$7,749,391	\$99,642,337
2006 Q1	838.3	8122.3	\$7,641,364	\$95,587,014
2006 Q2	746.3	8709.3	\$7,771,702	\$96,956,743
2006 Q3	659.3	9002.0	\$6,973,504	\$101,332,627
2006 Q4	716.3	9667.3	\$7,545,247	\$112,464,506
2007 Q1	793.7	9214.7	\$8,607,925	\$121,140,988
2007 Q2	774.7	9231.0	\$9,319,216	\$109,310,423
2007 Q3	702.0	9562.0	\$8,239,989	\$112,425,617
2007 Q4	587.3	10177.0	\$7,082,108	\$120,691,064
2008 Q1	655.3	9236.0	\$7,608,208	\$131,926,388
2008 Q2	715.3	8981.7	\$7,961,970	\$108,307,487
2008 Q3	719.7	8952.7	\$7,464,317	\$110,135,995
2008 Q4	640.7	9293.7	\$7,517,192	\$119,327,518

2000 – 2008 % Δ -1.8% 31.4% 30.6% 87.6%

- Source: Delaware Department of Labor and Center for Applied Demography and Survey Research

Figure 3 - Employment and Wages in Brownfield Tax Parcels (New Castle County)

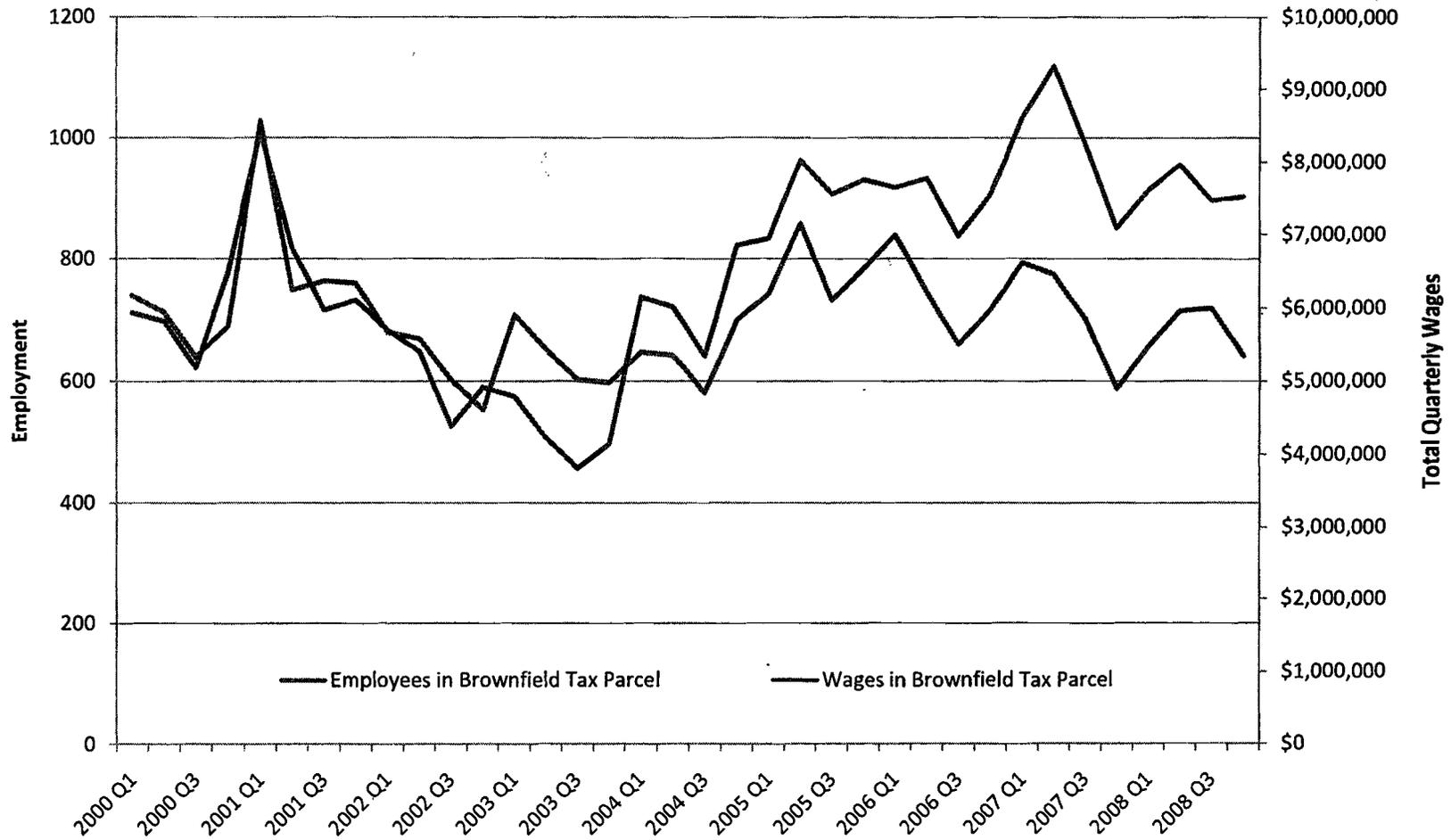


Figure 4 - Employment and Wages in Brownfield Tax Parcels and Surrounding Area (New Castle County)

