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## The Economic Impact Of The Metrohealth System Campus Transformation: 2015-2023

Ellen Cyran

*Cleveland State University, e.cyran@csuohio.edu*

Iryna Lendel

*Cleveland State University, i.lendel@csuohio.edu*

Candi Clouse

*Cleveland State University, c.clouse@csuohio.edu*

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Maxine Goodman Levin  
College of Urban Affairs

Prepared for:

**MetroHealth System**

Prepared by:

Ellen Cyran  
Iryna Lendel, Ph.D.  
Candi Clouse

**THE ECONOMIC  
IMPACT OF THE  
METROHEALTH  
SYSTEM CAMPUS  
TRANSFORMATION:  
2015-2023**

April 2017

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## INTRODUCTION

This report presents an analysis of the local economic impact of the MetroHealth System's campus transformation. The MetroHealth System ("MHS") Board of Trustees endorsed a campus transformation plan for an \$855 million capital project, which includes cost projections for various aspects of the project, including design, construction, and equipment. The transformation plan covers a period of nine years spanning 2015 to 2023. The project involves several new buildings, including a 12-story hospital, a large parking garage, and a central utility plant. The transformation also calls for demolishing outdated buildings to increase the hospital campus' greenspace and improve its network of internal roadways.<sup>1</sup> While a major component of the transformation plan—the Critical Care Pavilion Expansion—was completed in 2016, over 52% of the costs will be incurred in 2019 and 2020 (see Table 1 in the Summary for capital expenditures by year). The physical transformation is made up of four strategies and tactics designed to enhance the hospital system and its facilities: (1) comprehensive anchor facilities distributed geographically, (2) ambulatory centers disbursed throughout Cuyahoga County, (3) capital-light primary access facilities, and (4) a state-of-the-art main campus.

MetroHealth System ("MHS") opened in 1837 as City Hospital, becoming the City of Cleveland's first public hospital. As a public institution created in response to many Clevelanders' inability to afford basic medical care, the mission of City Hospital was to act as a safety net for Cleveland residents and provide quality healthcare to all, regardless of their ability to pay. Today, MetroHealth is an essential health system in Cuyahoga County, with over 1 million patient visits annually between 2012 and 2016. While the overall population of the county continues to decrease, the number of patients seen at MHS has continued to increase, demonstrating the hospital's position as an important part of the community.

This report details the economic impact analysis of the MHS campus transformation construction phases on both the City of Cleveland and Cuyahoga County. The economic impact measures employment, labor income, value added, output, and taxes for the two geographic areas. These components are disaggregated into direct, indirect, and induced impacts.<sup>2</sup> All data in this report is in 2015 dollars which was the year construction began.

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<sup>1</sup> MetroHealth Board of Trustees Unanimously Approves Sale of Bonds for Campus Transformation. 3/24/17. <http://news.metrohealth.org/metrohealth-board-of-trustees-unanimously-approves-sale-of-bonds-for-campus-transformation/>.

<sup>2</sup> For an explanation of these components, please see the Methodology section.

## SUMMARY OF THE EXPENDITURES AND THE IMPACT

The total capital expenditures of the campus transformation is \$855 million (Table 1). Over one-third of the costs (\$287.9 million) will be incurred in 2020 and the smallest outlay by year will be 2022 (\$38.7 million)

**Table 1: Capital Expenditures of MHS Campus Transformation, 2015-2023**

Expenditures	Completed	2017	2018	2019	2020	2021	2022	2023	9-Year Total
Total	\$88.0	\$52.8	\$65.8	\$161.6	\$287.9	\$94.8	\$38.7	\$65.4	\$855.0
Percent	10.3%	6.2%	7.7%	18.9%	33.7%	11.1%	4.5%	7.6%	100.0%

Note: Data are in millions of dollars.

The total economic impact of the MetroHealth System campus transformation for the City of Cleveland between 2015 and 2023 with expected expenditures by MHS of \$855 million are as follows:

- Total Employment Impact: 3,237 jobs
- Total Labor Income Impact: \$218.6 million
- Total Value Added Impact: \$275.8 million
- Total Output Impact: \$513.1 million
- Tax Impact: \$41.0 million

The total economic impact of the MetroHealth System campus transformation for Cuyahoga County between 2015 and 2023 are as follows:

- Total Employment Impact: 5,618 jobs
- Total Labor Income Impact: \$360.4 million
- Total Value Added Impact: \$486.4 million
- Total Output Impact: \$873.3 million
- Tax Impact: \$95.0 million

## METHODOLOGY

MHS has substantial purchasing power not only in terms of its regular operations, but also through significant “one-time” projects such as the campus transformation. When this spending is directed toward purchasing local goods and services, the local economy is affected. This series of transactions is what is referred to as economic impact - how MHS’ spending on payroll and operations ripples through the economy. The economic impact of the MHS transformation plan shows the effects of the purchase of goods and services during each phase of the transformation. An input-output model is used to trace the spending path each dollar makes as it travels through various industry sectors. This analysis uses IMPLAN Professional and IMPLAN Data Files to create models of the city and county. The model shows how the local economy responds to changes in economic activity. For every dollar spent in an industry, it traces that dollar using variables called multipliers to determine how that dollar is spent by other industries in each region of study.

This report measures five forms of impact: employment, output, value added, labor income, and taxes. Employment measures the number of jobs supported because of MHS spending during the campus transformation. Labor income is payroll paid to employees working on the project and in the project’s supply chain. Value added measures the value of goods and services less intermediary goods and represents a portion of output. Output measures the total value of goods and services produced in the region because of the spending and is often used as a proxy for Gross Domestic Product (GDP). Taxes include federal as well as state and local tax revenues.

Each of the impacts noted above is a summation of direct, indirect, and induced impacts. Direct impact includes the initial value of goods and services that MHS purchases in the two regions of study. Indirect impact measures the jobs and production needed to manufacture goods and services required by MHS for the campus transformation. Induced impact is the increase in spending of local households because of income received through their work on the projects, such as the building of the hospital and the critical care pavilion addition, and with local suppliers.

For this analysis, total expenditures and projected expenditures for the transformation for each year and each project were used. The categories, such as construction costs and equipment costs, were then assigned to industries.<sup>3</sup> The percentage of purchases that were made locally were assigned through the IMPLAN model.

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<sup>3</sup> The Design Contingency category was assigned to Architectural, engineering, and related services. The Escalation costs were assigned to the all industry categories based on the original percentage of expenditures in each category.

## CAPITAL EXPENDITURES IMPACT ON THE CITY OF CLEVELAND

The results of the impact of MHS’ transformation indicate 3,237 jobs will be created in Cleveland (Table 2). Additionally, labor income (household earnings) will increase by \$218.6 million, value added will increase by \$275.8 million, and output (the total value of all goods and services) will increase by \$513.1 million. Together the total state and local taxes are estimated to be about \$9.7 million and the total federal taxes are estimated to be about \$31.3 million with a total tax impact of is \$41.0 million.

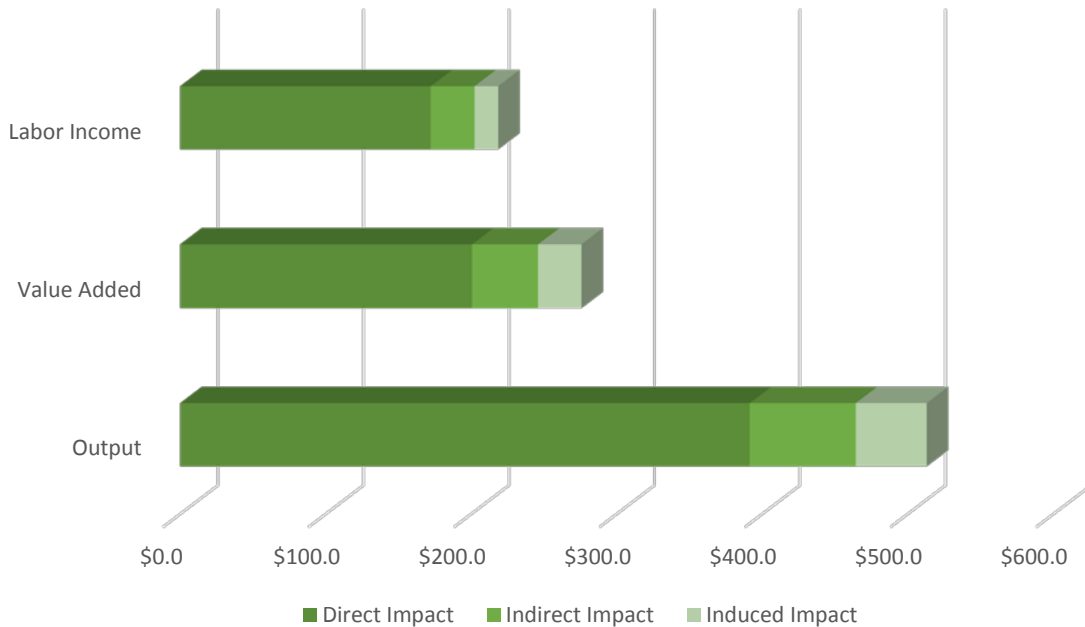
**Table 2: Economic Impact of MHS Campus Transformation, 2015-2023, City of Cleveland**

Impact Type	Employment	Labor Income	Value Added	Output	Total Tax
Direct Impact	2,371	\$172.2	\$200.6	\$391.4	\$28.0
Indirect Impact	503	\$30.1	\$45.4	\$73.0	\$7.6
Induced Impact	363	\$16.3	\$29.8	\$48.7	\$5.4
<b>Total Impact</b>	<b>3,237</b>	<b>\$218.6</b>	<b>\$275.8</b>	<b>\$513.1</b>	<b>\$41.0</b>

Note: Data are in millions of 2015 dollars.

For each measure of economic impact, the direct effect is at least 65% of the impact. For employment, 2,371 (73.2%) is in the direct effect which represents the employees working directly on the transformation plan. The direct effect accounts for \$172.2 million (78.8%) of the labor income, \$200.6 million (72.7%) of the value added, \$391.4 million (76.3%) of the output, and \$28 million (68.3%) of the taxes. Figure 1 shows the direct, indirect, and induced impact shares.

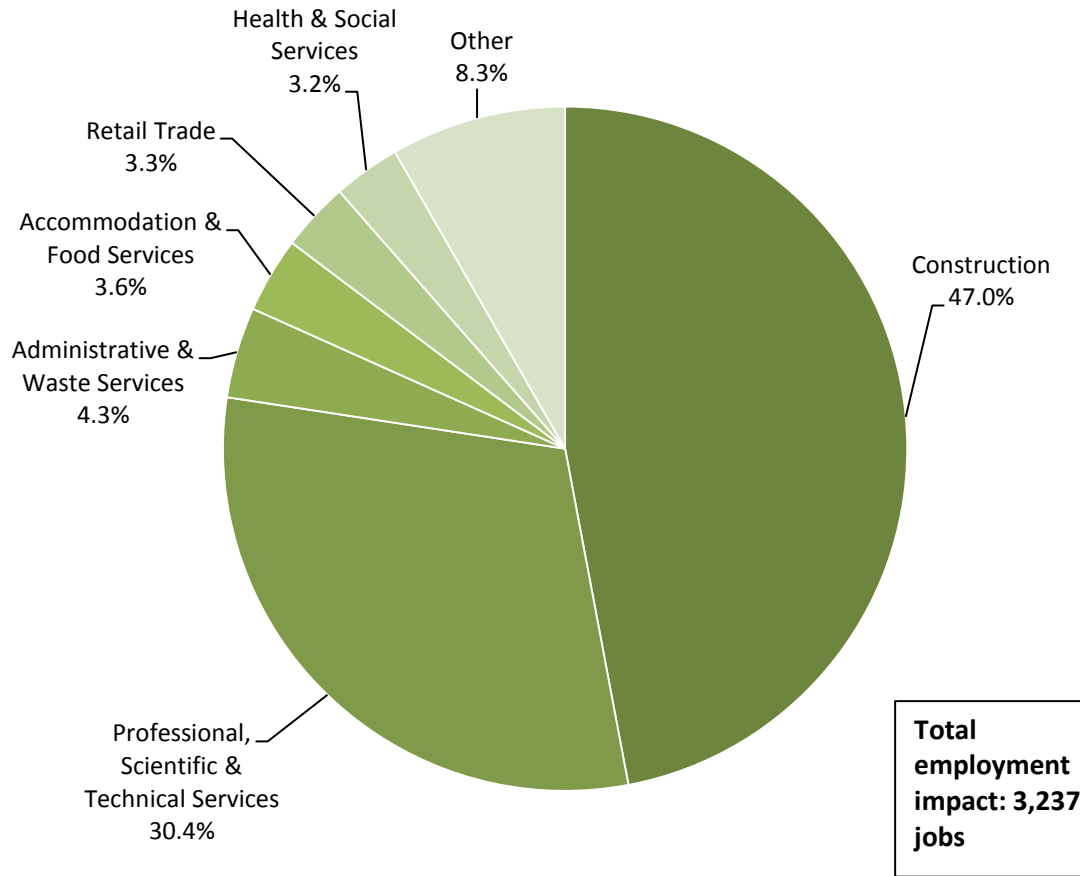
**Figure 1: Direct, Indirect, and Induced Effects of MHS Campus Transformation, City of Cleveland**



Note: Data are in millions of 2015 dollars.

For employment, the largest impact by major industry sector was in *Construction* (Figure 2). *Construction* accounted for 1,523 jobs or 47.0% of the total employment impact. The *Professional, Scientific, & Technical Service* sector was also significant and accounted for 983 jobs (30.4%). This was followed by *Administrative & Waste Services* with 139 jobs (4.3%). Almost all (99.6%) of the *Construction* sector impact was from the direct spending of MHS. The largest sector in terms of the indirect effect was the *Professional, Scientific, & Technical Services* sector, which accounted for 139 jobs, and the largest sector in terms of the induced effect was *Health and Social Services* at 103 jobs.

**Figure 2: Employment Impact of MHS Campus Transformation by Major Sector, City of Cleveland**



In terms of the labor income, *Construction* and *Professional, Scientific, & Technical Services* each represented 42% of the impact. For both value added and output the sector with the largest impacts were *Construction* followed by *Professional, Scientific, & Technical Services*. These results are available in Appendix A.



## CAPITAL EXPENDITURES IMPACT ON CUYAHOGA COUNTY

This section describes the total economic impact of MHS’s campus transformation construction phase on Cuyahoga County.<sup>4</sup> An estimated 5,618 jobs will be supported in the county due to the transformation project (Table 3). Labor income will increase by \$360.4 million, value added will increase by \$486.4 million, and output will increase by \$873.3 million. Together, the total state and local taxes are estimated to be about \$27.5 million and the total federal taxes are estimated to be about \$67.5 million with a total tax impact is almost \$95.0 million.

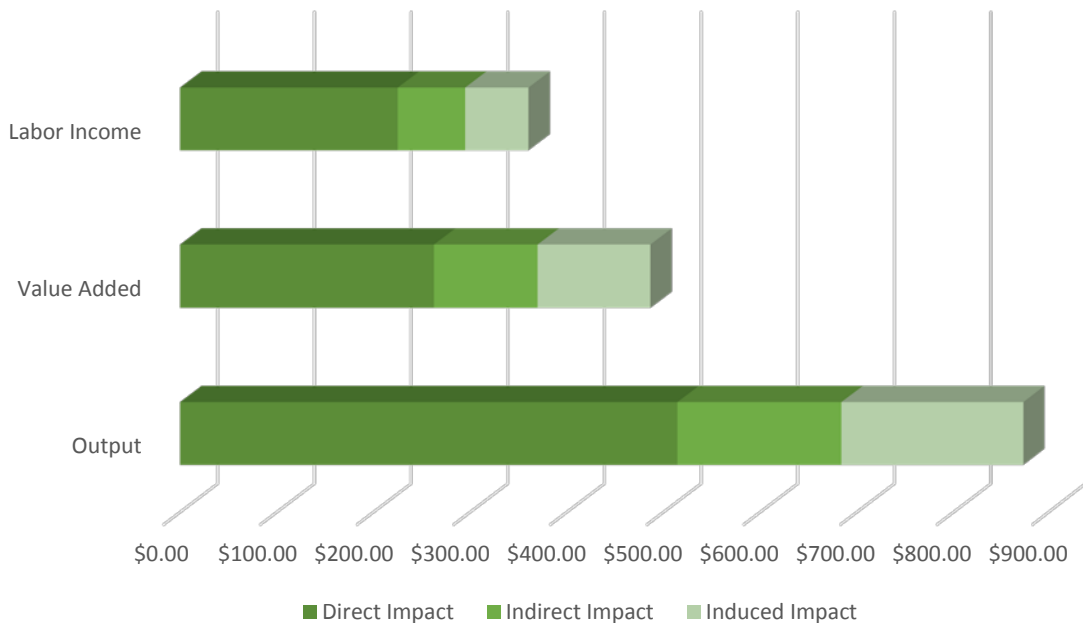
**Table 3: Economic Impact of the MHS Campus Transformation, 2015-2023, Cuyahoga County**

Impact Type	Employment	Labor Income	Value Added	Output	Total Tax
Direct Impact	3,155	\$225.1	\$262.7	\$514.4	\$48.1
Indirect Impact	1,098	\$69.7	\$107.1	\$169.6	\$21.9
Induced Impact	1,365	\$65.6	\$116.6	\$189.3	\$25.0
<b>Total Impact</b>	<b>5,618</b>	<b>\$360.4</b>	<b>\$486.4</b>	<b>\$873.3</b>	<b>\$95.0</b>

Note: Data are in millions of 2015 dollars.

The direct effect is at least 50% of the impact for the all the components. For employment, 3,155 (56.1%) is from the direct effect (Figure 3). The direct effect accounts for \$225.1 million (62.5%) of the labor income, \$262.7 million (54%) of the value added, \$514.4 million (58.9%) of the output, and \$48.1 million (50.6%) of the taxes.

**Figure 3: Direct, Indirect, and Induced Effects of MHS Campus Transformation, Cuyahoga County**

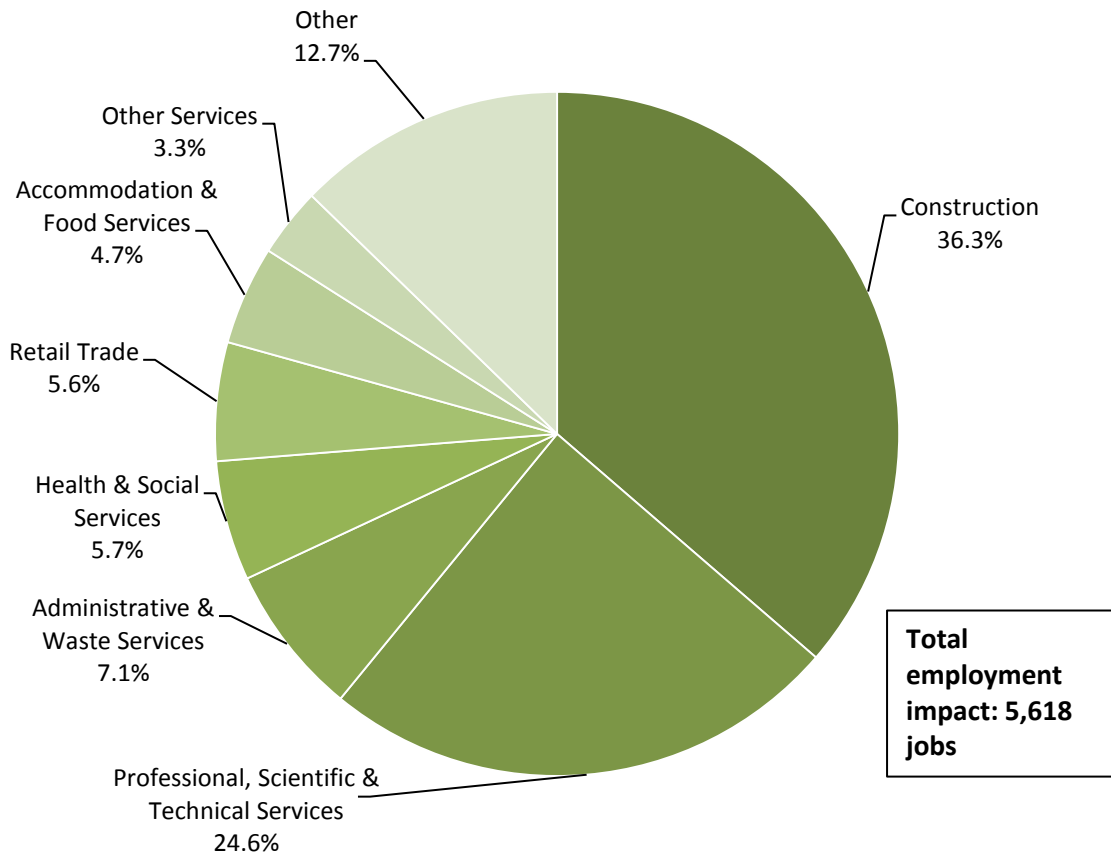


Note: Data are in millions of 2015 dollars.

<sup>4</sup> The results for Cuyahoga County include the City of Cleveland results; therefore, the impacts cannot be summed.

The employment impact in Cuyahoga County followed the same pattern as in the City of Cleveland. For instance, the largest industry sector, accounting for 36.3% of the employment impact (2,041 jobs), was again *Construction* (Figure 4). This was again followed by *Professional, Scientific, & Technical Services* (1,381 jobs) and *Administrative & Waste Services* (401 jobs). The impact in *Construction* was primarily found in the direct impact (99.1%) of MHS' transformation spending, as was the case with the city.

**Figure 4: Employment Impact of MHS Campus Transformation by Major Sector, Cuyahoga County**



For Cuyahoga County, *Construction* and *Professional, Scientific, & Technical Services* were the top two sectors for labor income, value added, and output. Appendix B provides a detailed look at the Cuyahoga County impact results by major sector.

## CONCLUSION

As shown, the Campus Transformation of MHS will generate significant returns to the city and county based on projected local spending. The economic impact on the city is smaller than that of Cuyahoga County as the county is larger and offers more opportunity for local purchasing than the city alone. Table 4 summarizes the economic impact of MHS' campus transformation capital expenditures between 2015 and 2023 on each of the two geographies.

**Table 4: Total Economic Impact of MHS Campus Transformation by Region, 2015-2023**

Region	Employment	Labor Income	Value Added	Output	Taxes
City of Cleveland	3,237	\$218.6	\$275.8	\$513.1	\$41.0
Cuyahoga County	5,618	\$360.4	\$486.4	\$873.3	\$95.0

Note: Data are in 2015 millions of dollars.

The nine-year economic impact of the MetroHealth Transformation shows that both the City of Cleveland and Cuyahoga County will benefit by supporting 3,237 total employees in Cleveland and 5,618 total in Cuyahoga County.<sup>5</sup> In Cleveland, overall household income will increase by \$218.6, with value added increasing by \$275.8 million, output by \$513.1 million, and taxes by \$41.0 million. In Cuyahoga County, household income will increase by \$360.4 million, value added by \$486.4 million, output by \$873.3 million, and taxes by almost \$95 million.

MetroHealth System has been investing in the future of care delivery and the campus transformation will continue this process. The economic impact demonstrates how their large construction project will affect the City of Cleveland and Cuyahoga County and allow them to further their mission "leading the way to a healthier you and a healthier community through service, teaching, discovery and teamwork."<sup>6</sup>

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<sup>5</sup> Note that the 3,237 employees in the City of Cleveland are also included in the 5,618 employees in Cuyahoga County. This is also true for the other measures of economic impact where the results for the City of Cleveland are included in the totals for the county.

<sup>6</sup> About The MetroHealth System. 3/24/17. <http://news.metrohealth.org/metrohealth-board-of-trustees-unanimously-approves-sale-of-bonds-for-campus-transformation/>

## APPENDIX

### APPENDIX A: ECONOMIC IMPACT OF CAMPUS TRANSFORMATION IN THE CITY OF CLEVELAND

Table A1: Employment Impact of MHS Campus Transformation by Major Sector, City of Cleveland

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	0	0	0	0
Mining	0	0	0	0
Utilities	0	1	1	3
Construction	1516	3	3	1523
Manufacturing	4	10	3	17
Wholesale Trade	0	6	1	7
Retail Trade	0	50	56	106
Transportation & Warehousing	0	42	9	52
Information	0	8	3	11
Finance & Insurance	0	14	17	31
Real Estate & Rental	0	27	12	39
Professional, Scientific & Technical Services	834	139	11	983
Management of Companies	0	8	1	9
Administrative & Waste Services	15	110	13	139
Educational Services	0	0	17	18
Health & Social Services	0	0	103	103
Arts, Entertainment & Recreation	2	10	10	21
Accommodation & Food Services	0	58	58	116
Other Services	0	15	41	55
Government & Non-NAICs	0	1	3	4
<b>Total</b>	<b>2,371</b>	<b>503</b>	<b>363</b>	<b>3,237</b>

**Table A2: Labor Income Impact of MHS Campus Transformation by Major Sector, City of Cleveland**

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	\$0	\$153	\$678	\$831
Mining	\$0	\$23,858	\$3,027	\$26,885
Utilities	\$0	\$172,591	\$151,814	\$324,405
Construction	\$92,545,121	\$172,787	\$205,580	\$92,923,488
Manufacturing	\$246,483	\$135,001	\$160,623	\$542,107
Wholesale Trade	\$0	\$575,126	\$104,263	\$679,389
Retail Trade	\$0	\$1,827,231	\$1,871,032	\$3,698,263
Transportation & Warehousing	\$0	\$2,769,469	\$578,241	\$3,347,710
Information	\$1,743	\$658,769	\$260,683	\$921,195
Finance & Insurance	\$0	\$1,261,994	\$1,166,323	\$2,428,317
Real Estate & Rental	\$0	\$1,533,748	\$694,700	\$2,228,448
Professional, Scientific & Technical Services	\$78,856,522	\$12,807,843	\$966,514	\$92,630,878
Management of Companies	\$0	\$1,102,468	\$206,851	\$1,309,318
Administrative & Waste Services	\$467,434	\$4,478,410	\$492,821	\$5,438,665
Educational Services	\$0	\$13,543	\$694,674	\$708,218
Health & Social Services	\$0	\$194	\$5,571,746	\$5,571,940
Arts, Entertainment & Recreation	\$53,224	\$378,419	\$350,003	\$781,647
Accommodation & Food Services	\$0	\$1,452,403	\$1,413,928	\$2,866,331
Other Services	\$0	\$617,166	\$1,144,611	\$1,761,777
Government & Non-NAICs	\$38,310	\$100,403	\$268,802	\$407,515
<b>Total</b>	<b>\$172,208,838</b>	<b>\$30,081,577</b>	<b>\$16,306,913</b>	<b>\$218,597,328</b>

**Table A3: Value Added Impact of MHS Campus Transformation by Major Sector, City of Cleveland**

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	\$0	\$185	\$1,035	\$1,220
Mining	\$0	\$39,975	\$5,622	\$45,597
Utilities	\$0	\$871,604	\$723,878	\$1,595,483
Construction	\$117,560,668	\$221,309	\$261,110	\$118,043,087
Manufacturing	\$371,428	\$2,152,558	\$493,363	\$3,017,350
Wholesale Trade	\$0	\$1,015,595	\$184,114	\$1,199,709
Retail Trade	\$0	\$2,522,082	\$2,918,263	\$5,440,346
Transportation & Warehousing	\$0	\$3,236,690	\$644,149	\$3,880,839
Information	\$3,921	\$1,100,881	\$602,339	\$1,707,142
Finance & Insurance	\$0	\$3,401,964	\$2,700,218	\$6,102,183
Real Estate & Rental	\$0	\$6,380,155	\$8,142,553	\$14,522,708
Professional, Scientific & Technical Services	\$81,973,209	\$13,697,756	\$1,180,771	\$96,851,736
Management of Companies	\$0	\$1,346,918	\$252,716	\$1,599,633
Administrative & Waste Services	\$585,262	\$6,016,862	\$644,469	\$7,246,593
Educational Services	\$0	\$15,044	\$740,086	\$755,131
Health & Social Services	\$0	\$215	\$6,140,475	\$6,140,690
Arts, Entertainment & Recreation	\$53,618	\$458,407	\$484,231	\$996,256
Accommodation & Food Services	\$0	\$1,944,641	\$1,958,040	\$3,902,681
Other Services	\$0	\$854,242	\$1,351,341	\$2,205,583
Government & Non-NAICs	\$57,413	\$126,386	\$387,102	\$570,901
<b>Total</b>	<b>\$200,605,520</b>	<b>\$45,403,471</b>	<b>\$29,815,876</b>	<b>\$275,824,867</b>

**Table A4: Output Impact of MHS Campus Transformation by Major Sector, City of Cleveland**

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	\$0	\$256	\$2,385	\$2,641
Mining	\$0	\$105,892	\$16,327	\$122,219
Utilities	\$0	\$1,827,132	\$1,506,452	\$3,333,584
Construction	\$248,632,012	\$464,737	\$572,848	\$249,669,598
Manufacturing	\$1,252,260	\$5,113,249	\$1,171,757	\$7,537,265
Wholesale Trade	\$0	\$1,597,341	\$289,576	\$1,886,917
Retail Trade	\$0	\$3,861,833	\$4,375,586	\$8,237,419
Transportation & Warehousing	\$0	\$6,772,587	\$1,333,057	\$8,105,644
Information	\$6,140	\$2,646,310	\$1,299,487	\$3,951,936
Finance & Insurance	\$0	\$5,030,686	\$4,922,850	\$9,953,537
Real Estate & Rental	\$0	\$8,086,159	\$11,300,050	\$19,386,209
Professional, Scientific & Technical Services	\$140,439,219	\$21,309,399	\$1,713,628	\$163,462,246
Management of Companies	\$0	\$2,059,940	\$386,496	\$2,446,436
Administrative & Waste Services	\$895,407	\$8,226,689	\$974,035	\$10,096,132
Educational Services	\$0	\$24,526	\$1,192,429	\$1,216,955
Health & Social Services	\$0	\$397	\$9,894,802	\$9,895,199
Arts, Entertainment & Recreation	\$82,142	\$700,994	\$800,479	\$1,583,615
Accommodation & Food Services	\$0	\$3,456,002	\$3,496,926	\$6,952,929
Other Services	\$0	\$1,380,408	\$2,670,182	\$4,050,590
Government & Non-NAICs	\$115,637	\$298,880	\$808,628	\$1,223,144
<b>Total</b>	<b>\$391,422,815</b>	<b>\$72,963,418</b>	<b>\$48,727,980</b>	<b>\$513,114,213</b>

## APPENDIX B: ECONOMIC IMPACT OF CAMPUS TRANSFORMATION IN CUYAHOGA COUNTY

Table B1: Employment Impact of MHS Campus Transformation by Major Sector, Cuyahoga County

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	0	0	0	0
Mining	0	5	1	6
Utilities	0	2	3	4
Construction	2,022	7	12	2,041
Manufacturing	5	13	3	21
Wholesale Trade	0	96	36	132
Retail Trade	0	102	212	315
Transportation & Warehousing	0	71	40	111
Information	0	23	22	45
Finance & Insurance	0	40	90	130
Real Estate & Rental	0	59	48	107
Professional, Scientific & Technical Services	1,048	276	57	1,381
Management of Companies	0	18	9	26
Administrative & Waste Services	77	247	77	401
Educational Services	0	1	64	65
Health & Social Services	0	0	318	318
Arts, Entertainment & Recreation	2	17	40	59
Accommodation & Food Services	0	84	179	263
Other Services	0	35	148	183
Government & Non-NAICs	0	2	7	9
<b>Total</b>	<b>3,155</b>	<b>1,098</b>	<b>1,365</b>	<b>5,617</b>



**Table B2: Labor Income Impact of MHS Campus Transformation by Major Sector, Cuyahoga County**

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	\$0	\$607	\$4,417	\$5,024
Mining	\$0	\$422,085	\$99,643	\$521,728
Utilities	\$0	\$211,831	\$333,698	\$545,530
Construction	\$123,411,450	\$411,624	\$724,504	\$124,547,578
Manufacturing	\$315,471	\$1,013,744	\$217,956	\$1,547,172
Wholesale Trade	\$0	\$8,722,033	\$3,243,353	\$11,965,386
Retail Trade	\$0	\$3,679,074	\$7,134,482	\$10,813,556
Transportation & Warehousing	\$0	\$4,637,014	\$2,504,001	\$7,141,015
Information	\$13,928	\$1,798,839	\$1,617,391	\$3,430,158
Finance & Insurance	\$0	\$3,394,250	\$6,063,700	\$9,457,949
Real Estate & Rental	\$0	\$3,406,742	\$2,834,643	\$6,241,386
Professional, Scientific & Technical Services	\$98,935,284	\$25,096,710	\$5,047,684	\$129,079,679
Management of Companies	\$0	\$2,443,319	\$1,191,326	\$3,634,644
Administrative & Waste Services	\$2,362,609	\$9,953,219	\$2,836,951	\$15,152,779
Educational Services	\$0	\$31,922	\$2,527,845	\$2,559,767
Health & Social Services	\$0	\$359	\$18,539,363	\$18,539,722
Arts, Entertainment & Recreation	\$63,822	\$649,753	\$1,507,539	\$2,221,114
Accommodation & Food Services	\$0	\$2,018,680	\$4,263,983	\$6,282,662
Other Services	\$0	\$1,590,109	\$4,187,835	\$5,777,943
Government & Non-NAICs	\$39,562	\$195,509	\$650,401	\$885,472
<b>Total</b>	<b>\$225,142,128</b>	<b>\$69,677,423</b>	<b>\$65,530,714</b>	<b>\$360,350,264</b>

**Table B3: Value Added Impact of MHS Campus Transformation by Major Sector, Cuyahoga County**

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	\$0	\$694	\$4,763	\$5,458
Mining	\$0	\$520,933	\$122,723	\$643,657
Utilities	\$0	\$1,046,514	\$1,570,538	\$2,617,052
Construction	\$156,789,512	\$527,270	\$921,545	\$158,238,327
Manufacturing	\$474,016	\$2,747,092	\$629,630	\$3,850,738
Wholesale Trade	\$0	\$15,401,931	\$5,727,322	\$21,129,253
Retail Trade	\$0	\$5,286,162	\$11,548,769	\$16,834,931
Transportation & Warehousing	\$0	\$5,530,380	\$2,880,967	\$8,411,348
Information	\$31,332	\$3,822,172	\$4,191,960	\$8,045,465
Finance & Insurance	\$0	\$8,832,892	\$13,601,585	\$22,434,476
Real Estate & Rental	\$0	\$14,862,499	\$27,514,885	\$42,377,384
Professional, Scientific & Technical Services	\$102,284,423	\$26,767,724	\$6,075,861	\$135,128,009
Management of Companies	\$0	\$2,985,076	\$1,455,479	\$4,440,555
Administrative & Waste Services	\$2,958,157	\$13,193,793	\$3,667,115	\$19,819,064
Educational Services	\$0	\$35,105	\$2,682,285	\$2,717,390
Health & Social Services	\$0	\$396	\$20,302,722	\$20,303,119
Arts, Entertainment & Recreation	\$64,295	\$780,567	\$2,421,411	\$3,266,272
Accommodation & Food Services	\$0	\$2,448,824	\$5,620,724	\$8,069,548
Other Services	\$0	\$2,106,389	\$4,749,766	\$6,856,156
Government & Non-NAICs	\$59,289	\$264,463	\$932,890	\$1,256,643
<b>Total</b>	<b>\$262,661,025</b>	<b>\$107,160,876</b>	<b>\$116,622,940</b>	<b>\$486,444,842</b>

**Table B4: Output Impact of MHS Campus Transformation by Major Sector, Cuyahoga County**

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	\$0	\$1,002	\$6,274	\$7,276
Mining	\$0	\$1,094,453	\$241,617	\$1,336,071
Utilities	\$0	\$2,248,075	\$3,381,268	\$5,629,343
Construction	\$331,530,093	\$1,106,643	\$2,006,685	\$334,643,421
Manufacturing	\$1,595,276	\$6,513,860	\$1,492,722	\$9,601,859
Wholesale Trade	\$0	\$24,224,345	\$9,008,002	\$33,232,347
Retail Trade	\$0	\$8,120,521	\$17,355,706	\$25,476,227
Transportation & Warehousing	\$0	\$11,359,761	\$6,016,398	\$17,376,159
Information	\$49,058	\$8,941,398	\$9,092,275	\$18,082,731
Finance & Insurance	\$0	\$13,382,414	\$25,083,305	\$38,465,720
Real Estate & Rental	\$0	\$19,123,200	\$37,547,030	\$56,670,230
Professional, Scientific & Technical Services	\$176,523,732	\$41,271,260	\$8,830,940	\$226,625,932
Management of Companies	\$0	\$4,565,295	\$2,225,969	\$6,791,264
Administrative & Waste Services	\$4,525,760	\$17,965,919	\$5,373,192	\$27,864,871
Educational Services	\$0	\$57,612	\$4,319,472	\$4,377,085
Health & Social Services	\$0	\$728	\$32,154,334	\$32,155,062
Arts, Entertainment & Recreation	\$98,498	\$1,186,789	\$3,875,524	\$5,160,811
Accommodation & Food Services	\$0	\$4,491,490	\$10,190,601	\$14,682,091
Other Services	\$0	\$3,381,207	\$9,106,445	\$12,487,652
Government & Non-NAICs	\$119,414	\$585,178	\$1,955,927	\$2,660,520
<b>Total</b>	<b>\$514,441,832</b>	<b>\$169,621,150</b>	<b>\$189,263,688</b>	<b>\$873,326,670</b>