

September 7, 2017

Estimated Total Economic Impact and Direct Tax Revenue Generation of Different Potential Waterfront Uses

The direct activity by new uses along Pittsburgh's waterfronts will generate direct spending, employment opportunities, economic impacts, and tax revenues. Using 13 generalized business categories; we created "typical businesses" that could potentially locate along the waterfront. Knowing that these businesses operate within different spaces, we normalized our analysis and assumed 10,000 square feet of each business type. We understand that all business types could have several different types/scale of business operations even in the same footprint dependent on specific use. This is an illustrative comparison, we used industry averages where available, and conservative estimates.

To estimate the sales for each business type, we identified industry standards per square foot, calculated industry standards per square foot based on average sales and sizes of businesses, or directly estimated sales that would occur in 10,000 square feet of space. We are agnostic to the types of businesses in this analysis. The business types included are those for which we could reasonably obtain sales and business activity information.

Table 1 shows the estimated sales, direct expenditures, and IMPLAN multipliers for Allegheny County for each of the business types. We created a high-level model that estimates the total economic impacts for expenditures, employment and employee compensation based on the estimated sales. This gets us the relative magnitude of economic impacts per business type. IMPLAN is an industry standard input-output model that estimates the induced and indirect economic impacts from the direct expenditures in a particular industry and geography. The induced effects are the spending by the company's employees on local purchases. The indirect effects are from vendors increasing production to meet more orders from the business of interest. Combined with the direct expenditures of our typical businesses, these create the total economic impacts of a business type in terms of expenditures, employment and compensation.

For example, for the category of management consulting services, we estimated annual sales of \$6.7 million. Those direct sales of \$6.7 million correspond to \$13.4 million in total economic expenditures. The difference between the \$13.4 million and the \$6.7 million, are the induced and indirect economic impacts generated by the direct management consulting services activity. This indirect and induced economic activity is also \$6.7 million because the multiplier is approximately 2, meaning that the total economic impact is double the direct economic impact. The employment multiplier is the number of employees in the industry per million dollars of sales. Therefore, with \$6.7 million in direct sales, we multiply 6.7 times the employment multiplier to get the 93 total employees supported. These 93 employees include the direct employees at the management consulting service firm and those employees in other industries supported by the induced and indirect economic activity.

Next, we calculated the average tax revenues to the City of Pittsburgh, the Pittsburgh School District, and Allegheny County from these typical businesses when they occupy 10,000 square feet of space (see Table 2 for the tax rates). To estimate the tax bases of each business type in 10,000 square feet of space we used the direct sales amounts from Table 1, IMPLAN estimated direct employment and direct employee compensation, and data from BizStats.com on profits, employment, and wages. We added the

estimates per tax type together to get the total taxes to each jurisdiction for business activity in 10,000 square feet of business space.¹ Then, we calculated the total taxes that would go to each jurisdiction per \$1,000 of sales for each business type (see Tables 3 through 6). This normalizes the initial 10,000 square foot space estimates. When comparing these estimates, consider the volume of sales per business type.

For example, parking garages have the highest taxes owed per \$1,000 in sales in our model but it also has one of the lowest sales volume of the example businesses. Looking at the Table 6, the summary table for all taxes by jurisdiction, we see that its business activities in 10,000 square feet of space will generate an estimated \$39,600 in taxes to the city and \$289 in taxes per \$1,000 in sales, driven by Pittsburgh's 27 percent parking tax. It generates \$2,600 in taxes to the school district with \$19 in taxes generated per \$1,000 of sales, and \$1,200 in taxes to the county with \$9 in taxes generated per \$1,000 of sales.

These calculations are meant as magnitude estimates and are not an exact accounting of taxes to each jurisdiction. The calculations are agnostic as to the supply of business owners that may start/move/expand a particular type of business to a waterfront location, and as to the demand for the goods and services provided by a particular type of business at a waterfront location.

¹ We did not account for the two percent early payment discount for real estate taxes or other tax relief programs.



Table 1 – Estimated Sales and Total Economic Impact in Terms of Output, Employment and Employee Compensation²

Category	Industry Name	Sales	Direct Impact	Total Output Multiplier	Total Output	Total Employment Multiplier	Total Employment	Total Employee Compensation Multiplier	Total Employee Compensation
Amusement	Museums, historical sites, zoos, and parks	\$352,000	\$352,000	2.002	\$705,000	17.906	6	0.707	\$249,000
Amusement	Performing Arts Companies	\$729,000	\$729,000	1.814	\$1,322,000	13.508	10	0.390	\$285,000
Hotels	Hotels and motels, including casino hotels	\$1,108,000	\$1,108,000	1.702	\$1,886,000	13.237	15	0.594	\$658,000
Manufacturing	3-D Printing	\$1,672,000	\$1,672,000	1.626	\$2,719,000	10.021	17	0.514	\$859,000
Manufacturing	Breweries	\$1,391,000	\$1,391,000	1.549	\$2,154,000	4.206	6	0.226	\$314,000
Manufacturing	Canning soups (except seafood)	\$1,973,000	\$1,973,000	1.433	\$2,827,000	3.525	7	0.235	\$463,000
Manufacturing	Electronic computer manufacturing	\$5,010,000	\$5,010,000	1.353	\$6,776,000	2.817	14	0.206	\$1,030,000
Manufacturing	Hydraulic fluids, synthetic, manufacturing	\$9,256,000	\$9,256,000	1.612	\$14,917,000	4.690	43	0.361	\$3,343,000
Manufacturing	Ready-mix concrete manufacturing	\$580,000	\$580,000	1.620	\$940,000	6.627	4	0.384	\$223,000
Multi-Family	Apartments	\$185,000	\$185,000	1.320	\$244,000	5.215	1	0.157	\$29,000
Office	Management consulting services	\$6,667,000	\$6,667,000	2.012	\$13,415,000	13.908	93	0.910	\$6,067,000
Parking	Parking Garage	\$137,000	\$137,000	2.378	\$326,000	41.839	6	0.704	\$96,000
R&D	Computer program or software development, custom	\$1,412,000	\$1,412,000	1.909	\$2,695,000	11.478	16	0.786	\$1,110,000
R&D	Scientific research and development services	\$772,000	\$772,000	2.089	\$1,612,000	10.549	8	0.721	\$557,000
Retail	Bar (Drinking Only)	\$838,000	\$838,000	1.862	\$1,560,000	30.354	25	0.928	\$778,000
Retail	Full-service restaurants	\$4,155,000	\$4,155,000	1.785	\$7,417,000	25.720	107	0.716	\$2,975,000
Retail	Limited-service restaurants	\$3,147,000	\$3,147,000	1.552	\$4,885,000	15.265	48	0.385	\$1,211,000
Retail	Retail - Clothing and clothing accessories stores	\$2,015,000	\$907,000	1.856	\$1,683,000	18.925	17	0.558	\$506,000
Retail	Retail - General merchandise stores	\$1,330,000	\$358,000	1.885	\$675,000	21.047	8	0.709	\$254,000
Utilities	Electric power generation - Fossil Fuel	\$808,000	\$808,000	1.401	\$1,132,000	2.772	2	0.195	\$158,000
Warehousing	Warehousing and storage	\$240,000	\$240,000	1.897	\$455,000	14.837	4	0.781	\$187,000

² All results are rounded

Table 2 - Tax Rates by Municipality

Tax Category	City	County	School District	Library	State
Income Tax (Resident)	1.00%		2.00%		3.07%
Income Tax (Nonresident)	1.00%				
Payroll Expense	0.55%				
Local Services Tax (per employee)	\$52.00				
Sales Tax		1.00%			6.00%
Liquor Tax (by the bottle)					18.00%
Alcoholic Beverage Tax (by the glass)	7.00%				
Amusement Tax	5.00%				
Amusement Tax (Purely Public Charity)	2.50%				
Institution and Service Privilege Tax	0.60%				
Room Rental Tax (Hotel)		1.00%			
Parking Tax	27.27%				
Real Estate Tax	0.81%	0.47%	0.98%	0.03%	



Table 3 – Estimates of Direct Taxes, by Tax Type, for the City of Pittsburgh Taxes Generated by Businesses Occupying 10,000 Square Feet of Space and the Sum of the Taxes Owed per \$1,000 of Sales

Large Categories	Specific Categories	Resident Earned Income Tax	Payroll Expense Tax	Local Services Tax	Amusement Tax (Purely Public Charity)	Institution and Service Privilege Tax	Parking Tax	City Real Estate Tax	Carnegie Library Real Estate Tax	Pittsburgh Total	Taxes Per \$1,000 of Sales
Amusement	Museums, Historical Sites, Zoos, and Parks	\$400	\$800	\$200	\$9,000	\$2,000	\$0	\$0	\$0	\$12,400	\$35
Amusement	Performing Arts Companies	\$300	\$700	\$200	\$18,000	\$4,000	\$0	\$0	\$0	\$23,200	\$32
Hotels	Hotels and Motels, Including Casino Hotels	\$1,000	\$2,200	\$500	\$0	\$0	\$0	\$4,600	\$100	\$8,400	\$8
Manufacturing	3-D Printing	\$1,300	\$2,800	\$500	\$0	\$0	\$0	\$6,200	\$200	\$11,000	\$7
Manufacturing	Breweries	\$600	\$1,400	\$100	\$0	\$0	\$0	\$15,800	\$500	\$18,400	\$13
Manufacturing	Canning soups (except seafood)	\$500	\$1,000	\$100	\$0	\$0	\$0	\$15,800	\$500	\$17,900	\$9
Manufacturing	Electronic computer manufacturing	\$1,100	\$2,400	\$300	\$0	\$0	\$0	\$6,200	\$200	\$10,200	\$2
Manufacturing	Hydraulic fluids, synthetic, manufacturing	\$3,300	\$7,300	\$700	\$0	\$0	\$0	\$5,300	\$200	\$16,800	\$2
Manufacturing	Ready-mix concrete manufacturing	\$300	\$600	\$100	\$0	\$0	\$0	\$9,900	\$300	\$11,200	\$19
Multi-Family	Apartments	\$100	\$200	\$100	\$0	\$0	\$0	\$2,200	\$100	\$2,700	\$15
Office	Management consulting services	\$9,600	\$21,000	\$2,400	\$0	\$0	\$0	\$5,800	\$200	\$39,000	\$6
Parking	Parking Garage	\$100	\$200	\$200	\$0	\$0	\$37,000	\$2,000	\$100	\$39,600	\$289
R&D	Computer program or software development, custom	\$1,700	\$3,600	\$400	\$0	\$0	\$0	\$6,200	\$200	\$12,100	\$9
R&D	Scientific research and development services	\$700	\$1,500	\$200	\$0	\$0	\$0	\$6,200	\$200	\$8,800	\$11
Retail	Bar (Drinking Only)	\$1,400	\$3,000	\$1,100	\$0	\$0	\$0	\$1,900	\$100	\$7,500	\$9
Retail	Full-Service Restaurants	\$4,900	\$10,600	\$4,500	\$0	\$0	\$0	\$4,700	\$100	\$24,800	\$6
Retail	Limited-Service Restaurants	\$1,700	\$3,800	\$2,000	\$0	\$0	\$0	\$4,700	\$100	\$12,300	\$4
Retail	Retail - Clothing and Clothing Accessories Stores	\$700	\$1,500	\$1,500	\$0	\$0	\$0	\$1,900	\$100	\$5,700	\$3
Retail	Retail - General Merchandise Stores	\$400	\$800	\$1,100	\$0	\$0	\$0	\$1,900	\$100	\$4,300	\$3
Utilities	Electric power generation - Fossil Fuel	\$200	\$400	\$100	\$0	\$0	\$0	\$12,300	\$400	\$13,400	\$17
Warehousing	Warehousing and Storage	\$300	\$700	\$100	\$0	\$0	\$0	\$2,900	\$100	\$4,100	\$17



Table 4 – Estimates of Direct Taxes, by Tax Type, for Pittsburgh School District Taxes Generated by Businesses Occupying 10,000 Square Feet of Space and the Sum of the Taxes Owed per \$1,000 of Sales

Large Categories	Specific Categories	Resident Earned Income Tax	School District Real Estate Tax	School District Total	Taxes per \$1,000 of Sales
Amusement	Museums, Historical Sites, Zoos, and Parks	\$800	\$0	\$800	\$2
Amusement	Performing Arts Companies	\$600	\$0	\$600	\$1
Hotels	Hotels and Motels, Including Casino Hotels	\$2,000	\$5,600	\$7,600	\$7
Manufacturing	3-D Printing	\$2,500	\$7,600	\$10,100	\$6
Manufacturing	Breweries	\$1,200	\$19,300	\$20,500	\$15
Manufacturing	Canning soups (except seafood)	\$900	\$19,300	\$20,200	\$10
Manufacturing	Electronic computer manufacturing	\$2,200	\$7,600	\$9,800	\$2
Manufacturing	Hydraulic fluids, synthetic, manufacturing	\$6,700	\$6,500	\$13,200	\$1
Manufacturing	Ready-mix concrete manufacturing	\$500	\$12,100	\$12,600	\$22
Multi-Family	Apartments	\$200	\$2,600	\$2,800	\$15
Office	Management consulting services	\$19,200	\$7,000	\$26,200	\$4
Parking	Parking Garage	\$200	\$2,400	\$2,600	\$19
R&D	Computer program or software development, custom	\$3,300	\$7,600	\$10,900	\$8
R&D	Scientific research and development services	\$1,400	\$7,600	\$9,000	\$12
Retail	Bar (Drinking Only)	\$2,800	\$2,300	\$5,100	\$6
Retail	Full-Service Restaurants	\$9,700	\$5,700	\$15,400	\$4
Retail	Limited-Service Restaurants	\$3,400	\$5,700	\$9,100	\$3
Retail	Retail - Clothing and Clothing Accessories Stores	\$1,400	\$2,300	\$3,700	\$2
Retail	Retail - General Merchandise Stores	\$800	\$2,300	\$3,100	\$2
Utilities	Electric power generation - Fossil Fuel	\$400	\$15,000	\$15,400	\$19
Warehousing	Warehousing and Storage	\$600	\$3,600	\$4,200	\$18



Table 5 – Estimates of Direct Taxes, by Tax Type for Allegheny County Taxes Generated by Businesses Occupying 10,000 Square Feet of Space and the Sum of the Taxes Owed per \$1,000 of Sales

Large Categories	Specific Categories	Sales, Use and			Allegheny County Total	Taxes per \$1,000 of Sales
		Hotel Occupancy Tax	Alcoholic Beverage Tax	Real Estate Tax		
Amusement	Museums, Historical Sites, Zoos, and Parks	\$200	\$0	\$0	\$200	\$1
Amusement	Performing Arts Companies	\$400	\$0	\$0	\$400	\$1
Hotels	Hotels and Motels, Including Casino Hotels	\$77,600	\$0	\$2,700	\$80,300	\$72
Manufacturing	3-D Printing	\$0	\$0	\$3,600	\$3,600	\$2
Manufacturing	Breweries	\$0	\$97,000	\$9,300	\$106,300	\$76
Manufacturing	Canning soups (except seafood)	\$0	\$0	\$9,300	\$9,300	\$5
Manufacturing	Electronic computer manufacturing	\$0	\$0	\$3,600	\$3,600	\$1
Manufacturing	Hydraulic fluids, synthetic, manufacturing	\$0	\$0	\$3,100	\$3,100	\$0
Manufacturing	Ready-mix concrete manufacturing	\$0	\$0	\$5,800	\$5,800	\$10
Multi-Family	Apartments	\$0	\$0	\$1,300	\$1,300	\$7
Office	Management consulting services	\$0	\$0	\$3,400	\$3,400	\$1
Parking	Parking Garage	\$0	\$0	\$1,200	\$1,200	\$9
R&D	Computer program or software development, custom	\$0	\$0	\$3,600	\$3,600	\$3
R&D	Scientific research and development services	\$0	\$0	\$3,600	\$3,600	\$5
Retail	Bar (Drinking Only)	\$8,400	\$59,000	\$1,100	\$68,500	\$82
Retail	Full-Service Restaurants	\$41,600	\$73,000	\$2,600	\$117,200	\$28
Retail	Limited-Service Restaurants	\$31,500	\$0	\$2,600	\$34,100	\$11
Retail	Retail - Clothing and Clothing Accessories Stores	\$2,000	\$0	\$1,100	\$3,100	\$2
Retail	Retail - General Merchandise Stores	\$13,300	\$0	\$1,100	\$14,400	\$11
Utilities	Electric power generation - Fossil Fuel	\$0	\$0	\$7,200	\$7,200	\$9
Warehousing	Warehousing and Storage	\$0	\$0	\$1,700	\$1,700	\$7



Table 6 – Summary of Estimates of Total Sales per 10,000 Square Feet of Space, Taxes Owed by Taxing Jurisdiction for Business Activity in 10,000 Square Feet of Space, and Taxes per \$1,000 of Sales - Direct Taxes to Pittsburgh, the Pittsburgh School District, and Allegheny County from Typical Businesses That Could Locate Along the Waterfront

Large Categories	Specific Categories	Sales per 10,000 SF	Pittsburgh		School District		Allegheny County	
			Estimate of All Taxes	Taxes per \$1,000 of Sales	Estimate of All Taxes	Taxes per \$1,000 of Sales	Estimate of All Taxes	Taxes per \$1,000 of Sales
Amusement	Museums, Historical Sites, Zoos, and Parks	\$352,000	\$12,400	\$35	\$800	\$2	\$200	\$1
Amusement	Performing Arts Companies	\$729,000	\$23,200	\$32	\$600	\$1	\$400	\$1
Hotels	Hotels and Motels, Including Casino Hotels	\$1,108,000	\$8,400	\$8	\$7,600	\$7	\$80,300	\$72
Manufacturing	3-D Printing	\$1,672,000	\$11,000	\$7	\$10,100	\$6	\$3,600	\$2
Manufacturing	Breweries	\$1,391,000	\$18,400	\$13	\$20,500	\$15	\$106,300	\$76
Manufacturing	Canning soups (except seafood)	\$1,973,000	\$17,900	\$9	\$20,200	\$10	\$9,300	\$5
Manufacturing	Electronic computer manufacturing	\$5,010,000	\$10,200	\$2	\$9,800	\$2	\$3,600	\$1
Manufacturing	Hydraulic fluids, synthetic, manufacturing	\$9,256,000	\$16,800	\$2	\$13,200	\$1	\$3,100	\$0
Manufacturing	Ready-mix concrete manufacturing	\$580,000	\$11,200	\$19	\$12,600	\$22	\$5,800	\$10
Multi-Family	Apartments	\$185,000	\$2,700	\$15	\$2,800	\$15	\$1,300	\$7
Office	Management consulting services	\$6,667,000	\$39,000	\$6	\$26,200	\$4	\$3,400	\$1
Parking	Parking Garage	\$137,000	\$39,600	\$289	\$2,600	\$19	\$1,200	\$9
R&D	Computer program or software development, custom	\$1,412,000	\$12,100	\$9	\$10,900	\$8	\$3,600	\$3
R&D	Scientific research and development services	\$772,000	\$8,800	\$11	\$9,000	\$12	\$3,600	\$5
Retail	Bar (Drinking Only)	\$838,000	\$7,500	\$9	\$5,100	\$6	\$68,500	\$82
Retail	Full-Service Restaurants	\$4,155,000	\$24,800	\$6	\$15,400	\$4	\$117,200	\$28
Retail	Limited-Service Restaurants	\$3,147,000	\$12,300	\$4	\$9,100	\$3	\$34,100	\$11
Retail	Retail - Clothing and Clothing Accessories Stores	\$2,015,000	\$5,700	\$3	\$3,700	\$2	\$3,100	\$2
Retail	Retail - General Merchandise Stores	\$1,330,000	\$4,300	\$3	\$3,100	\$2	\$14,400	\$11
Utilities	Electric power generation - Fossil Fuel	\$808,000	\$13,400	\$17	\$15,400	\$19	\$7,200	\$9
Warehousing	Warehousing and Storage	\$240,000	\$4,100	\$17	\$4,200	\$18	\$1,700	\$7

