
WM RECYCLE AMERICA, L.L.C.
CITY OF SPOKANE MRF
ECONOMIC IMPACT STUDY

Conducted by:

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May 19, 2010



ECONOMIC IMPACT SUMMARY

The WM Recycle America, L.L.C. single stream materials recovery facility (MRF) will have a total five-year economic impact of \$46.2 million on Spokane County, Washington. Total impacts on earnings¹ are \$14.9 million wages, and impacts on state and local taxes top \$2.8 million. Employment during the construction period is estimated at 50, increasing to 57 once operations commence in 2012.

Table 1: Total WM Recycle America Economic Impacts, in 000s

Impact*	2011	2012	2013	2014	2015	5-Year Total
Output	\$7,227	\$9,576	\$9,691	\$9,809	\$9,930	\$46,233
Earnings	\$2,559	\$2,977	\$3,043	\$3,109	\$3,175	\$14,863
Taxes	\$370	\$582	\$595	\$608	\$652	\$2,806
Employment	50.2	57	57	57	57	-

*Includes direct, indirect, and induced impacts.

OVERVIEW

The purpose of this study is to provide nonbiased, third-party research to area stakeholders of the economic and fiscal impacts of the proposed single stream MRF in Spokane County, Washington.

The MRF will generate more than \$7.2 million in new economic activity and 50 jobs in Spokane County in 2011 during the building and improvements phase of the project. Fiscal impacts in the form of state and local taxes derived from activity transpiring in Spokane County in 2011 will total \$370,000—resulting primarily from sales, property, and employee-related taxes.

Operations in 2012 will have a \$9.6 million economic impact, growing to \$9.9 million in 2015. Total employment impacts are expected to remain stable at 25 jobs. The fiscal impacts in 2012 total \$582,000, growing to \$652,000 in 2015.

METHODOLOGY²

This study examines the economic and fiscal impacts of the proposed MRF in Spokane County, Washington. It does not attempt to model the environmental impacts or related foregone opportunity costs associated with recycled materials. The impacts quantified below detail activity only in Spokane County, Washington. Economic leakage from the county occurs naturally as not all direct and indirect goods and services can be sourced locally. Such leakage is not included in the totals below.

RRT Design & Construction and Waste Management provided information on employment, wages, operating expenditures, and capital outlays that serve as the foundation for economic analysis. Construction impacts were derived from the \$11.6 million capital project spread over one year, of which 35% represents local building and improvements and 65% represents nonlocal expenditures on machinery and equipment. Employment impacts were estimated based on 25 FTEs in year two, with total wages in

¹Earnings include wages, benefits, and employer-paid taxes.

²A similar definition was used in another publication created by the Business Research Division titled: "Economic Drivers: City of Boulder, Boulder County, Colorado," May 2008.

excess of \$1.1 million, benefits totaling \$200,000, and payroll taxes of \$193,000. Other operating expenditures were estimated at \$722,500 in year two, of which 90% are local. Researchers utilized IMPLAN input-output modeling software.³ IMPLAN generates industry multipliers based on trade flows and industry profiles of the study area (Spokane County).

Multipliers refer to the interindustry relationships within a study area in terms of input-output (I-O) economic impacts.⁴ Multipliers are useful for analyzing project decisions to understand the incremental impacts that such activities have on the local economy. IMPLAN multipliers are static and thus do not consider large-scale disruptive impacts on the economic fabric without calculating specific infrastructure changes.

For example, consider what would happen given the collapse of a high-tech firm in Spokane County that directly employs thousands. The multipliers would account for a decrease in demand for locally sold goods (i.e., groceries, fuel), but the model would not account for the elimination of some grocery stores and fueling stations as a result of the decrease in demand unless explicitly worked into the model.

For the purpose of this study, all multipliers are comprised of direct, indirect, and induced effects. *Direct* refers to direct spending or employment in the study industry or firm. *Indirect* is the spending or employment in related industries impacted by spending or employment in the study industry or firm. *Induced* refers to changes in household expenditures impacted by spending or employment in the study industry or firm.

State and local fiscal impacts are aggregated by the IMPLAN model based on tax rates and tax burdens absorbed by industries. The fiscal impacts are based on activity that occurs in Spokane County.

IMPACTS

The following section identifies the aggregated impacts of the single stream MRF in Spokane County. Disaggregated results by affected industry may be found in Appendix 1.

Output

The proposed MRF in Spokane County, Washington, will have total economic benefits of \$7.2 million in year one associated with local capital outlays related to building and improvements. Year two impacts total \$9.6 million, growing to \$9.9 million in year five. Other capital outlays are planned for machinery and equipment; however, they will occur outside the county.

Table 2: Output, in 000s

	2011	2012	2013	2014	2015
Direct	\$4,065	\$5,382	\$5,430	\$5,479	\$5,528
Indirect	\$1,509	\$2,316	\$2,349	\$2,383	\$2,418
Induced	\$1,653	\$1,877	\$1,912	\$1,947	\$1,984
Total	\$7,227	\$9,576	\$9,691	\$9,809	\$9,930

³Minnesota IMPLAN Group, Inc. (MIG), Stillwater, Minnesota. www.implan.com.

⁴Bureau of Economic Analysis, Regional Multipliers, <http://www.bea.gov/scb/pdf/regional/perinc/meth/rims2.pdf>, retrieved January 20, 2010.

Employment

RRT Design & Construction and Waste Management estimated year one operating employment at 25 FTEs earning an average wages of \$46,288. Given the variance in household spending profiles, employment was segmented by household earnings (i.e., \$25k-\$35k, \$35k-\$50k, \$50k-\$75k, and \$75k-\$100k). In addition, the capital project for building and improvements was assumed to take one year, which will generate an additional 50 construction-related jobs in 2011.

Table 3: Operating Employment Segments

Industry	Income Range	Employees
Waste Management and Remediation Services	\$35k-\$50k	20
Waste Management and Remediation Services	\$50k-\$75k	2
Waste Management and Remediation Services	\$75k-\$100k	3

Direct employment related to the facility will total 26 in year one, generated by the MRF construction. Nonconstruction employment is assumed to total 25 in 2011, remaining stable over the five-year period.

Table 4: Facility Impacts on Employment (Direct, Indirect, and Induced)

	2011	2012-2015
Direct	26.0	25.0
Indirect	10.4	16.7
Induced	13.8	15.3
Total	50.2	57.0

Wages

Direct wages associated with construction activities are expected to average \$47,316 in 2011. Wages for employees of facility operations will average \$46,288 in 2012. Wage inflation will drive the average annual operations earnings to \$49,374 in 2015.

Fiscal Impacts

The fiscal impact of the MRF derives from taxes paid directly by the MRF, by companies that supply the MRF, and by employees relating to their earnings, property, and consumption. It is estimated that \$370,000 in new state and local taxes will be generated in 2011, primarily due to the sales, property, and employee-related taxes associated with the MRF building and improvements capital project. Nearly \$582,000 in state and local revenues will be generated in 2012, growing to \$620,000 in 2015.

Table 5: Spokane County-Derived State and Local Fiscal Impacts

Year	Employee-Related	Indirect Business Tax	Household Spending	Corporations	Total
2011	\$185,364	\$162,825	\$11,229	\$10,825	\$370,243
2012	\$195,416	\$346,895	\$12,785	\$26,845	\$581,941
2013	\$199,561	\$354,605	\$13,069	\$27,441	\$594,676
2014	\$203,794	\$362,315	\$13,354	\$28,038	\$607,501
2015	\$208,114	\$370,025	\$13,638	\$28,634	\$620,411

LITERATURE REVIEW

The literature review details similar impact studies that were conducted in other parts of the country. These reports illustrate the economic impacts of recycling facilities, and they demonstrate the validity of such impact studies.

A 1999 California waste diversion study estimated recycling collection and the MRF's direct impact on employment, earnings, and output using IMPLAN. Output totaled \$3.2 billion (\$115,999 per employee), and earnings totaled \$1.4 billion (\$49,574 per employee) (Goldman & Ogishi, 2001). In comparison, this WM Recycle America study in Spokane County, Washington, estimated total impacts (direct, indirect, and induced) of \$153,773 per employee for 2010, and average wages of \$52,082 (including construction impacts).

A report on the recycling industry in Delaware, Maine, Massachusetts, New York, and Pennsylvania estimated total MRF employment in the five states at 2,460 in 2007. Annual payrolls were estimated at \$82.4 million (\$33,500 per employee) and output at \$257.7 million (\$104,755 per employee) (DSM Environmental Services, Inc. and MSW Consultants, 2009). Based on 2002 Census statistics, a Tennessee study of solid waste management collection and disposal companies reported 204 MRF jobs with average earnings of \$23,799 and annual sales of \$20.7 million (\$101,294 per employee) (Tennessee Department of Environment and Conservation, 2009). Direct wages estimated by RRT Design & Construction and CasaBella Architects for this WM Recycle America study put average operating wages at \$31,784 in 2010. Output per employee totaled \$160,979 in 2010, including direct construction impacts.

A South Carolina report on the recycling industry found average wages to total \$32,229. Researchers applied the Waste Management and Remediation Services multiplier to output (1.59) and employment (2.2) (Hefner & Blackwell, 2006). Given that local trade flows in Spokane County, Washington, differ from the South Carolina statewide study, operations multipliers in the WM Recycle America study are comparatively lower—1.61 (employment) and 1.41 (output).

The U.S. Environmental Protection Agency commissioned a Recycling Economic Impact Study in 2001, which cited annual national payrolls for recycling processing of \$3.8 billion (\$23,786 per employee) and total receipts of \$41.8 billion (\$259,559 per employee). According to the study, the entire recycling and reuse industry grosses about \$236 billion per year (U.S. Environmental Protection Agency, 2006).

A Montana study noted that recycling industry average annual earnings were \$29,028, or 12.4% higher than the state average for all industries in 2003. This figure includes the processing, collection, remanufacturing, and sales of materials. Revenues totaled \$89.1 million (\$277,201 per employee) (Montana Department of Environmental Quality, 2004).

An Iowa study detailing the economic and fiscal impacts of recyclable materials processing in the state calculated direct output at \$232.3 million (\$135,630 per employee) and labor income at \$49.1 million (\$28,668 per employee). Combining the indirect and induced effects with a multiplier of 1.44 yielded a total output of \$335.6 million. The income multiplier was 1.73, and the jobs multiplier was 1.81. State and local net fiscal impacts totaled \$13.6 million in 2007 (\$7,965 per employee) (Economic Impacts of Recycling in Iowa, 2007).

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APPENDIX 1: TOTAL (DIRECT, INDIRECT, INDUCED) IMPACTS BY INDUSTRY

2011 Impacts

Sector	Description	Employment	Labor Income	Value Added	Output
36	Construction of other new nonresidential structures	26.0	\$1,465,257	\$1,552,031	\$4,065,000
369	Architectural, engineering, and related services	2.3	\$153,189	\$155,391	\$272,025
413	Food services and drinking places	1.8	\$35,114	\$52,324	\$99,409
319	Wholesale trade businesses	1.4	\$83,835	\$144,927	\$226,299
360	Real estate establishments	1.0	\$24,522	\$114,318	\$146,736
394	Offices of physicians, dentists, and other health practitioners	0.8	\$52,158	\$60,550	\$87,240
397	Private hospitals	0.8	\$51,783	\$54,383	\$100,467
329	Retail Stores - General merchandise	0.5	\$16,763	\$24,962	\$36,906
331	Retail Nonstores - Direct and electronic sales	0.5	\$6,768	\$23,384	\$32,360
388	Services to buildings and dwellings	0.5	\$13,244	\$16,253	\$30,324
-	Other	14.6	\$656,130	\$1,124,504	\$2,130,050
-	Total	50.2	\$2,558,763	\$3,323,027	\$7,226,816

2012 Impacts

Sector	Description	Employment	Labor Income	Value Added	Output
390	Waste management and remediation services	27.0	\$1,646,183	\$2,554,410	\$5,387,214
413	Food services and drinking places	3.1	\$62,306	\$92,844	\$172,939
360	Real estate establishments	1.5	\$36,643	\$170,820	\$219,748
382	Employment services	1.2	\$35,861	\$38,667	\$48,032
319	Wholesale trade businesses	1.2	\$73,315	\$126,741	\$197,519
357	Insurance carriers	0.9	\$61,535	\$113,046	\$269,503
394	Offices of physicians, dentists, and other health practitioners	0.9	\$59,826	\$69,452	\$98,765
397	Private hospitals	0.9	\$59,549	\$62,538	\$115,270
368	Accounting, tax preparation, bookkeeping, and payroll services	0.8	\$41,634	\$50,035	\$74,459
388	Services to buildings and dwellings	0.8	\$21,799	\$26,752	\$50,202
-	Other	18.7	\$878,275	\$1,503,781	\$2,942,024
-	Total	57.0	\$2,976,926	\$4,809,086	\$9,575,675

2013 Impacts

Sector	Description	Employment	Labor Income	Value Added	Output
390	Waste management and remediation services	27.0	\$1,682,771	\$2,611,185	\$5,431,498
413	Food services and drinking places	3.1	\$63,691	\$94,908	\$173,405
360	Real estate establishments	1.5	\$37,457	\$174,617	\$225,241
382	Employment services	1.2	\$36,658	\$39,526	\$48,344
319	Wholesale trade businesses	1.2	\$74,944	\$129,558	\$201,618
357	Insurance carriers	0.9	\$62,903	\$115,558	\$277,896
394	Offices of physicians, dentists, and other health practitioners	0.9	\$61,156	\$70,995	\$99,697
397	Private hospitals	0.9	\$60,873	\$63,928	\$117,622
368	Accounting, tax preparation, bookkeeping, and payroll services	0.8	\$42,559	\$51,147	\$74,459
388	Services to buildings and dwellings	0.8	\$22,284	\$27,346	\$51,642
-	Other	18.7	\$897,795	\$1,537,205	\$2,989,786
-	Total	57.0	\$3,043,091	\$4,915,973	\$9,691,208

2014 Impacts

Sector	Description	Employment	Labor Income	Value Added	Output
390	Waste management and remediation services	27.0	\$1,719,360	\$2,667,961	\$5,476,153
413	Food services and drinking places	3.1	\$65,076	\$96,971	\$173,873
360	Real estate establishments	1.5	\$38,272	\$178,414	\$230,872
382	Employment services	1.2	\$37,455	\$40,386	\$48,658
319	Wholesale trade businesses	1.2	\$76,574	\$132,375	\$205,802
357	Insurance carriers	0.9	\$64,270	\$118,071	\$286,550
394	Offices of physicians, dentists, and other health practitioners	0.9	\$62,486	\$72,539	\$100,638
397	Private hospitals	0.9	\$62,196	\$65,318	\$120,021
368	Accounting, tax preparation, bookkeeping, and payroll services	0.8	\$43,485	\$52,259	\$74,459
388	Services to buildings and dwellings	0.8	\$22,768	\$27,941	\$53,123
-	Other	18.7	\$917,317	\$1,570,628	\$3,039,115
-	Total	57.0	\$3,109,259	\$5,022,863	\$9,809,264

2015 Impacts

Sector	Description	Employment	Labor Income	Value Added	Output
390	Waste management and remediation services	27.0	\$1,755,947	\$2,724,735	\$5,521,168
413	Food services and drinking places	3.1	\$66,460	\$99,035	\$174,342
360	Real estate establishments	1.5	\$39,086	\$182,210	\$236,644
382	Employment services	1.2	\$38,252	\$41,245	\$48,975
319	Wholesale trade businesses	1.2	\$78,203	\$135,192	\$210,073
357	Insurance carriers	0.9	\$65,638	\$120,584	\$295,475
394	Offices of physicians, dentists, and other health practitioners	0.9	\$63,815	\$74,083	\$101,588
397	Private hospitals	0.9	\$63,520	\$66,708	\$122,469
368	Accounting, tax preparation, bookkeeping, and payroll services	0.8	\$44,410	\$53,371	\$74,459
388	Services to buildings and dwellings	0.8	\$23,253	\$28,536	\$54,646
-	Other	18.7	\$936,839	\$1,604,050	\$3,090,038
-	Total	57.0	\$3,175,423	\$5,129,749	\$9,929,877