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Reuse and the Benefit to Community A Beneficial Effects Economics Case Study for the Solitron Microwave Superfund Site

Introduction

The Solitron Microwave Superfund site is located about a mile east of U.S. Highway 1 in Port Salerno, Florida. From 1963 to 1987, a manufacturing facility operated on site. Following the facility's closure, the site became a community eyesore. Contamination also posed a threat to public health and the environment. EPA and local stakeholders worked together to align the site's cleanup and reuse goals, resulting in the successful redevelopment of the site.

Today, the site is home to Port Salerno Industrial Park, with 20 acres of commercial and industrial space occupied by various tenants. Rather than sitting vacant and unused, the site now provides much needed office and warehouse space while ensuring the site's remedy remains protective of human health and the environment. Superfund site restoration and reuse can revitalize local economies with jobs, new businesses, tax revenues and local spending. Cleanup may also take place while active land uses remain on site. This case study explores the Solitron Microwave site area's cleanup and reuse, illustrating the beneficial effects of Superfund redevelopment.

Beneficial Effects

Site businesses employ 126 people, providing an estimated annual employment income of nearly \$10 million and generating over \$32 million in annual sales revenue.

Site properties are currently valued at over \$8.2 million and generate about \$137,000 in annual property tax revenues.

Incorporation of remedial design components into the construction of new on-site buildings enabled the safe redevelopment of the property and protects the site's remedy.



Sources:
FDER, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Figure 1. The site is located in Port Salerno in Martin County, Florida.

Site History

The Solitron Microwave site occupies 20 acres in Port Salerno, Martin County, Florida. Residential areas surround the site. The site borders Cove Road, a primary transportation corridor in the area. Current property features include commercial and industrial buildings and associated parking areas. According to the 2020 U.S. Census, over 10,000 people live in Port Salerno.

Contamination History

From 1963 to 1987, a metal plating and microwave components manufacturing facility operated on site. Manufacturers made materials for the military, aerospace and microwave industries. Operations at the facility used an industrial-strength cleaning solvent. Operators stored spent solvent on site in barrels before shipping it for off-site disposal. Waste from the facility's operation was also discharged into a nearby drainage ditch. In 1965, site operators built a waste treatment plant on site.

In the early 1980s, the Florida Department of Environmental Protection (FDEP) identified soil contamination at the site. Between 1991 and 1998, Martin County Health Department sampling found contamination in 12 private wells near the site. Solvent use and improper waste disposal practices had contaminated soil, sediment and groundwater with hazardous chemicals. In 1998, EPA placed the site on the Superfund Program's National Priorities List.

Site Cleanup

After determining that site owners did not have the financial resources to fund site investigation and cleanup activities, EPA began cleaning up the site in 2000. The remedy EPA selected included excavation and off-site disposal of contaminated soil, treatment and monitoring of contaminated groundwater, and extension of the municipal water lines to nearby residences

Through a cooperative agreement in 2001, EPA provided Martin County with funding for plans to address contamination in private wells, which affected homes north and east of the site. Martin County completed the plans but did not have funds to implement the project. EPA contracted with FDEP to provide Martin County with the necessary resources. Martin County extended municipal water supply lines to approximately 150 homes. In 2002, EPA provided the U.S. Army Corps of Engineers with funding through a cooperative agreement to excavate



Figure 2. A 2003 aerial view of the site before redevelopment.



Figure 3. Site buildings before cleanup and construction.

contaminated soil on site. The U.S. Army Corps of Engineers removed 4,000 cubic yards of contaminated soil from around the former Solitron Microwave Company facilities. In the same year, a group of local developers and real estate professionals attracted by the site's redevelopment potential partnered to create the Port Salerno Industrial Park, LLC (PSIP).

PSIP contacted EPA and expressed interest in redeveloping the site property into an industrial park. In response, EPA issued a status letter summarizing the site's cleanup and capacity to support reuse. The status letter helped assure the community and potential industrial park tenants that the site was safe. EPA also addressed liability concerns through a prospective purchaser agreement with PSIP.

In 2003, PSIP purchased the site property. EPA and PSIP coordinated remaining cleanup activities with redevelopment plans for the site. As part of their redevelopment plans, PSIP demolished the last Solitron Microwave Company building at the site. This allowed EPA to remove 497 cubic yards of contaminated soil that had been inaccessible underneath the building. Removal of all remaining contaminated soil from the site eliminated the requirements for land use restrictions, allowing PSIP greater flexibility constructing facilities on site. EPA completed cleanup activities in 2004. The completion of cleanup and removal of all contaminated soil supported the site's achievement of the Sitewide Ready for Anticipated Use performance measure. PSIP continued with their development plans to provide space for commercial and industrial businesses at the site.

This collaborative effort between EPA, FDEP, Martin County and PSIP resulted in lasting benefits for the local economy, the environment and area residents. Today, instead of remaining abandoned and blighted, the site is a hub for commercial and industrial activities.

The site's cleanup has benefited the parties involved, the surrounding community, the local economy and the environment. EPA and PSIP worked together to integrate cost-saving maintenance activities into site redevelopment plans. PSIP divided the industrial park into lots according to the locations of EPA's groundwater monitoring wells, which allows EPA continued easy access to the wells. The industrial park now provides seven lots of industrially-zoned, utility-connected property ranging in size from 1 acre to 5.5 acres. Other park features include 6 acres reserved for wetland areas, an upland preserve for native plant habitat, a 50-foot natural buffer



Figure 4. The stormwater retention pond located on site.



Figure 5. A groundwater monitoring well is integrated into landscaping near a new warehouse.

between the site and surrounding residential areas, a stormwater retention pond and a paved road. In total, the industrial park offers 150,000 square feet of warehouse, office and industrial space.

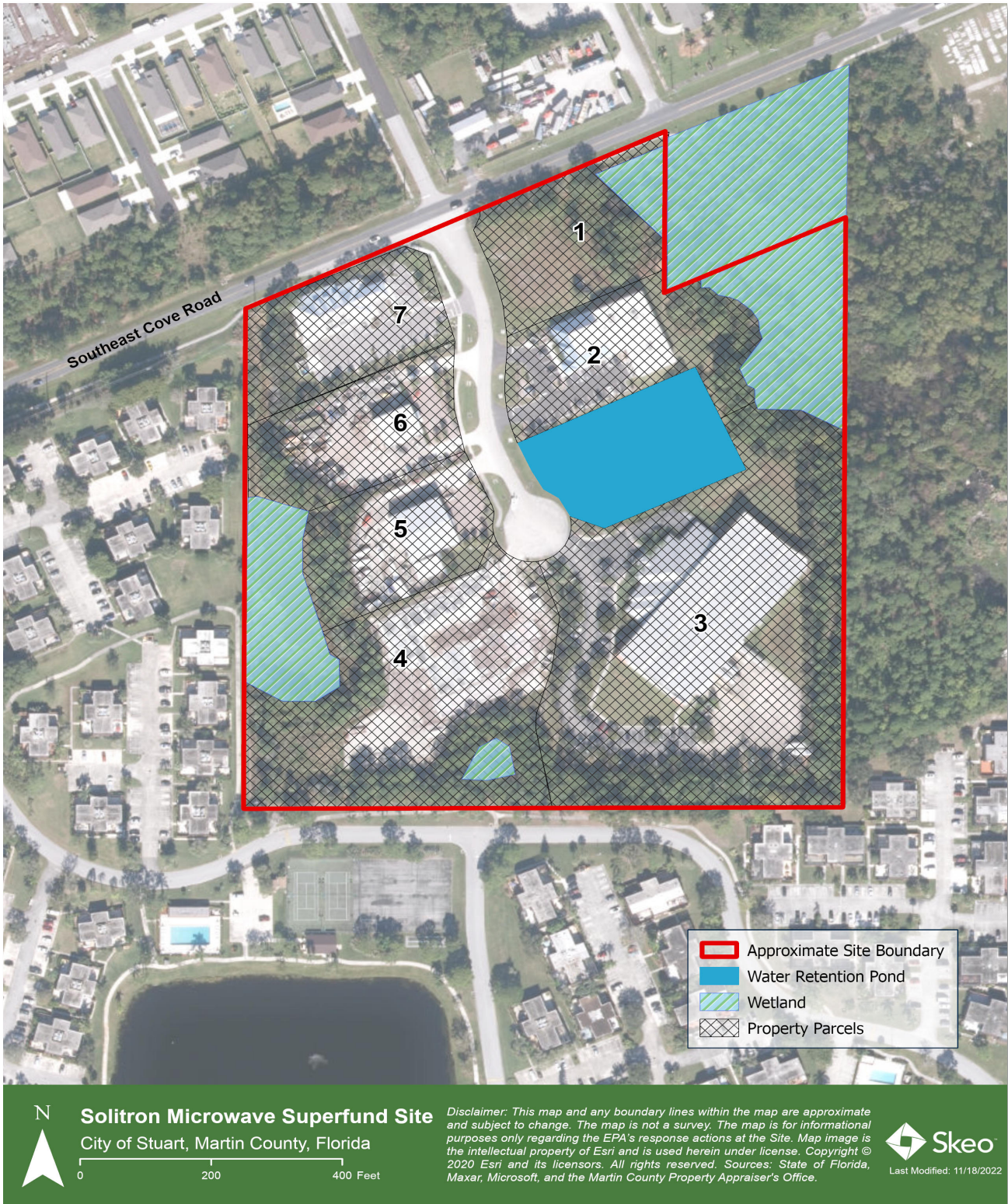


Figure 6. Solitron Microwave site detail map.

Beneficial Effects

Today, the Solitron Microwave site supports a variety of commercial and industrial businesses within the PSIP. These include a microwave components manufacturer, a printing firm, a medical products supplier, a roof repair business and yacht services company, an insulated construction panel supplier, an earthwork and utilities business, and a dialysis center. Businesses that operate on site bolster the local economy and help generate local and state tax revenues.

Lot 1

The industrial park has available space for further development in Lot 1, located at 5595 SE Grouper Avenue. Lot 1 is 1.11 acres in size and construction on a 5,200-square-foot building will begin in late 2022. Lot 1 could support another medical practice or professional office space.

Lot 2

Microwave Components, LLC operates out of the building at 5635 SE Grouper Avenue. The company relocated to the PSIP in 2020, nearly tripling their facility size. The company specializes in computer components products such as cables and antennas, as well as integrated microwave assemblies and custom design solutions. Products made by the company serve various industries, including the aerospace, defense, telecommunications and space markets. The Port Salerno facility allows the company to have increased warehouse space and capacity for inventory and logistics support. The business contributes more than \$4 million in estimated annual employment income and generates more than \$14.5 million in annual sales.

Lot 3

Stuart Web, Inc. is located at 5675 SE Grouper Avenue, the largest lot in the industrial park. Attracted by the expansive space available in the PSIP, the company purchased the lot in 2006. The company's facility is situated on 5.5 acres and provides specialty printing services to the surrounding area. The company prints materials such as newspapers and booklets, and provides stitching, trimming and insertion services. Stuart Web, Inc. provides an estimated annual employment income of nearly \$2 million.



Figure 7. View of the vacant Lot 1 from inside the industrial park



Figure 8. Sign in front of Stuart Web, Inc.

Lot 4

iRemedy operates out of the warehouse at 5700 SE Grouper Avenue. Completed in mid-2021, the facility provides more than 21,000 square feet of finished space on a 3.18-acre lot. The company provides a variety of medical supplies, such as surgical instruments, wheelchairs and catheters, to medical practices and individual consumers in the surrounding areas. Overall, the business contributes more than \$570,000 in estimated annual employment income.

Lot 5

Three businesses currently operate from the warehouse facility at 5670 SE Grouper Avenue. The building was constructed in 2014 and includes more than 5,000 square feet of warehouse space.

Onshore Roofing Specialists, Inc. provides roof repair and installation services to surrounding counties. The business services residential and commercial projects and provides metal fabrication for gutters. Overall, the business contributes more than \$380,000 in estimated annual employment income and generates more than \$1 million in annual sales.

Broadbill Marine Yacht Services provides dock-side yacht repair, including engine repair, hydraulics, and interior and exterior refinishing. In addition to maintenance and repair, the company provides equipment installation and troubleshooting services for lighting, audio, marine electronics and automation systems. Broadbill Marine Yacht Services provides more than \$570,000 in estimated annual employment income.



Figure 9. Delivery space behind one of the on-site warehouses.



Figure 10. The warehouse on Lot 5 where three businesses operate.



Figure 11. Front of the Stuart Web, Inc. warehouse.

The third business located at Lot 5, Copan Co. USA, LLC, is the primary importer of lightweight Coratec panels for the construction and transportation industries. The panels are used in a variety of commercial and industrial applications from flooring to soundproof walls. The company has a separate division on site that specializes in service boxes for trucks and vans. The lightweight materials used by the company enable the service boxes to be less than half the weight of similar trailers and more fuel efficient. Overall, the company contributes more than \$270,000 in estimated annual employment income and more than \$4.4 million in annual sales.

Lot 6

Coastal Land Development of Martin County, Inc. built and operates out of the warehouse at 5640 SE Grouper Avenue. The business provides a variety of earthwork and utilities installation services to residential and commercial clients, including demolition, excavation, importing and exporting fill materials, and installation of fire, sanitation, water and drainage utility systems. The company provides more than \$1.4 million in estimated annual employment income.

Lot 7

The Fresenius Medical Care dialysis center operates out of the building at 5610 SE Grouper Avenue. The medical office provides in-center hemodialysis for patients in the surrounding areas. Overall, the business provides more than \$300,000 in estimated annual employment income.

2008 Excellence in Site Reuse

Amenities at the industrial park include a designated turning lane into the property, a paved cul-de-sac roadway, and upland preserve areas, trees and several wetland areas maintained by the Port Salerno Industrial Park Property Owners Association. PSIP's collaboration with EPA and its dedication to reuse of the site have created commercial and industrial space, as well as an attractive business environment. EPA recognized PSIP's efforts with its "Excellence in Site Reuse Award" in 2008.



Figure 12. The team responsible for the cleanup process and recipients of the 2008 Excellence in Site Reuse Award.



Figure 13. Property advertisements for the site areas.

Preserving Ecological Integrity

Martin County's Comprehensive Plan discusses Conservation and Open Space (Chapter 9) and lays out county policy regarding wetlands and redevelopment. These policies recognize that wetlands serve many important hydrological and ecological values and functions, such as flood control, groundwater aquifer recharge and wildlife habitat for most of Florida's threatened and endangered species. The county policies also require preservation of native wetland areas and upland habitat within all development projects. The county prides itself on its strong wetland policies adopted to ensure that natural wetlands are preserved and restored to the greatest extent possible, and that there is no net loss of the spatial extent, functions and values of natural wetlands.

EPA worked with PSIP to design lots that would accommodate ease of access to the established groundwater monitoring system. PSIP and developers then worked with Martin County to ensure preservation of on-site wetlands and that new facilities would not impact wetlands. There are wetlands next to lots 1, 2 and 5, and there is a wetland area on lot 4. PSIP also worked with EPA and Martin County to design a stormwater retention system to manage increased runoff from hardscaping and development of the PSIP lots. The stormwater retention system helps maintain post-development discharges from the site at pre-development levels.

As the remaining space in the industrial park is bought and additional buildings are constructed, developers continue to coordinate with local code for water quality and to obtain environmental permits to safely build on site properties.



Figure 14. Lot 1 prior to any redevelopment, with wetlands in the background.

Property Values and Tax Revenues

On-site properties help generate property tax revenues that support local government and public services. Today, site properties have a combined value of more than \$8.2 million. In 2021, site properties generated about \$137,000 in total property tax revenues. On-site businesses also generate tax revenues through the collection of sales taxes, which support state and local governments.¹

Conclusion

Collaboration and cooperation among EPA, FDEP, Martin County and PSIP was vital to the successful cleanup and beneficial reuse of the Solitron Microwave Superfund site. The site owners have worked closely with local, state and federal agencies to make the PSIP a reality. The site's cleanup protects human health and the environment, while its reuse supports jobs and local businesses, enhances land values and tax revenues, protects the site's wetlands and natural systems, and has replaced a contaminated community eyesore with a bustling commercial and industrial resource. Port Salerno Industrial Park will continue to support local economic growth, providing well-situated land for additional development in a thriving Florida community.

This once-contaminated area now supports businesses that provide jobs and services to the local community and surrounding areas. Today, on-site businesses support local economic growth, providing about 126 jobs and nearly \$10 million in estimated annual employee income. In 2021 on-site businesses generated over \$32 million in sales revenue.

*For more information about EPA's Superfund Redevelopment Program, visit:
<https://www.epa.gov/superfund-redevelopment>.*

¹ The Florida sales tax rate is 6 percent. For more information, see:
https://floridarevenue.com/taxes/taxesfees/Pages/sales_tax.aspx#:~:text=Sales%20tax%20is%20added%20to,%2C%20and%206.95%25%20on%20electricity



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Technical Appendix

Employment Information for On-Site Jobs

EPA obtained the data included in this appendix directly from reputable sources and reported the data as presented by those sources. Information on the number of employees and sales volume for on-site businesses came from the Hoovers/Dun & Bradstreet (D&B) database.¹ D&B maintains a database of more than 300 million businesses worldwide. When Hoovers/D&B database research was unable to identify employment and sales volume for on-site businesses, EPA used the Reference Solutions database.² These databases include data reported by businesses. Accordingly, some reported values might be underestimates or overestimates. While sales values typically exceed estimated totals of annual income, sales can sometimes be lower than estimated income. This could be attributed to a number of business conditions and/or data reporting.

Wage and Income Information for On-Site Jobs

EPA obtained wage and income information from the U.S. Bureau of Labor Statistics (BLS). Part of the U.S. Department of Labor, the BLS is the principal federal agency responsible for measuring labor market activity, working conditions and price changes in the economy. All BLS data meet high standards of accuracy, statistical quality and impartiality.

EPA used the BLS Quarterly Census of Employment and Wages database to obtain average weekly wage data for businesses at the Solitron Microwave Superfund site. Average weekly wage data were identified by matching the North American Industry Classification System (NAICS) codes for each type of business with weekly wage data for corresponding businesses in Martin County. If weekly wage data were not available at the county level, EPA sought wage data by state or national level, respectively. In cases where wage data were not available for the six-digit NAICS code, EPA used higher-level (less-detailed) NAICS codes to obtain the wage data.

To determine the annual wages (mean annual) earned from jobs generated by each of the selected businesses at the Solitron Microwave Superfund site, EPA multiplied the average weekly wage figure by the number of weeks in a year (52) and by the number of jobs (employees) for each business.

¹ <http://www.dnb.com>

² <https://www.thereferencegroup.com>

Table A-1. Solitron Microwave Superfund Site: Information for On-Site Organizations and Businesses

On-Site Business	NAICS Code ^a	NAICS Title	Number of Employees ^b	Average Weekly Wage (2021) ^c	Annual Wage (Mean Annual) per Employee	Total Annual Income ^d	Annual Sales (2021) ^b
Bio-Medical Applications of Florida, Inc. (Fresenius Medical Care)	621492	Kidney Dialysis Centers	5 ^f	\$1,168	\$60,736	\$303,680	\$842,068
Broadbill Marine Yacht Services	541990	All Other Professional, Scientific, and Technical Services	4	\$2,766	\$142,832	\$575,328	\$219,180 ^e
Coastal Land Development of Martin County, Inc.	237990	Other Heavy and Civil Engineering Construction	20	\$1,399	\$72,748	\$1,454,960	\$1,750,000
Copan Co. USA, LLC	423310	Lumber, Plywood, Millwork/Wood Panel Merchant	5 ^f	\$1,062	\$55,224	\$276,120	\$4,410,000 ^f
iRemedy	446199	All Other Health and Personal Care Stores	12	\$919	\$47,788	\$573,456	\$610,000
Microwave Components, LLC	423690	Other Electronic Parts and Equipment Merchant Wholesalers	25	\$3,482	\$181,064	\$4,526,600	\$14,595,477
Onshore Roofing Specialists, Inc.	238160	Roofing Contractors	10 ^f	\$735	\$38,220	\$382,200	\$1,026,000 ^f
Stuart Web, Inc.	323111	Commercial Printing (except Screen and Books)	45	\$744	\$38,688	\$1,740,960	\$8,640,000
Total			126			\$9,833,304	\$32,092,725

^a NAICS code provided in the D&B database, unless otherwise noted.

^b Data are from the D&B database.

^c Average weekly wage per employee based on BLS 2021 Average Weekly Wage data.

^d Total annual income figures derived by multiplying "Number of Employees" by "Annual Wage (Mean Annual) per Employee."

^e While sales values typically exceed estimated totals of annual employee income, annual reported sales can sometimes be lower than estimated annual income. This atypical condition of estimated income exceeding sales can be a result of business conditions, estimated business wages not accurately reflecting actual wages for the site-specific business, annual sales being under-reported, a business loss for the year or a combination of those factors.

^f Data are from the Reference Solutions database.

Property Values and Local Tax Revenue Generated from Property Taxes

EPA obtained data on the most recently assessed values for property parcels at the Solitron Microwave Superfund site in May 2022 through property records accessible through Martin County’s online property appraisal database.³ EPA also obtained 2021 property tax information for the site parcels.⁴

Table A-2. Property Value and Tax Summary for Taxes Payable in 2021

Parcel ID No.	Site Location	Total Market Value of Land and Improvements (2021)	Total Property Tax (2021)
253841015000000400	Lot 4	\$344,370	\$5,720
253841015000000500	Lot 5	\$568,061	\$10,159
253841015000000300	Lot 3	\$3,221,191	\$53,508
253841015000000020	Stormwater Management	NA	NA
253841015000000600	Lot 6	\$476,850	\$8,004
253841015000000200	Lot 2	\$2,027,110	\$33,673
253841015000000700	Lot 7	\$1,402,660	\$23,300
253841015000000030	Wetland Preserve Areas	NA	NA
253841015000000010	Street ROW	NA	NA
253841015000000100	Lot 1	\$182,800	\$3,293
Totals		\$8,223,042	\$137,657

NA = no property value information is available, or the property is tax exempt.

³ Martin County Property Appraiser: <https://www.pa.martin.fl.us/>

⁴ Martin County Tax Collector: <https://martin.county-taxes.com/public>