

ISLAND WATER RECLAMATION FACILITY IMPACT ANALYSIS

October 2020



IWRF IMPACT ANALYSIS

ST. LUCIE COUNTY, FLORIDA

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ACKNOWLEDGMENTS

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SECTION ONE: FINDINGS

Total Regional and Community Impacts and Findings

- From an economic cost-benefit perspective, decommissioning and relocating the existing Island Water Reclamation Facility (IWRF) reasonably creates or preserves \$570 million to \$700 million in annual economic benefits to the community, reflecting \$4 to \$5 of benefit for every \$1 of cost
- As a catalyst for residential and commercial growth on the island, direct redevelopment of the IWRF and indirect redevelopment of other adjacent properties would conservatively create nearly \$290 million in development value, driving significant one-time economic impacts for the region
- After build-out of direct and indirect redevelopment in the area, the annual recurring economic impact could conservatively measure more than \$60 million each year, representing an economic payback of relocation costs of less than 3 years

IWRF Site-Specific Impacts and Findings

- The IWRF site is currently zoned “open space”, but has a Future Land Use (FLU) designation that would allow 8 development units per acre (~150 du) and a 1.0 Floor Area Ratio of commercial (~815,000 sq. ft.). No direct provision is assumed for converting commercial land use rights to residential units
- With a rezoning to the limits of the FLU, residential for-sale condominium is considered the most likely use for the redeveloped site at the existing 8 dwelling units per acre, approximately 150 units. No additional residential entitlements were assumed*
- We do not believe the market supports the full FAR amount of commercial/non-residential. However, we believe the addition of some market supportable commercial (retail, restaurant) would produce a more valuable utilization of the site within the current FLU. We have assumed 55,000 gross square feet of supportable commercial based on review of market demand factors
- Within this type of scenario, the scale of redevelopment on the IWRF site should reflect a 1- to 3-year absorption at most (residential sales or commercial leasing activity after construction)
- Land value for the Island Water Reclamation Facility (“IWRF”) site is estimated between \$6.7 million to \$11.3 million, reflecting a potential sale price of \$360,000 to \$600,000 per acre
- The property would need rezoning approval, at minimum. A potential developer would most likely pursue a Planned Unit Development (PUD)

Notes: 1. This study does not assume increases to density / intensity above the current FLU. We note that the Harbour Isles site is ~8.0 du/acre calculated against total site area, but when calculated against developable uplands, the effective density is greater.



SECTION TWO: BACKGROUND AND HISTORY

About the Fort Pierce Utilities Authority's Island Water Reclamation Facility

In 1972, the City of Fort Pierce ("City") created a governmental utilities authority to be known and designated as Fort Pierce Utilities Authority ("FPUA"), which is responsible for the development, production, purchase and distribution of all electricity, gas, water, sanitary sewer collection and disposal, and other utility services as designated by the City Commission. Fort Pierce is one of more than 2,000 communities in the United States served by a community-owned electric utility. FPUA is unique as it is among the few providers of water, wastewater, natural gas, and Internet services.

The FPUA owns and operates a wastewater collection and transmission system that consists of 110 lift stations and 7 master lift stations. The gravity collection system consists of 158 miles of piping ranging in size from 4 to 42 inches. Most of the collection system is vitrified clay pipe ("VCP"). The gravity collection system has 3,344 manholes located throughout FPUA's service area. The transmission system consists of 98 miles of force mains ranging in size from 1.5 inches up to 30 inches. The force mains are predominantly PVC.

FPUA owns and operates the Island Water Reclamation Facility ("IWRf") which has a permitted capacity of 10.0 Million Gallons per Day ("MGD") Average Annual Daily Flow ("AADF"), Three-Month Average Daily Flow ("TMADF") of 11.5 MGD, Peak Hour Flow ("PHF") of 14.92 MGD for deep well injection, and PHF of 18.6 MGD for surface water discharge. The facility, located

on South Hutchinson Island and built in 1959, has one Class 1 Deep Injection Well. The current Capacity Analysis Reports ("CAR") indicates that the facility is operating well below its design capacity. Based on these data there is no need to expand the facility. The facility has seen high peak hour flows that occurred during tropical storm events and did not exceed the facility's current permitted capacity. The flows entering the facility come from residential (homes), commercial (restaurants and other businesses), and industry (manufacturing, juicing, car washes, etc.). The facility receives industrial waste from five customers. These customers follow FPUA's industrial pretreatment program, and there have been no reported violations nor adverse impacts on the IWRf.

Even with proper operating and maintenance activity and capital renewal and replacement, the IWRf is vulnerable to natural disasters, mainly tropical storms and hurricanes. For Florida, the 2017 hurricane season was one of the most active and destructive on record. In 2017, there were 17 named storms, and significant damage was registered across the Caribbean and southeastern United States.

In particular, Hurricane Irma (September 10, 2017) moved over the Florida Keys and made landfall near Naples before moving up the center of the state. In total, Irma caused at least \$6 billion in property damage and another \$2.5 billion in agriculture losses, with the entire peninsula suffering damage.

As a result of power outages and damage to power distribution systems that continued for several weeks after Irma, the IWRF reported several discharges into the Indian River Lagoon. Consequently, in 2017 the Florida Department of Environmental Protection (“DEP”) fined FPUA \$10,500 for these spills totaling about 10.5 million gallons of treated and untreated sewage at the plant and at several lift stations throughout the City. These spills included the following:

- About 1.25 million gallons between 3 a.m and 6:45 a.m. Oct. 2, 2017
- About 6 million gallons between 10 p.m. Sept. 10, 2017 and 1 p.m. Sept. 11, 2017
- About 3 million gallons between 3:49 a.m. and 9:30 a.m. Sept. 12, 2017

The DEP fine for the discharges was minimized by proactive efforts of the FPUA to recognize and implement an action plan as a result of the 2017 spills. The FPUA has invested more than \$3 million installing a backup electric generation system to minimize the potential for a similar event in the future.

The FPUA Board has considered moving the 59-year-old plant off the island in recent years, which would help eliminate the threat of future spills in the Indian River Lagoon. In light of the 2017 events, continued risk from natural disasters, and more focused environmental regulation efforts, FPUA would like to decommission the IWRF and build a mainland water reclamation facility. St. Lucie County (“County”) has five wastewater treatment facilities, one each on North and South Hutchinson Island, and three smaller package plants on the mainland. St. Lucie County would like to decommission the three mainland package plants and redirect corresponding wastewater flow to a mainland location. FPUA is working collaboratively with St. Lucie County to locate a new mainland water reclamation facility where both utilities could utilize the new facility.

Based on the draft relocation analysis conducted by Raftelis Financial Consultants, Inc. in May 2020, the total conceptual capital costs to relocate the IWRF to a mainland location was calculated to cost roughly \$131 million to \$150 million, depending on the mainland location site.



SECTION THREE:

ST. LUCIE SOCIO-ECONOMICS

In 2019, the population of St. Lucie County totaled slightly more than 328,000 residents occupying nearly 113,000 households out of roughly 140,000 housing units. The average home value reflected in the County was about \$234,654 in 2019. In 2019, the median age within the County was 44.6, with an average household size of 2.6. Approximately 88% within the County's population has obtained their high school diploma; 47% of the high school graduates within the County have obtained an advanced degree. In the County, the per capita income was \$28,458, the average disposable income was \$60,380, and the median household income was \$54,202 in 2019.

From this base of consumer demand, the St. Lucie economy is estimated at a Gross Regional Product ("GRP") of nearly \$8.6 billion dollars (see Table 3.1). This regional contribution of final product is generated from about \$16.6 billion in economic activity (output) generating approximately \$4.9 billion in wages and salaries.

Table 3.1. St. Lucie County Gross Regional Product

Component	GRP (\$, millions)
Household Demand	\$12,084
State/Local Government Demand	1,661
Federal Government Demand	186
Capital	2,232
Exports	3,977
Imports	(11,161)
Institutional Sales	(399)
Total Final Demand	8,580

Based on industry, the St. Lucie economy is dominated by Services and Government activities, accounting for 45% and 49% of total jobs and GRP, respectively (see Table 3.2).

Table 3.2. Industry Share of Gross Regional Product

Industry	Share of Employment	Share of GRP
Services	34%	36%
Government	11%	13%
Wholesale and Retail Trade	12%	11%
Medical	12%	10%
Utility	1%	10%
Construction	7%	6%
Manufacturing	4%	4%
Total	81%	90%

Medical industries including physicians, dentists, outpatient care centers, medical and diagnostic laboratories, home health care services, hospitals, and nursing and community care facilities play a relatively significant role in the local economy as well, generally driven by demographics. While not significant in the share of jobs, utilities also play a significant role in the local economy as a result of the Florida Power facility located on Hutchison Island, as well as the Florida Power and Light solar power plant located between Interstate 95 and Florida's Turnpike.

Tourism in Florida is a major industry that also plays a significant role in St. Lucie, although its full impact is generally included within other industry classifications (e.g., retail, restaurants, services). There are several directly related industries, but

a portion of the impact of visitation requires estimating visitor spending.

The logical base for estimating the impact of visitation is the inventory of hotel and other lodging in the County. This analysis estimates that the County has a supply of roughly 4,000 accommodations among traditional hotel and motel rooms and other transient accommodations (e.g., AirBnB). In 2019, these accommodations generated approximately \$116M in room-revenues from an estimated

550,000 overnight visitors to the County. Accounting for potential day-visitation using industry standards, the total number of annual visitors to St. Lucie is estimated to be between 1.0M to 1.3M, generating more than \$225M in spending in addition to room-revenues.

Together with specific tourist-related industries, this analysis estimates that visitation to St. Lucie supports more than \$550M in economic output and nearly 5,000 jobs (see Table 3.3).

Table 3.3. Economic Output Supported by Visitation

Sub-industry	Jobs	Output
Visitor Spending (Excluding Lodging)	2,030	\$225,000,000
Hotels and Motels, including Casino Hotels	710	74,200,000
Other Amusement and Recreation Industries	690	38,500,000
Scenic and Sightseeing Transportation and Support Activities for Transportation	520	73,600,000
Other Accommodations	350	41,800,000
Travel Arrangement and Reservation Services	290	51,900,000
Gambling Industries (Except Casino Hotels)	180	24,900,000
Boat Building (Less Resident Demand)	75	19,100,000
Amusement Parks and Arcades	35	2,200,000
Museums, Historical Sites, Zoos, and Parks	15	2,000,000
Total	4,890	\$553,100,000

Based on this analysis, tourist-related activity in St. Lucie is estimated to account for 6.5% of GRP. There is a likelihood of some double counting between estimates of visitor spending and reported industries identified above; however, it is our opinion that any double counting is

mitigated by excluding other tourism-related spending or industries. As a result, calculating a range of possible tourist-related impacts would be expected to average to 6.5% of GRP.

SECTION FOUR: DEVELOPMENT POTENTIAL

One objective of this analysis is to provide an estimate of the economic value or market value of the property underlying the IWRF, assuming the facility would be decommissioned and relocated. This analysis starts at the point where the 19-acre site is made available for development or is otherwise in a “greenfield” state. The full costs of decommissioning, relocation, and site remediation (if any) are considered outside of this analysis and not included in determining either development opportunities or the market value of the site.

Potential development opportunity for the site is considered in terms of highest-and-best-use (“HBU”) reflecting the reasonably probable and legal use of vacant land that is physically possible, appropriately supported, financially feasible, and that results in the highest value. However, this analysis does not include a full site analysis or market analysis to identify either physical or market constraints. This analysis relies on observed physical and market characteristics of surrounding properties as reasonable validation of development scenarios. The potential market for uses on this site is limited to residential, either for-sale or for-rent, and commercial in the form of lodging or retail and restaurant.

What Is Residual Land Value?

The economic value or market value of land as used in this analysis includes the following assumptions:

1. A hypothetical buyer and seller are both willing, and thus interested in the transaction, and are able to enter into a transaction, implying a hypothetical buyer has sufficient

funds, and the seller has sufficient rights to enter into a transaction;

2. A hypothetical buyer is prudent, implying a rational buyer, and is considered to be a “financial” and not a “strategic” buyer;
3. Even though a willing buyer and willing seller are hypothetical, they are presumed to be dedicated to achieving their individual maximum economic advantage, but absent any compulsion to buy or sell;
4. Both parties are assumed to understand the industry and other economic conditions and their effects on the asset to be sold;
5. A hypothetical buyer is assumed to represent an independent third party; and
6. A hypothetical sale will be for cash.

In economic theory, the most ideal indication of the market value of land would be an observed market transaction for a specific piece of land or an alternative that is identical in every aspect. However, even with observed market transactions, it is improbable these transactions meet the standards described above, particularly with land and real estate. With a high level of risk in terms of development costs and returns, land is generally viewed as a means of adding flexibility to development cost in order to control profitability. This tends to lead to land speculation and generally creates asymmetry in information, favoring the buyer or developer. As a result, this analysis will utilize a Residual Land Value approach for estimating market value for the subject site that would be created from various development options.

Residual Land Value is a method for calculating the value of land by subtracting from an

estimated total market value all costs associated with the development, including profit but excluding the cost of the land. The amount left over is the residual land value—i.e., the amount someone is able to pay for the land, given the assumed value of the development, the assumed project costs, and an acceptable market profit.

Total Market Value

Total market value can be expressed as a capitalization of net income from a stabilized year. Calculating market value using this approach for a project with a constant growth rate would generate the same value as a Discounted Cash Flow (“DCF”) method, because the discount factor using income capitalization is equal to the discount factor in a DCF approach minus the growth rate. At this level of research, a DCF is not necessary to express the potential total market value from various development scenarios. In addition, a capitalized income method allows a comparison of development products whether they are for-sale or for-lease because it expresses total market value as if full projected revenue has been achieved or a sale is completed. After a determination of the potential development opportunities, the total market value is estimated from a detailed sales analysis or local and regional data on commercial and residential rental rates.

Development Costs

Building costs form the largest risk to the cost side of residual valuation—representing about 80% to 90% of total direct project costs. Building cost information is published by multiple organizations, giving details of historical cost information for a wide range of building types

(residential and commercial). This information is based on a national average of tender prices. There are regional adjustments to be made, depending on location. Site improvements, soft costs, developer marketing, overhead, sales costs, and interest costs are estimated using industry standards and are generally a function of the scale of building costs.

Residual Land Value

Residual land value is the difference between the estimated total market value and estimated development cost, considering a provision for federal taxes and normal profit is left for the purchase of land. Conceptually, this method provides the most unbiased measure of the market price for land, consistent with the concept of market value.



Development Opportunities

The IWRF is located on the north end of Hutchinson Island, along the North Causeway between the mainland and barrier island. The decommissioning and relocation of the IWRF will create specific redevelopment opportunities for the 19-acre site, but is also expected to generate market conditions that are favorable for additional development or redevelopment of other properties along the causeway. This type of redevelopment generally follows a strategic and channeled process of developing vacant parcels and repurposing existing under-used parcels. Most often, this process is not simply the unsystematic development of individual lots but is driven by a unique opportunity or catalyst that influences a broader area. The redevelopment of the IWRF site is a clear market catalyst to create opportunities to foster new economic growth and maintain the existing character of the area.

The sites most likely to be influenced by redevelopment of the IWRF site, all of which have connected accessibility, include the County property to the north and the marina immediately adjacent to the east (see Table 4.1)

Table 4.1. IWRF Redevelopment Site Acreage

Property	Acres
North County Site	12.6
FPUA IWRF ¹	18.7
Causeway Cove Marina	42.8
Total	74.1

Note: (1) There is a sub-station that occupies 1 acre of the FPUA IWRF site which will not be relocated and redeveloped; however, development rights would be calculated for the entire property and would not have an effect on the direct impacts.

The IWRF site (Parcel ID: 2402-323-0003-000-3) measures 18.7 acres, all of which would be assumed to be developable for an alternative use. Nearly 2,500 linear feet of the property fronts the Indian River Lagoon, as illustrated in the map below (see Figure 4.1).

Figure 4.1. Site Map



The Causeway Cove Marina is developed with an active, functional use; however, it could be considered under-utilized from an economic perspective. It would be reasonable to speculate that one factor influencing its current use is the location of the IWRF. The presence of the treatment facility should have very limited or no influence on the commercial marina uses, but is generally not ideal for residential development or other types of commercial uses such as retail and restaurant. Redeveloping the IWRF to an alternative use would be expected to remove negative market perceptions, if any, and promote the development of the property that may not have been considered optimal in the past.

The County property on the north side of the causeway currently provides a variety of public uses through the St. Lucie County Regional History Center, St. Lucie County Aquarium, Museum Pointe Park, and other boating and recreational facilities. While there are no apparent deficiencies or gaps in these public uses, the market conditions created by the redevelopment of the IWRF could provide opportunities to

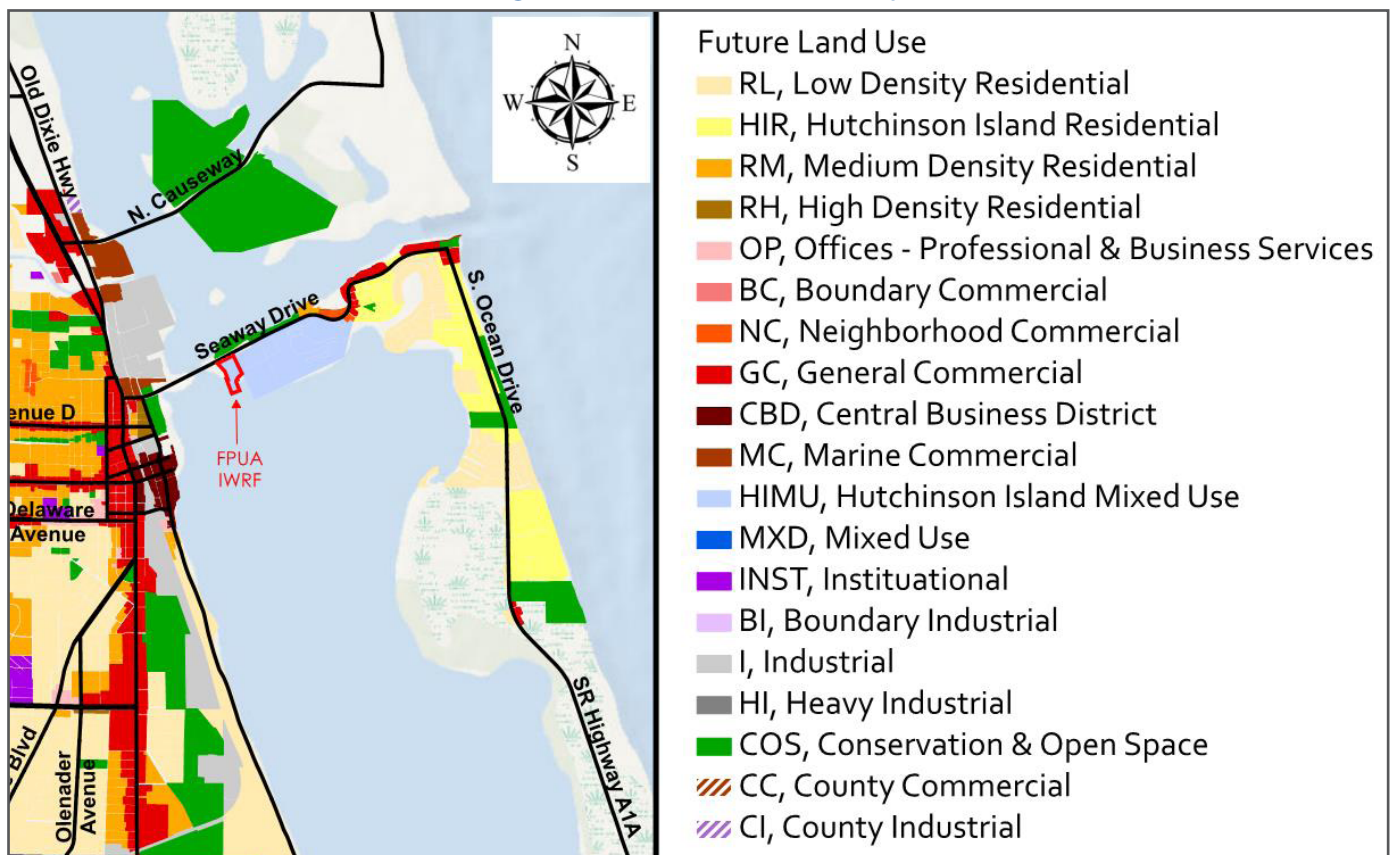
significantly enhance these uses. For example, the County might consider the addition of civic or public event space that would be efficiently located adjacent to allowable commercial uses on the IWRF site or redeveloped within the Causeway Cove Marina.

Overall, the analysis of legally permissible development on the site and other adjacent sites included a review of the City of Ft. Pierce’s existing Future Land Use (“FLU”) and Zoning regulations, as represented in the following pages.

Future Land Use

The IWRF and Causeway Cove Marina sites are located within a special FLU designation called Hutchinson Island Mixed Use (“HIMU”), which also encompasses several adjacent properties, including Harbour Isles and the Smithsonian Marine Station. The County site to the north is within a FLU designation of Conservation and Open Space (“COS”), which limits its future development potential to public uses (see Figure 4.2).

Figure 4.2. Future Land Use Map



The HIMU designation is intended to provide for mixed-use, residential, and tourism-related uses, but at lower densities to protect the existing character of the island. Based on the FLU designation of HIMU (see Table 4.2), the development potential for the IWRF and Causeway Cove sites is 8 dwelling units (“du”) per acre plus a 1.0 non-residential Floor Area Ratio (“FAR”).

Table 4.2. Maximum Development Potential

Land Use	Rate	IWRF Site	Causeway Cove
Residential	8 du/acre	150 du	342 du
Commercial	1.0 FAR	814,572 sq. ft.	1,864,368 sq. ft.

However, the HIMU designation as a whole is limited to 20% non-residential floor area of all developed uses. This overall limitation of non-residential development indicates that the HIMU is envisioned as predominately a residential area. Currently, non-residential development within the HIMU amounts to only 2% of all developed uses, which would not appear to further constrain non-residential development on the IWRF or Causeway Cove site based on maximum allowable.

While the FLU and existing commercial development may not constrain allowable maximum commercial square footage, the current market is not expected to support development anywhere near the allowable maximums for either site.

The Harbour Isle condominium development just east of the site, also within the HIMU designation, encompasses a net land area of approximately 95 acres today (110 acres at the time of development) and comprises 905 units, along with some common features and

accessory buildings. Therefore, residential density at Harbour Isle today is nearly 10 du per acre on a net land basis for the entire development, which includes vacant commercial acreage as well as common area acreage. In fact, by following the land lines for Harbour Isle West and Harbour Isle East, which total a net land area of 81 acres, the intensity of the 905 condominium units reflects more than 11 units per acre.

Regardless of the comments above, the development of Harbour Isle appears to exceed 8 du per acre on a gross acre basis. Construction of the Harbour Isle development began in 2003, possibly before the HIMU designation existed. The Comprehensive Plan does reference a presently non-existent Medium Density Residential Hutchinson Island/General Commercial (“RMHI/GC”) category. That may explain how Harbour Isle exceeds the current maximum of 8 du per acre.

The IWRF, Causeway Cove Marina, and County sites are also within the Coastal Planning Area (not the High Hazard Area), which has a somewhat higher threshold applied to proposed land use and zoning changes.

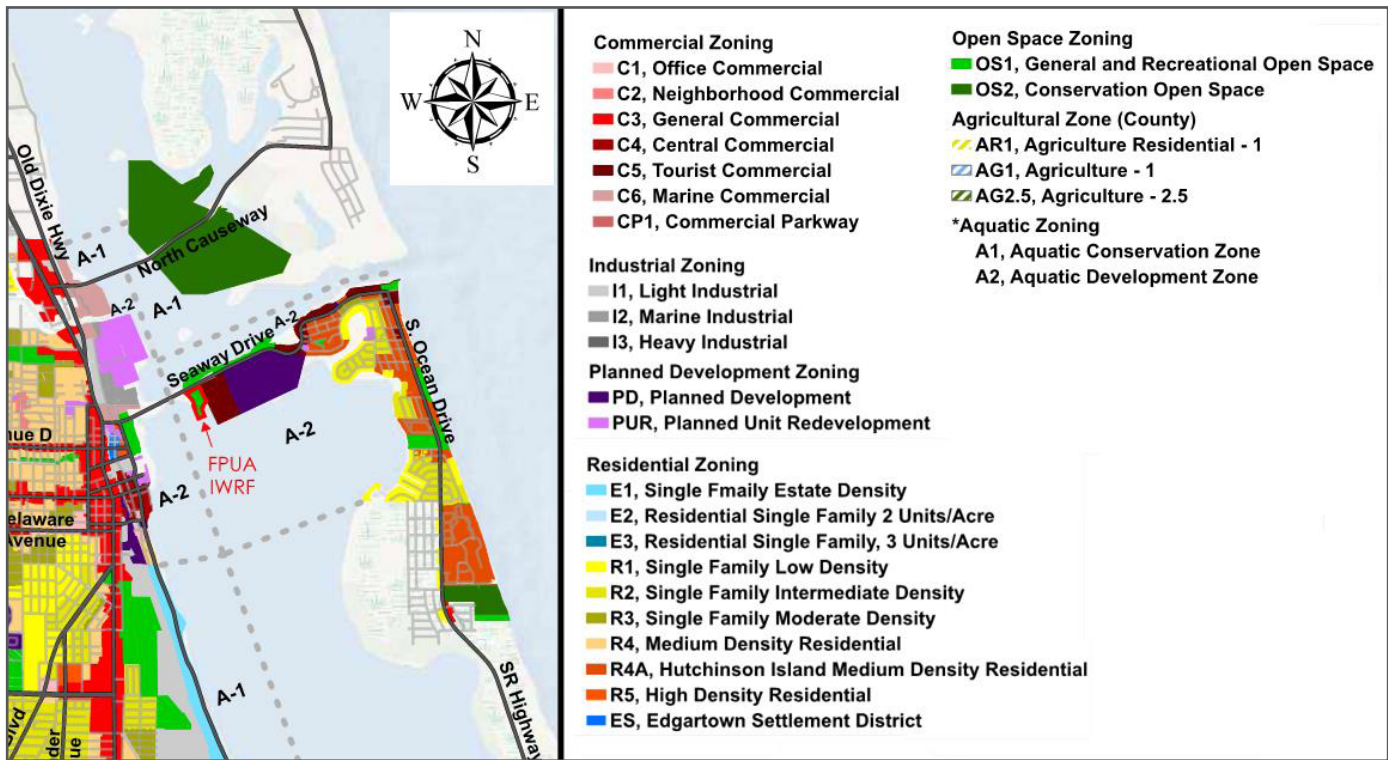


Zoning

The IWRF and County sites are currently zoned General and Recreational Open Space (“OS-1”) with South Beach Overlay (Sec. 125-157 (1)), as

illustrated in Figure 4.3 below. The Causeway Cove Marina site is zoned General Commercial (“C4”).

Figure 4.3. Zoning Map



The OS-1 zone does not allow residential or commercial type developments, so any proposal would require a rezoning to a different designation. The overlay lists specific standards for the underlying zoning categories, including C-3, C-5, OS-1, R-1, R-2, R-3 and R-4A; however, it does not specify that others are not allowed, that’s just what exists there today. The City’s zoning map also shows that there are PUDs and PURs currently within the overlay, which would be the most likely choice for a redevelopment of the property, depending on what is proposed. For the purpose of this analysis, future development potential will be assumed to be governed by the current FLU designations. Any required

adjustments to existing zoning will be assumed to be accomplished through some future PUD process, as needed.

The South Beach Overlay automatically limits the residential density on the island to a maximum of 8 du per acre, so no rezoning would be able to exceed that. At the same time, the overlay limits the height of buildings according to their underlying zones. The highest of all the underlying districts is 45 feet or 4 stories; however, there is no specific limit stated for PUD/PUR zones. It is unclear whether a rezoning to PUD or PUR could allow the City to approve heights greater than 45 feet/4 stories.

Direct Development Opportunities

Given the nature of existing development within the HIMU, the initial consideration for development of the site was residential, specifically for-sale condominium units. Over the past 12 months, there have been more than 970 qualified sales of condominium units in St. Lucie County, with an average unit price of approximately \$235,000, reflecting a sales price per square foot of \$177 (including non-waterfront units). The pool of sales is dominated by small, older condominium units, which has a significant impact on market value relative to future market opportunity.

Approximately 78% of the units sold in 2019 had a finished area or less than 1,500 square feet, predominately a result of the average age of these units being nearly 31 years. There is strong indication that the market is demanding larger units, either a result of consumer demand or profit requirements driven by land prices, which is expected to continue in the future. Just among the pool of condominium sales in 2019, units built before 1990 averaged 1,150 square feet, compared with 1,600 square feet from 1990 and later, a 40% increase. Based on these trends and our modeling, products offered in the near-term are expected to average 2,500 square feet in living area.

In addition to unit size, the realized price per square foot is significantly impacted by the age of existing units. Using a model to adjust sale prices for size of unit, age of building, date of sale, and location (non-water, river-front, ocean-front), this analysis estimates a \$9,000 to \$15,000 premium on current sales prices for each year since construction. (Alternatively, this can also be considered a penalty on the current sales price for each year before 2020 that units are constructed.)

Adjusting recent sales to account for future market opportunity, this analysis is based on an average sales price of \$230 per square foot applied to 2,500 square feet of finished area (see Table 4.2)

Table 4.2. Adjustment to Recent Sales

Living Area	2,500 sq. ft.
Price per square foot	\$230
Market Price	\$575,000

It is also assumed that the different development scenarios reflect no more than a 1- to 3- year absorption period (unit sales or commercial leasing activity after construction), given the volume of sales in 2019 and the proposed programs.

This initial consideration was modeled based on allowable maximums, for the development of 150 units with a finished living area of 2,500 square feet, constructed in either a 2-story or 4-story product (see Table 4.3).

Table 4.3. Initial Consideration for Development

Land Area	2-Story	4-Story
Residential Buildings	196,900	98,450
Parking (surface)	150,000	150,000
Front set-back	28,350	28,350
Other (roads, stormwater, amenities, open space)	439,322	537,772
Total	814,572	814,572
Other % of Total	53.9%	66.0%
Dwelling Units	150	150

While this analysis understands the HIMU's intent to provide an incentive for mixed-use development while at the same time maintaining a character of development (intensity and height) that reflects the desire of the community, the HIMU FLU designation is relatively inefficient from an economic perspective. The portion of the site (excluding roads and stormwater retention) that is either used for amenities or open space is significant. Depending on the contribution of this space to the market prices of the condominium units, it is reasonable to identify this constraint as an economic or market underutilization of the property.

In addition, as a stand-alone site, the potential underutilization of land when applying gross density limits can more easily be addressed when the property size is much larger than the IWRF site (which emphasizes the potential synergies should the site be combined with other adjacent property for redevelopment). The development of Harbour Isle is an example of the advantage of developing more land with the same gross density limits. Developing roughly 110 acres allowed Harbour Isle to utilize 15 acres to construct a commercial marina and transfer development rights—and effectively more land value—to the remaining 95 acres. While the marina did not contribute to the market value of individual units, it created income for the developer/owner. So while the same gross density limitation is applied, it has a significantly different impact on economic utilization.

One consideration for the more efficient development of the subject site, even with the obstacles of both FLU and zoning, would be to consider allowing more density on this 18.7-acre site but remain consistent with the character of existing, similar developments (see Table 4.4).

Table 4.4. New Consideration for Development

Land Area	8 du/ac	13.5 du/ac
Residential Buildings	98,450	165,375
Parking (surface)	150,000	252,000
Front set-back	28,350	28,350
Other (roads, storm-water, amenities, open space)	537,772	368,847
Total	814,572	814,572
Other % of Total	66.0%	45.2%
Dwelling Units	150	252

Note: (1) There is a sub-station that occupies 1 acre of the FPUA IWRF site which will not be relocated and redeveloped; however, development rights would be calculated for the entire property and would not have an effect on the direct impacts.

It seems reasonable to assume that developing the subject site at higher gross density, even up to 13.5 dwelling unit per acre (“du/ac”), would be virtually indistinguishable from the spacing and connectivity of Harbour Isle, which was developed at more than 5-times the scale at more than 11 du per net acre.

A second consideration for development would be the addition of non-residential uses as allowed by the HIMU designation. However, it is important to distinguish between mixed-use and multi-use development.

It is generally accepted that for mixed-use development the physically integrated combination of residential, commercial, cultural, or transportation functions within a structure, consolidates activity within an area, and is intended to promote some level of self-sustaining interdependence. The success of mixed-use development is not exclusively about high-density development. However, there are products and markets, both reflecting a much higher intensity than allowed in this case, that are more conducive to a mixed-use development. Multi-use development is simply a program of multiple uses that may or may not promote some level of self-sustaining interdependence. Commercial development (retail, restaurant) included on the site will most likely be developed as stand-alone and may or may not be integrated with the condominium product.



Base Development Pro Forma

A financial pro forma for developing 150 condominium units on the site is provided in the following table (see Table 4.5). Financial modeling for this analysis assumes the IWRP would be

provided as “greenfield”. No costs for decommissioning, relocating, or reclamation (if any) have been included in this pro forma.

Table 4.5. Financial Pro Forma (\$, 000s)

Component	Value (\$,000s)	Notes
Total Market Value	\$86,250	150 units at \$575,000
Land	\$6,728	\$8.26/sq. ft.
Site	\$492	\$1.25/sq. ft.
Building	\$60,555	\$154/sq. ft.
Soft	\$1,221	2% of hard costs
Total Direct Costs	\$68,996	
Developer Overhead, Marketing, Sales	\$7,631	12.5% of hard costs
Interest	\$1,916	2.5% of total cost
Provision for Federal Taxes	\$3,083	40% of net margin
Net Income	\$4,624	
Profit (%)	5.4%	

Assuming the market supports the \$575,000 sales price for these units, along with the various assumptions on projects costs, the base development program would create a land value of approximately \$6,700,000 or \$45,000 per unit. Using the residual land value approach, we

estimate that the addition of 55,000 square feet of commercial use, along with the development of for-sale residential condominiums, would generate the equivalent land value of the alternative residential development at 13.4 du/ac (see Table 4.6).

Table 4.6. Alternative Residential Development – Residual Land Value Approach

	8 du/ac		13.5 du/ac
	No Commercial	With Commercial	
Total Market Value	\$86,250	\$104,580	\$144,900
Direct Costs	68,996	83,669	115,921
Net Income	4,624	5,850	7,765
Profit (%)	5.40%	5.60%	5.40%
Residual Land Value	\$6,732	\$11,435	\$11,314
Dwelling Units	150	150	252
Commercial Sq. Ft.	-	55,000	-

Indirect Development Opportunities

The County site on the north side of the causeway is assumed to remain in public use for the purpose of this analysis; however, redevelopment of the IWRP property, along with the potential redevelopment opportunities created for the Causeway Cove Marina, could promote additional development or redevelopment of public uses on this site. While any consideration of new or redeveloped public uses on this site would create significant community and social value, they would not directly contribute to economic market value. But the additional development or the redevelopment of public uses on the County site could create demand supporting non-residential uses developed on both the IWRP and Causeway Cove Marina sites. For example, civic or public event or meeting space, whether developed as a stand-alone or incorporated into existing facilities would provide significant support for new commercial uses such as retail, restaurant, and lodging.

Therefore, potential additional redevelopment as a result of the catalyst of relocating the IWRP is currently limited to the Causeway Cove Marina property. This in-direct redevelopment opportunity was modeled based on allowable maximums, for the development of 343 units

with a finished living area of 2,500 square feet. The marina uses would remain as currently developed (see Table 4.7).

Table 4.7. Potential Additional Development

Land Area	Sq. Ft.	Dist. (%)
Residential Buildings	225,185	12.1%
Parking (surface)	343,000	18.4%
Front set-back	46,575	2.5%
Marina (submerged)	1,105,988	59.3%
Other (roads, storm-water, amenities, open space)	144,491	7.7%
Total	1,865,239	100.0%
Dwelling Units	343	

A financial pro forma for developing 343 condominium units on the site is provided in the following table (see Table 4.8).

Assuming the market supports the \$575,000 sales price for these units, along with the various assumptions on projects costs, the base development program for in-direct development opportunities would create a land value of approximately \$15,400,000 or \$45,000 per unit.

Table 4.8. Additional Financial Pro Forma for 343 Condominium Units

Component	Value (\$,000's)	Notes
Total Market Value	\$197,225	343 units at \$575,000
Land	\$15,382	\$5.74/sq. ft.
Site	\$1,126	\$1.25/sq. ft.
Building	\$138,480	\$154/sq. ft.
Soft	<u>\$2,792</u>	2% of hard costs
Total Direct Costs	\$157,780	
Developer Overhead, Marketing, Sales	\$17,451	12.5% of hard costs
Interest	\$4,381	2.5% of total costs
Provision for Federal Taxes	\$7,045	40% of net margin
Net Income	\$10,568	
Profit (%)	5.4%	

SECTION FIVE: IMPACT ANALYSES

Cost-benefit and economic impact analyses assist in the study of the economic contributions of the use of public resources, or to help evaluate the consequences of public policy decisions affecting resources. These analyses are commonly applied to the issue of public funding as it relates to the following (among other issues):

- Resource allocation (public services)
- Land use regulations and restrictions
- Economic development
- Environmental protection
- Social and economic assistance

Cost-benefit and Economic Impact assessments may be *ex ante*, estimating the likely impacts of proposed or hypothetical public projects or policy; or *ex post*, measuring impacts associated with an historical public project of policy. Evaluating a public project or policy after it has happened or is implemented only seems to have value if it can be corrected (assuming desired outcomes are not being achieved) or may appear to only provide a validation of an action that has arguable benefit. However, a review of the impacts *ex post* is likely to be more accurate because the desired changes (at least measurable changes) can be observed and compared with actual costs. An *ex ante* analysis is faced with the challenge of making assumptions about how certain economic parameters will change, or how individuals or groups will react. Thus, the outcome of a cost-benefit or economic impact analyses is contingent on the validity of the assumptions being used to describe probable changes in economic activity and benefit. This analysis is obviously an *ex ante* assessment of the

potential impact of redevelopment of the IWRP, assuming it is decommissioned and relocated; as such, it is subject to variation from actual changes in economic activity.

A critical difference between cost-benefit and economic impact analyses is how they each deal with costs. In calculating economic impacts, more costs or spending generates more jobs and income. Thus the more costs associated with a public project or policy, the larger the estimated economic impact to the region. In contrast, in a cost-benefit analysis, the cost of a public project or policy is subtracted from calculated benefits, thereby reducing the value of a project or policy the higher the cost. This seemingly conflicting dynamic of the effect of the cost of a public project or policy is typically not recognized; the goal of policy research is generally focused on one or the other method of analysis depending on the goal of the inquiry. It is not common for research to address both public policy efficiency and the magnitude of economic impact.

Cost-Benefit Analysis

A cost-benefit analysis calculates the costs (implicit or explicit) and benefits (also implicit or explicit) of a specific public project or policy and how different individuals or groups are affected. The benefits of a public project or policy can include market benefits: those that can be quantified from market transactions; as well as non-market benefits: those that are received by an individual or group without having to pay for them. Measured in like terms (i.e., economic output, income, employment), the calculated costs can be subtracted from benefits to reveal either a positive or negative net impact in total

and between individuals or groups. This method allows for the comparison of different projects or policies to determine which are relatively more efficient and how the impacts differ at the level of individuals or groups.

The goal of cost-benefit analysis is to understand the efficiency of public projects or policy. This implies that, at most, specific projects or policies should only be undertaken if the net impact for the whole is positive (benefits exceed costs) and generates more net benefit than alternative projects or policies that accomplish similar ends. Cost-benefit analysis, however, also provides for the evaluation of the distributional implications of projects or policies. In the end, a properly constructed cost-benefit analysis should provide sufficient information to allow policy makers to choose the most efficient public project or policy—providing both aggregate positive net impacts and minimal negative distributional impact among individuals or groups.

The most significant complication with cost-benefit analysis as it relates to public projects and policy is the notion of implicit “benefit” or “cost”, market and non-market benefits, and the ability to calculate values of public or social themes. For example, it is intuitively beneficial to provide a safe, clean potable water supply for which costs are clearly quantifiable. However, it is not entirely clear how one would calculate the value of the health, safety, and welfare conferred to the public. It is common to attempt to calculate costs avoidance as a surrogate to benefits, such as reduced medical cost by avoiding illness or the loss of economic efficiency from having to allocate time and resources to constantly search for sufficiently safe, clean water. However, these

costs most certainly miss the value of ethereal benefits that are sometimes more important than cost avoidance.

Decommissioning and Relocation Cost

The cost impact of decommissioning and relocating the IWRF are identifiable based on existing studies. These explicit costs also appear to reflect the complete set of cost implications because the program will be funded with new, incremental revenues. Thus, there is no apparent opportunity cost by allocating public resources to meet the requirements for decommissioning and relocating the IWRF and, therefore, little implicit costs. Based on operational and planning estimates, the full annual program operations and maintenance costs are estimated between \$131M and \$150M.

Economic Values of Benefits

The value of the benefit of relocating the IWRF to a more appropriate location is not as easily identifiable, or at least measurable. The community has the choice of not relocating the facility, but this would continue the risk of spills and discharges of wastewater into the Indian River Lagoon. The risk would largely be recognized in the future if other natural disasters occur that have an impact on the IWRF, in addition to increased efforts and pressure from state legislation and regulation. Environmental legislation, regulations, and penalties are not expected to simply go away and will most likely escalate in the future.

In addition, the property would remain underutilized, and the community would not realize the benefits of incremental jobs, income, and taxes that could be generated from a more appropriate use. At a minimum, the benefit of relocating the IWRF could be attributed to the avoidance of further fines. However, this type of “cost avoidance” estimate is woefully inadequate to capture the full value or benefit from protecting the natural resources of the region. Cumulative spills of more than 10 million gallons of wastewater in 2017 as a result of power outages from Hurricane Irma carried a fine of only \$10,500. The FPUA would clearly not be making the decision of relocating the IWRF to avoid fines of this amount from future spills and discharges. The greater significance of the environmental impact over time and downstream is about preserving the natural assets that contribute to a significant tourism industry in the county and region.

The significance of tourism in the region provides reasonable evidence of the economic value of the area’s natural resources. Common practices in research attempting to calculate the economic value of environmental or natural resources include: 1) industry valuation; 2) travel cost and expenditures; and 3) contingent valuation. The objective of each method is to relate a market value for a good or service that is not entirely transacted in market terms. The more appropriate measure of benefit of relocating the IWRF is the preservation of the tourism industry directly impacting St. Lucie County and the region.

What happens if natural resources are destroyed? A study found that wastewater discharged into the waters in the Caribbean is killing coral reefs at alarming rates. At a specific site impacted by wastewater discharge, 30% of the coral were infected with two coral diseases (black-band and white plague), which can destroy a coral colony rapidly. At other locations where no wastewater was discharged, no more than 4% of coral were infected.

The northern extension of the Florida coral reef tract runs parallel to the Atlantic coastline of southeast Florida, from the northern border of Biscayne National Park in Miami Dade County to the St. Lucie Inlet. The reefs and hard-bottom habitats in the northern third of the Florida reef tract support diverse biological communities, which provide habitat to important fisheries. Marine and estuarine fisheries habitats observed in southeast Florida consist of a varying mosaic of contiguous coral reefs, marine and estuarine soft substrate habitats (e.g., tidal sand flats and mud flats), sea-grass, oyster reefs, mangroves, offshore hard-bottom and nearshore hard-bottom, including worm reef.

A number of stressors affect coral reefs and other fisheries habitats in southeast Florida. The degradation of habitat and loss of ecosystem functions, such as primary production, trophic linkages, and habitat complexity can result from synergistic and cumulative effects of natural and human stressors on a system. The discharge of wastewater, stormwater from urban development, and agriculture—along with the increase of populations in critical areas—have contributed to the degradation of the water quality and fisheries habitats of the southeast Florida ecosystem. These discharges carry excess nutrients, suspended and dissolved organic matter, and other pollutants to the estuaries, which in turn affect the water quality, flora, and fauna in the estuaries and adjacent coastal waters.

Recreation and tourism are two of Florida’s most important industries. Much of Florida’s recreation and tourism is associated with reef-related activities such as fishing, diving, and boating, as well as industries supporting these activities. Results from two studies of economic activity associated with natural and artificial reefs in Florida indicated that reef-related recreation and tourism supported more than 36,000 jobs, and that a total of \$2.3 billion in sales and \$1.1 billion in income were generated annually from reef-related expenditures. These findings clearly demonstrate that conservation and sustainable

use of coral reef and fisheries resources are very important to Florida's economy.

Benefits of managing wastewater could therefore be attributed to the total value of the tourism industry or the value of travel costs and expenditures. Environmental damage has a cumulative impact and ultimately reduces the attraction of a destination based on natural resources. Some level of tourism could continue after major damage, and impacts have become obvious; however, it is reasonable to predict significant reduction in the overall industry without proper environmental management practices.

The direct economic value of the tourism industry in the region is clearly a function of its natural resources; whereas a travel cost and expenditure model in theory reflects how users value a destination based on what they spend to get there and personal expenditures while they are there. The non-market contingent valuation method has been used to elicit a response to what someone might be willing to pay in order to preserve something, particularly environmental resources. Studies of water rights and non-commercial fish have resulted in household values in the range of \$160-\$200 to protect natural resources. In other words, households responded that they would be willing to pay \$160-\$200 to protect the identified natural resource (see Table 5.1).



Table 5.1. Economics Costs and Benefits

Economic Costs	Low (\$, mil)	High (\$, mil)
IWRF Relocation	\$130	\$150
Economic Benefits		
Industry Loss	\$190	240
Travel Cost and Expenditures	300	371
Household Contingent Value ¹	18	23
Economic Impact of Redevelopment	<u>60</u>	<u>72</u>
Total	\$568	\$706
Net Cost-Benefit	\$438	\$556
Benefit to Cost Ratio	4:1	5:1

Note: (1) Conservatively applied to only the number of households in St. Lucie County. Because the Indian River Lagoon impacts the quality of a region-wide tourism industry, this measure could reasonably be applied to a regional household count.

Economic Impacts

Economic impact analysis attempts to calculate how a particular event affects the economy or economic growth of a specific geography. This type of analysis commonly measures positive and negative impacts in terms of output, employment, and income. For example, a project might add to a region or country's level of output, creating new employment and household income. As the new, incremental household income is spent in the region or country, additional demand is created for goods and services, generating further increases in output, employment, and income. This dynamic continues for several cycles, diminishing each time until no further indirect impact can be measured. The initial change is, therefore, the direct impact and the sum of changes resulting from the cycles of re-spending representing the indirect impacts.

The goal of economic impact analysis is to estimate the relative significance of changes in economic activity caused by a specific project or event. Generally, large positive economic impacts are often considered “good”, particularly for regions in need of jobs and income. A common error with economic impact analysis is confusing estimated impacts (positive or negative) with benefits to individuals or groups. Economic impact analyses determine the likely stock and flow of economic activity in a region or country; thus economic impact analysis measures benefits to the economy, not the benefits to individuals and groups.

Economic benefits are typically defined as the value of a new business’ or development’s economic output, expressed in terms of sales or production capacity, value added or other like economic or commercial activity, and total employment generated. The common measures of benefit are simply economic output (final sales), jobs, and wages. The measures of economic benefit from an economic analysis are generally the basis for the creation of new public tax revenues and fees.

Economic benefits can be classified as direct, indirect, or induced:

- Direct benefits relate to revenues generated or expenditures made in the local economy during the years of construction and operation of a proposed project. For example, from an economic context, direct construction expenditures relate to the spending required to complete the development of a project. After development is complete, sales generated by one or many companies occupying the commercial space reflect direct permanent, on-going economic benefits from operations.
- Indirect and induced benefits are those stimulated by subsequent or secondary rounds of expenditures, such as employees

and/or other businesses that have some link to the operations or other partners, and any parties subsequently involved as users, tenants, or owners. For example, the largest impact of these secondary effects includes employment and output that is created when employees of the primary activity spend annual wages as household consumption expenditures.

The economic benefits derived in this report have been prepared using commercially available software, Impact Analysis for Planning (“IMPLAN”). IMPLAN is a common input-output model often used to track the impacts of major capital spending and business-operating activities. These kinds of generalized models incorporate multipliers adapted from extensive archives of national economic accounts specific to a state, region, or county. Consequently, the output is explained in terms of both direct and total economic impact of these activities. Calculating economic benefits utilizing this type of input-output model is generally accepted as the industry standard, and results will be consistent among different input-output models or between different professionals.

Total Recurring Operation Impacts

The redevelopment of the IWRF site, at final build-out, is expected to produce demand for nearly 593 total annual, permanent jobs within the region from on-going operations. Roughly 220 of these jobs will be directly associated with the activities on the site, supporting the operation and maintenance of the residential units, along with retail and restaurant spending generated in the commercial uses. The other 373 jobs result from indirect and induced effects from direct operations and household disposable income.

The table on the following page (Table 5.2) presents the estimated recurring (on-going) economic impact within the region.

Table 5.2. Economic Impact Summary (2020 Dollars) – On-going Impacts

Economic Measures	Direct	Indirect-Induced	Total Impact
Employment	220	373	593
Earnings (000s)	\$6,097	\$13,243	\$19,340
Output (000s)	\$14,911	\$49,345	\$64,256
Wages / Employee	\$27,714	\$35,552	\$32,641
GDP to Wage Ratio	2.4	3.7	3.3

Source: IMPLAN; GAI Consultants

These kinds of recurring annual economic impacts are essential to achieving other local tax revenues. The levels of annual economic output (e.g., sales, business revenues) and annual wages directly support the predominate forms of tax revenues used to fund City services.

The total job count from on-going operations is associated with more than \$64 million in annual economic output and \$32 million in total annual earnings. Direct job impacts associated with the redevelopment total nearly \$15 million in annual economic output and \$28 million in annual earnings.

Direct, Indirect, and Induced Operating Job Impacts

The subsequent rounds of spending that create indirect and induced employment impacts are those most likely to benefit the neighboring areas adjacent to the site. While these employment impacts can occur anywhere within the region, the direct activity stimulated by the redevelopment is likely a main attraction for these support and affiliated jobs. The Indirect and Induced employment impacts created from the direct development of the redevelopment represents a mix of professional and service-related jobs, clearly providing adjacent neighboring area with more and enhanced employment opportunity than would otherwise exist. The table on the following page (Table 5.3) estimates the top employment sectors created at build-out of the Project resulting from the direct effects of on-going operations.



Table 5.3. Employment Sector Impacts

Industry Sector	Jobs
509 - Full-service restaurants	138.1
411 - Retail - General merchandise stores	94.2
476 - Services to buildings	28.8
447 - Other real estate	21.0
510 - Limited-service restaurants	18.2
483 - Office of physicians	14.0
490 - Hospitals	13.8
488 - Home health care services	12.2
406 - Retail - Food and beverage stores	11.6
422 - Warehousing and storage	8.7
442 - Other financial investment activities	8.5
512 - Automotive repair and maintenance, except car washes	7.0
517 - Personal care services	6.4
494 - Child day care services	6.4
491 - Nursing and community care facilities	6.3
417 - Truck transportation	5.7
485 - Offices of other health practitioners	5.6
511 - All other food and drinking places	5.4
472 - Employment services	5.4
493 - Individual and family services	5.3

Total Construction Impacts

During all construction phases over a 2- or 4-year period, an estimated 4,000 total jobs are expected to be created within the region, with 2,932 of these directly associated with the redevelopment of the IWRF and Causeway Cove sites. The total job count for new development of the entire site is associated with almost \$430 million in total output, with more than \$168 million in earnings connected to the redevelopment.

The following table (Table 5.4) illustrates the estimated nonrecurring (one-time) economic impact captured within the region from the proposed construction activities.

Table 5.4. Economic Impact Summary (2020 Dollars) – One-Time Impacts

Economic Measures	Direct	Indirect-Induced	Total Impact
Employment	2,932	1,066	3,998
Earnings (000s)	\$129,544	\$38,517	\$168,061
Output (000s)	\$292,000	\$138,210	\$430,210
Wages / Employee	\$44,176	\$36,139	\$42,036
GDP to Wage Ratio	2.3	3.6	2.6

Source: IMPLAN; GAI Consultants

While these impacts occur only during the construction and development of the Project, they are nonetheless critical to maintaining a flow of demand for construction-related employment within the region and establishing a base of skilled labor that provides for future opportunities.

Direct, Indirect, and Induced One-Time Impacts

Construction spending will also provide a catalyst for Indirect and Induced employment impacts in the form of a mix of professional and service-related jobs. The following table (see Table 5.5) estimates the top employment sectors created at build-out of the Project from the Direct effects of one-time construction.

Table 5.5. Top 20 Employment Sector Impacts

Industry Sector	Jobs
58 - Construction of new multifamily residential structures	2,285.0
457 - Architectural, engineering, and related services	364.0
55 - Construction of new commercial structures, including farm structures	299.9
405 - Retail - Building material and garden equipment and supplies stores	94.1
447 - Other real estate	67.5
509 - Full-service restaurants	43.1
472 - Employment services	41.2
417 - Truck transportation	34.4
510 - Limited-service restaurants	33.3
476 - Services to buildings	25.9
490 - Hospitals	23.6
411 - Retail - General merchandise stores	23.1
456 - Accounting, tax preparation, bookkeeping, and payroll services	22.4
483 - Offices of physicians	22.2
468 - Marketing research and all other miscellaneous professional, scientific, and technical services	21.1
462 - Management consulting services	20.2
406 - Retail - Food and beverage stores	19.4
477 - Landscape and horticultural services	19.3
488 - Home health care services	18.6
442 - Other financial investment activities	15.8

Similar to on-going economic impacts, the Indirect and Induced employment impacts created from the construction of the Project represents a mix of professional and service-related jobs, clearly providing adjacent neighboring area with more and enhanced employment opportunity than would otherwise exist.

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