



AGENDA REPORT
August 6, 2019

**Accepting North Merritt Island Small Area Study Density Recommendation,
District 3**

SUBJECT:

Accepting North Merritt Island Small Area Study Density Recommendation

DEPT/OFFICE:

District 3

REQUESTED ACTION:

Board consideration of accepting recommendation 3 of the North Merritt Island Small Area Study and directing staff to return to the Board with an accordingly amended Future Land Use map.

SUMMARY EXPLANATION and BACKGROUND:

On November 1, 2018, the Board acknowledged receipt of the North Merritt Island Small Area Study after a years-long community effort. Among the most critical of its recommendations (recommendation 3) was amending the FLU map in the subject area to 1:2.5.

ATTACHMENTS:

Description

- **NMI SAS**



Tammy Rowe, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001
Fax: (321) 264-6972
Tammy.Rowe@brevardclerk.us

August 7, 2019

MEMORANDUM

TO: John Denninghoff, Assistant County Manager

RE: Item J.2., North Merritt Island (NMI) Small Area Study (SAS) Density Recommendation

The Board of County Commissioners, in regular session on August 6, 2019, authorized you to prepare and bring back to the Board density recommendations of the NMI SAS being that it is a riverine or an estuarine, how that may be applied for NMI, and to provide a list of improvements that may be funded for NMI to improve its drainage with compensatory storage to the August 20, 2019, meeting.

Your continued cooperation is greatly appreciated.

Sincerely yours,

BOARD OF COUNTY COMMISSIONERS
SCOTT ELLIS, CLERK

Tammy Rowe

Tammy Rowe, Deputy Clerk

/ds

cc: Each Commissioner

NORTH MERRITT ISLAND
SMALL AREA STUDY



"Paddling Trail kayak launch" photo taken from Island Pioneer Trail by Brevard County Staff

BREVARD COUNTY, FLORIDA
Planning & Development Department
2018

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EXECUTIVE SUMMARY

On August 7th, 2014, the Board of County Commissioners (BCC) directed staff to conduct a study of the area north of the Barge Canal in North Merritt Island (NMI) after a rezoning approval with a Binding Development Plan (BDP) was approved after much discussion and public comment. NMI residents were officially appointed by the District 2 Commissioner on January 9th, 2015 to serve on the North Merritt Island Citizen's Committee to guide the North Merritt Island Small Area Study (herein after known as The Study). The first Citizen's Committee kick-off meeting was January 20, 2015.

The Study set out to take an in-depth look at the area; its infrastructure, economy, and environment; and the community's vision to serve as a tool when planning for careful land development while preserving a unique quality of life. The Study focused on providing data and information to the Citizen's Committee for the purpose of formulating recommendations for future improvement projects, land development regulations or amendments to the Comprehensive Plan. The Study addressed long-term concerns by examining the Character of the Community, Land Use and Zoning, Infrastructure and Service Demand and Environmental and Ecological Factors.

The Citizen's Committee hosted many public meetings in coordination with the County's Planning & Development Department and incorporated data and information from a variety of County departments and State and Federal agencies. A list of thirteen Recommendations, which are arranged by type, rather than priority, are included for the Board's consideration at the conclusion of The Study. Recommendations #7, #8, and #3 were selected by the Citizen's Committee as the top three considerations and are listed below for quick reference.

Recommendation 7 (on page 60) proposes that Brevard County should significantly improve the current Federal Emergency Management Agency (FEMA) stormwater model for North Merritt Island. This stormwater model could then be used to demonstrate whether proposed development would pose any adverse flooding impact on neighbors or streets. Brevard County Natural Resource Management Department has estimated the cost to collect the survey and mapping data to be \$150,000 and the cost to update the FEMA stormwater model to be \$300,000 totaling \$450,000.

Recommendation 8 (on page 62) proposes that Brevard County should create a Special Area of Stormwater Concerns (SASC) within the boundary of the North Merritt Island Small Area Study to require development to meet specific stormwater standards tailored for addressing the drainage challenges and deficiencies within the SASC. These standards could include, but would not be limited to volume limitations, increased discharge rate limitations; higher degrees of stormwater treatment, improving downstream infrastructure, individual lot detention, and lot fill limitations. Brevard County Natural Resource Department has advised that additional detail is necessary to allow evaluation of smaller individual projects for impacts on surrounding properties. Adoption of tailored standards applied within a SASC with support of an updated model as recommended above, could aid in avoiding harmful cumulative flood, drainage and water quality impacts.

Recommendation 3 (on page 58) proposes that for all parcels ≥ 2.5 acres in size with the Residential 1 (Res 1) Future Land Use designation and Agricultural Residential (AU) Zoning classification, Brevard County should amend the Future Land Use Map to Residential 1:2.5 (Res 1:2.5). If so directed by the Board of County Commissioners to implement the recommendation, County staff would initiate a Large Scale Comprehensive Plan Amendment (LSCPA) to modify the Future Land Use Map (FLUM). This FLU change from RES 1 to RES 1:2.5 would reduce the number of dwelling units that can be built in The Study area by approximately 1,492 dwelling units.

As a result of this in-depth look into the concerns over future growth and identifying the main priorities for action, the Board took action to upgrade the FEMA Flood Model for NMI. The Board may wish to consider taking action on the remaining twelve (12) recommendations listed on pages 59 through 65.



Citizen's Committee Members

Darleen Hunt, Chair

John Schantzen, Vice Chair

Jack Ratterman

Susan Smith

Ted Balke

Brevard County Staff

Tad Calkins Planning & Development Director

Erin Sterk Planning & Zoning Manager

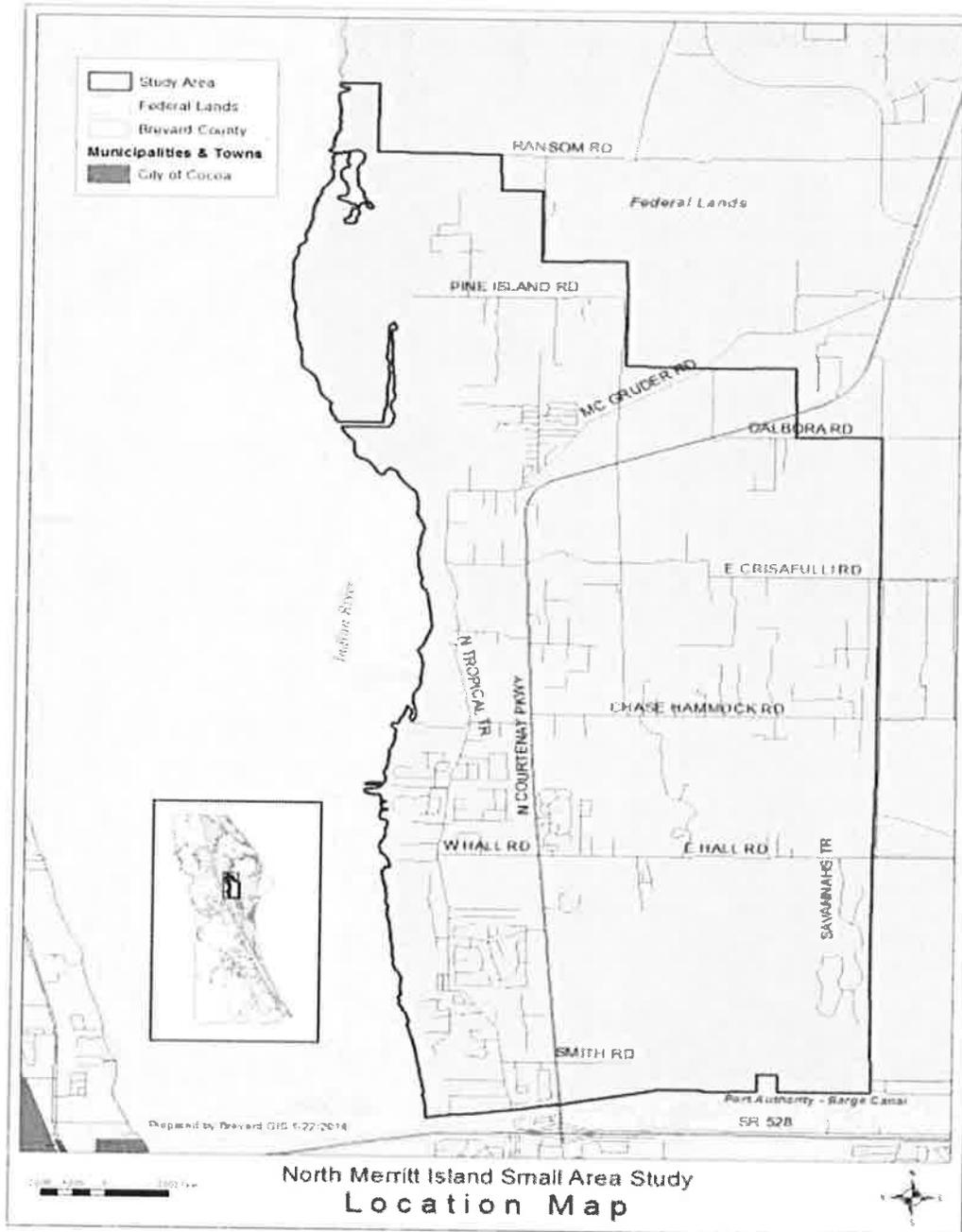
Cheryl Campbell Planner III

Anne Rembert Special Projects Coordinator II – GIS & Mapping

In coordination with various County departments and State agencies

STUDY AREA AND BOUNDARIES

The North Merritt Island study area is bound by the Kennedy Space Center to the north and east, the Barge Canal to the south and the Indian River Lagoon to the west.



Map 1 Study Area and Boundaries

CHARACTER OF THE COMMUNITY

Community Background

The study area is bordered by the Barge Canal to the south, and the Kennedy Space Center (KSC) to the north and east, and the Indian River Lagoon on the west. The center of the study area is a bowl or basin with very low elevation, is located on a barrier island, and is subject to evacuation during storm events. An often heard comment by residents of North Merritt Island is that when they drive north over the Barge Canal Bridge, they enter an unlighted rural oasis. The SR 3 corridor totally changes once over the bridge from commercial to rural. This is what most residents and Citizen Committee representatives have said they would like to retain and preserve.

Residents in North Merritt Island are drawn to the area's rural environment with back porch exposure to the natural Florida habitat and wildlife. The area's climate is unique in that it supports a diversity of tropical and subtropical flora and fauna. Close proximity to the beaches and to the Kennedy Space Center adds to the area's desirability as a location for residential housing. Kennedy Space Center is one of the largest employers, lying adjacent to the study area on both the north and east sides. North Merritt Island features amenities such as rural living areas, social activities, biking and hiking, wetlands, protected species and wildlife, oak hammocks, pine forests, and other beautiful sceneries. There are about 1900 acres of recreation and conservation areas within NMI including Kings Park, Manatee Cove Park, Savannahs Golf course, Mitchell Ellington Park, Kabboord Sanctuary, and Pine Island Conservation Area¹. Located just to the east of the study area on the south portion of Kennedy Space Center on East Hall Road is KARS Park I, a recreational activities center operated by the NASA Exchange Council of Kennedy Space Center for the welfare of NASA employees, retirees and their guests. Many people enjoy the rocket launches from the John F. Kennedy Space Center located on Merritt Island.

Generally, the NMI area has remained rural due to having an abundance of land for agricultural use, unique topography, wetland habitat and the desire of the residents to retain a rural quality of life. Prior to the development of the Space Center, North Merritt Island was heavily farmed for citrus. These citrus roots were maintained by families like the Harvey's, Ramshur's, Policicchio's, and the Crisafulli's, but much of the citrus production has been lost in recent decades to citrus greening. The Crisafulli's are no longer actively maintaining their groves, but rather, they have replaced the fruit with cattle. While a few small groves are still maintained, other agricultural uses are being introduced by land owners, including dragon fruit, mangos, avocados, palm tree and plant nurseries, and other tropical species.



Dragon Fruit Farm
Source: Darleen Hunt



Crisafulli Cattle Operation
Source: Darleen Hunt

¹ Source: North Merritt Island Homeowner's Association

Within the study area, North Merritt Island also features an elected advisory board and an active homeowner's association. The North Merritt Island Dependent Special District Board established in 1998 for the purposes of advising the Board of County Commissioners with recommendations on particular rezoning and land development matters which affect the North Merritt Island area of the County. The North Merritt Island Homeowner's Association (NMIHOA) is a non-profit corporation funded by donations and fund-raising efforts of the members. Membership is on a yearly basis. Regular members have all the rights of membership. Non-residents of North Merritt Island can participate in the association as associate members, but may not hold office or vote. Both entities have a vested interest in protecting the interests of the area².

Historic Aspects

Pre-1900s

The North Merritt Island area, along with Cape Canaveral and Cocoa Beach, was home to the Ais Indian tribe of Central Florida. The first recorded contact between the Ais and the Spaniards was in 1513 when Ponce de Leon came ashore at a village south of Cape Canaveral, naming Florida during that same year. In the 1560s, many European fleets, some with treasure, ended in shipwreck along the Florida coast due to hazardous navigation through the Gulf Stream and the fierce hurricanes. In 1605, Merritt Island was called Ulumay and was the first town in the province of the Ais located on the Banana River³.

The first concerted efforts to develop the Indian River region were made during the late 1800s. A group of South Carolina natives from the Sea Islands established a community at Courtenay, named for a former governor of South Carolina and located near the intersection of North Tropical Trail and Church Road. Prominent early settlers included the LaRoche, Sams, Porcher, Campbell, and Dummett families.

The LaRoche and Sams families settled at Courtenay on Merritt Island. Together, they had extensive land holdings along the Indian River and the interior, north of what is now State Road 528. The LaRoches all maintained small orange groves, but their main industry centered on vegetable production for northern markets. J.H. Sams raised vegetables and oranges on his 160-acre homestead and also served as superintendent of Brevard County Schools for 40 years⁴. The John H. Sams house is a historic property that has withstood the test of time, storms and hurricanes. Today it is the oldest standing home in Brevard County, now located within the Pine Island Conservation Area. Constructed in 1875, it was originally located in the Eau Gallie area and later moved in 1878 to the North Merritt Island location. Mr. Sams was granted a homestead deed for 156 acres in 1884.

Douglas Dummett filed a land claim under the Armed Occupation Act of March 16, 1843. The Armed Occupation Act of 1842 granted lands to settlers that met certain conditions. Under the conditions of the act, any single man 18 years of age or older or any head of a family could apply for up to 160 acres of land. If the settler established a home within a year, lived on the land for five consecutive years, and cleared and enclosed at least five acres of the granted land, he or she would receive title to the entire parcel for free⁵.

The Dummitt Mansion has been described as a one room house that Mr. Dummitt shared with his daughter. The property was said to be one mile by one mile in size. At the time, the property was reported to contain 3,000 orange trees on rich sandy soil. Lemons and limes



Sams House
Source: Brevard County Staff

² Source: North Merritt Island Dependent Special District

³ Source: History of Brevard County Volume 1

⁴ Source: Sam's House at Pine Island Conservation Area; <http://nbbd.com/godo/sanctuaries/SamsHouse/>

⁵ Source: Florida Memory State Library & Archives of Florida

also grew right along the side of the oranges on the same tree. It was common to see deer and bears, and the occasional sighting of possums, raccoons, panthers, and wild cats in the groves. Mr. Andrew Jackson worked for Mr. Dummitt. He married Mr. Dummitt's daughter Katie and bought 60 acres of land from Mr. Butler Campbell which was located not far from the Dummitt Groves. Butler Campbell and Andrew Jackson built The Clifton School House, also referred to as The Clifton Colored School, around 1890-1891. Mr. Jackson's four children attended Clifton Colored School, which closed in 1910.



"White Lilly Cemetery" historical marker
Source: Darlene Hunt

St. Luke's Episcopal Church and Cemetery was built in 1888. LaRoche, Porcher and Sams were the founding families of the Gothic style Episcopal Church located in Courtenay at 5555 North Tropical Trail. Bethel A.M.E. Church of Merritt Island & Community ("White Lilly") Cemetery was established in 1892. It was the first African Methodist Episcopal church on North Tropical Trail and was referred to as "The Little Church on Courtenay." It served as a place of worship for grove workers. The church burned down in the spring of 1968, and the concrete footers of the brick piers were all that remained. The cemetery has been renamed to the Bethel-Greater Mounty Olive Church Community Cemetery and still in operation at 1240 North Tropical Trail.

Families moving to the area in the 1800s had three ways to reach North Merritt Island via the Indian River. One route was to sail the Atlantic Ocean past Cape Canaveral and through the Indian River Inlet, the only natural waterway into the river along the coast. The route was dangerous due to the open sea and shallow water at the inlet. Others came up the St. Johns River to enterprise on Lake Monroe and made the tortuous journey to Salt Lake or one of the other lakes in the upper reaches of the river. From there, they crossed over to the Indian River and proceeded southward to their destination. The third route was by way of the Mosquito Lagoon, across a small spit of land known as "the Haulover", and into the Indian River. In 1854, the construction of the Old Haulover Canal was funded by the federal government at a cost of \$5,000 to connect the Mosquito Lagoon on the east with the Indian River on the west. Slaves of a local citrus grower dug the 500 yard long, 3 foot deep and 10 to 14 foot wide canal by hand. Today, the Haulover Canal continues to connect the Mosquito Lagoon with the Indian River and is part of the Intracoastal Waterway.

The 1900s

During the late 1950s and early 1960s, the space race provided the impetus for residential development in the north study area. In the 1960s, North Merritt Island went through a period of depopulation due to the land being acquired by NASA. 88,000 acres on North Merritt Island was acquired at a cost of \$55 million. Families living in the area were relocated to other areas. The half-fallen Clifton School House was still standing in 2004 in a remote area of North Merritt Island; somehow it was spared during the demolition of the area. A historic plaque now marks the site of the school. In 1962, the federal government appropriated \$5,000,000 for the completion of locks to connect Port Canaveral with barge canal across Merritt Island. The 90-foot wide and 600-foot long lock was opened in 1965. A few days prior to the official opening, the Saturn 1B rocket traversed through the new waterway on its way to the Kennedy Space Center.

According to the Citizen's Committee, during the space program, SR 3 was a 2-lane road in which traffic going to the space center would backup to the barge canal. The NMI Homeowners Association petitioned for a new road, collecting 2,000 signatures. 1964, the Emory L. Bennett Causeway (SR 528) toll road opened. It was constructed by Brevard County staff to provide relief for travelers between the mainland and Cape Canaveral. The roadway's single toll booth was removed in 1990. After the Apollo program, employment at the space center drop to approximately 8,000 people from 27,000. The space center was the 2nd largest tourist attraction in Florida, behind Disney. Kennedy Space Center went through two major layoff periods, one during the early 1970s and the second in the late 1980s through early 1990s.

Access

All vehicles entering or exiting North Merritt Island from the south must use the N. Courtenay Parkway (SR 3) four-lane highway to cross the Barge Canal over a double bascule drawbridge. Entering from the north, vehicles cross into Merritt Island from U.S. 1 south of Titusville using the NASA Causeway (SR 405) bridge to head towards KSC. Those heading to North Merritt Island then veer south on Space Commerce Drive before turning south onto the SR 3 arterial highway.

Commercial

The SR 3 corridor, also referred to as North Courtenay Parkway, has some developed retail, warehousing and wholesale businesses. Amongst these there are limited small shopping centers and independent restaurants, professional businesses and mini warehouse storage facilities. A few churches also border the corridor, as well as four service stations with mini-marts, and three commercial plant nurseries. To date, all commercial development is accessed from N. Courtenay Parkway, with none continuing along any other intersecting corridors.

The primary shopping area for NMI residents is outside of the study area, immediately south of the Barge Canal, where a vibrant commercial corridor provides grocery and hardware stores, restaurants, car dealers, thrift stores, auto repair, local government facilities, insurance companies, an enclosed mall and an assortment of business and professional services, all within a 10 mile area. Although residents have expressed an interest in a local grocery store on NMI, major grocery chains require a minimum base of 10,000 residences to warrant a new store, and even at total build out, this number will not be reached within the study area.

The citizens of Merritt Island recognized a need for visual improvement along the North Courtenay corridor and formed a Citizen Resource Group. Together with Brevard County leaders and staff members, the North Courtenay Parkway Corridor Study with recommendations was adopted on November 1, 2005. The primary goal of the study was to visually enhance the corridor to reflect the beauty of the North Merritt Island area. The recommendations address the need for enhanced signage standards that were greater than those in the Land Development Regulations. A new Ordinance amending Brevard County's Sign Standards within the Land Development Regulations was adopted on November 1, 2005. The recommendations also address the need for screening outdoor storage areas along the corridor with an opaque buffer with native trees to be included in landscape plans where new businesses are being developed.



Space Coast Veterinary Hospital
Source: Darlene Hunt

Residential



Single-Family Housing off North Tropical Trail
Source: Darleen Hunt

Residential areas are primarily located off of side roads from SR 3. Types of homes and residences range from trailer park and mobile home communities, assisted living facilities, duplexes, subdivisions, river front and canal front homes, large lot ranch style homes, and agricultural parcels with homes with livestock, horses, palm trees, nut, fruit and vegetable crops.

Low lying areas experience flooding in yards and roads during rainy seasons and some homes have flooded during heavy rains and storm events, leaving driveways and streets impassable in some areas.

North Tropical Trail, a two-lane north-south corridor paralleling SR 3, is located on the west side of the Island and has a slightly higher elevation along a coastal ridge. The south end of North Tropical Trail is lined with subdivisions and has the highest residential density in the study area, with most parcels having the Residential 4 (Res 4) Future Land Use designation, allowing a maximum density of four units per acre.

The northern portion of North Merritt Island consists primarily of large parcels, residential homes and agriculture. The majority of the northern area has a Future Land Use designation of Residential 1 (Res 1), which permits low density residential development with a maximum density of one unit per acre. This area also has Public Conservation lands to the west along the Indian River Lagoon.

Wayfinding

The majority of the SR 3 corridor has limited signage and wayfinding of important historical and environmental areas within the parameters of The Study. There is a lack of uniformity of signs or building design and it is difficult to navigate access points. Signage in place before the 2005 sign regulations does not have to comply with the new standards and is grandfathered in, resulting in haphazard signage along the corridor. The corridor has also been designated a Scenic Byway as part of the Indian River Lagoon National Scenic Byway (IRLNSB) corridor. An IRLNSB publication lists Manatee Cove Park and the Pine Island Conservation Area as sites to visit however there is limited signage in order to easily access these areas.



Indian River Lagoon National Scenic Byway
Source: Darleen Hunt

Wildlife and Recreation

Wildlife is plentiful throughout the NMI area due to much undeveloped land, but also because it is bordered to the north by the 140,000-acre Merritt Island National Wildlife Refuge, located on Kennedy Space Center Lands. Wildlife frequently sighted include many species of birds and waterfowl, bobcats, coyotes, alligators, wild hogs, raccoons, possum, armadillo, snakes, turtles and tortoises, otter, deer, and even occasionally black bears.



Egret Birds off of Judson Rd.
Source: Brevard County Staff

Several County parks and trails are located within the NMI area. Kings Park has a beautiful multi-use path named Island Pioneer Trail. Manatee Cove Park has a pavilion and playground for children, as well as a Kayak/Canoe launch area used by residents and commercial kayak tour companies. The Pine Island Conservation Area offers two stormwater retention lakes used for fishing, kayaking and canoeing, bird watching and hiking. The Sams House portion offers trails and river access as well as numerous activities and educational programs for all ages. North Merritt Island's history is valued and preserved, as evidenced through the Historical Preservation sites at St. Luke's Episcopal Church, the White Lilly Cemetery, and the Sams House nature center complex.

In 2015, the conceptual alignment of the East Coast Greenway (ECG) was routed through the North Merritt Island study area through the Office of Greenways & Trails and depicted in the Florida Greenways & Trails System (FGTS) as a Land Trail Opportunity. A Feasibility Study to examine the ECG connection from the SR 405 Bridge to the north to SR 528 at the south is funded in FY 2019, which will examine potential future routes and impacts of a completed trail system. The route, if deemed feasible, will provide a connection to the East Coast Greenway National Trail network and also local residents and visitors to the greater Brevard Trails network.

There are recreational parks and conservation public lands on NMI, but there are no public meeting facilities or public schools. Because there are no schools in North Merritt Island, the nearest facilities are

located south of the Barge Canal at the Merritt Island Service Complex and the Merritt Island Public Library. Public meetings are held in local church facilities or at the Merritt Island Service Complex. The 100-acre Mitchell Ellington Park features ball fields, pavilions, and restrooms, but was also designed with a "foot print" to accommodate a County Community Center. Until this is constructed, NMI does not have a public meeting location to accommodate the needs of local residents both above and below the Barge Canal. The County also has building designs for Community Centers that could accommodate emergency staging following major storm events, if needed.

POPULATION AND DEMOGRAPHICS

Brevard County was founded in 1844 by Theodorus W. Brevard. The County's first recorded population was 139 in 1850. As of 2015, Brevard County's estimated population is 553,591, with a projected 2020 population of 595,700.⁶

Population

The North Merritt Island Study Area is located within Census Tract 699.01. The Study Area encompasses about 12% of the census tract, but was appropriate to utilize for this analysis, as the remaining area within the Census Tract but outside of the Study Area boundary has little to no residential development. This census tract's data will provide an adequate representation of the demographic makeup of the area and can be seen in the **Census Tract Boundary Map** on the next page.

Historical and current population data has been used to evaluate the pace of growth within this rural area. The percent of change calculation is a simple mathematical concept that represents the degree of change over time by making a comparison between two values expressed as a percent increase. **Table 1** below examines the population and change over time within Florida, Brevard County, and then North Merritt Island.

Since 1980, Florida's population has almost doubled, growing by 197%. With that said, the pace of growth has begun to level out, steadily declining over the last several decades. Brevard County's population increased at almost exactly the same rate as the state, growing 199% over the same 30 year period.

In 1980, the population within Census Tract 699.01 was 1,620. By 2010, the population bloomed to 7,926, or a 489% growth over the 30-year period evaluated – a rate that was almost 2.5 times higher than the State or County growth rate. North Merritt Island experienced a 118% increase for the 10 year period between 1980 and 1990, but the growth rate has slowed continually since then. Between 1990 and 2000, North Merritt Island was still experiencing substantial growth at a rate of 79%, but the pace of growth had declined by 39% from the prior 10 year period. From 2000 to 2010, the growth rate slowed to 26%, but was still almost double that of both Brevard County and State.

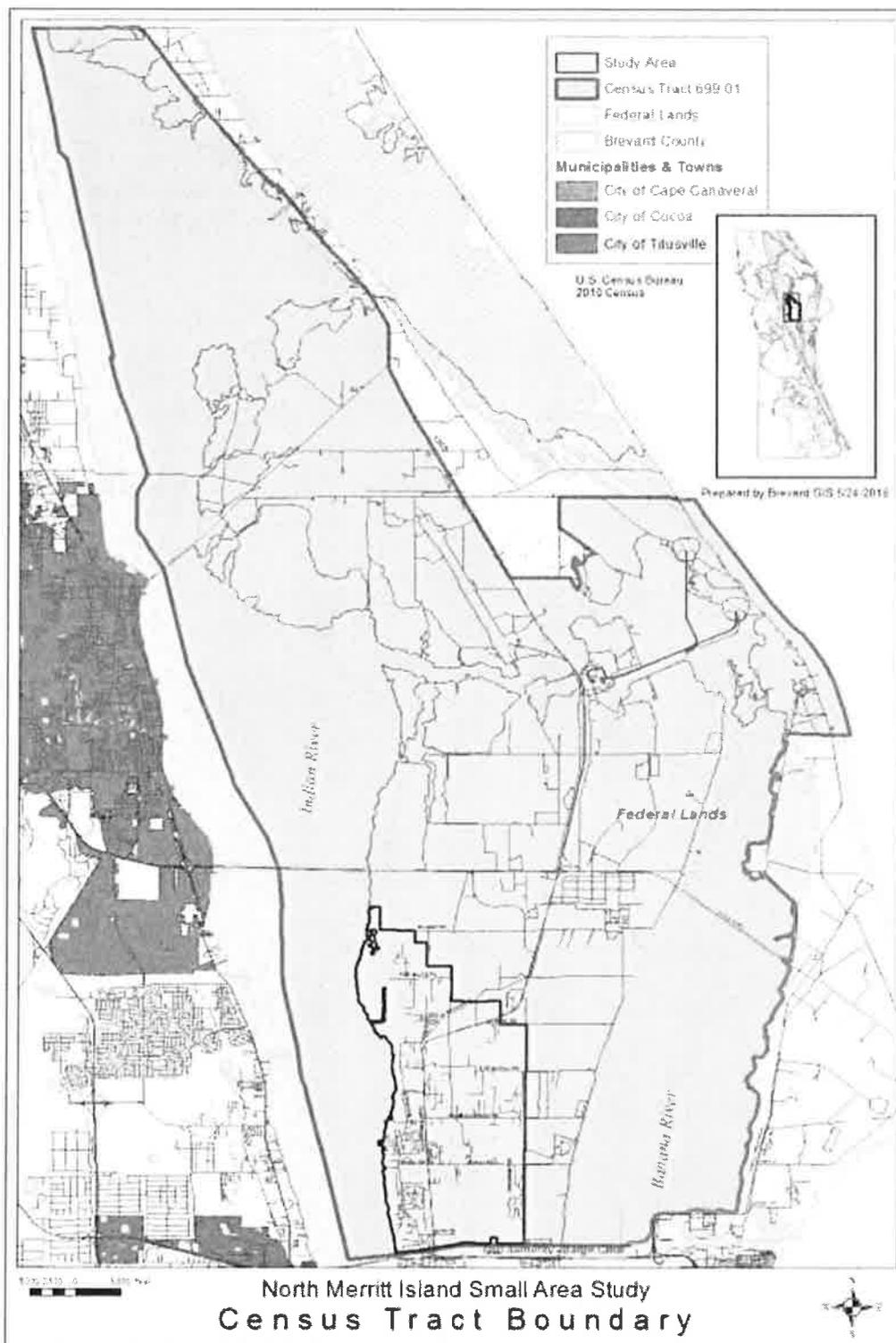
Although the Kennedy Space Center went through two major layoff periods, with one occurring during the early 1970's and the second occurring in the late 1980's through early 1990's, North Merritt Island continued its rapid population growth. The population growth seems to be independent of the Space Center activity, demonstrating that people are attracted to the area for more than employment opportunities. With several new residential projects currently in the works, population in the area is expected to increase.

Table 1 Population Change

	Population Change					
	Florida	% Change	Brevard	% Change	NMI	% Change
1980 Census	9,536,558		272,959		1,620	
1990 Census	12,936,271	36%	398,978	46%	3,529	118%
2000 Census	15,982,261	24%	476,234	19%	6,306	79%
2010 Census	18,801,310	18%	543,376	14%	7,926	26%

Source: Economic Development Commission of Florida's Space Coast, 2018

⁶ Source: Bebr – Projections of Florida Population by county, 202-2045, with Estimates for 2016
<https://www.bebr.ufl.edu/population/data>



Map 2 Census Tract Boundary

Households

Household is defined as set forth in F.S. § 196.075, "a person or group of persons living together in a room or group of rooms as a housing unit, but the term does not include persons boarding in or renting a portion of the dwelling." The household count in the NMI area has changed from 589 in 1980 to 3,182 in 2010. The overall percent change was an increase of 440% in a 30-year period of time. Population and households are still experiencing growth, however at a slower rate than previous decades. The household change from 1980 to 1990 was roughly 3 times higher than Brevard County and the State of Florida. This trend continued through 2000. In 2010, the household change in NMI slowed by approximately 50%, remained double that of both Brevard County and Florida.

Table 2 Household Change

	Household Change					
	Florida	% Change	Brevard	% Change	NMI	% Change
1980 Census	3,667,906		101,051		589	
1990 Census	5,134,521	40%	161,143	59%	1,319	124%
2000 Census	6,337,855	23%	198,194	23%	2,437	85%
2010 Census	7,420,802	17%	229,692	16%	3,182	31%

Source: Economic Development Commission of Florida's Space Coast, 2018

Housing Types

The NMI area consists predominately of single-family residential housing, manufactured homes, and multi-family residential dwelling units. A single-family dwelling is defined as a private residence building used or designed for use as a home or residence, in which the use and management of all sleeping quarters and all appliances for sanitation, cooking, ventilation, heating and lighting are designed primarily for the use of one family unit. Typically, all rooms within the building must have internal access and the building shall have only one kitchen and one electrical meter. The minimum living area required per single-family dwelling unit varies among zoning classifications up to 2000 square feet. Multi-family dwelling units are defined as a residential building designed for or occupied by more than two families, with the number of families in residence not exceeding the number of dwelling units provided.

Mobile home means a modular unit which is designed for temporary or permanent single-family residential use and which is mobile as defined by F.S. Ch. 320, and is built on an integral chassis with an attached running gear. A mobile home shall be constructed to comply with federal mobile home construction and safety standards promulgated by the United States Department of Housing and Urban Development. All mobile homes used for residential purposes shall have a license from the state division of motor vehicles pursuant to F.S. ch. 320. Further, all regulations contained in F.S. Ch. 319 shall apply. If a mobile home is no longer eligible for a title certificate under F.S. ch. 319, the structure shall no longer be considered a mobile home. This definition does not include modular units.

Manufactured home shall have the same meaning as "manufactured home" in F.S. § 320.01(2) (b). Manufactured Home means a mobile home fabricated on or after June 15, 1976, in an offsite manufacturing facility for installation or assembly at the building site, with each section bearing a seal certifying that it is built in compliance with the federal Manufactured Home Construction and Safety Standard Act.

There are various types of zoning classifications in NMI, which define the minimum floor area of the living area. Single-family dwelling units can vary from 750 square feet to 2000 square feet. Multi-family dwelling units include duplexes and apartments. Duplexes require a minimum floor area of 1,150 square feet with a minimum of 575 square feet per unit. One bedroom apartments require a minimum floor area of 500 square feet, two bedrooms - 750 square feet plus 100 square feet for each additional bedroom, and efficiencies - 400 square feet.

Household Ownership

One measurement of a community's stability is the amount of housing that is owner-occupied. This generally implies a strong vested interest in the community. Residents who own their homes take pride in their property, which is outwardly reflected in the upkeep and maintenance of homes and neighborhoods. The percentage of homeowners versus renters is known as homeownership rate. The homeownership rate is derived by the number of owner-occupied units divided by the total number of occupied household units.

In addition to homeownership, a rental component is an essential aspect of a vital housing market. There are many reasons why individuals need or desire to rent, such as younger couples saving for their first home, individuals without children, or working professionals with a preference for a management company to be responsible for building and outdoor maintenance. The demand for rental housing does not diminish when limited apartments are available. Instead, the market reacts by landlords purchasing single-family homes and then leasing them as rental units. For this reason, a component of well managed rental communities rather than individually managed single-family housing rental units is desirable.

Table 3 Housing Units

	Housing Units								NMI % Change	Brevard % Change
	2000				2010					
	NMI Totals	% of Total	Brevard	% of Total	NMI Totals	% of Total	Brevard	% of Total		
Total	2,636		222,072		3,501		269,864		33%	22%
Owner-Occupied	2,162	82%	147,885	67%	2,671	76%	168,841	63%	24%	14%
Renter-Occupied	297	11%	50,310	23%	511	15%	60,851	23%	72%	21%
Vacant	177	7%	23,877	11%	319	9%	40,172	15%	80%	68%

Source: Economic Development Commission of Florida's Space Coast, 2018

As **Table 3** demonstrates, total housing units increased 33% from 2000 to 2010. Data in the previous population section indicated a population increase of 26% during the same time period. A conclusion can be drawn that the growth of housing units and the relative attractiveness of the location is influencing immigration. As of 2010, 76% of the 3,501 housing units in the area were owner-occupied, compared to 82% in 2000, decreasing slightly in the Study Area and Brevard County as a whole.

Renter-occupied housing units in the Study Area increased slightly between 2000 and 2010, whereas Brevard saw no change with regards to percentage of housing units used as rental properties. Overall, renter-occupied housing units increased by 72% from 2000 to 2010, whereas Brevard County saw an increase of only 21%.

The percentage of vacant housing units increased marginally in the Study Area and Brevard County, with North Merritt Island's vacancy rate of 9% in 2010 being significantly lower than the 15% vacancy rate within Brevard County as a whole.

Table 4 Median Household Income

	Median Household Income		
	Florida	Brevard	NMI
2010 ACS	\$ 47,661	\$ 49,523	\$ 58,472
2011 ACS	\$ 47,827	\$ 50,068	\$ 63,306
2012 ACS	\$ 47,309	\$ 49,099	\$ 60,789
2013 ACS	\$ 46,956	\$ 48,039	\$ 59,439
2014 ACS	\$ 47,212	\$ 48,483	\$ 63,889
2015 ACS	\$ 47,507	\$ 48,925	\$ 64,583
2016 ACS	\$ 48,900	\$ 49,914	\$ 65,684

Source: American Community Survey (ACS)

As **Table 4** demonstrates, as of 2016, the median household income – defined as half of NMI households making less than this amount, and half making more – was \$65,684 in the NMI area. The data indicates the median household income has been significantly higher than Florida's and Brevard County's between the years of 2010 to 2016. Most recently, the median household income in North Merritt Island was almost 32% higher than Brevard County and 38% higher than Florida as a whole. This trend indicates that the average household income on NMI may be associated with the growth in aerospace manufacturing and spaceflight technology on Merritt Island and other high-paying jobs within Brevard County.

Trends in Brevard and North Merritt Island

Since 1844, Brevard County has proven to be an attractive place to live. With a projected 2020 population of 595,700, it can be expected that The North Merritt Island Study Area will see its share of growth. Between 1980 and 1990, NMI experienced its highest growth in population. The area has proven to be an attractive area to live despite major layoffs to the space program. NMI population growth was 2 to 4 times higher than the County and the State of Florida between 1980 and 2010. This demonstrates that population growth within North Merritt Island is independent of the space exploration activity.

Owner-occupied housing represents about three-fourths of the housing units in the North Merritt Island, having a greater percentage of homesteaded properties than the County overall. Areas with high homeownership rates typically demonstrate stability and social solidarity, which is evident in North Merritt Island by the NMI Homeowners Association and the actions of this Citizen's Committee to bring forth this Study. Furthermore, North Merritt Island consistently has a higher median household income when compared to the County and the State, which implies that the area is likely to continue to maintain stable conditions. Although some agricultural productions, such as citrus farming have declined in the area, there still remain examples of agriculture uses that have been historically present. North Merritt Island's rural appeal, tropical climate, larger lots and agricultural pursuits make it great and growing place to live.

LAND USE AND ZONING

General Pattern of Land Use

The NMI Study Area contains a mix of commercial and residential development. The Study Area is predominately made up of single-family residential. Commercial land uses are limited to being in close proximity to the North Courtenay Parkway (SR 3) arterial roadway. An examination of the general pattern of land uses is critical to understanding what zoning classifications will help to preserve the area's character.

Future Land Use

Originally established in 1988, the purpose of the Future Land Use Map (FLUM) is to delineate Brevard County's vision of how the communities within it are developed and maintained. The FLUM is required as part of the Comprehensive Plan authorized by Chapter 163, Florida Statutes. The FLUM identifies the goals of development of an area by assigning each parcel of land in Brevard County a Future Land Use designation, which defines establishes densities (the number of residential dwelling units in a given land area per acre) and intensities (amount of non-residential development per acre). Density is an important characteristic in relationship between land use, transportation and Level of Service standards.

North Merritt Island has experienced a number of density reductions in the last few decades and the map on the following page and narrative below demonstrates the changes over time.

The 1988 Brevard County Comprehensive Plan was prepared in accordance with Chapter 163, Part II, Florida Statutes, "The Local Government Comprehensive Planning and Land Development Regulation Act of 1985", and Florida Administrative Code Rule 9J-5, "Minimum Criteria for Review of Local Government Comprehensive Plans and Determination of Compliance". The 1988 Brevard County Comprehensive Plan replaced the County Comprehensive Plan which was adopted in July of 1981 as mandated by the Local Government Comprehensive Planning Act of 1975 (See map on page 16).

On June 1, 1992 a North Merritt Island Small Area Study (SAS) was completed by County staff at the direction of the Brevard County Board of County Commissioners. From the SAS a list of recommendations were prioritized. The amendments that were proposed by Brevard County Staff and Adopted by the County Commission based upon these recommendations resulted in changes to the Density Map reducing dwellings units by 5,732 dwelling units over 8,423.6 acres. (See map on page 16).

In 2001, Brevard County received approval by the Department of Community Affairs (DCA) of the Evaluation and Appraisal Report (EAR) which included amending the Future Land Use Map. Prior to the Future Land Use Map Amendment in 2001, the County utilized both a Density Map and a Future Land Use Map. When this amendment was completed, the County had combined the two maps into one map calling it the Future Land Use Map which created twenty-two (22) different Future Land Use categories. (See map on page 16).

In 2004, the Brevard County Board of Commissioners directed County staff to conduct a Small Area Study for portions experiencing recent growth pressures in Merritt Island. The study area was located north of State Road 528 and is approximately bordered by the Indian River Lagoon on the west, by N. Tropical Trail on the north, Porcher Road and the Treasure Lagoon Development on the south and by the commercial corridor along Courtenay Parkway (SR 3) on the east. As a result of the recommendations that were derived from the study, the majority of the parcels within the study area received a Future Land Use change from Residential 2 (RES 2) and Residential 1 (RES 1) to Residential 1:2.5 (RES 1:2.5) significantly reducing the density within this area. (See map on page 16).

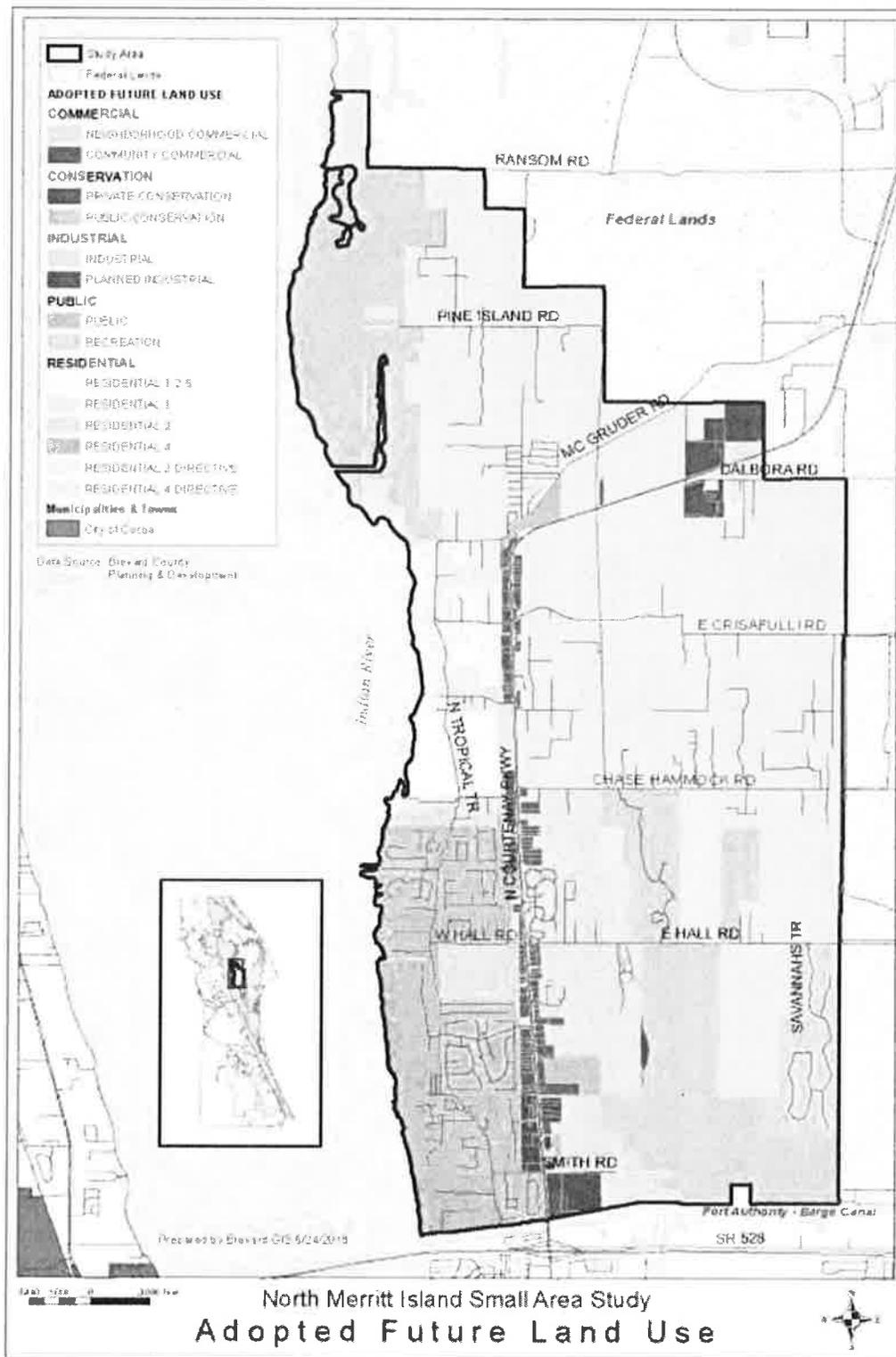


Map 3 Future Land Use History

Table 5 All Future Land Use Map Designations for Study Area

Future Land Use Designation		Total Acreage	% of Total Acreage	Vacant Acreage	% of Future Land Use Designation Vacant
Residential Land Uses		7623	71.47%	3414	44.79%
RES 4	Residential 4	1162	10.90%	150	12.90%
RES 2	Residential 2	859	8.06%	402	46.80%
RES 1	Residential 1	5117	47.98%	2701	52.78%
RES 1:2.5	Residential 1:2.5	463	4.35%	155	33.42%
RES 4_DIR	Residential 4 Directive	4	0.04%	1	13.50%
RES 2_DIR	Residential 2 Directive	16	0.15%	6	34.37%
Commercial Land Uses		302	2.83%	141	46.66%
CC	Community Commercial	206	1.93%	98	47.59%
NC	Neighborhood Commercial	96	0.90%	43	44.66%
Industrial Land Uses		241	2.26%	158	65.36%
IND	Industrial	17	0.16%	0	0.00%
PI	Planned Industrial	224	2.10%	158	70.46%
Conservation Land Uses		2114	19.82%	2047	96.84%
PRIVCONS	Private Conservation	9	0.08%	9	100.00%
PUBCONS	Public-Conservation	2105	19.73%	2038	96.83%
Public Facilities & Recreation Land Uses		386	3.61%	35	8.95%
PUB	Public Facilities	74	0.69%	29	39.48%
REC	Recreation	312	2.92%	5	1.69%
Total under County Jurisdiction		10665	100.00%	5794	54.33%

Source: Brevard County Planning & Zoning Office March 2018



Map 4 Adopted Future Land Use

The North Merritt Island Study Area is estimated to include 10,665 acres. Overall, 5,794 acres, or 54.33%, of the land in the Study Area remains vacant. Residential Future Land use designations represent 7,263 acres, or 71.47% of the Study Area. Of the Residentially designated land, Residential 1 FLU is the most represented designation at 5,117 acres, or 47.98% of the Study Area, with density limited to one unit to the acre. Within Brevard County, there are eight FLU designations, Residential 30 being the highest which allows up to 30 dwelling units per acre. Presently in North Merritt Island, Residential 4 is the highest FLU designation, allowing up to 4 dwelling units per acre.

Residential Future Land Use	Maximum Density
Residential 4	4 dwelling units per acre
Residential 2	2 dwelling units per acre
Residential 1	1 dwelling unit per acre
Residential 1:2.5	1 dwelling unit per 2.5 acres

Residential development potential in NMI is limited by a 23.43% of the Study Area being made up of Conservation, Public Facilities, and Recreation Land Uses, accounting for about one fourth of all acreage in the Study Area.

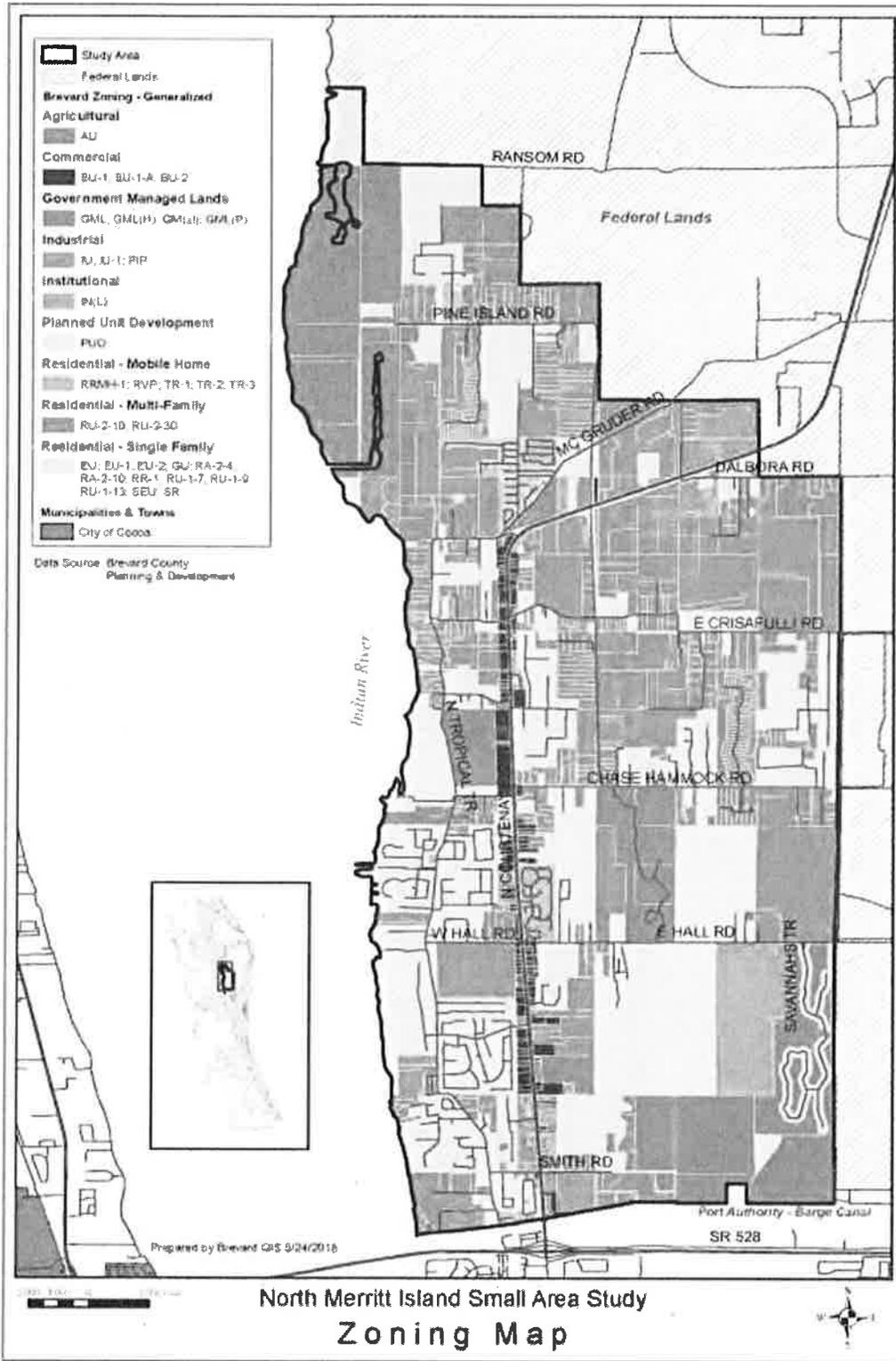
The limited commercial and industrial development is located along North Courtenay Parkway (SR 3), which, when combined, constitutes a mere 5.09% of the Study Area. Of the land with commercial FLU designations, 46.66% remains undeveloped. Of the land with industrial FLU designations, 65.36% remains undeveloped.

Zoning

Table 6 All Zoning Land Use Map Designations for Study Area

Zoning Classification		Total Acreage	% of Total Acreage	Vacant Acreage	% Vacant of Zoning Class.
Unimproved, Agricultural & Residential Zonings		6901	64.94%	3634	52.66%
GU	General Use	462	4.35%	442	95.57%
AU	Agricultural Residential	4194	39.47%	2365	56.39%
RR-1	Rural Residential	1030	9.69%	349	33.93%
SEU	Suburban Estate Residential	6	0.06%	4	59.58%
SR	Suburban Residential	475	4.47%	195	41.10%
EU	Estate Use Residential	226	2.13%	49	21.85%
EU-1	Estate Use Residential	22	0.21%	2	7.90%
EU-2	Estate Use Residential	394	3.71%	207	52.64%
RU-1-7	Single-Family Residential	0	0.00%	0	0.00%
RU-1-9	Single-Family Residential	3	0.03%	0	11.93%
RU-1-13	Single-Family Residential	49	0.46%	7	13.37%
RA-2-4	Single-Family Attached Residential	13	0.12%	13	100.00%
RA-2-10	Single-Family Attached Residential	26	0.25%	1	2.27%
Multiple-Family Residential Zonings		31	0.30%	14	43.94%
RU-2-10	Medium-Density Multiple-Family Residential	30	0.28%	14	46.60%
RU-2-30	High-Density Multiple-Family Residential	2	0.02%	0	0.00%
Mobile Home Residential & Rec. Vehicle Park Zonings		206	1.94%	15	7.38%
RRMH-1	Rural Residential Mobile Home	27	0.25%	6	21.19%
TR-1	Single-Family Mobile Home	64	0.61%	7	10.35%
TR-2	Single-Family Mobile Home	7	0.07%	3	38.54%
TR-3	Mobile Home Park	103	0.97%	0	0.24%
RVP	Recreational Vehicle Park	5	0.05%	0	0.00%
PUD Zonings		768	7.22%	331	43.16%
PUD	Planned Unit Development	768	7.22%	331	43.16%
Commercial Zonings		210	1.98%	97	46.29%
BU-1-A	Restricted Neighborhood Retail Commercial	35	0.33%	19	55.40%
BU-1	General Retail Commercial	111	1.05%	55	49.34%
BU-2	Retail, Warehousing and Wholesale Commercial	64	0.60%	23	36.10%
Industrial Zonings		261	2.46%	165	63.23%
PIP	Planned Industrial Park	216	2.03%	158	73.13%
IU	Light Industrial	25	0.24%	2	8.77%
IU-1	Heavy Industrial	20	0.18%	5	24.93%
Special Zonings		2249	21.17%	1532	68.13%
GML	Government Managed Lands	485	4.56%	207	42.66%
GML(H)	Government Managed Lands High-Intensity	97	0.91%	0	0.00%
GML(I)	Government Managed Lands Institutional	29	0.27%	28	97.92%
GML(P)	Government Managed Lands Parks & Conservation	1322	12.44%	1296	98.04%
IN(L)	Institutional Use Low	318	2.99%	2	0.60%
Total under County Jurisdiction		10626	100.00%	5789	54.48%

Source: Brevard County Planning & Zoning Office March 2018



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Map 5 Zoning Map

Land uses are divided into residential, commercial and industrial Zoning districts. Zoning districts function for the purposes of defining a list of rules. These rules typically establish a list of land uses permitted in each district and a series of specific standards governing lot size, building height, and required setback provisions. The NMI Study Area encompasses a variety of Zoning classifications requiring as much as 5 acres down to 7,500 square feet per parcel.

Residential Zoning classifications make up 74.4% of the Study Area. Typically made up of single-family homes, the total acreage of Unimproved, Agricultural & Residential Zonings is 6,901 acres or 64.94% of the Study Area, of which 52.66% remains undeveloped.

The most popular single-family residential Zoning classification is Agricultural Residential (AU), which makes up 39.47% of the Study Area and 58.75% of the Unimproved, Agricultural & Residential Zonings. Of the AU Zoned acreage, 56.39% remains undeveloped. Additionally, a large percentage of the improved parcels with AU Zoning may be underdeveloped, with many parcels significantly larger than 2.5 acres in size.

Original AU zoning for Brevard County was established May 2, 1958 [Lot sizes were required to be a minimum lot size of 5,000 square feet, having a minimum width of 50 feet and a minimum depth of 75 feet]. On March 6, 1975, Agricultural residential (AU) zoning classifications were required to be an area of not less than one acre, having a minimum width of 125 feet and a minimum depth of 125 feet. After 1975, AU requirements were amended to a minimum lot size of two and one-half acres, having a minimum width of 150 feet and a minimum depth of 150 feet. Lots are determined as "Nonconforming lots of record" if they do not meet today's standards and had been recorded or platted prior to or on March 6, 1975.

Multiple-Family Residential Zonings make up only 31 acres and about 44% of that land remains vacant. While almost all of the land zoned for Mobile Home Residential and Recreational Vehicle Park (206 acres) are utilized, 7.38% remains vacant.

Commercial and Industrial Zoning classifications account for 4.44% of the total land area. However about 46% of commercial land is vacant and approximately 63% of industrial land is vacant. Conservation, Public Facilities and recreation are considered Special Zoning and account for 21.17% of the Study Area's lands.

INFRASTRUCTURE AND SERVICE DEMAND

Transportation Network

North Courtenay Parkway (State Road 3) is the major north-south corridor providing external access to North Merritt Island. Vehicular access is limited to the rural area by the Canaveral Barge Canal at the southern end and Space Commerce Way at the northern end. North Courtenay Parkway is intersected at approximately one mile segments by Grant Road/Smith Road, Hall Road, Chase Hammock Road, and Crisafulli Road. There are three signalized locations along North Courtenay Parkway: a U-turn signal located approximately one-quarter mile north of the Canaveral Barge Canal for users accessing the marine harbor and exiting Sea Ray Drive, a signal at the intersection with Grant Road/Smith Road, and a signal at the intersection with Hall Road. Unpaved roads, such as Judson Road, are common in the area.

North Courtenay Parkway is a four-lane divided highway that is functionally classified as an urban principal arterial from the southern study area limits to Pine Island Road and a rural principal arterial from Pine Island Road to the northern study area limits. The drawspan of the Christa McAuliffe Drawbridge, located across the Barge Canal at the southern study limits, opens daily for vessel traffic on the hour and half-hour from 6 a.m. to 10 p.m.; except that from 6:15 a.m. to 8:15 a.m. and from 3:10 p.m. to 5:59 p.m., Monday through Friday. The drawspan does not open on Federal holidays. From 10:01 p.m. to 5:59 a.m., every day, the drawspan must open on signal if at least 3 hours' notice is given to the drawtender. The drawspan must open as soon as possible for the passage of public vessels of the United States and tugs with tows. The Florida Department of Transportation (FDOT) assumed jurisdiction of North Courtenay Parkway in the early 1990's after completion of a roadway widening project. This roadway was widened from two lanes to four lanes to relieve congestion for commuters traveling to and from the Kennedy Space Center.

North Tropical Trail is a parallel north-south roadway located west of North Courtenay Parkway. North Tropical Trail is a two-lane undivided highway that is functionally classified as an urban minor collector. The northern section terminates at North Courtenay Parkway approximately one-half mile southwest of Pine Island Road. In a report by Vanasse Hangen Brustlin, Inc. (1991), North Tropical Trail was identified as a "constrained corridor" meaning it cannot be widened by two or more lanes. This restriction is considered a policy constraint and not a physical constraint. The SAS prepared in 1992 suggested alternative solutions including improvements to North Courtenay Parkway to reduce "cut-through" traffic on North Tropical Trail, as a large number of vehicles traveled on this corridor in order to bypass the congestion of North Courtenay Parkway. The existing traffic volumes along the North Tropical Trail corridor are very low, which would indicate the corridor is being utilized by local traffic. This concern existed prior to the widening effort of North Courtenay Parkway and appears to have been addressed with the corridor improvements.

Intersection improvements were constructed at North Courtenay Parkway and Hall Road in 2014. The project included the replacement of the span signal to mast arms, major drainage improvements, and turn lane improvements. The intersection improvements increased the efficiency of the intersection and improved the overall flow of the North Courtenay Parkway corridor.

The Space Coast Transportation Planning Organization (SCTPO) maintains a traffic count database to monitor traffic volumes on arterial and collector roadways in Brevard County. Within the study area, the SCTPO performs annual traffic counts for seven roadway segments. Existing traffic volumes were reviewed to evaluate the current operating conditions of the overall roadway network. **Table 7** provides a summary of the 2017 Annual Average Daily Traffic (AADT) and current Maximum Acceptable Volume (MAV) published by the SCTPO on May 10, 2018.

Space Coast Area Transit's last major update to the Transit Development Plan occurred September 2017. Route expansion can be modeled as part of a service change evaluation by performing route timing and logistics to determine if an expansion can occur without reducing service elsewhere in the network. That information was evaluated within the 2017 Transit Development Plan, but service expansion was ultimately determined not to be feasible to be extended into North Merritt Island at this time.

Table 7 – North Merritt Island 2017 AADT Summary Table

Roadway	Segment		2017 AADT	MAV	% MAV	LOS
	From	To				
N. Courtenay Pkwy	SR 528 North Ramps	Hall Rd	22,960	41,790	55%	C
N. Courtenay Pkwy	Hall Rd	N Tropical Trl	15,220	41,790	36%	C
N. Courtenay Pkwy	N Tropical Trl	Space Commerce Way	9,710	40,300	24%	C
N Tropical Trl	Grant Rd	Hall Rd	660	15,600	4%	C
N Tropical Trl	Hall Rd	Crisafulli Rd	1,800	15,600	12%	C
N Tropical Trl	Crisafulli Rd	N Courtenay Pkwy	1,800	15,600	12%	C
Hall Rd	N Courtenay	N Tropical	3,270	15,600	21%	C

The MAV indicates the maximum traffic volumes allowed based on the Level of Service (LOS) desired. Comparing the AADT with the MAV, all segments of the major roadway network are currently operating at an acceptable level of service. A large percentage of the vehicular trips on North Courtenay Parkway are concentrated on the southern segment and do not traverse the length of the corridor. Both Hall Road and North Tropical Trail are very low volume roadways.

The 10 year AADT data collected by the SCTPO is summarized in **Table 8**. In reviewing the five year growth trend, the overall traffic volumes are increasing. However, with the exception of Hall Road, the current traffic volumes do not exceed traffic volumes observed in 2008. Furthermore, as shown in **Table 7**, the existing roadway volumes are significantly below the maximum allowable volume.

Table 8 – North Merritt Island 10 Year AADT Summary Table

Roadway	Segment		AADT									
	From	To	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
N. Courtenay Pkwy	SR 528 North Ramps	Hall Rd	24,280	25,070	24,530	23,740	20,900	20,420	19,090	22,300	21,170	22,960
N. Courtenay Pkwy	Hall Rd	N Tropical Trl	17,330	18,160	17,820	16,550	13,040	13,570	14,270	15,090	13,490	15,220
N. Courtenay Pkwy	N Tropical Trl	Space Commerce Way	12,070	13,560	13,080	10,510	8,370	8,650	8,690	9,350	9,060	9,710
N Tropical Trl	Grant Rd	Hall Rd	750	-	630	-	580	-	-	-	660	-
N Tropical Trl	Hall Rd	Crisafulli Rd	1,900	1,810	1,680	1,870	-	1,670	1,530	1,640	1,720	1,800
N Tropical Trl	Crisafulli Rd	N Courtenay Pkwy	1,710	1,710	1,650	1,580	1,460	1,360	1,380	1,490	1,440	1,800
Hall Rd	N Courtenay	N Tropical	2,960	2,900	2,690	3,040	2,890	2,960	-	2,950	3,080	3,270

The surrounding roadway network adjacent to North Merritt Island exhibits similar growth characteristics as shown in **Table 9**. The roadways are below the maximum allowable volume and are operating at an acceptable level of service.

Table 9 – Adjacent Roadway Network 10 Year AADT Summary Table

Roadway	Segment		AADT										MAV
	From	To	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
N. Courtenay Pkwy	SR 528 South Ramps	SR 528 North Ramps	30,680	30,960	30,590	25,790	27,350	27,850	28,960	29,210	28,190	32,190	41,790
Space Commerce Way	SR 3	Nasa Causeway	-	-	-	-	-	-	-	3,090	3,040	3,780	12,900
Nasa Causeway	US 1	Space Commerce Way	15,710	15,790	13,870	12,060	11,200	10,520	11,110	10,170	12,070	12,260	30,400

Public Schools

As of 2017, there was an estimated 1,479 students ranging from ages five to nineteen years of age living within The Study Area⁷. Students residing in the Study Area attend either Lewis Carroll, Audubon, Mila, and Stevenson (School of the Arts) Elementary Schools. Stevenson is a School of Choice meaning any student in Merritt Island can attend this school however parents are obligated to provide transportation. Students in 7th and 8th grade would attend Jefferson Middle School or Edgewood Junior/Senior High School (7th-12th grades). Merritt Island High School is the primary high school for Merritt Island, however Edgewood Junior/Senior High School, a school of choice provides parents and students an alternative. None of these public schools are located within the Study Area and are instead located on Central Merritt Island, with students traveling by vehicle to school rather than biking or walking. The elementary school is the closest school located to the Study Area, at an approximate distance of 1.25 miles, followed by the high school at a little over 2 miles away. The middle school is the farthest away at approximately 5.25 miles away from the southern boundary of the Study Area.

When new development application or building permit is submitted for review, the Brevard Public Schools under the Facilities Planning Department receives notification of the project for the purposes of completing a school concurrency review. The concurrency review is cumulative to ensure no thresholds are tripped. Redistricting of schools occurs when a threshold is tripped, however, there known of the schools mentioned have exceeded any thresholds with the current development. The School Board of Brevard County owns three parcels, located at southeast corner of N. Tropical Trail and McGruder Rd. The parcels continue northeast bordering McGruder Rd and N. Courtenay Parkway for combined total acreage of 29.22. There are no plans for developing the site within the next 5 years.

⁷ 2017 American Community Survey (ACS)

Public Wastewater (Sewer) Service

The public wastewater service is provided by the Brevard County Utility Services Department. The Sykes Creek Plant serves the entire Merritt Island area and has a maximum capacity of 6 millions of gallons a day (mgd). The plant is currently operating at 3.1 mgd. Although the Sykes Creek Plant has the existing capacity to serve future development in the study area, in a total build-out scenario the existing the system would need to be extended to the new service areas and upgrades to some pump stations and force mains would also be required.

The plant treats the influent wastewater to F.D.E.P. Standards, as a condition of the Utility's Operation Permit, and has two effluent disposal alternatives: Reclaim water customers or deep well injection. The plant provides reclaimed water to 1,100 customers located north of the Barge Canal.

Table 10 Wastewater Generation

Description	# of Units	Sq. Ft.	Avg. GPD	Generation Total
Current Usage				
Residential	1,320	602,528	200	264,000
Commercial	17		750	12,750
Total Current Demand				276,750

Source: Brevard County Utilities Services Dept.

Units: GPD-Gallons Per Day

Assumptions:

1. GDP Flows Based on 2015 Report
2. Current Usage Based Upon 2/19/18 GIS connections estimates
3. Buildout Potential assumes extending sewer service to all area in Study Area, actual feasibility may vary.
4. Total Unit Buildouts based on GIS data provided from Planning and Development Department

The adopted Capital Improvement Plan (CIP) includes funding of the installation of a force main to serve area between Hall Road and 5335 North Courtenay Parkway.

Public Water Service

The public water service is provided by the City of Cocoa Utilities. The City Engineering Division has confirmed that they have existing capacity to meet the future needs of North Merritt Island.

Table 11 Water Generation

Description	# of Units	Avg. GPD	Generation Total
Current Usage	3,508	265	929,620
Current Generation			
Residential	3,348	265	887,220
Commercial	*160	265	42,400
Total Current Demand			929,620

Source: City of Cocoa Utilities Dept.

* The average commercial unit size is assumed at 1,000 sq. ft. of principal structure or storefront in a plaza.

Parks and Recreation

Brevard County extends 72 miles along Florida's Atlantic coastline, creating a uniquely diverse variety of natural resources, vegetation and wildlife species. Predominant geographic features include the Indian River Lagoon and the coastal ridge with its pine and oak forests. The most renowned environmental feature is the Indian River Lagoon surrounding Merritt Island, separated from the Atlantic Ocean by a barrier peninsula. This lagoon is the nation's most diverse estuary system with more than 4,300 species of plants and animals.

There are three community parks located within the North Merritt Island Small Study Area, including Kings Park, Mitchell Ellington Park and Manatee Cove Park. In addition to the parks, Pine Island Conservation Area is also within the Study Area. This conservation area is a 947 acre Florida wildlife sanctuary, which houses the historic Sams House. At this historic landmark visitors enjoy hiking, biking, fishing canoeing and kayaking through five different habitats and over five miles of trails.

Kings Park is a 240 acre community river park, which is primarily a wetland preserve, hosting a variety of freshwater fishing opportunities. Within the park are a deep freshwater lake which offers a ramp for kayaking and canoeing and a smaller lake with canoeing and rustic walking trails which invite adventures and explorations. This park is the home of the Island Pioneer Trail which is a 10 foot wide multi-use trail. A feasibility study for an extension of the North Merritt Island Pioneer Trail is proposed to provide a multimodal connection between the NASA Causeway (SR 405) at the Barge Canal to North Courtenay Parkway (SR 3).

Mitchell Ellington Park is a 114 acre regional park that features athletic facilities to include football, baseball, soccer and softball. This regional park has two pavilions and a multi-featured playground with pedways and benches. The park is bound by wetlands to the north and woods to the east and west with a lake and a pond located in the central area.



Pine Island Conservation Area
Source: Brevard County Staff 2018

Manatee Cove Park is a 29.49 acre community river park known for being a fisherman's haven. This park hosts an equestrian facility with access to a small lagoon where visitors can launch their kayaks and canoes and see manatees and a variety of birds and wildlife. The park also has a pavilion and children's playground.

The 947 acre Pine Island Conservation Area is a Florida wildlife refuge that offers opportunities for horseback riding, biking, fishing, canoeing and wild life viewing through its five different habitats. This conservation area is also home to the oldest standing home in Brevard County, the Sams Family Cabin which was built in 1875 and the newly restored building known as the 1988 Sams Family main house. The Cabin now serves as the Environmentally Endangered Lands (EEL) program's central regional management location and education center. The EEL program acquired this land in 1996. The



Island Pioneer Trail
Source: Brevard County Staff 2018

Indian River Anthropological Society conducted an in depth study. Archaeologists discovered not only the rich history of the pioneering Sams family, but also prehistoric fossils, which provide evidence of ancient human habitation. These artifacts are on display within the learning center.

Fire Rescue

Brevard County Fire Rescue (BCFR) is the largest fire and emergency medical services (EMS) provider in the County providing emergency services from 32 fire stations. Emergency response resources include 18 class-A fire engines, 5 ladder trucks, 31 ambulances, 3 special operations units and other command and wildfire units. All primary emergency response units are capable of providing patient care at the paramedic level (ALS). Each year, over 50,900 emergency medical patients are cared for and transported to area hospitals. More information about Brevard County Fire Rescue can be found on their website at brevardfire.us.



Engine 40 at Station 40
Source: Brevard County Fire Rescue staff

The North Merritt Island Study Area is served by BCFR Engine 40; the fire station is located at 6400 N. Tropical Trail. The fire station is staffed 24/7 with three firefighters; the engine provides advanced life support (ALS) emergency medical care at the paramedic level. Fire engine 40 was specifically designed and built to fit inside the NMI smaller than standard Fire Station. Initial fire engine response to building structure fires is Engine 40, Ladder Truck 41 (300 Alma Dr. MI), Engine 42 (840 N. Banana River Dr. MI) and Engine 841 (Merritt Island Vol. Fire Dept., 300 Alma Dr. MI)

Within the Study Area, Rescues 41 (300 Alma Blvd. MI) and 43 (902 Airport Rd. MI) are the two primary ambulances dispatched to transport emergency medical patients to area hospitals. Both rescue units are housed in fire stations located on Merritt Island.

BCFR includes additional Brevard County fire rescue services such as a Special Operations Team, Fire Prevention, 911 Dispatch and Ocean Rescue. Additional safety information can be found on the department's website at www.brevardfire.us

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Table 12 BCFR & EMS Calls for Service – North Study Area & NMI

Type of Call	Total NMI SAS	Total MI (not including NMI SAS)	Total All MI	% NMI SAS To All of MI
Total Medical/EMS Calls	619	4987	5606	11.04%
Total Fire Calls	113	1063	1176	9.61%
Other Type Calls	96	995	1091	8.80%
Total Calls	828	7045	7873	10.52%
Fire Alarms	22	329	329	6.69%
Brush Fires	10	9	19	52.63%
HAZMAT	1	30	31	3.23%
Miscellaneous Fires	22	72	94	23.40%
Structure Fires	9	95	104	8.65%
Vehicle Fires	2	22	24	8.33%
Average Turn Out Time	00:00:59:000	00:01:02:000		
Average Response Time	00:08:05:000	00:06:21:000		
Average On Scene	00:39:34:000	00:29:20:000		

Source: Brevard County Fire Rescue

Law Enforcement

The Brevard County Sheriff's Office East Precinct provides the majority of the east area unincorporated law enforcement services. The Precinct is located at 2575 N. Courtenay Parkway in Merritt Island. The East Precinct covers zones 20 and 21 and has a service responsibility of Merritt Island north to Nasa/US Government land, east to the Atlantic Ocean, south to the southern tip of Merritt Island with the exception of the Canaveral Precinct Patrol Area and west to the western side of the Indian River Lagoon. Table 9 depicts calls for service in both 2016 and 2017 for Zones 20 and 21 of the East Precinct and the percentage change in calls over that time.

Table 13 Percent of Increase/Decrease East Precinct Calls for Service – North Study Area Zones 20 & 21

Zones 20 & 21			% Change
Type of Call	2016	2017	2016-2017
Assist Motorist/Disabled Vehicle	47	40	-15%
Battery	31	39	26%
Burglary	30	30	0%
Burglary Business	1		-100%
Burglary Vehicle	35	8	-77%
Fraud/Forgery	45	53	18%
Injured/Ill Person	526	546	4%
Intoxicated Driver	7	9	29%
Narcotics	16	14	-13%
Reckless Driving	95	71	-25%
Robbery	1		-100%
Sex Offense	4	3	-25%
Shooting In Area	28	41	46%
Theft	61	43	-30%
Traffic Enforcement	70	63	-10%
Traffic Stops	335	463	38%
Vehicle Stolen	20	7	-65%

These do not represent all of the calls for service, but many of the categories that directly affect the residents within the Study area. The residents' complaints about speeding vehicles and traffic violations are also reflected in the number of citations and traffic stops performed by the Sheriff's Department. Out of the 17 types of calls within the area 10 of the types of calls depict a decrease between the years 2016 and 2017 as much as a 100%. Calls related to burglary's (not business related burglary calls) remained the same and 5 out of the 17 types of calls depict a percentage increase between 2016 and 2017. The East Precinct's General Crime Unit has been exemplary in the ability to solve business, residential and vehicle burglaries. The percentage drop in business related burglaries shows a 100% decrease in crime.

The East Precinct has taken an active role in reducing the amount of crime while also taking in consideration the need to assist the public in their needs no matter what the event may be.

Emergency Management

Brevard County Emergency Management is responsible for the disaster preparedness of all residents to include the residents within the Study Area. Brevard County implements emergency response actions in two general ways: (1) through field operations and through support operations conducted by the activated County emergency support functions (ESFs) operating from the County EOC. Brevard County Emergency Management serves as the coordinating group for County agencies, municipal governments, and community organizations during pre-disaster planning and programming, as well as during actual emergency response and disaster recovery operations. Each ESF is managed by a primary agency that is assisted by several designated support agencies. Brevard County Emergency Management is the lead

organization "in-charge" through the coordination and direction of the Policy Group and ESF recommendations.

The Policy Group is responsible for major, county-wide policy and planning decisions during and after disasters. This group includes the:

County Commission Chairperson

- County Manager
- County Emergency Management Director
- County Fire Chief
- County Attorney
- County Sheriff
- Superintendent of Brevard Public Schools
- Space Coast Public Management Assoc. Rep.

Natural and Manmade Hazards

Hurricane and Storm Effects

Hurricane and storms effects can produce high winds, storm surge, flooding, tornadoes, thunderstorms and lightning. The probability for more hurricane and storm effects to strike the peninsula of Florida and consequently, the Brevard County area, are very high and will occur once a year or more. The greatest threats are storm surge along the barrier islands, wind damage to homes, businesses and coastal lands, inland flooding and mass casualty.

While it is possible for the County to be hit by a category 4 or 5 hurricane, it is very unlikely based on past trends that have seen Florida's northeastern region mainly receiving tropical depressions/storms and categories 1-3. Impacts from these storms can include tree and natural environment destruction, infrastructure and house damage or collapse, downed power lines, blocked roads, flooding, and massive amounts of storm-generated debris. All structures in North Merritt Island are susceptible to impacts of hurricanes, especially buildings in floodplains, low lying areas and unsound housing or mobile homes. Because this County has experienced hurricanes and/or storms with associated hazards annually it can be assumed to occur again with a similar frequency.

This hazard would prompt evacuation to the entire Study Area. When winds exceed 40 mph, responders cannot safely respond to incidents. Wide spread disruption and destruction of critical infrastructure would hinder commerce and delivery of services. The restoration of power and telecommunications may take weeks to complete.

Flooding

Vulnerable populations are those in flood zones including isolated low lying areas, flow ways for streams and creeks, seepage hill bases, wetlands, and coastal areas. Some areas in the zones include North Merritt Island between Hall Road to the south, north and east boundaries of the Kennedy Space

Tornado Tracks (1950-2013)



Center, and west boundary of State Road 3. The probability that Brevard County will continue to experience flooding as described is highly likely, a once a year or more occurrence. The majority of North Merritt Island is located within Flood Zone AE.

Residents are strongly advised to heed public officials when noticed on a flooding event. Brevard County Emergency Management encourages everyone to stay informed and sign up for emergency alerts. Resident can get more information at <http://www.brevardfl.gov/EmergencyManagement>.

Those residents in flood prone areas should devise a plan so that first responders are not put in danger rescuing them. Here is a place to find out your risks,

<http://www.brevardfl.gov/EmergencyManagement/KnowYourRisk>. Resident can also use the following link to start a plan, <http://www.brevardfl.gov/EmergencyManagement/HaveAPlan>. Finally, if rescues are warranted, then boat, high profile vehicles, and helicopters could be dispatched, as in the recent flooding associated with Hurricane Harvey in Houston.

NMI currently does not have a pre-identified staging area in the event of an emergency. There are many shelters within Brevard County that may be utilized by NMI residents. Shelters opening are dependent on the incident and locations would be announced publicly via press releases, the "embrevard.com" website and social media. Brevard County Emergency Management lists a range of hazards that may impact the County and in particular North Merritt Island. The following sections discuss identified natural and manmade hazards: Hurricane and Storm Effects, Storm Surge, Flooding, Tornadoes, Thunderstorms and Lightning, Severe Winter Storms, Drought, Wildfires, Agricultural Infestations and Disease, Sea Level Rise, Hazardous Materials, and Launch Anomaly.

Tornadoes

A tornado is a violently rotating column of air, often (but not always) is visible as a funnel cloud. Brevard County historical area-adjusted tornado activity is above Florida state average. It is 3.3 times above overall U.S. average. Tornadoes in Brevard County have caused 12 fatalities and 638 injuries as recorded between 1950 and 2004. The last recorded tornado to impact NMI formed within or southeast of The Savannahs Trail on September 10, 2017. It was recorded as an EF-1 with estimated peak winds of 100-110 mph. The path width was approximately 100 yards causing pool screen enclosures, snapped trees, minor roof damage, and destroyed several mobile homes along the way.

The entire County and all of its municipalities are at risk for tornado-related wind or debris damage. They can be a threat in events ranging from tropical storms to the most powerful hurricanes. Since the worst tornado experienced to date within the boundaries of Brevard County was an F-4 tornado, it can be assumed that all of Brevard County is susceptible to an F-4 tornado, and could expect to experience a tornado of this strength in the future. The probability of future tornados is considered highly likely, with a once a year or more occurrence. A worst case scenario for high winds due to tornadoes would be for a front with multiple tornadoes to move across areas of the County with concentrations of mobile and manufactured homes. Mobile homes and older manufactured homes would be most at risk.

Thunderstorms and Lightning

Thunderstorms produce meteorological effects including wind, heavy rainfall, lightning and thunder, and sometimes hail. Central Florida also has one of the highest density lightning flashes in the world. On average, Brevard County is hit with more than 22,166 lightning strikes a year, the most dangerous months being June, July and August when thunderstorm activity is greatest. Florida has more lightning-related deaths and injuries than any other state. The majority of the strikes which cause deaths have occurred in open areas or recreational settings such as golf courses, followed by water related areas like lakes and beach, under trees, and driving equipment like tractors.

Not only is the danger to individuals, but the frequency with which it occurs can cause wild fires. Brevard County experiences about 70-80 thunderstorm days a year. The entire County and all of its municipalities are considered to be at risk from thunderstorms and lightning. These events can cause damage to structures, disruption of utilities (mainly electrical), and surface/air transportation problems.

Structures experiencing direct strikes would suffer differing degrees of damage, from slight to total losses if fires ensued. Damaged systems could be repaired or replaced within a few days or weeks, depending on

the system and the extent of the damages. The actual vulnerability to lightning strikes is a factor of the characteristics of the community and the vulnerability of its designated critical facilities and neighborhoods.

Severe Winter Storms

A severe winter storm for Brevard County would be an event producing unusually low and prolonged temperatures which may be accompanied by ice or sleet storms. In Brevard County, freezing temperatures can pose a severe threat to the agriculture industry. The County has experienced several damaging freezes in the past 20 years, including in 2000-2001, when the County was part of a Presidential Disaster Declaration. Recently, in early January 2010, an unusual period of cold temperatures occurred over several days which caused some damage to the area's citrus crop.

The locations most vulnerable to severe winter weather in Brevard County would be agricultural lands. There are approximately 146,470 acres of farm land in Brevard County according to the 2012 Census of Agriculture. Business closures and significant damages to the County's citrus and horticultural industries would result in substantial economic damages.

Drought

A drought is a period of unusually persistent dry weather lasting long enough to cause serious problems such as crop damage and/or water supply shortages. The severity of the drought depends upon the degree of moisture deficiency, the duration and the size of the affected area. Brevard County Emergency Management regularly monitors information from the National Oceanographic and Atmospheric Administration, National Weather Service, St. Johns River Water Management District and the Florida Forest Service Keetch-Byram Drought Index for decreases in water, river, and lake levels.

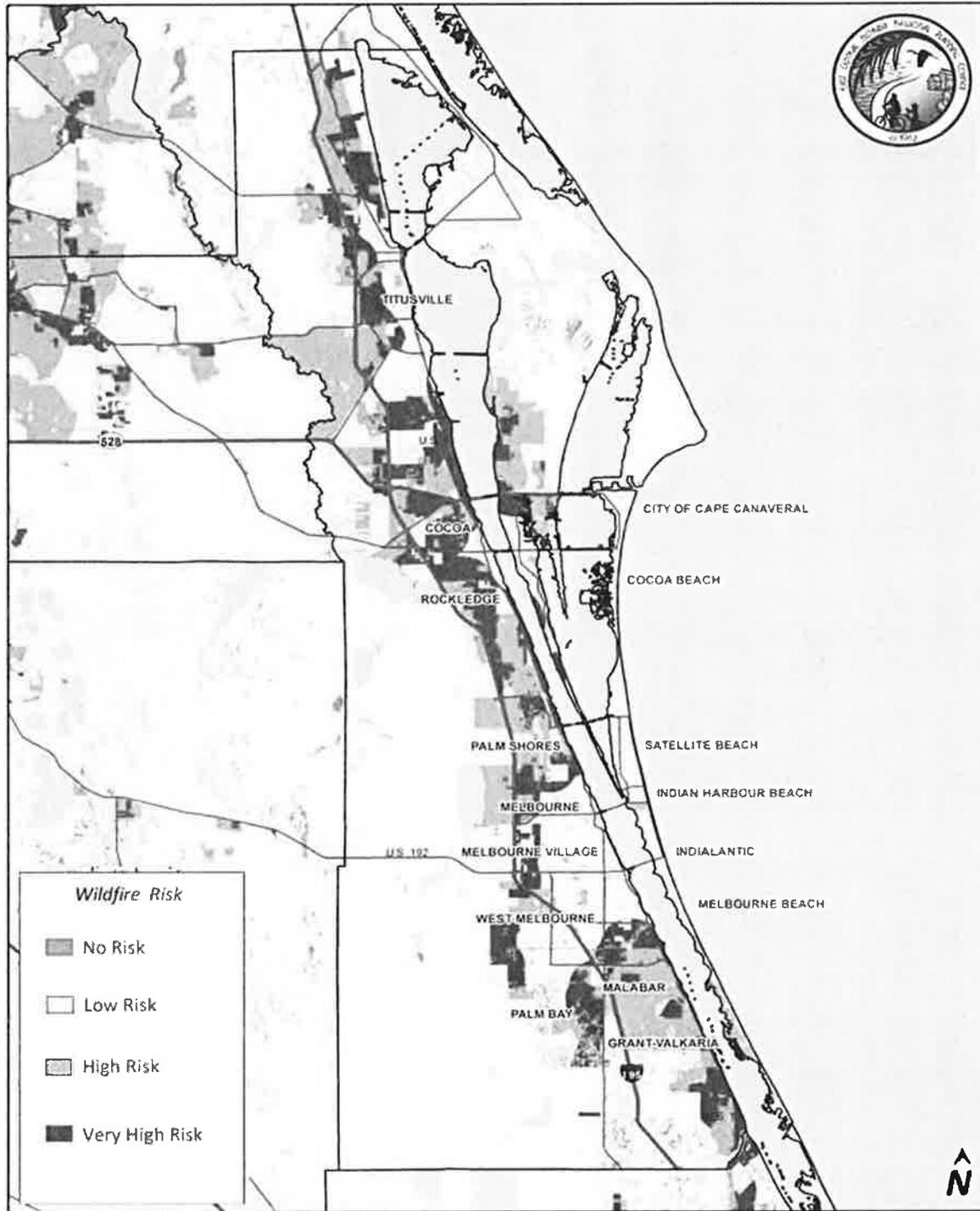
There are distinct wet and dry seasons in Brevard. The dry season lasts from December through May, the wet from June through November. During the dry season, periods of drought often occur, and can lead to a persistent and high wildland fire threat. 23% of Brevard County including NMI is agricultural-usable for citrus, raising cattle or horses. Cattle ranches and citrus growers would be affected when drought occurs that affects surficial and Florida aquifer water supplies. There is a medium to high risk of losing crops and plants, as well as a decrease in available water to the public.

Wildfire

There is a high risk of wildfires occurring during a drought. The most at-risk locations are areas where development has occurred or is occurring at the edge of previously undeveloped vegetated areas, such as forests, grasslands, wetlands, etc. Distribution of the locations most vulnerable to wildfire can be seen on the summary map, Locations of Wildfire Levels of Concern and Fire Risk Areas. The map depicts different degrees of vulnerability of development to wildfire that are calculated by combining indices for wildland fire susceptibility and general fire effects given terrain and other geographic features.

Brevard County is susceptible to wildfires throughout the year, particularly during the months with minimal rainfall amounts (December through April). The major causes of brush and forest fires are due to lightning, human negligence, or cases of criminal mischief. In recent years, homes and businesses have been threatened by encroaching wildfires. Brevard County has a considerable amount of undeveloped area with prime fuel source for fires.

Wildfire Risk Zones

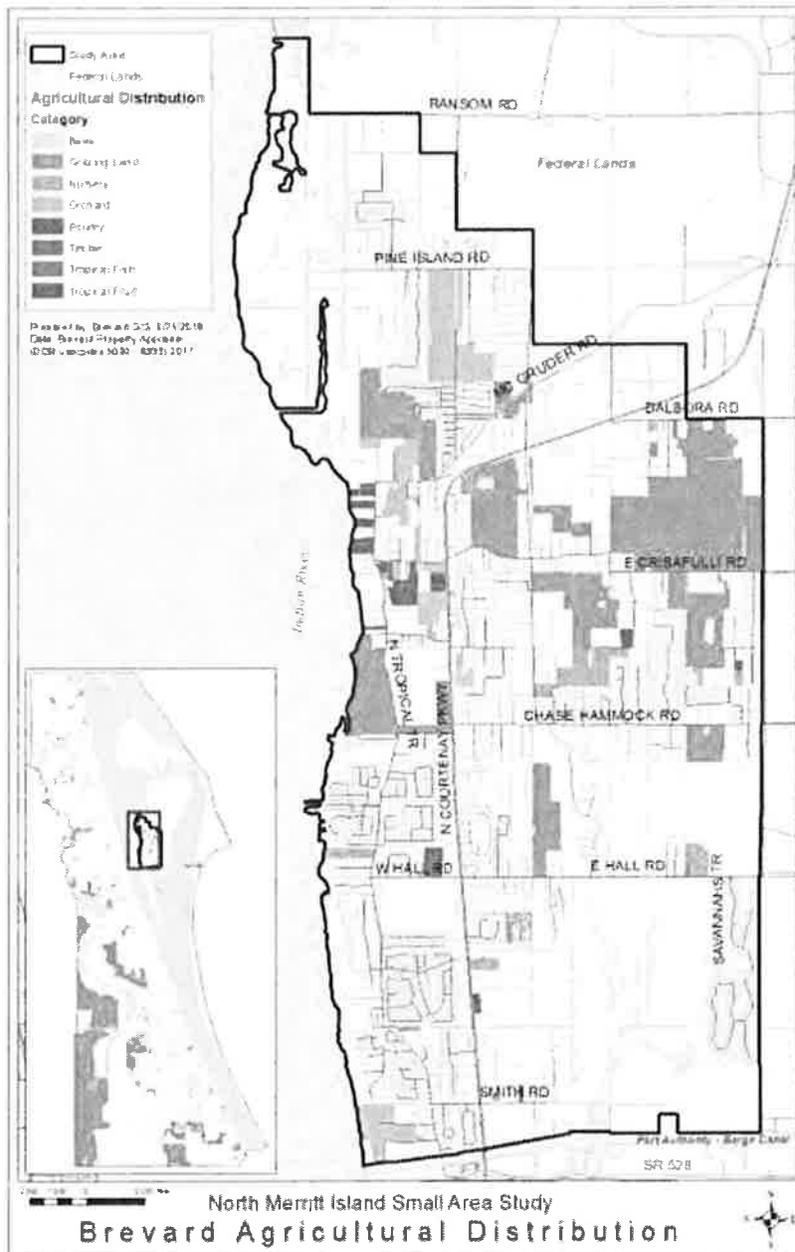


Data Source(s): HAZUS (2011), Brevard County (2013)

Map 6 Wildfire Risk Zones

Agricultural Infestations and Disease

Infestation or disease in agriculture occurs when biological entities such as insects, rodents, coyotes, pigs, bacteria or viruses significantly increase in a given area, affecting crops to the point where human and animal health is threatened, valuable crops may be damaged or significant environmental resources may be lost. Examples of common Brevard infestations are caused by mosquitos, citrus greening, southern pine beetle, Florida Dampwood Termites, rats or noxious plants like Brazilian Pepper, etc. Coordination with the University of Florida IFAS Brevard County Extension is the first step in mitigating agricultural infestations and disease.



Map 7 Agricultural Distribution

Hazardous Materials

Hazardous materials are materials that if released, can pose a threat to human health or the environment. Hazardous material releases can cause acute or chronic health effects, damage to property, expensive cleanup/contractor costs, serious injury and even death. Hazardous materials are stored and transported throughout the East Central Florida area in various quantities. The storage of hazardous materials ranges from residential storage of household products to bulk storage of large volumes for industrial purposes. Hazardous materials are transported by various methods such as railcars, barges and trucks. For purposes of this study, only those locations where the bulk storage of hazardous materials is present will be addressed because the amount of bulk storage material affects its potential risk.

The release of a hazardous material during handling would most likely be the initial responsibility of the facility or carrier. If the release could not be contained by the facility or carrier, then resources would need to be mobilized to remediate the release. Immediate action must be taken to respond to the release to preserve health and safety and reduce the impact to the neighboring community and the environment. Hazardous material releases in highly populated areas could result in evacuation or "shelter-in-place" situations.

Brevard County has many facilities and operations, both public and private, where significant quantities of hazardous materials are present. The space industry poses a unique challenge to Brevard County. The County also has several major roadways, railroad routes and marine port facilities that support transportation of large quantities of hazardous materials. As sources of hazardous materials releases, fixed-facilities and transportation routes are often in close proximity to populated areas, significant property development and very valuable environmental resources important to the human and economic well-being of the County. Due to the continuous presence of hazardous materials being transported or stored in and around Brevard County, hazardous materials events of varying magnitudes are considered highly likely future events.

Launch Anomaly

Brevard County, and the State of Florida, is an unquestioned leader nationally and internationally in the global aerospace industry. This plan accounts for the federal, state, local, and private partner collaboration required to ensure public safety, response, recovery, and protection of the residents and tourists within Brevard County.

A launch anomaly provides the potential of hazardous materials and/or debris which may impact the Study Area. Although a launch mishap is rare, it may be startling, remain calm and shelter in place. Stay informed via radio, TV, and/or social media. Await an 'all-clear' to be issued by local public safety officials.

Brevard County Emergency Management activates in support of every space launch, and posts updates on Facebook and Twitter pages.

Evacuation Routes

North Merritt Island is in the Zone A (Red) evacuation zone pictured below. Evacuations in Zone A are mandatory when an Atlantic-approaching hurricane threatens Brevard County, which includes the barrier islands. All portions of the islands are included in an evacuation due to storm surge, which can affect causeway and bridge approaches, making it impossible for vehicles to access the area safely. In addition, emergency vehicles deem it is not safe for any vehicle to cross bridges when wind speed exceeds 40 MPH.

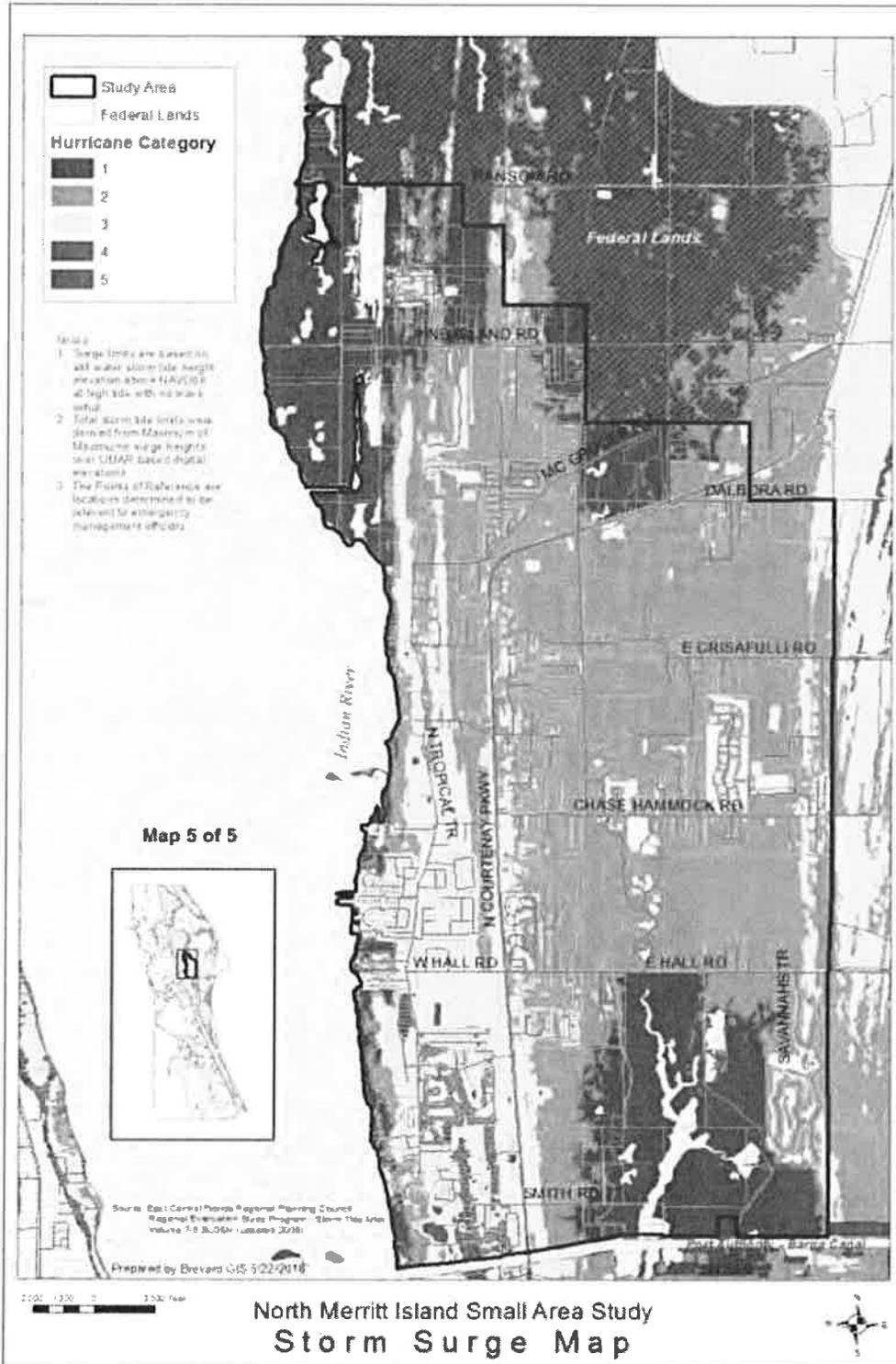
Zone A (Red) Evacuation Zone⁸ is depicted below.



Map 8 Evacuation Zone A

8

<https://floridadisaster.maps.arcgis.com/home/webmap/viewer.html?webmap=06d4b60721a64884bfa942d0beb6d473&extent=-81.118,28.0415,-79.9685,28.533>



Map 11 Storm Surge Map

The storm surge map (above) was created as part of the Statewide Regionals Evacuation Study (SRES) Tide Atlas series published in 2010. This map identifies those areas subject to potential storm surge flooding from the five categories of hurricane on the Saffir Simpson Hurricane Wind Scale as determined by NOAA's numerical storm surge model, SLOSH. SLOSH stands for Sea, Lake and Overland Surges from Hurricane. The red areas that flood from the surge of a Cat 1 hurricane are identical to the Coastal High Hazard Zone Map on Pg. 35. The complete storm surge map series Map 1 of 5, Map 2 of 5, Map 3 of 5, Map 4 of 5, and Map 5 of 5 can be found in the Appendix section of this report.

FEMA Flood Zones and Flood Hazard Areas

The majority of the lands included within the Study Area are classified by the Federal Emergency Management Agency (FEMA) as Special Flood Hazard Area (colloquially referred to as "flood zone") under the National Flood Insurance Program (NFIP). These "AE" zones lie within the 1-percent annual chance frequency flood plain, formerly known as the 100-year flood plain, and are subject to partial or complete inundation based upon that statistical probability. The FEMA Flood Insurance Rate Map (FIRM) depicts the Special Flood Hazard Area and, along with the technical supporting data contained in the FEMA Flood Insurance Study (FIS), has been adopted by the Board of County Commissioners as a condition for participation in the NFIP. This participation affords the availability of NFIP flood insurance coverage for citizens of Unincorporated Brevard County.

When the 1989 FEMA FIS was published, the Special Flood Hazard Area within the Study Area was confined to lands around the headwaters of Sykes Creek south of Hall Road, and to the immediate shoreline areas of the Indian River lagoon. The remaining land within the Study Area was depicted by FEMA as lying outside the Special Flood Hazard Area. If for no other reason, the 1989 FIS, while employing best data available at the time, was acknowledged to be limited in scope and failed to accurately represent flood threats within the Study Area. These limitations were particularly notable where land uses had changed from historically rural, agricultural areas to those with greater density and more intense uses and impervious areas. In addition, the 1989 FIS incorporated only limited topographic data for analysis of potential flooding conditions within the Study Area.

When the revised FEMA FIS was published in 2014, the Special Flood Hazard Area was greatly expanded and now encompasses substantial areas north of Hall Road and east of North Courtenay Parkway formerly depicted as outside the "flood zone". It also includes a sizeable north-to-south drainage slough west of North Courtenay Parkway which was previously unidentified. The primary basis for these changes was the incorporation of Light Detection and Ranging (LiDAR) topographic survey data. This highly accurate data provided a truer representation of at-risk areas and facilitated more accurate flood modeling within the Study Area.

A product of the enhanced flood modeling incorporated into the 2014 FIS is the addition of more and accurate land profiles within the Study Area, known as "transects". The 1989 FIS identified only four transects in the Study Area and provided only limited numeric data in table form; specifically, the anticipated flood water elevation and associated wave height at a given transect. The 2014 FIS (a) identified more transects within the Study Area; (b) depicted the transects as true land profiles, which may be envisioned as "slices" through portions of the Study Area; and (c) provided additional data for each transect, including existing ground elevations, areas subject to wave heights between 1.5 and 3 feet, areas subject to high velocity wave action, and areas determined to be above anticipated flood water elevations.

The LiDAR data and FEMA FIS revision both illustrate the principal reason for flooding potential within the Study Area. From the east bank of the Indian River lagoon, the land elevation rises to a slight, but discernable, elevated ridge. Progressing east, the land elevation then falls, in essence forming a depressed "bowl" area between this first ridge and similarly elevated ridges along the west bank of the Banana River lagoon outside the Study Area. This "bowl" spans the entire north-to-south length of the Study Area. Elevation changes are minimal along its entire length, and the southern end forms the headwaters of Sykes Creek. Thus, contained between two elevated areas and with a limited receiving water body to the south, this entire "bowl" is subject to flooding ranging from nuisance street floods from typical, seasonal rain events, to severe and prolonged inundation from the impact of tropical systems. The 2014 FEMA FIRM

depicts this increased recognition of flooding potential in its expansion of the Special Flood Hazard Area from the previous 1989 FIRM.

Efforts toward flood mitigation within the Study Area are hampered by the lack of additional outfalls to alternative receiving water bodies. Furthermore, when raised water levels within the receiving water bodies, seasonal rains and tropical systems, they become too high to accept any additional water by gravity flow from the "bowl". In essence, the water has no way to flow out thus, inundates property within the "bowl" and persists until the water level in the receiving bodies lower enough to accept additional water from the "bowl".

Another challenge is land use changes from historic agricultural lands to residential areas, which serve to put more real property at risk. The traditional mitigation approach of filling land for development to elevate areas above anticipated flood levels may only result in diverting flood waters to adjacent properties. Within the "bowl", this merely serves to increase the level and duration of inundation for those adjacent properties.

A third challenge is identifying funding sources for suitable infrastructure capable of mitigating flooding in the Study Area. Engineering solutions to address flooding conditions would prove to be formidable, expensive and unreliable. Given the topographic condition of the "bowl", some drainage solutions may propose pumping storm water out of the area. However, reliance on pumped systems has historically proven to be both less than effective and fiscally unsustainable. A suitable benefit-to-cost ratio for truly effective flood mitigation may be unattainable.

Proposals for future land use changes and development within the Study Area should utilize best available data as the basis for decisions regarding the suitability of such changes and development. These should include consideration of the associated need for increased critical facilities and public infrastructure in harm's way to serve the increased density or intensity of land uses. This Study concludes that the 2014 FEMA FIRM and FIS contain appropriate data for such consideration and recommends that they be utilized in any future decision making process for development within the Study Area.



Map 12 FEMA Flood Zones

Wetlands

North Merritt Island (NMI) is adjacent to the following surface waters:

- The Indian River Lagoon (IRL) along the western shoreline; designated by the State as a Class II waterbody;
- The Banana River along the eastern shoreline; designated by the State as a Class II waterbody and Outstanding Florida Water; and
- Sykes Creek, trending north from the Barge Canal to Hall Road; designated by the State as an Aquatic Preserve and Outstanding Florida Water.

The locations of the natural wetlands of NMI tend to occur in the same locations as the flood zones and hydric soils; which all correspond to the lower elevations. The National Wetlands Inventory map depicts the following wetlands types on NMI:

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Estuarine and Marine Wetland
- Estuarine and Marine Deepwater
- Lake
- Freshwater Pond

Extending out from Sykes Creek, the St. Johns River Water Management District 2009 Land Cover and Land Use Classification (LCLU) System maps a large saltmarsh interspersed with saltwater ponds, mixed scrub-shrub wetland, and cabbage palm hammocks. Moving further out from Sykes Creek, the wetland classifications transition to mangrove swamps, wetland forested mixed, mixed scrub-shrub wetland, mixed wetland hardwoods, small freshwater marshes, and larger areas of cabbage palm hammocks. The wetland system continues north, generally following Judson Road. Wetlands extend further north and are abundant throughout the Federal property to the north.

The wetlands on the western portion of NMI tend to occur along or near the shoreline, and consist primarily of saltwater marshes, cabbage palm hammocks, wet prairies, wetland forested mixed, mixed scrub-shrub wetland, and mangrove swamps. There is an NWI-mapped freshwater forested/shrub wetland system on the west side of North Courtenay Parkway, extending north and south of Hall Road.

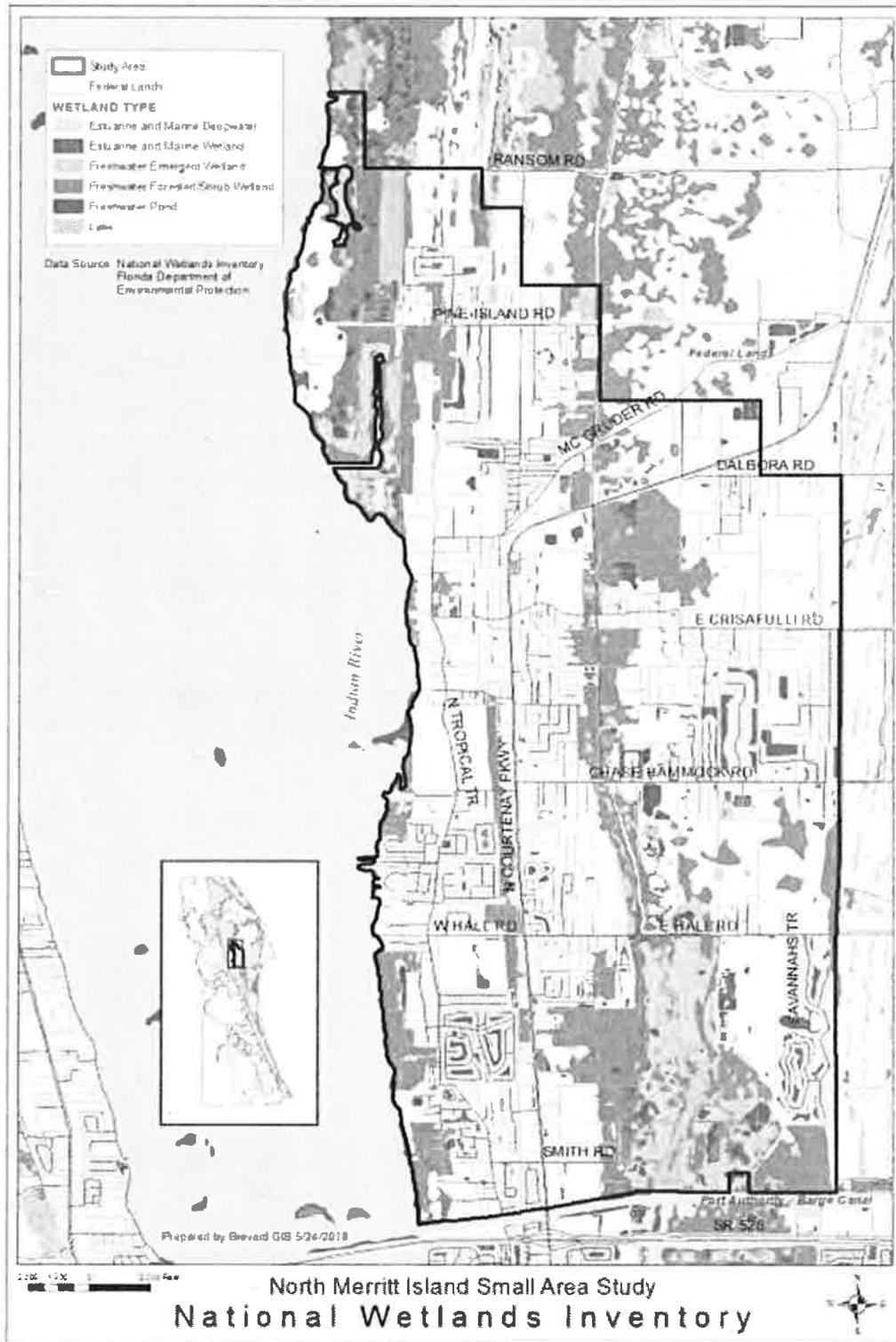
East of the Sykes Creek wetland system, and within the NMI Small Area Study Area, are mapped freshwater forested/shrub wetlands and wetland forested mixed. The wetlands on the eastern portion of NMI, outside of the NMI Small Area Study area, consist primarily of mixed scrub-shrub wetlands, wet prairies, freshwater marshes, and cabbage palm savannah.

Sykes Creek and most of the immediately adjacent wetlands are owned by Brevard County and are in public conservation. However; further east, west, and north of Sykes Creek are large, privately-owned undeveloped parcels containing wetlands. The parcels primarily have residential Future Land Use (FLU) designations, with Community Commercial FLU along North Courtenay Parkway. There are also privately-owned undeveloped parcels containing wetlands on the west side of North Courtenay Parkway, along the IRL shoreline. These parcels have residential FLU designations.

Development of all parcels must meet the criteria established in the Wetlands Protection ordinance (Chapter 62, Article X, Division 4). Sections 62-3694(c) (1) and (2) establish a residential density of one dwelling per five acres (1:5) within wetlands. Alternatively, the limitation of 1:5 within wetlands may be applied as a maximum percentage limiting wetland impacts to not more than 1.8% of the total non-commercial and non-industrial acreage on a cumulative basis.

Section 62-3694(c) (3) contains criteria for commercial and industrial development within wetlands. The intent is to limit wetland impacts to established commercial corridors through the establishment of Mitigation Qualified Roadways (MQRs) in order to discourage development sprawl. North Courtenay Parkway is the only Mitigation Qualified Roadway in the North Merritt Island area. Wetlands proposed to be

impacted on commercial/industrial parcels adjacent to MQRs shall be assessed using methodologies established in the countywide Wetlands Study, prepared BKI, Inc. Consulting Ecologists, to determine if they meet the criteria of High Functioning Wetlands or Landscape Level Wetlands. Impacts to High Functioning and Landscape Level Wetlands shall be prohibited unless the proposed impacts are found to be in the public interest. Public interest is determined by the Board of County Commissioners.



Soils

Soils can be grouped by their drainage characteristics. Soils which infiltrate water quickly and easily are classed as type A with lower "grades" for decreasing infiltration capacity, down to type D. Few of the soils on NMI are A soils. Generally soils, including most on NMI, have two classes; one for areas where the water table is lower and a lower grade for locations of higher water table. Some are A/D, but the majorities are B/D, C/D, or D.

The abundant low soil grades in the study area generally indicate poor for drainage and infiltration conditions except at the higher elevations. It is also evident from the various maps that the wetlands, flood plains, areas inundated at 1 and 2 feet of lagoon rise, and the poorest soils all follow similar patterns with the most adversely affected areas following the low lying central area between the north-south running ridges.

The combination of lower elevation and poorer soils combine to increase the likelihood of flooding and the presence of wetlands. Increases in lagoon levels or groundwater elevations due to higher rainfall amounts contribute to the decreased capacity of the dual graded soils to accommodate stormwater runoff with the associated increased probability of flooding.



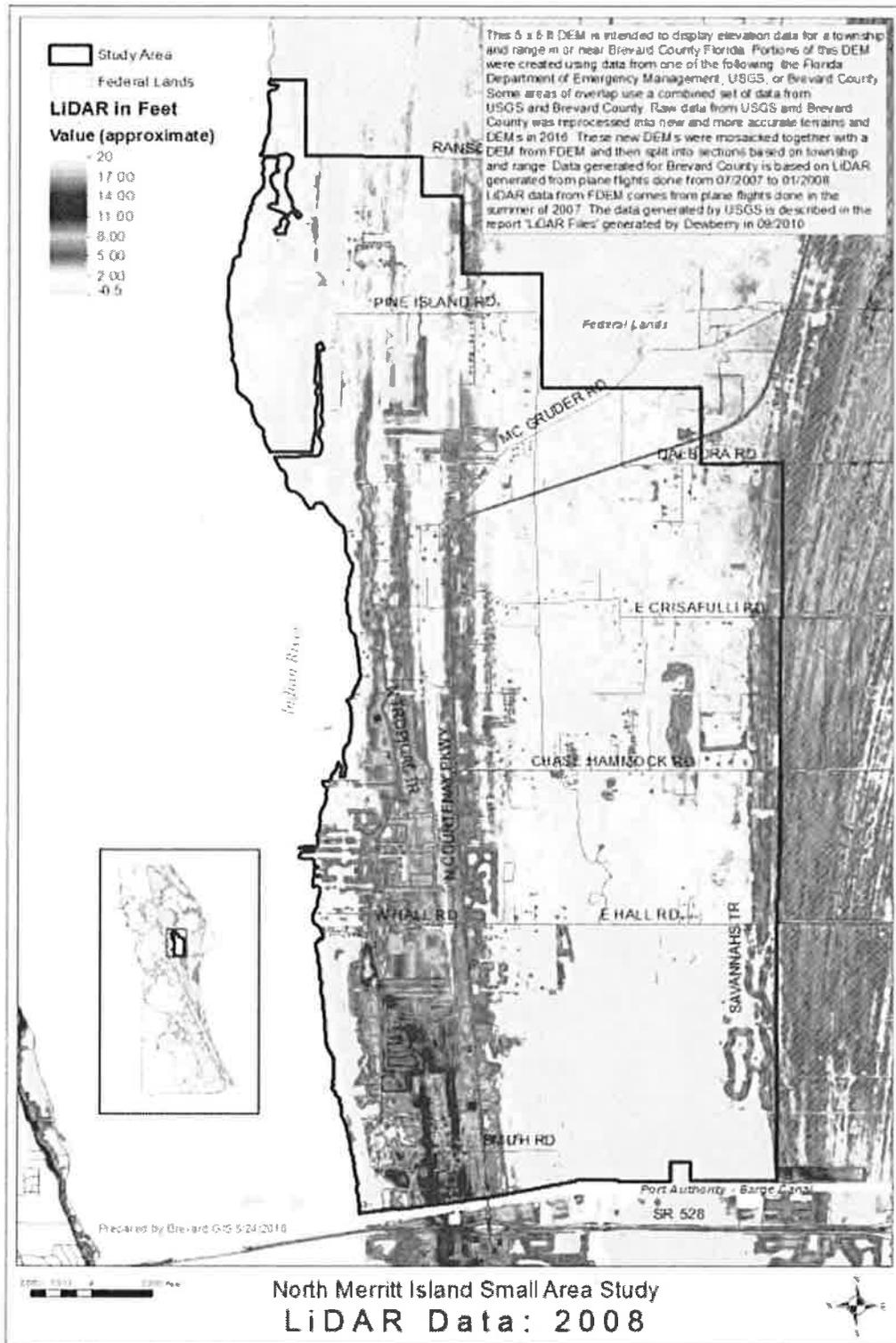
Map 14 Soil Drainage Characteristics

Elevation (Topography)/ LiDAR

The land surface on North Merritt Island (NMI) varies in elevation between a maximum of 15 feet and 0 feet in the North American Vertical Datum of 1988 (NAVD88), excluding the ponds and canals which can extend to -12 feet. The two ridge systems run north-south and lie near the west side of the island slightly west of N Courtenay (State Rd 3) and along the east side of the island, almost entirely on property controlled by the federal government. A broad low lying area between the ridges and a narrow area to along the western edge of the island make up the remainder of the island. The elevations of the western ridge are generally greater near the southern end of the island and trend lower to the north with the reverse being true of the low lying area in the middle and the eastern ridge.

NMI LiDAR was collected in 2007 and made available to the County in 2009. LiDAR is a method of collecting elevation information from an aircraft or ground vehicle and has been found to be quite accurate in Brevard County and in NMI, even in areas with heavier trees and brush. As can be seen from the attached map it is quite detailed and is very useful for planning and evaluation purposes.

When comparing older information (plans, surveys, etc.) with more recent information, it is important that the same datum, basis for measurement, is used or that the information is adjusted to the current datum. The datum used in elevations can be thought of as your zero point. There are three datum used in Brevard County: sea level (of various flavors), National Geographic Vertical Datum 1929 (NGVD29), and NAVD88. The most commonly used are the last two, with the NAVD88 being the most current and what most surveyors and engineers are using in their plans and drawings. The difference between the two elevations is approximately 1.4 feet for NMI with the NAVD88 elevation being the smaller number ($\text{NAVD88} + 1.4 = \text{NGVD29}$ – approximately). One way to visualize the datum difference is to imagine you're standing next to a step stool 1.4 feet high. If you're 5.5 feet tall (from the floor) you could be said to be 4.0 feet tall in the step stool datum. The top of your head didn't move, just where you measured from.



Map 15 2008 LiDAR Data

Lagoon Levels

The elevations of the lagoon tend to be around 0 during the wet season with lower levels generally occurring during the dry season. The lagoon levels near NMI are influenced by seasonal average sea level (not tides), rainfall, and wind. During storm events the lagoon water level commonly increases by 1 to 3 feet with much higher storm surges possible. Elevated levels are unlikely to directly flood the center low lying areas of North Merritt Island however, in the event of an extended period of high water in the lagoon the ground water levels would increase and backwater inundation would cause the water levels in the entire "bowl" of the island to rise.

The attached maps show the areas affected under various scenarios from 1 foot to 3 feet of extended lagoon level increases. These are still-water elevations without accounting for the effects of wind or rainfall. Wind driven wave action and rainfall would increase the extent of flooding shown in each scenario.

Increases in lagoon level also inhibit the discharge of stormwater from the NMI drainage systems by decreasing the difference in elevation between the system and the lagoon. High lagoon level can also impact drainage by potential filling the stormwater systems with lagoon and/or groundwater reducing the amount of storage available in the system. These impacts can greatly increase the extent and duration of flooding from storm events.



NMI Drainage Map 16 Increased IRL Water Level Inundation

Stormwater

The North Merritt Island (NMI) drainage basin is located in the east central area of unincorporated Brevard County, north of State Road 528, south of the Kennedy Space Center and west of Kars Park (NASA property). Approximately 9,000 acres of stormwater runoff from residential and agricultural land on NMI drains to two major outfall locations: 1) north through the Judson and Pine Island Rd. drainage ditches into the North Indian River Lagoon, and 2) south to the Barge Canal and ultimately Sykes Creek. A limited portion of drainage from the eastern fringes of the NMI Small Area of Study (SAS) drain east through NASA's Kars Park property via three drainage ditches extending from East Crisafulli Rd., Chase Hammock Rd., and Hall Rd. The remaining areas, on the west side of State Road 3 (SR3), discharge to the North Indian River Lagoon (NIRL) via the W. Hall Rd. outfall pipe under N. Tropical Tr., a small drainage ditch located east and north of Sam's House, and an indistinguishable area to the west through a drainage ditch located west of Florida Inland Navigation District (BV-11) property.

The NMI topography mimics a bowl shape signature with the center inland portion of the island at Joseph's Ct. consisting of the lowest (or near lowest) elevations ranging from 0 to 4 ft. (+/-) NAVD 88; whereas, the higher western ridge, generally extends north to south along N. Tropical Tr. and ranges in elevations between 4 and 9 ft. (+/-) NAVD88). The east ridge, eastward of the NMI SAS, lies within the NASA's Kars Park property. The extensive drainage ditch system throughout NMI has less than a few inches of drop to either of the receiving water bodies, NIRL and the Banana River via Sykes Creek and the Barge Canal, making recovery from most storm events extremely slow. The direction of flow throughout the Judson drainage ditch is dynamic and dependent upon multiple factors including the seasonal high water elevations, driving wind direction, tailwater conditions within the NIRL and Barge Canal, and the amount of storage available within the drainage system. However, for drainage east of SR3, the divide in flow is generally near the junction of Chase Hammock Road and Judson Road. Areas to the north tend to drain through the Judson Rd. and Pine Island Rd. drainage ditch system and ultimately to the NIRL. Areas to the south tend to drain through a series of drainage ditches and wetland marsh areas paralleling Pioneer Trail at Kings Lake Park into two creeks that skirt the Sykes Creek Mosquito Impoundment on both sides, and under normal circumstances discharge into the Barge Canal. Under normal conditions (dry events), stormwater runoff from the east central and northern extents flows into the Pine Island Conservation Area Stormwater Management System (PICA SWMS) via gravity flow to provide stormwater treatment prior to discharging in the NIRL.

One of the major concerns is the increased frequency and intensity of the storm events. These events combine to increase the normal and seasonal high water levels within the Indian River Lagoon, due to more frequent and/or back to back rain events. They reduce the available flood storage within wetlands, wet detention ponds, drainage ditch systems, and the Sykes Creek Mosquito Impoundment. They also decrease the rate of discharge from these storage and conveyance systems that discharge to the North Indian River Lagoon and Sykes Creek.

Stormwater Projects, Infrastructure, and Mobile Pumps

In the mid-1990's, Brevard County developed a Master Drainage Plan to reduce the flooding issues on NMI. The first of multiple projects included the Lake George Water Quality Enhancement Project, located within King's Park on the south side of Chase Hammock Road, completed in 2010. A new drainage ditch conveyance system, construction of a wet detention pond and associated weir, and the installation of a large box culvert under Chase Hammock Rd. and culverts with flash boards under Hall Road were some of the flood control and water quality improvement components designed to divert and manage stormwater runoff as well as restore historical flow patterns. The Lake George Project also reduces the conveyance burden on the Judson Rd. drainage ditch system by moving water south through a secondary conveyance system towards the Barge Canal.

Prior to the construction of the PICA SWMS, the Pine Island drainage ditch conveyed stormwater runoff from a substantial portion of the NMI drainage basin with minimal engineered flood storage and water quality

treatment prior to discharging to the NIRL. There was no connectivity to the large borrow pits located north and south of the Pine Island ditch. These pits were converted to stormwater management detention ponds by the Brevard County Stormwater Management Program. Construction of Phase 1 of the PICA SWMS, completed in December 2012, included the expansion and perimeter berm build-up of the north pond (81-acres), construction of a pump house station with a single 24-inch pump having an optimal design flow rate of 15,000 gpm, fabrication of a diversion weir to force water into the settling basin to be conveyed to the north pond via hydraulic pumps and/or two 30-inch gravity pipes with back-flow prevention devices (i.e. Flapgates and Tideflex®), and an outfall weir to the downstream end of the Pine Island drainage ditch, ultimately discharging to the NIRL. Phase 2 involved the expansion of the south pond (26-acres) and perimeter berm build-up, installation of an additional 24-inch pump and a 30-inch pump, each having an optimal design flow rate of 15,000 gpm and 32,000 gpm, respectively, and the construction of a second separate outfall to the NIRL via Sams Creek for the south pond. Phase 2 was completed in December 2014. The first 24-inch pump flows to the north pond. The 30" pump flows to the south pond. The second 24-inch pump has the ability to discharge to either the north or south pond via a butterfly valve. The Pine Island Rd. and Judson Rd. drainage ditch systems convey stormwater runoff to the PICA SWMS for flood storage and water quality treatment via gravity flow and/or pumps. Depending on the water level and conditions, stormwater may also overflow the diversion weir, by-passing the system, and discharge directly to the river.

Between 2010 and 2014, more than \$4.5 million in drainage improvements were completed. Construction of another \$3 million of flood control measures are expected to be underway by 2019. State and Federal agencies, including the Environmental Protection Agency, Florida Department of Environmental Protection and St. Johns River Water Management District, have contributed more than \$1.5 million in cost-share funds between 2010 and 2014 towards NMI Stormwater construction projects.

In emergency situations the Mosquito Control pump at Hall Rd. is used to displace flood waters into the Sykes Creek Mosquito Impoundment. During Hurricane Irma and the six weeks of rain that followed a 24" mobile pump was added at Hall Rd. to move more flood waters into the impoundment. A second 24-inch mobile pump was brought in an attempt to alleviate residential flooding. Additionally, a supplemental 12-inch mobile pump was installed at PICA SWMS. All seven pumps, including the three permanent pumps at PICA SWMS, ran nearly continuously, with exception of refueling and maintenance, for 8+ weeks.

The Hall Rd. Pump Station is a major pending and fully funded stormwater project and includes the construction of a permanent pump station on E. Hall Rd., north of the Mosquito Impoundment. The construction entails the installation of two 25,000 gallon per minute hydraulic pumps, and an additional culvert under Hall Rd. to enhance conveyance and pump performance. These pumps will replace the existing mobile pumps currently used by Public Works during heavy rainfall events. Construction plans are 90% complete, 3 of the 4 required permits have been obtained, and drainage easements are currently being pursued as needed. Once ready for bidding, construction will be timed for the next available dry season, likely November 2019.

W. Crisafulli/Church Rd. Drainage Improvements, currently in preliminary engineering design, is a partially funded project to reduce recurring flooding on the west side of SR 3. The conceptual design involves tying into an existing outfall to the south and west to reduce flooding and improve the recovery time.

Additional drainage improvements recommended for the west side of SR 3 but not yet funded include: 1) upsizing the outfall pipe at W. Hall Rd. and N. Tropical Tr. to reduce flooding within the Horseshoe Bend area; 2) Creating a second emergency discharge location from the north impoundment at PICA SWMS; and, 3) Increasing gravity discharge capacity of the PICA SWMS diversion weir system by adding an additional pipe.

Flooding

Recurring and prolonged flooding has been documented on NMI by the County since Tropical Storm Gordon in November 1994 (7.83-inches of rainfall at Melbourne Airport), shortly after the inception of Brevard County Stormwater Utility. In October 2005, Hurricane Wilma dropped over 6 inches of rain in 24 hours causing flooding to multiple access roads for several days, impassable for standard vehicles. Citrus Groves ran pumps for 24 hours a day for multiple days to remove water in an effort to save their crops;

however, staff observations and reports indicate the water level within the drainage ditches were so high, water moved in a circular pattern over dikes with no beneficial results from running the grove pumps.

Tropical Storm Fay in 2008 brought an all-time record of 16.93 inches of rainfall to North Merritt Island over a four day period. Several homes had interior flood damage (based upon residential survey responses received in late 2008). Sections of five major roads were impassable and many agricultural properties and private residential lots were inaccessible for 14 days or longer. Water levels threatened and enveloped more than 50 homes and lots (>1-acre) where many residents keep horses and other livestock. The survey after the storm indicated that at least 30 barns, sheds, and similar non-residential structures also received flood damage. Properties containing citrus groves and other agricultural lands were submerged and inaccessible, and the use of agricultural pumps, once again, proved highly ineffective. This time, recovery to pre-storm water level conditions did not occur until more than 21 days following the event despite the use of the MC and portable pumps.



Tropical Storm Fay, 2008 – W. Crisifulli Rd., E. Crisifulli Rd., Porcher Rd., and Church Rd.
 Source: Darlene Hunt

Hurricane Irma impacted Brevard County on September 11th with substantial heavy rains initiating on September 8th and subsequent rainfall through October 25th, 2017 for a total of 30.6 inches in 47 days resulting in one of the most prolonged flooding events to the area in modern history. The difference with this storm was the duration of the event and the resulting complete saturation of the soils during the nearly continuous rainfall received through late October, thereby, increasing the runoff volume and reducing, if not eliminating, any potential storage capacity. Several residents reported 3-4 inches of standing water inside their homes, with a few experiencing a second interior flooding episode following the heavy rains on October 2, 2017. Much of NMI experienced road flooding of 3-6 inches, most completely recovering within the first 24-48 hours following the storm with the exception of Crisafulli Rd., East and West, Joseph's Ct., and Church Rd. Significant yard flooding was prevalent basin wide.



Hurricane Irma, 2017 - E. Crisifulli Rd., Church Rd., and W. Crisifulli Rd.
 Source: Darlene Hunt

Staff Gauge Monitoring

In 2013, sixteen new staff gauges were set by Brevard County Mapping and Surveying at critical locations within the NMI drainage basin to monitor the stormwater management system as well as the continually changing tailwater conditions within the NIRL and the Barge Canal. Since December 2014, three (3) staff gauges have been added to the area. This data informs staff where best to operate portable pumps. All of the staff gauges were set in reference to the latest vertical control datum, North American Vertical Datum of 1988 (NAVD 88).



Source: Brevard County Public Works

Maintenance

Ditch maintenance on Pine Island Road (from the 90 degree bend to PICA SWMS) was completed in March 2013. To further improved stormwater runoff conveyance to PICA SMWS, additional ditch maintenance will be completed in early 2018 from the 90 degree bend to State Road 3. Additional phased ditch improvements, if funding allows, includes excavating sediment with the Judson Road drainage ditch from SR3 southward to E. Crisafulli Rd. to improve the capacity of the conveyance system.

Mosquito Impoundment

The Mosquito Impoundment is an essential tool in the flood recovery process for the NMI drainage basin as it provides needed storage for flood waters pumped from the north by the mosquito pump and the two mobile pumps on E. Hall Rd. during significant storm events. When water levels rise within the Barge Canal following long periods of rain, especially during October when seasonal high water occurs in the lagoon,

the water in the two creeks running parallel to the impoundment can and will backflow to the north, potentially exacerbating flooding problems from Chase Hammock Rd. and E. Crisafulli Rd.

The Mosquito Impoundment provides temporary storage for stormwater runoff pumped in from the north until the Barge Canal water levels lower enough to allow for natural gravity flow to resume. The previously referenced flashboards under Hall Rd. serve to prevent backflow from the Barge Canal into ditches and wetland marsh areas to the north. If not controlled, this backflow would worsen flooding conditions in the east central area of NMI.

Septic

The Florida Department of Health (DOH) regulates onsite sewage treatment and disposal systems (OSTDS), commonly known as septic systems. Permitting and inspections of all OSTDS are handled by the County Health Department's Environmental Health Section. All parcels where sewer systems are not available as defined in Section 381.0065(2) (a), Florida Statutes, may apply to the department to install a septic system. All septic systems must be installed meeting all requirements of Section 381.0065, Florida Statutes (F.S.) and Chapter 64E-6, Florida Administrative Code (F.A.C.).

Where sewer is not available and vacant parcels in the study area are developed, an OSTDS Construction Permit must be obtained. New construction permits are required to meet all current regulations, including separation between the bottom of the system drainfield and the estimated wet season water table, setbacks to surface water, potable wells and non-potable wells. If the current state regulations cannot be met and the property owner is denied a permit, the owner may apply for a variance from the rule or statute requirements. Variances are processed through the Department of Health Central Office.

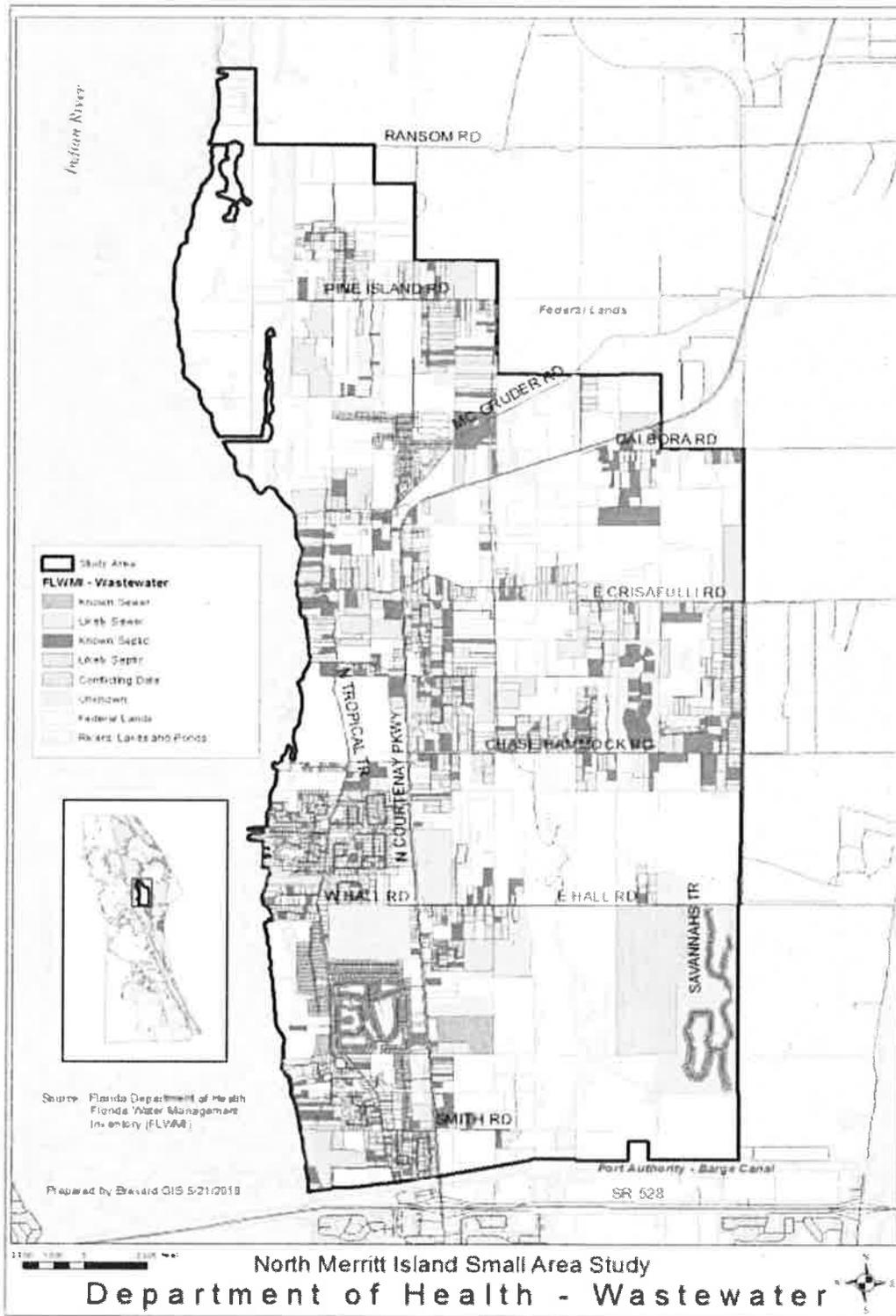
Property owners of parcels in the study area who are modifying existing buildings on their property (for example, adding a bedroom to an existing residence) and wish to continue use of their existing septic system, must apply for an OSTDS Modification Construction Permit and, in some cases, will be required to meet current regulations. The existing septic system is required to be evaluated by a licensed plumber, certified environmental health professional, or registered septic tank contractor in order to be permitted.

Property owners of parcels in the study area with a failing septic system that needs repair must apply for an OSTDS Construction Permit and meet the requirements listed in 64E-6.015, F.A.C. Repairs may be permitted to meet lesser setbacks and separations based on the year the original septic system was installed. The existing setbacks must be maintained if they are greater than the repair minimums defined by current rule.

If site conditions pose challenges to meeting the regulations, property owners may choose to apply for an aerobic treatment unit (ATU) or performance based treatment system (PBTS). ATU and PBTS are designed to produce cleaner effluent than standard septic systems, and can be permitted in certain situations to overcome limiting site conditions where a conventional OSTDS cannot be permitted.

The Soils map included on page 47 of this study shows the diversity of soil types in the area. The soils and estimated wet season water table indicators found during site evaluations assist the Department in determining the requirements for elevations of septic system installations. Septic systems in areas with higher wet season water table indicators may be required to be installed above native grade, sometimes creating a mounded system. Some soils in the study area are restrictive and are not suitable for septic systems. These restrictive layers can either be removed and replaced with suitable soils or the system can be elevated above them. Many property owners choose to fill their entire lot to avoid a visible septic system mound.

The Florida Department of Health's Florida Water Management Inventory (FLWMI) has identified 2,046 parcels possibly served by septic systems in the study area. The FLWMI map of the study area below was created from the most recent data received on 11/22/2017. The map shows parcels with known septic systems, likely septic systems, known sewer, and likely sewer. More information about the FLWMI can be found by visiting: <http://www.floridahealth.gov/environmental-health/onsite-sewage/research/flwmi/index.html>



Map 17 Department of Health - Wastewater

This study area is included in the proposed temporary OSTDS moratorium on the installation of new OSTDS that are not capable of reducing total nitrogen in effluent by at least 65%. This proposed moratorium will affect the installation of OSTDS for new construction or renovation of existing structures.

A 2018 DOH proposed rule change to Chapter 64E-6, (F.A.C.) will allow in-ground nitrogen reduction biofilters, which include nitrogen-reducing media layer in drainfields. If the rule proposal is approved, it will provide more options to the systems available which can meet the 65% total nitrogen reduction requirement. Another 2018 Department rule proposal includes recognizing in the F.A.C. regulations, aerobic treatment units (ATUs) certified to the National Sanitation Foundation (NSF) Standard 245. For technology screening purposes, NSF 245 certified ATUs are 50% nitrogen-reducing units. NSF 245 ATUs must first meet NSF Standard 40 and as such, are already available for use in Florida. NSF 245 ATUs when disposing to a drainfield with a 24-inch separation to the estimated seasonal high water table is expected to meet the 65% nitrogen reduction requirement.

ATU, of which nitrogen-reducing (NSF 245) treatment units are a subset, and PBTS, engineer-designed to specific performance standards that can include nitrogen reduction require, at minimum, semiannual maintenance inspections completed in conjunction with a service contract with a department approved maintenance entity, an annual inspection from the department, and an Onsite Sewage Treatment and Disposal System Operating Permit from the department. The operating permits are required to be renewed on an annual or biennial basis depending on type. Some ATU and PBTS also require monitoring of effluent quality. The department is required to take enforcement actions for violations of these requirements.

CITIZEN'S COMMITTEE RECOMMENDATIONS

The following Recommendations have been grouped according to type within the following categories:

- Community & Quality of Life
- Planning & Land Use
- Transportation & Infrastructure
- Utilities & Natural Resources
- Safety & Emergency Management

The Recommendations below are not ranked in order of priority, but are numbered for reference purposes only. Recommendations #7, #8 and #3 were selected as the top three recommendations by the Citizen's Committee.

Community & Quality of Life

Recommendation 1: Brevard County should budget funding a community center at Mitchell Ellington Park for previously planned and designed site.

STAFF RESPONSE, PARKS & RECREATION: The Parks' bond referendum funding for the construction of this Community Center was defeated in 2010-11. There is no funding currently available for the center's construction and the required operation and maintenance. If directed by the Board, Parks staff could consider resubmitting the Community Center in the "Unfunded CIP" budget for FY2019-.

Recommendation 2: Brevard County in partnership with other agencies should purchase riverfront land across from the FIND site on the west side of NMI for a public park with boat launching access.

STAFF RESPONSE, PARKS & RECREATION: There is currently no funding available for the land acquisition and/or necessary operations and maintenance costs.

Planning & Land Use

Recommendation 3: For all parcels ≥ 2.5 acres in size with the Residential 1 (Res 1) Future Land Use designation and Agricultural Residential (AU) Zoning classification, Brevard County should amend the Future Land Use Map to Residential 1:2.5 (Res 1:2.5).

STAFF RESPONSE, PLANNING & DEVELOPMENT: If so directed by the Board of County Commissioners to implement this recommendation, County staff would initiate a large scale Comprehensive Plan Amendment (LSCPA) to modify the Future Land Use Map (FLUM) of the parcels of land greater than 2 ½ acres with a Future Land Use (FLU) designation of Residential 1 (RES 1) with a Zoning designation of Agricultural Residential (AU). This Future Land Use change from Residential 1 to Residential 1:2.5 (RES 1:2.5) would apply to 2,486.14 acres, which could potentially reduce the number of dwelling units that can be built in the Study Area by a maximum of 1,492 dwelling units.

2,486 acres @ 1 unit per acre = 2,486 dwelling units
 2,486 acres @ 1 unit per 2.5 acres = 994 dwelling units

 Potential Maximum Reduction = 1,492 dwelling units

A Future Land Use change is a large scale amendment which is typically processed via one of the two amendment cycles per year. The application period for the two amendment cycles close on June 30th and December 31st. The LSCPA process takes approximately 6 months to complete. Parcels proposed for Future Land Use designation amendment are depicted on the map found in **Appendix B.**

Transportation & Infrastructure

Recommendation 4: Brevard County should budget funding and review grant opportunities for the funding of planned pedestrian trails and bicycle paths and maintenance.

STAFF RESPONSE, PUBLIC WORKS: The Brevard County Planning, Public Works, and Parks and Recreation Departments, along with the Space Coast Transportation Planning Organization (TPO), are consistently looking at ways to improve bicycle and pedestrian infrastructure within North Merritt Island and improve network connectivity and access. New funding sources are currently being identified and projects are being proposed for currently available grants opportunities.

As a part of the 2015 updates to the Office of Greenways & Trails Land Trails Opportunities Map, the Space Coast TPO pursued the rerouting of the unbuilt portion of the East Coast Greenway through North Merritt Island, depicting connections between existing and planned trails on statewide trails maps. The designation of NMI trails as part of a larger, regional network of trails makes these projects eligible for additional funding sources. In 2015, the East Coast Greenway was also designated as a part of the Florida Department of Transportation's Shared-Use Nonmotorized (SUN) Trail Network, making this corridor eligible for an annual \$25 million appropriation.

Space Coast Transportation Planning Organization (TPO) will be funding a Feasibility Study in FY21 at which time TPO will administer the project through their Unified Planning Work Program (UPWP). Funding for the next phases of the East Coast Greenway through North Merritt Island will be determined by the results of the Feasibility Study.

Recommendation 5: Brevard County should re-sign Sea Ray Drive to be one-way, eastbound only, like it was originally designed when S.R. 528 was a toll road. Sea Ray Drive traffic should travel only eastbound, entering the corridor at North Courtenay Parkway and exiting only at North Banana River Drive, eliminating the westbound connection of Sea Ray Drive with S.R. 3.

STAFF RESPONSE, PUBLIC WORKS: Two current FDOT projects will impact this intersection – the widening of SR 528 and improvements that may result from the SR3 Courtenay Parkway Corridor Study. County staff has advised FDOT's project managers and MIRA staff of the recommendation for engineering improvements within the area and consideration of any transportation improvements should be done in coordination with FDOT.

Sea Ray Drive is approximately 2.6 miles in length. Restricting the roadway to one-way traffic would force those accessing parcels at the west end to go almost 5 miles out of the way to get back to the point of origin to continue heading west on SR 528, south on SR 3 or north on SR 3. Additionally, Sea Ray Drive and parcels at the east end would be restricted from being accessed from North Banana River Drive.

It should be noted that the bridge on Sea Ray Drive was extensively damaged during Hurricane Irma and was deemed unsafe until repairs could be made. At this time, vehicles are unable to traverse the entire length of Sea Ray Drive. There are potential future access issues associated with converting this roadway to a one-way segment.

Recommendation 6: Brevard County should request that FDOT review the intersection of North Courtenay Parkway (SR 3) / the Beachline (SR 528) / Sea Ray Drive / Marine Harbor Drive, to include ways to allow full-access at Sea Ray Drive/Marine Harbor Drive, to reduce or eliminate the need for the U-turn located on SR 3 north of the Barge Canal.

STAFF RESPONSE, PUBLIC WORKS: Just north of the Barge canal, lies a traffic signal which does not lie at an intersection, but only accommodates U-turns, which result from restricted turning movements at one limited-access unsignalized intersection, just outside of the Study Area. The intersection of S.R. 3 and Sea Ray Drive (east of S.R. 3) / Marine Harbor Drive (west of S.R. 3) is not full access, with left turning movements prohibited. This intersection's turning restrictions are in place to reduce conflicts with the S.R. 3 / S.R. 528 interchange, which lies only 160 feet to south, and the Barge Canal bridge, which lies less than 300 feet to the north. Because these two intersections are so close in proximity, they cannot both be signalized, with the interchange's northern intersection signalized and the smaller Sea Ray Drive / Marine Harbor Drive / S.R. 3 intersection left unsignalized.

Currently, traffic traveling westbound on Sea Ray Drive cannot make a left onto North Courtenay Parkway (S.R. 3). Westbound vehicles must turn north on S.R. 3, cross the Barge Canal, and make a U-turn approximately 650 feet south of the intersection of Grant/Smith Road and S.R. 3. Both the U-turn signal and the intersection of Grant/Smith Road with S.R. 3 are signalized.

Additionally, vehicles headed west on Marine Harbor Drive (directly across S.R. 3 from Sea Ray Drive) are also not provided full access from S.R. 3 and similarly have to head north across the Barge Canal, to the U-turn, to then head south, crossing the Barge Canal once more to gain access to Marine Harbor Drive and the Port Authority's Marina and new residential units.

While the signalized U-turn allows vehicles that are exiting Sea Ray Drive to continue south on SR 3, it also allows vehicles traveling north on SR 3 to access Marine Harbor Drive. A large number of these vehicles are towing a boat trailer. The turning radius required by these vehicles to complete a U-turn maneuver cannot be accommodated further north at the intersection of SR 3 and Grant Road/Smith Road, necessitating the separate and specialized wide-radius U-turn signal that remains in place today. FDOT's recommendation for improvements at the Sea Ray Drive connection in the SR 528 widening project will determine the feasibility of removing this signal.



Utilities & Natural Resources

Recommendation 7: Brevard County should significantly improve the current Federal Emergency Management Agency (FEMA) stormwater model for North Merritt Island. This stormwater model could then be used to demonstrate whether proposed development would pose any adverse flooding impact on neighbors or streets.

STAFF RESPONSE, NATURAL RESOURCES MANAGEMENT: NMI Drainage Study Description, Cost Estimate, and Schedule (8/15/2018)

The current stormwater model for North Merritt Island is useful for approximating flood plain elevations and the areal extent of flooding; however, the model is based on large-scale overview data and lacks fine-scale site details and groundwater interactions with the surface water stormwater and wetland systems. The existing model is not an ideal diagnostic tool for determining the impacts of small changes to the NMI stormwater system, such as smaller residential and commercial development.

Including additional details from undeveloped areas and existing subdivision stormwater systems would significantly improve the precision of the model for commercial projects and small subdivisions. Additional surveying and data collection is necessary to include the details for smaller channels and culverts as well as flow obstructions. Groundwater modeling would account for the impacts of high and low water tables on the stormwater systems.

Additional precision in the model would also allow the county to plan and evaluate proposed improvements and select more cost-effective projects with better final results. Furthermore, updates to the current model could incorporate software updates that allow the floodplains of multiple events to be easily mapped and shown. The additional mapping tools would enable the County, residents, and developers to more easily visualize the extent of flooding under various rainfall scenarios and the impacts of projects on those extents.

Increasing the accuracy of the drainage model would also assist developers and their engineering consultants in enhancing subdivision and commercial development designs as it would allow them to make changes to their on-site stormwater management system to adequately accommodate the required stormwater runoff volume needed to eliminate additional drainage impacts to other properties within the basin. This advance effort would create the opportunity for the developers to address potential impacts from their projects early during plan formulation, ahead of full permitting, to avoid the need for adjustments and extensive modifications late in the design and permitting process. A more detailed drainage model for NMI would also provide documentation in the event of disputes regarding the impact of a project.

The estimated cost to upgrade the Federal Emergency Management Agency (FEMA) flood model to the level of detail needed for the 13,100 acre NMI drainage study area is \$450,000 (\$150,000 for surveying and mapping and \$300,000 for the stormwater modeling). Since the proposed services exceed \$200,000 per policy BCC-26 for Consultant's Competitive Negotiation Act (CCNA), Request for Qualifications (RFQ) will be required; whereas, the advertisement and negotiation process may take up to 6 months. The anticipated schedule to complete the survey inventory is 9-12 months, which could initiate as early as mid-September 2018, and the drainage model and final report will require an estimated additional 9 months for a total estimated schedule of 18-21 months for submittal of the final report and drainage model. The stormwater inventory surveying tasks will be conducted by Brevard County Surveying and Mapping to obtain additional infrastructure data not previously captured in the FEMA model. Information from existing and permitted as-built surveys for numerous subdivisions, parks, Road and Bridge roadway projects, and Stormwater Capital Improvement Projects (CIP) will be included within the stormwater inventory for the NMI drainage model. The upgraded two-dimensional surface and groundwater stormwater model would include various storm event simulations: the mean annual; 10 year, 24-hour; 25-year, 24-hour; and 100-year, 24-hour in addition to multiple scenarios for variable tailwater conditions within the Indian

River Lagoon and likewise, for seasonal high and low groundwater table elevation changes. The model would reflect future phased CIPs (i.e. the Hall Road Pump Station, the W. Hall Road Pipe Capacity Improvements, and the W. Crisafulli/Church Rd. Drainage Improvements) in addition to simulating the current conditions and stormwater infrastructure. The information and results would be documented in a final report and pertinent Geographic Information System (GIS) files. The flood plains for the various recurrence interval storms would be delineated by the drainage model results.

The use of the updated stormwater model to ensure development does not negatively impact other properties; infrastructure or the public would assist County staff with the application of existing county codes and ordinances and would assist developers with demonstrating compliance with existing county codes and ordinances. The use of the model for demonstration of project impacts could contribute to significantly improved stormwater management on North Merritt Island without requiring revisions to county ordinances. Therefore, the use of the model for development and project planning could commence once the upgraded model is reviewed and accepted by the County.

Recommendation 8: Brevard County should create a Special Area of Stormwater Concerns (SASC) within the boundary of the North Merritt Island Small Area Study to require development to meet specific stormwater standards tailored for addressing the drainage challenges and deficiencies within the SASC. These standards could include, but would not be limited to volume limitations, increased discharge rate limitations, higher degrees of stormwater treatment, improving downstream infrastructure, individual lot detention, and lot fill limitations.

STAFF RESPONSE, NATURAL RESOURCES MANAGEMENT: The existing stormwater model is more than adequate for broad area analysis. However, as noted in the staff response to Recommendation 1, additional detail is necessary to allow evaluation of smaller individual projects for impacts on surrounding properties. Adoption of tailored standards applied within a Special Area of Stormwater Concerns (SASC) with support of an updated model as recommended above, could aid in avoiding harmful cumulative flood, drainage and water quality impacts. Code or comprehensive plan changes could be implemented by the Board instead of creating a SASC for NMI, but those changes would affect areas outside the scope of this study.

Recommendation 9: Brevard County should require the repair of existing septic drain fields meet the State standard.

STAFF RESPONSE, DEPARTMENT OF HEALTH, ENVIRONMENTAL HEALTH SERVICES: The Florida Department of Health (DOH) issues repair permits in accordance with Chapter 64E-6, Florida Administrative Code and Florida Statutes. Depending on lot subdivision and original installation date, some systems can be repaired with drainfield installations meeting a six-inch separation from the water table in contrast to today's 24-inch separation requirement for new system installations. If directed by the Board, a stricter local ordinance could be pursued that would require repaired systems to meet a separation of the drainfield from the water table greater than 6 inches.

Recommendation 10: Brevard County should adopt a local ordinance requiring any newly constructed septic systems to reduce nitrogen by 65% minimum by utilizing a nitrogen-reducing system as a requirement for a construction permit.

STAFF RESPONSE, DEPARTMENT OF HEALTH, ENVIRONMENTAL HEALTH SERVICES: For new systems Brevard County can enact an ordinance requiring an engineer-designed performance-based treatment system (PBTS), NSF245-certified (nitrogen reducing) aerobic treatment system (ATU) or other nitrogen reducing technology that is approved for use in Florida. If the County were to enact such an ordinance, it is recommended that the ordinance clearly state the Florida Department of Health (DOH)-approved nitrogen-reducing options that meet the performance standards required by the ordinance. It is also recommended that the ordinance differentiate between nitrogen reduction from the unit installed, and nitrogen reduction in the drainfield. For example, a NSF 245-certified ATU, per certification test, can achieve at least a 50% nitrogen reduction. Together with

an estimated 30% nitrogen reduction of the remaining nitrogen in the drainfield, such a unit can be estimated to achieve a total nitrogen reduction of 65%. Please note it is Brevard County's responsibility to seek advice from their legal counsel, when determining the lawfulness of potential County-initiated ordinances. While not part of the recommendation, similar considerations would apply to more stringent local considerations for repairs (when not triggered under a periodic evaluation program) or modifications.

DOH is working to incorporate in-ground nitrogen-reducing biofilters, as evaluated in the FOSNRSS project, into the Florida Administrative Code (FAC), Chapter 64E-6. The Department plans to develop design and review criteria for in-tank nitrogen-removing biofilters -evaluated during FOSNRS to facilitate their permitting as performance based treatment systems as already allowed by Part IV of Chapter 64E-6 of the FAC to meet current State Standards.

Recommendation 11: Brevard County should continue to seek Hazard Mitigation Grant Funds to purchase flood-prone properties in North Merritt Island and use the drainage model to prioritize affected properties for potential acquisition.

STAFF RESPONSE, NATURAL RESOURCES MANAGEMENT: Hazard Mitigation Grants are highly competitive federal grants that require the County to document that the benefits of the project exceed the costs. The primary benefit from acquiring privately owned flood-prone property is the owner's avoidance of future flood damages. This must be documented with proof of prior flood damages. Often, property owners do not adequately document their damages, save their receipts, and share this private information with County staff. Staff developed an on-line survey for capturing flood damages and has promoted the survey in affected neighborhoods after storms for the last decade; however documentation of damages is still inadequate for many flood prone properties. Damage to public infrastructure and costs of emergency response also need to be documented. Brevard County offices should foster interagency collaboration prior to storm events to identify all information needs, both during and after an event, to support grant funding and damage reimbursement requests through state and federal agencies. This includes the dates and times of roadway closures, extent of flooding, depth of flooding, and other damages. Information should continue to be collected from affected residents via community outreach meetings, site visits, and web based surveys. Any agency on location should collect as much information as feasible on flooding extent, duration, and damages to assist in gathering sufficient documentation for the County to successfully complete for Hazard Mitigation Grants to acquire flood-prone properties and/or construct drainage improvements to reduce flood risk on NMI.

Recommendation 12: Brevard County should continue to seek opportunities for enhancements to stormwater storage and treatment in North Merritt Island, including the acquisition of sites and partnerships with other agencies.

STAFF RESPONSE, NATURAL RESOURCES MANAGEMENT:

West Crisafulli Road / Church Road Drainage Improvements: This watershed management project is intended to divert stormwater runoff from W. Crisafulli Rd southward towards Church St through a water quality treatment system on the Florida Inland Navigation District (FIND) Dredge Material Management Area (DMMA) BV-11 site. The system will discharge to an existing outfall into the Indian River Lagoon, to the west, to relieve recurring flooding problems on the west side of North Courtenay Parkway. The Natural Resources Management and Public Works Departments are contributing funds to this project. FIND has verbally agreed to a land use agreement allowing the County to use a portion of the referenced DMMA property. The Task Order by Mead and Hunt, Inc. has been executed and the engineering design is underway. Further coordination with FIND is expected to help in expediting the construction of the water quality treatment component of the improvements.

Hall Road Pump Station Project: The Hall Road Pump Station Project (also referenced as NASA Drainage Improvement) involves the installation of two 25,000 gallon per minute hydraulic,

electric pumps at the Mosquito Impoundment on Hall Road to alleviate the duration of recurring flooding in this area. Adding the flexibility to switch to diesel in the event of power outages during emergencies has also been included in the project. The bid documents and construction plans are finalized, and drainage easement acquisitions are nearing execution. The County expects to bid the project in summer 2019, and initiate construction in November 2019.

Pine Island Phase 3 Emergency Outfall Weir: This phase will include the installation of an emergency outfall weir in the northwest corner of the north detention system to redirect stormwater discharge to a secondary outfall to alleviate the burden on the Pine Island drainage ditch and improve gravity flow from the system. As implied, the new outfall weir will be used during heavy rain events, and the primary, existing outfall will be blocked temporarily to force water through the emergency weir. During normal operations, the main, existing outfall will be utilized to enhance water quality prior to discharging to the Indian River Lagoon.

Safety & Emergency Management

Recommendation 13: Brevard County Fire and Rescue should evaluate the potential for a more centrally located station, to be implemented when the building needs to be either renovated or reconstructed, to bring response time down.

STAFF RESPONSE, EMERGENCY MANAGEMENT: Brevard County Emergency Management reviews all plans annually to meet the Level of Service (LOS) standards, with key plans receiving additional State and/or Federal reviews on a pre-identified cycle. Brevard County Emergency Management continuously works to grow the existing volunteer program by identifying new partners to engage, seeking additional opportunities for volunteers to serve, and sharing that information with our local emergency management community.

ACHIEVEMENTS

During the course of the study, many of the original Citizen's Committee Recommendations have been achieved by various Brevard County Departments or the Board of County Commissioners, and those memorialized here.

Achievement 1: Brevard County should budget funding a manatee observation deck at Manatee Cove Park.

STAFF RESPONSE, PARKS & RECREATION: The Eagle Scout completed the manatee observation deck at Manatee Cove.

Achievement 2: Brevard County should complete the process of permitting the commercial outfitters for kayak and associated rentals.

STAFF RESPONSE, PARKS & RECREATION: On December 15, 2015, the Board of County Commissioners approved the Eco-Tour Commercial Permit Process, recommending two different permitting processes – a General Permit that will allow operation in 22 County Parks and a Restricted Use Permit with a lottery selection process offered for Manatee Cove Park and Pine Island Conservation Area, both within North Merritt Island.

Achievement 3: Brevard County should preserve and maintain the historic sites within the study area.

STAFF RESPONSE, ENVIRONMENTALLY ENDANGERED LANDS (EEL) PROGRAM: The Brevard County Historical Commission recognizes the John H. Sams Homestead, located at the Pine Island Conservation Area, within their Historical Landmark Guide. Educational Staff consists of one full time Sanctuary Steward and two part time naturalists. Volunteer workforce consists of 48 enlisted volunteers, 13 of which form the Board of the Pine Island Preservation Society, a 501 (c) (3) entity

designed to assist the educational and public outreach programs of the Central Region's Management and Education Center (Sams House).

The Environmentally Endangered Lands Program, which is overseen by Parks and Recreation, annually reviews and submits budget to the Brevard County Board of County Commissioners. The process proceeds on a timed schedule annually to meet BOCC requirements. Historical preservation is not a primary function of the EEL Program. The Program's primary function is the preservation of biodiversity. In some cases, as is the case with Sams House, the EEL Program acquires historical resources when purchasing conservation lands. In these situations, the Program will manage the historical resources as appropriate within the context of the site specific management plan.

Achievement 4: Brevard County should ask MIRA to include the NMI corridor, up to N. Tropical Trail in its jurisdiction.

STAFF RESPONSE, MIRA: The Merritt Island Redevelopment Agency (MIRA) completed a Redevelopment Plan Update in 2013, including a "Findings of Necessity" study to assess boundary expansion. As a result, the CRA's boundaries were expanded to include the Barge Canal/SR 528 corridor as a specific targeted area.

Due to the residential nature and lack of anticipated land use change of North Merritt Island north of the Barge Canal, inclusion of the NMI SR3 corridor was determined to be outside of the MIRA goals and objectives and the area was not recommended for inclusion within the CRA. CRA Master Plans are required to be updated every 5 to 10 years, but because stakeholders recommend that North Merritt Island maintain its rural character, future inclusion into MIRA is not likely.

Achievement 5: Brevard County should meet with the Legislative Delegation to re-institute the law that was repealed regarding septic inspection, Senate Bill 550.

STAFF RESPONSE, NATURAL RESOURCES MANAGEMENT: After careful consideration, the Brevard County Board of County Commission sent letters to our Legislators in November 2010 supporting efforts to delay or repeal the implementation of Senate Bill 550, in effect since June 4, 2010, noting the unnecessary and unfair burden on Brevard County citizens and encouraging the Florida Legislature to explore more reasonable solutions to address water quality. Recipients included Governor Charlie Crist, one Senator and the Senate President, five Representatives and the House Speaker-Designate, and the State Surgeon General. Ultimately, the requirements for septic inspection within Senate Bill 550 were repealed the following year.

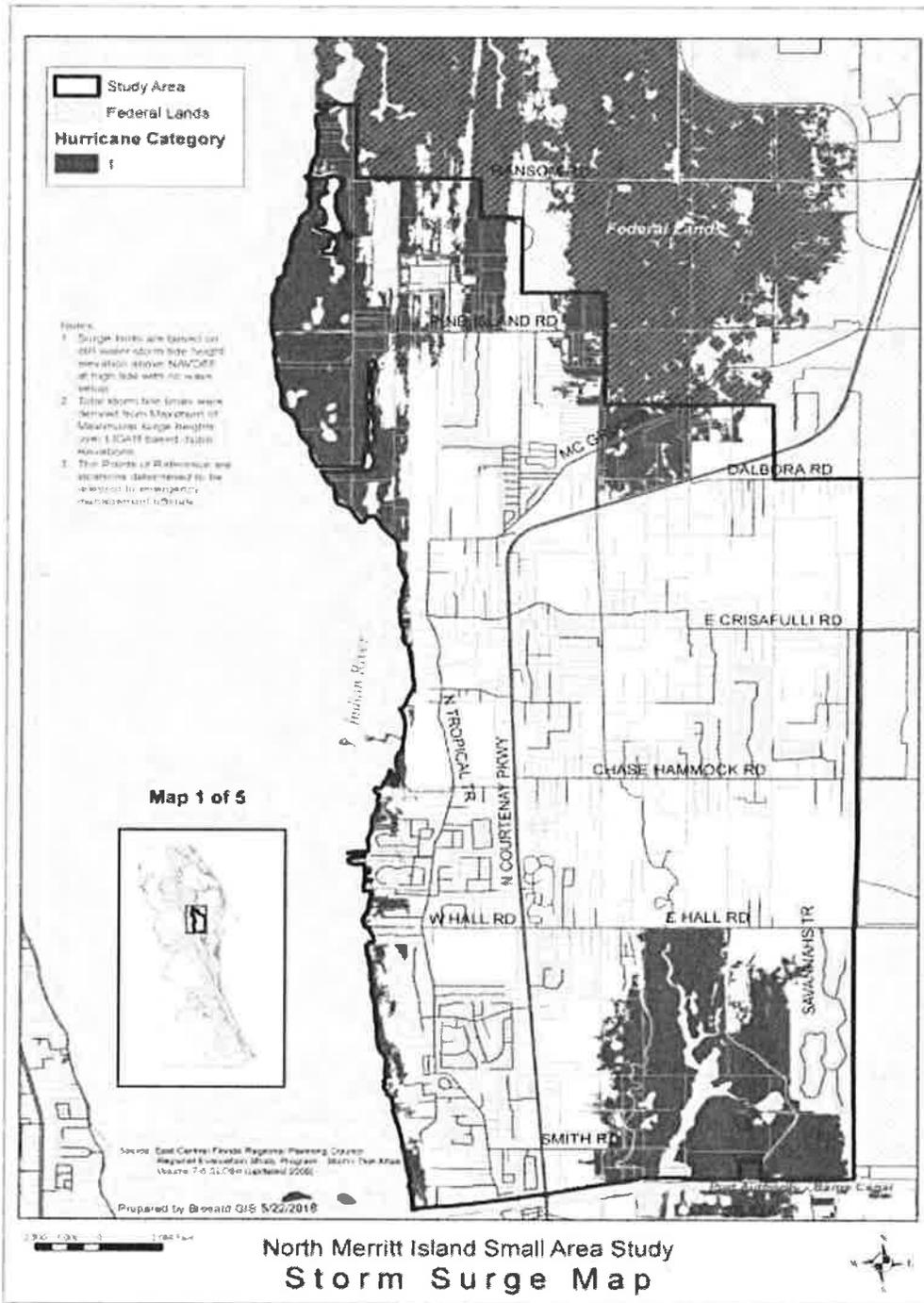
The Board of County Commissioners reviews legislative items and develops an annual Legislative Program. The 2016 Legislative Program was approved September 3, 2015 and includes the following priority related to septic systems: "Support revenue allocation for voluntary upgrade of existing onsite sewage treatment systems to Performance based Advanced Wastewater systems or connection to centralized sewer."

Achievement 6: The Small Area Study committee recommends to the Board of County Commissioners that the cargo rail will have a negative impact the Comprehensive Plan for NMI.

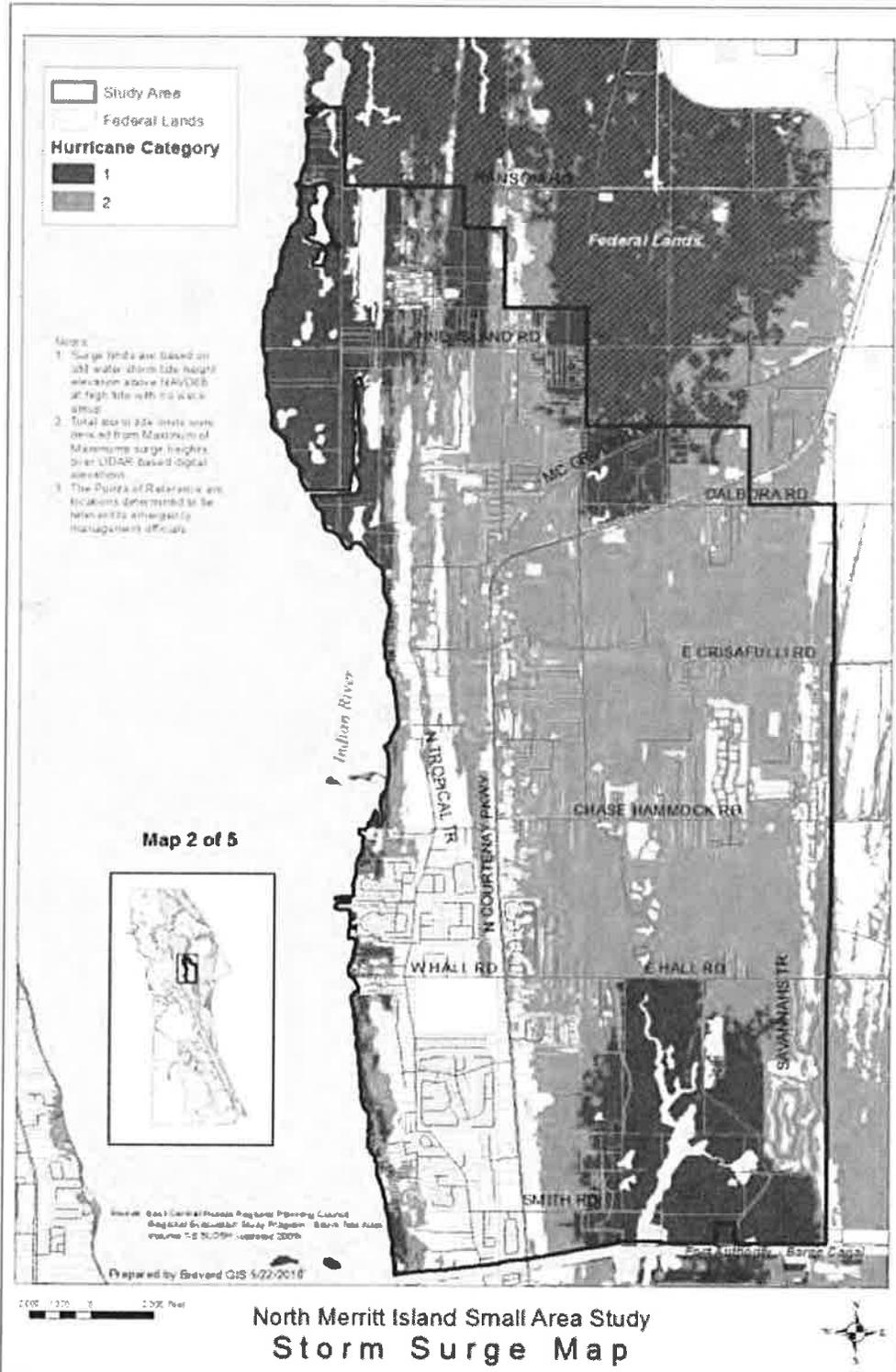
STAFF RESPONSE, COUNTY COMMISSION AND PORT AUTHORITY: On September 3, 2016, the Board of County Commissioners unanimously approved the adoption of a resolution opposing the planned Canaveral Port Authority (CPA) Cargo Rail Expansion Project's proposed route through North Merritt Island and urging CPA Commissioners to explore alternative routes. In January 2018, the Port Canaveral Commission elected to no longer pursue the mainline rail connection from the Port to the F.E.C. rail line along US-1. Subsequently, the application to the Lead Federal Agency, the Surface Transportation Board (STB) was cancelled.

APPENDICES

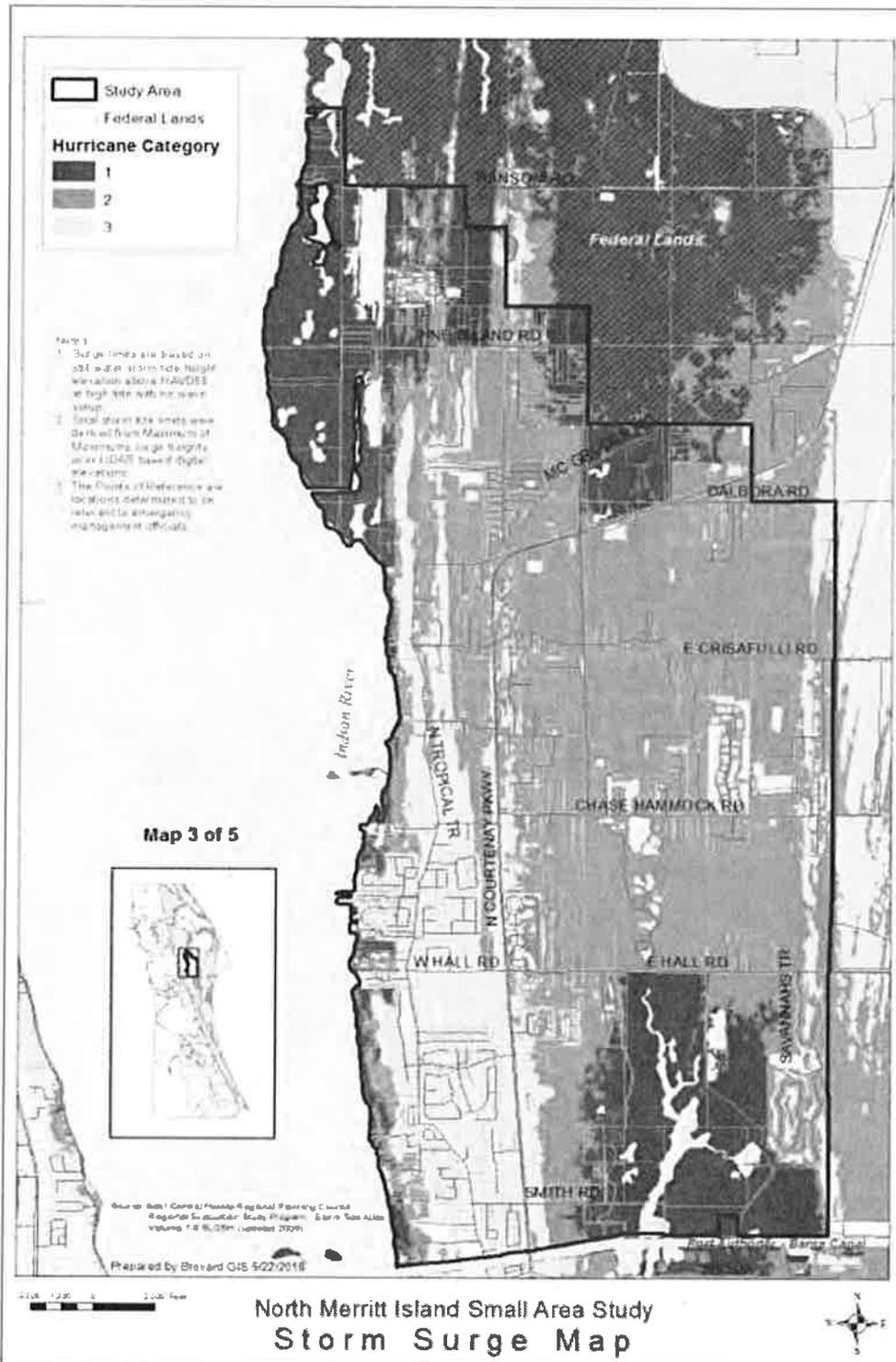
APPENDIX A



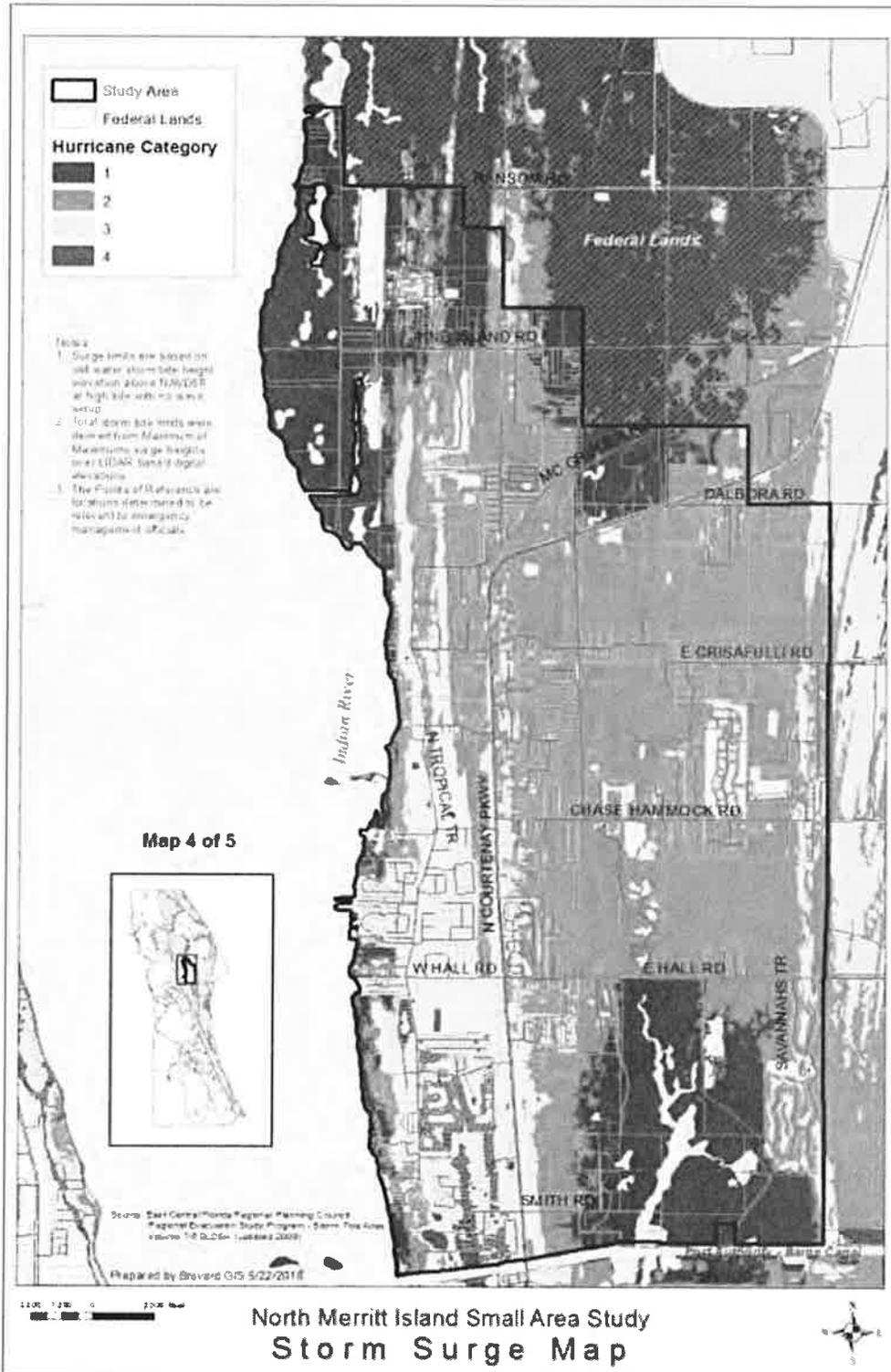
Map 18 Storm Surge Map Series 1 of 5



Map 19 Storm Surge Map Series 2 of 5

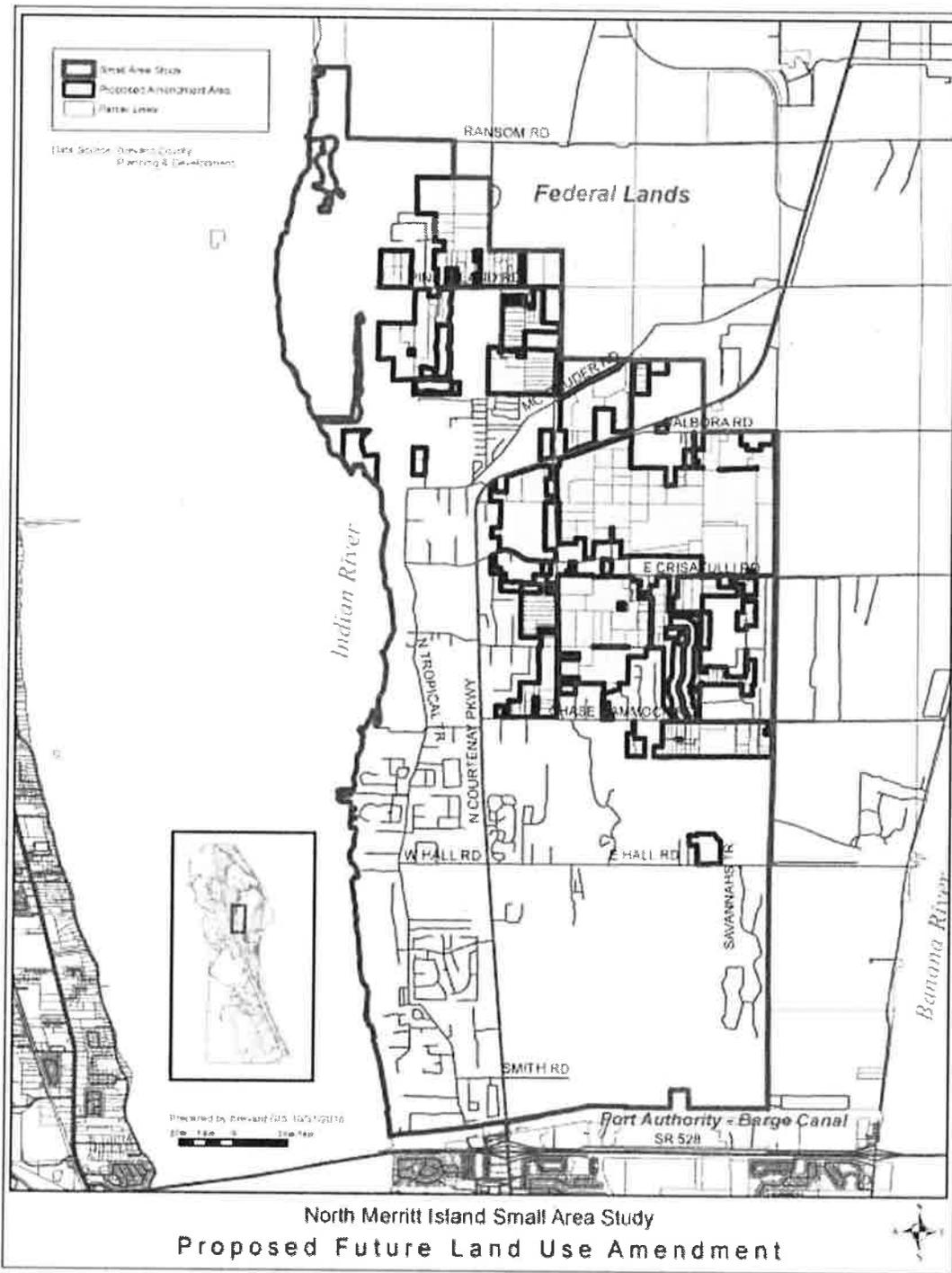


Map 24 Storm Surge Map Series 3 of 5



Map 21 Storm Surge Map Series 4 of 5

APPENDIX B



*THIS IS AN APPROXIMATION DUE TO ZONING CHANGES OCCURING AFTER MARCH 2018 AS NOTED IN TABLES 5 & 6.

Map 23 Proposed Future Land Use Amendment

J.2.

From: Bruce M

Sent: Thursday, August 1, 2019 11:58 AM

To: (D3.Commissioner@brevardcounty.us) <D3.Commissioner@brevardcounty.us>

Subject: FW: NMI Density to be discussed at CC next Tuesday

Hi Commissioner,

Not sure if I can make it on August 6th, but I do want you to know my opinion on this.

Limiting density is not the solution to the flooding and pollution problem, no matter where it. The solution is more specific regulations to address the issue of concern.

If the issue is flooding, then increase the amount of stormwater that is required to be stored on site.

If the issue is pollution, increase the treatment requirements for the on-site stormwater management systems.

Decreasing the density has more potential to INCREASE flooding and pollution because of the little regulations that would be applicable for the development of each individual lot.

Letting the uneducated masses dictate good practices doesn't seem like your usual method of handling things. Simply limiting density to resolve complex issues was a tool used when the comp plan was devised in the 80's, which has gotten us into this mess. I think we have all learned more in the last almost 40 years. Better regulation, planning, and technology are the real answer.

I suggest that a panel of the proper experts be assembled to come up with some real solutions.

Thank you for the opportunity to express my opinion.

Bruce A. Moia, P.E.

President, MBV Engineering, Inc.

1250 W. Eau Gallie Blvd., Unit L, Melbourne, FL 32935

P: 321.253.1510 C: 321.243.0583 F: 321.253.0911

Conference:218.895.1236 Passcode:723343

BruceM@mbveng.com

www.mbveng.com

J.2.

Brevard County Board of County Commissioners Meeting

August 6, 2019

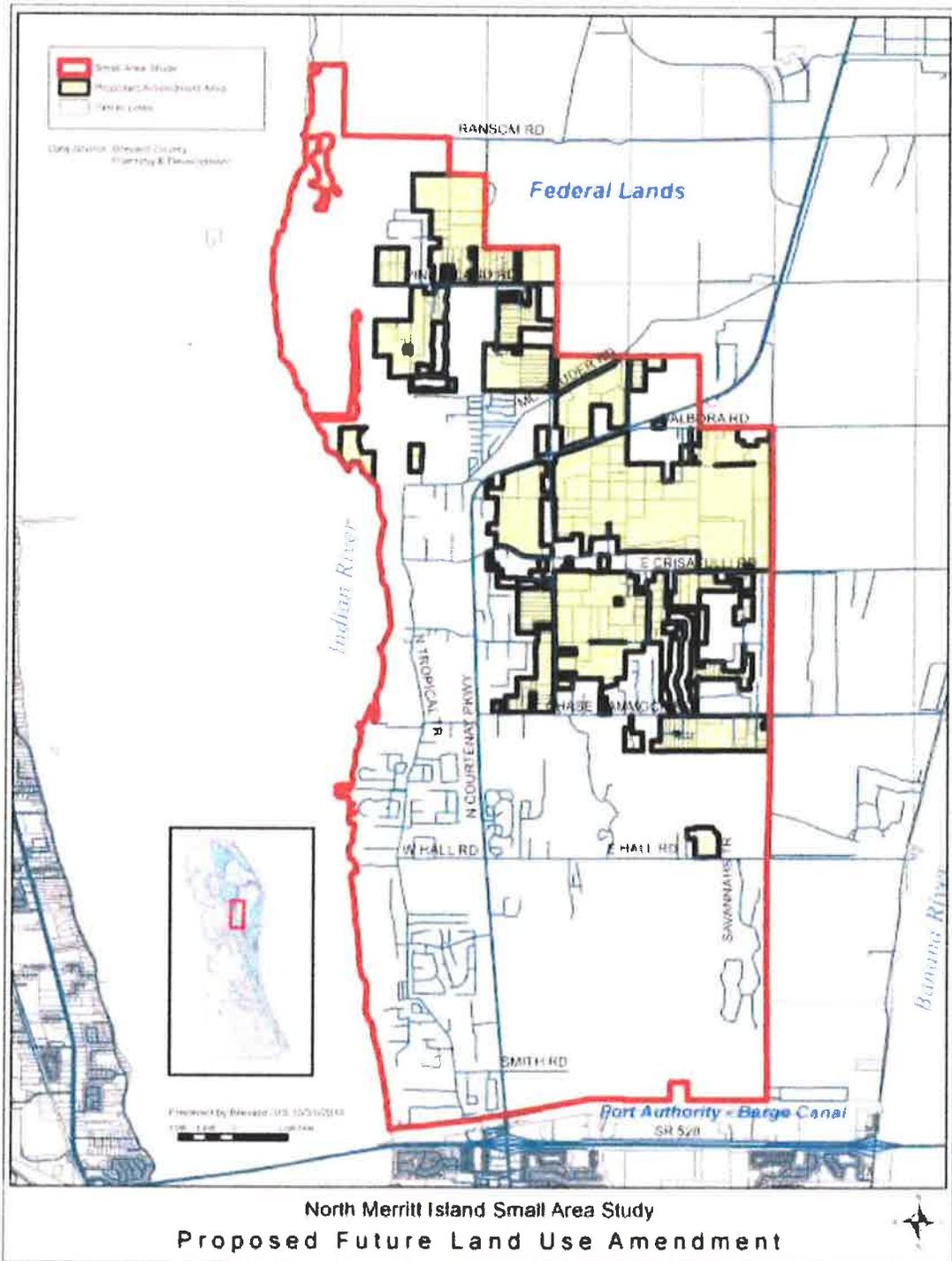
- PRESENTED ON BEHALF OF -

**Crisafulli Enterprises, Inc., RCB Family Trust,
Estelle K. Crisafulli as Trustee of the Estelle K. Crisafulli
Living Trust, Joseph Bud Crisafulli, Mary Carol Crisafulli,
Wayne Crisafulli, Chuck Crisafulli and 782, LLC**

**J.2. Accepting North Merritt Island
Small Area Study Density Recommendation, District 3**

KIMBERLY BONDER REZANKA, ESQ.
Cantwell & Goldman, P.A.
96 Willard Street, Suite 302
Cocoa, FL 32922

APPENDIX B



*THIS IS AN APPROXIMATION DUE TO ZONING CHANGES OCCURING AFTER MARCH 2018 AS NOTED IN TABLES 5 & 6.

Map 23 Proposed Future Land Use Amendment

CITIZEN'S COMMITTEE RECOMMENDATIONS

The following Recommendations have been grouped according to type within the following categories:

- Community & Quality of Life
- Planning & Land Use
- Transportation & Infrastructure
- Utilities & Natural Resources
- Safety & Emergency Management

The Recommendations below are not ranked in order of priority, but are numbered for reference purposes only. Recommendations #7, #8 and #3 were selected as the top three recommendations by the Citizen's Committee.

Community & Quality of Life

Recommendation 1: Brevard County should budget funding a community center at Mitchell Ellington Park for previously planned and designed site.

STAFF RESPONSE, PARKS & RECREATION: The Parks' bond referendum funding for the construction of this Community Center was defeated in 2010-11. There is no funding currently available for the center's construction and the required operation and maintenance. If directed by the Board, Parks staff could consider resubmitting the Community Center in the "Unfunded CIP" budget for FY2019-.

Recommendation 2: Brevard County in partnership with other agencies should purchase riverfront land across from the FIND site on the west side of NMI for a public park with boat launching access.

STAFF RESPONSE, PARKS & RECREATION: There is currently no funding available for the land acquisition and/or necessary operations and maintenance costs.

Planning & Land Use

Recommendation 3: For all parcels ≥ 2.5 acres in size with the Residential 1 (Res 1) Future Land Use designation and Agricultural Residential (AU) Zoning classification, Brevard County should amend the Future Land Use Map to Residential 1:2.5 (Res 1:2.5).

STAFF RESPONSE, PLANNING & DEVELOPMENT: If so directed by the Board of County Commissioners to implement this recommendation, County staff would initiate a large scale Comprehensive Plan Amendment (LSCPA) to modify the Future Land Use Map (FLUM) of the parcels of land greater than 2 ½ acres with a Future Land Use (FLU) designation of Residential 1 (RES 1) with a Zoning designation of Agricultural Residential (AU). This Future Land Use change from Residential 1 to Residential 1:2.5 (RES 1:2.5) would apply to 2,486.14 acres, which could potentially reduce the number of dwelling units that can be built in the Study Area by a maximum of 1,492 dwelling units.

2,486 acres @ 1 unit per acre = 2,486 dwelling units
 2,486 acres @ 1 unit per 2.5 acres = 994 dwelling units

 Potential Maximum Reduction = 1,492 dwelling units

A Future Land Use change is a large scale amendment which is typically processed via one of the two amendment cycles per year. The application period for the two amendment cycles close on June 30th and December 31st. The LSCPA process takes approximately 6 months to complete. Parcels proposed for Future Land Use designation amendment are depicted on the map found in **Appendix B.**



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**MINUTES OF THE MEETING OF THE BOARD OF COUNTY COMMISSIONERS
BREVARD COUNTY, FLORIDA**

5:00 PM

The Board of County Commissioners of Brevard County, Florida, met in regular session on November 1, 2018 at 5:00 PM in the Government Center Commission Room, Building C, 2725 Judge Fran Jamieson Way, Viera, Florida.

ITEM A. CALL TO ORDER

Attendee Name	Title	Status	Arrived
Rita Pritchett	Chair	Present	
Jim Barfield	Commissioner District 2	Present	
John Tobia	Commissioner District 3	Present	
Curt Smith	Commissioner District 4	Remote	
Kristine Isnardi	Vice Chair/Commissioner District 5	Present	

ZONING STATEMENT

The Board of County Commissioners acts as a Quasi-Judicial body when it hears requests for rezonings and Conditional Use Permits. Applicants must provide competent substantial evidence establishing facts, or expert witness testimony showing that the request meets the Zoning Code and the Comprehensive Plan criteria. Opponents must also testify as to facts, or provide expert testimony; whether they like, or dislike, a request is not competent evidence. The Board must then decide whether the evidence demonstrates consistency and compatibility with the Comprehensive Plan and the existing rules in the Zoning Ordinance, property adjacent to the property to be rezoned, and the actual development of the surrounding area. The Board cannot consider speculation, non-expert opinion testimony, or poll the audience by asking those in favor or opposed to stand up or raise their hands. If a Commissioner has had communications regarding a rezoning or Conditional Use Permit request before the Board, the Commissioner must disclose the subject of the communication and the identity of the person, group, or entity, with whom the communication took place before the Board, takes action on the request. Likewise, if a Commissioner has made a site visit, inspections, or investigation, the Commissioner must disclose that fact before the Board, takes action on the request. Each applicant is allowed a total of 15 minutes to present their request unless the time is extended by a majority vote of the Board. The applicant may reserve any portion of the 15 minutes of rebuttal. Other speakers are allowed five minutes to speak. Speakers may not pass their time to someone else in order to give that person more time to speak.

ITEM B., MOMENT OF SILENCE

Chair Pritchett called for a moment of silence.

ITEM C., PLEDGE OF ALLEGIANCE

Commissioner Isnardi led the assembly in the Pledge of Allegiance.

ITEM E.1., RESOLUTION, RE: PUERTO RICAN HERITAGE MONTH

Commissioner Barfield read aloud, and the Board adopted Resolution No. 18-177, recognizing November 2018 as Puerto Rican Heritage Month.

A representative expressed her appreciation for the Resolution.

RESULT: ADOPTED [UNANIMOUS]

MOVER: Jim Barfield, Commissioner District 2

SECONDER: Kristine Isnardi, Vice Chair/Commissioner District 5

AYES: Pritchett, Barfield, Tobia, Smith, Isnardi

Board to approve staff's recommendation. She noted she is going to submit something for the record to prove the impact fees were paid back in February.

Commissioner Barfield asked what the status is on this because it has been a long drawn out case with different issues.

Mr. Calkins explained on August 20, staff approved the second Site Plan; the Board authorized in the settlement that it would allow for two separate Site Plans, one addressing the deck and all the life safety improvements associated with it so the restaurant could open and have people utilize the deck; the second site plan was approved in August and contained the infrastructure, parking, and stormwater to support that expansion; and the Settlement Agreement gives him basically 12 months to complete the construction, which leaves 10 months left. He continue he believes there was a bond requirement that the County receive if by today; and they had not received it, but he believes it was being turned in today, he will have to ask Ms. Rezanka about it.

Commissioner Barfield asked if the Board is voting today to give them the impact fee exemption when and if they demolish these buildings.

Mr. Calkins responded that is correct. He noted basically they need to pull a permit for the demolition; and they would have to complete the demolition, complete the site plan construction, and whatever it indicated would take place in the area of the demolition.

Commissioner Barfield asked if it is normal procedure to do that and then come to the Board to get the exemption.

John Denninghoff, Assistant County Manager, explained in the site plan process the applicant, in phase one, did not identify the building being demolished; the impact fees where then assessed based on what was shown in the site plan; since then he has modified the site plan to show the demolition of one of the buildings that was already on the site; when he was appealing the impact fees previously, it came out that he was planning to demolish the building; had he shown that in the first site plan, staff would have assessed the impact fees as they would be paid at this point in time; therefore, in effect he will pay the lower impact fee which he would have paid had he shown the demolition in the original site plan. He noted what staff is asking him to do is complete the demolition as though it was part of phase one and when it is complete, assuming the Board approves it, he would be refunded that portion which he would not have been expected to pay had he done it in phase one; he explained he will pay the amount he was supposed to pay, but he will not have an extended or projected period of time of having the benefit of that building for an undefined period of time, either; they are protecting both the impact fee process, the site plan process, and also trying to be cooperative with the applicant in giving him every benefit of the doubt.

Chair Pritchett stated she remembers when this was heard last time, the net between how much the applicant had paid; he negotiated at the last meeting to demolish this building; and if the Board approves this, then he just needs to make sure the building is demolished within six months and everything is good.

Ms. Rezanka stated if the Board approves this then the County can refund the money once the demolition is complete and signed off of site plan two improvements. She noted he will not get the money back unless he finishes everything in Site Plan No. 2.

Chair Pritchett commented that is good, that is what the Board alluded to.

The Board authorized an impact fee refund of \$22,689 to Banana Riverfront, LLC for demolition of a 1,292 square foot accessory building at the Squid Lips restaurant in Cocoa Beach, if completed within six months from the date of approval.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Jim Barfield, Commissioner District 2
SECONDER:	Kristine Isnardi, Vice Chair/Commissioner District 5
AYES:	Pritchett, Barfield, Tobia, Smith, Isnardi

ITEM J.1., ACKNOWLEDGEMENT, RE: NORTH MERRITT ISLAND SMALL AREA STUDY (SAS)

Erin Sterk, Interim Planning and Zoning Manager, stated this is requesting the Board's acknowledgement of the North Merritt Island Small Area Study (SAS); they have a planner who will make a presentation and the Citizen Committee's Chair who would like to day a few words; and she will also introduce the item.

Darlene Hunt stated she is a 41-year resident of North Merritt Island and she owns 23 acres where they grow all kinds of things, citrus, mangos, papayas, jack fruit, and all kinds of stuff; she is just trying to emphasize the agricultural nature of the area; she thanked Commissioner Barfield for appointing the committee to study and recommend how the future of North Merritt Island should proceed; and she complimented the County staff and all the different Departments that made informational presentations and answered the committees questions which resulted in the Comprehensive document being presented tonight. She went on to say Ms. Sterk and John Denninghoff, Assistant County Manager, were both a great help to them. She stated a number of changes occurred during the last four years and one of the reasons this study has taken so much time was due to personnel changes and shortages; and she noted the County has an excellent staff now and the committee is really grateful for their service. She continued two significant issues were present when the study began but they

have already been decided and passed; one was a proposed cargo rail through North Merritt Island and another was the status of the Savannah's Golf Course, so that should show how far back the study goes; as for the study itself, staff made sure all meetings were announced in advance and opened to the general public; they were completely open in the direction their recommendations were taking; one recommendation now, which seems to be most controversial, has to do with the density of the agricultural properties; and the intent was not to make any changes to the use of any properties, the proposal was to maintain the one residential unit per 2.5 acres which is specified for agricultural properties, and merely changes the land use map to reflect that density. She advised the trend they have been seeing during the study period has been a rapid movement to increase their allowed density through rezoning requests; with exception of the Harvey Groves parcel, they have not actually seen development but rather zoning density changes; this trend has all the appearance of trying to get under the wire before this fact-filled, science-based, expert recommendation study was officially adopted and implemented; the other trend is the increased flooding on North Merritt Island; she stated they are all grateful to the County for its efforts to help alleviate flooding and the recently approved funding for a Comprehensive Modeling and mapping of the island; she noted the land elevation on this barrier island is only a half foot to about 10 feet above sea level; and the largest undeveloped portions are about three to four feet above sea level. She stated she trust that each parcel that is developed will be given very careful attention to the affect that it is going to have on the adjacent land owners and this rural barrier island for many, many years. She requested the Board's support for this well-prepared study and that it authorize staff to begin implementation of the recommendations of the North Merritt Island SAS.

Cheryl Campbell, Planning and Development, stated the North Merritt Island SAS was a process of gathering and analyzing data presenting the information to the citizens committee members at regularly held public meetings; the committee then made recommendations identifying and prioritizing the top three most important issues within this area; the study area is down by Kennedy Space Center to the north and east, the Barge Canal to the south, and the Indian River Lagoon (IRL) to the west; the study consist of five categories; the data in these sections were provided by multiple departments and State agencies; and the following are the 13 recommendations prioritizing the top three as Nos. 7, requesting significant improvement to be made to the current Federal Emergency Management Agency (FEMA) stormwater model for North Merritt Island. She advised on October 21, 2018, the Board authorized an upgrade of FEMA flood model for North Merritt Island; in addition to recommendation No. 7, No. 8 is requesting a special area of stormwater concerns be created to require development to meet specific stormwater standards tailored for addressing the drainage challenges and efficiencies within the SAS; once the FEMA flood model is complete and the data is analyzed, the Board may wish to consider a special area of stormwater concerns for this study area; and recommendation No. 3 is requesting a future land use change on all properties 2.5 acres or greater with agricultural zoning to be amended from a future land use designation of residential 1 (RES-1) to RES-1-2.5. She noted once the FEMA flood model is complete and the data is analyzed the Board may wish to consider further analysis of which properties are appropriate for the amendment. She went on to say this slide shows the 10 remaining recommendations from the study; the highlighted recommendations are the ones currently being worked on; and if the Board has any questions about the recommendations or if it wants any more information staff would be happy to help.

Kim Rezanka, Attorney with Law Firm of Cantwell and Goldman, stated this SAS has been a long process; staff and all those involved have taken a lot of time and energy to put into this; her entire reason for following along was waiting for the evidence to support recommendation No. 3; at one of the meeting, she thinks it was in April, she had asked staff and was told they were still working on it; it has been her position and her client's position that this has not come to fruition; there is lots of evidence and there is flooding; there have also been redevelopment trends in North Merritt Island that were completely ignored in this study; and the packet she provided to LPA, and has been provided to the Board, shows there have been eight rezonings in North Merritt Island since 2004. She noted only one has been started to be built, but that is the trend. She continued the reason is because that is not what those on the committee wanted to address; their whole purpose was to limit density; what Bruce Moia said at the LPA was reducing density is not necessarily going to reduce flooding; she agrees there are studies, there are problems, something needs to be done; and the compensatory storage, however that study needs to be done before this recommendation is adopted. She apologized to Commissioner Smith because she has a package for the Board. She went on to say the SAS is very important in all perspectives because it is a planning tool; there is nothing in the Comprehensive Plan, there is nothing in the Land Development Regulations, in Florida Statutes, or Florida Administrative Code that allows for SAS, it is simply something generated by planners as a tool; and that tool will be used for North Merritt Island until the end of time just like when they did the first rezoning with Egrets Landing with the 1992 SAS that was used against her client because it is of record and on the County's website even though it was never formally adopted. She mentioned that is of concern to her and why she believes it should not be formally adopted; and it needs more information or something needs to be done with recommendation No. 3. She advised the first documents in the packet are from the County's website; it shows the SASs; the SASs on the website are definitely used by opponents and those in favor of development or non-development; and she asked the Board to be very careful when adopting or recommending something that will be used in the future; even if the County never does future land use amendments, it will still be used on those 2,400 acres; and the next documents in the packet are from the website as well, and it shows when the SAS were adopted. She noted some were approved; she believes all of them at some point were approved, but she does not have all the minutes to show that; she had old Agenda Reports pulled, and there has been a change; but in 2008 there was a formal adoption by the County Commission of the East Merritt Island SAS. She advised the prior ones do not show an adoption, they show review of the recommendations; the November 2005, minutes show where the Commission approved the recommendations of the North Courtenay Parkway Study, but in March of 2005, the County Commission was only asked to consider; when that was presented to the Board, it was given five options, this Board has not really been given options because staff has not done that, but in the Minutes it shows staff did that; and she has all of those. She went on to say it has been stated over and over again that the homeowners association represents 8,000 people, so she pulled from their website that they have 400 members; at all of the meetings she has attended for the SAS, there were never more than 10 people in the audience; although it may have been publicly noticed she does not know where it was publicly noticed because she only knew about it because she asked staff; when she tried to find the minutes listed on Commissioner Barfield's website, some were very hard to find; and she also has in the packet she provided the only reference in the Florida Statutes to SAS which is 369.322 dealing with Wekiva Study Area. She announced she was provided a letter by Stuart Buchannan, who used to be with the County and started this SAS, and it was his opinion looking through all of this that the LPA should have voted on this, and they did not, so he believes it should go back to the LPA. She went on to say she

provided a list options because there are many; the Board could adopt it in full and move to recommend all of them; she has provided six options; personally she would like to see the LPA be able to make a recommendation on it because they were not given that opportunity; they wanted to and they felt their hands were tied; and she asked the Board to essentially look at recommendation No. 3 and not adopt it, perhaps defer it, at the very least the property of her client with the 300 acres be attached as an appendix to the SAS if the Board is to adopt it, and that they be excluded from the SAS if adopted, and she will address the future land use if and when the time comes.

Robert Delano stated his remarks, although short, are very heartfelt about this SAS; he is appealing to the Board's intellect and better judgment; he is asking the Board to please scrutinize the study very carefully; global warming, wetland destruction, human hazardous waste are all addressed in this study and are not to be trifled with; he has been coming to North Merritt Island and is a recent resident for a little more than a year; he has been coming to this area for more than 40 years to partake in the most wonderful fly fishing on the Mosquito Lagoon, Banana River, and Indian River; and he noted they are going to move and he is very sorry he moved to the area to begin with because he feels as if he has impacted this fragile area. He noted it is that fragile; the Board needs to address that and pay attention to the science; science does not have an agenda; in all indications it points to the fact that the County is losing this precious land; if people pay attention to science now, he remembers after Katrina when scientists were questioning whether they should even rebuild New Orleans because the town would be under water in 75 years; that 75 years is now 50 years; and he asked what is going to happen to this area in 50 years. He went on to say he is very sorry, but the Board Members' children understand the rudiments of science better than they do; the children listen and scrutinize and one of these days they will be voting; and he hopes whatever the Board does in the future that its children are going to be proud of what it has done.

Bud Crisafulli stated he wants to speak to North Merritt Island as he knows it, remembers it, and to give the Board some facts as it may not understand some of the things this area is faced with; North Merritt Island is drained to one central drainage system, Judson Canal, everything runs to Judson Canal; it goes from the Barge Canal all the way to Pine Island Road where it empties into the river north and south; east and west there are some ditches at Hull Road, Chase Hammock Road, and a couple other small roads in between that contribute to this drainage system; and the question about flooding is what is the Board's definition of flooding. He added when there is 15 inches of rain on a flat land like Merritt Island, the elevation five to six feet, or anywhere in the country where they have seen water three or four feet deep and he asked is flooding is considered a foot of water, six inches on the road, or is it three inches in someone's yard; he does not mean to belittle the fact that if it is in someone's home, it is terrible; he noted he had two family members that went through that and he would never want to see that again; but if there was never another home built on Merritt Island, it is not going to stop the flooding when those rainfall events continue to happen. He went on to say he appreciates the Board and County staff; it has taken steps to put in a pump system and design some things; he believes John Denninghoff, Assistant County Manager, has caught on to how the County has to pump ahead of the storms; this last rain event over the summer when there was four or five inches of rain in one afternoon, the water never got to the top of the canal because it was pumped ahead of time; that is an old grove owners trick to pump ahead of the storm and dry the ditches so they can hold the first six inches of rainfall; and he advised in the old days they used to have pumps running, and they do not have that anymore. He mentioned that is not really needed if there are pumps to move the water, that starts the vortex; he wants to address something that was not covered in the SAS that has to do with the drainage, Kennedy Space Center (KSC); KSC is doing great things, but they are also running water into the drainage system, unless that has changed just recently; it is amazing that there can be that many thousands of acres and Merritt Island cannot drain that way, but KSC can drain towards Merritt Island; that really needs to be addressed; he does not know if KSC was left out of the Study purposely or not, but there goes half of the density because that is 200,000 acres or so on the east side at the end of Hull Road, the end of Chase Hammock, the end of Crisafulli, and all that north section will never be developed; years ago when the properties were taken from families, it took away the density, and the land; and then in the 1980s there was a Comprehensive Plan which changed four units per acre to two units per acre. He noted 10 years ago when he sat on the North Merritt Island Committee, and they talked about changing to one unit per acre, he voted for it because he thought that is what North Merritt Island should look like; and now the Board is thinking one unit per 2.5 acres and he does not think that is fair, it is not right that the farmers and the people who have kept their land to make Merritt Island what it is, should be faced with this. He stated everybody is panicking over this; they do not have IRAs or retirement funds, they have what they are left with, their land, to pass on to their children; and he asked the Board to allow them to be able to do that. He continued he feels like the density was put in the SAS just to see if it would stick, kind of like the amendments. He commented he is passionate about North Merritt Island; and he thinks it is where everybody wants to be.

Phil Bennardo stated he is a Board Member with the North Merritt Island Homeowners Association; as a resident he would recommend the SAS be accepted and approved; the study provides recommendations but it also provides good guidelines and a useful tool for the Board to use when looking at future rezoning request that affect Merritt Island; North Merritt Island is facing a period of every increasing growth and density increases; and he believes all future rezoning requests that increase density, the Board should take into account the information provided in this SAS. He noted the study addresses things like flooding, stormwater management, infrastructure, schools, traffic, environmental concerns, and other things; approval of rezoning request that increase density without full information is really contributing to what he believes is an accumulative problem; each new subdivision by itself is not going to break the infrastructure or completely destroy the environment; each traffic study is in a vacuum, the effects of flooding, they are considered individually; but to take numerous rezoning requests, people can see they have a serious combined effect on the issues that are being addressed in the SAS; and he thinks if the Board keeps approving all this density it will be a disaster waiting to happen. He noted suddenly there is another major fish kill or red tide in the Lagoon; traffic jams over the barge canal which was changed to four lanes several years ago, there are existing homes that never flooded and now they flood on a regular basis, and overcrowded schools, it just goes on and on; he believes the recommendations in this study can help keep the effects of future rezoning requests, at least in the proper perspective; he asked that the SAS be accepted and that no property owner be exempt from this study; he noted uncontrolled growth is not only bad for the residents of North Merritt Island, but it is bad for the County as well because the County is going to have to play catch up in resolving problems that could have been avoided or minimized by following some of the study's recommendations. He stated maybe if County starts addressing traffic studies before they become critical, or expand to build new schools to avoid restricting and bussing, addressing environmental issues before

they become serious, plan ahead with regards to flooding and stormwater management; he stated he thinks looking at that study, it alerts people to a lot of those problems; planning ahead and avoiding problems he believes is always the most cost effective approach; and this SAS can be very useful in helping to do this. He request the SAS be adopted and put into use now, and if it needs updated it can be done in the future; to keep kicking the can down the road at some point the County will have to pay the price; and down the road it will be more costly.

Sarah Hodge stated she has had flooding where she lost over 100 trees, and her road was under water for over two months; they plant and get flooded again because of the new growth; and she wants to support this SAS.

Jack Ratterman stated he has lived on Merritt Island for 61 years and he asked that the Board please adopt this SAS. He stated notice was given in the paper and through Courtenay notes; Courtney Notes is mailed to every resident on North Merritt Island at least four time per year; her applicant could have been a member of the SAS group; he is sure if he wanted to be on that study, the District 2 Commissioner, could have found a seat for him; therefore, he is sure he could have sat in on that, but he never saw him there. He went on to say he has thought about this all day; it really bothers him because he is fearful the Board has already made up its mind; he would venture to say the applicant has probably already contacted half of the Board; he noted he is there to try to get the Board to change its mind which is kind of like going up a mountain; sometimes people have to think of things differently; therefore, he is asking the Board to help the applicant from making a mistake in requesting the over-density. He mentioned if not, the applicant is going to be responsible for the things that are going to happen; first he will crush the rural community, people live in North Merritt Island because it is a rural area with farms, agriculture and acres of land where people do not have to see their neighbors; the applicant will also be responsible for increased traffic; there will be safety issues caused by increased traffic and increased population; there will be crowded schools that have not been adjusted to; and then once the subdivision is built up on a five or six foot plain, and claim that the water is all going to stay there, well the applicant will be responsible for that flooding too. He stated he knows the applicant has lived in North Merritt Island for a long time, as other grove people have too; he asked the Board to do the best thing for them and not let them make the mistake of having over-crowding, and the density become an issue down the road. He asked the Board to approve the SAS especially with recommendation No. 3.

Chair Pritchett explained this is just an acknowledgement of the study; it really was not on the Agenda to approve or disapprove it.

Nancy Minerva stated she is in support of what her many neighbors have said, that the SAS has been worked on for a long time with good intentions, to give the Board good information it can use to guide the decisions it makes; that is really important because the Board has a lot to do; she tried to read the report several times and has spent hours looking through it; she thinks it is very important for the Board to use the guidance in the SAS whether it is approved or acknowledged; she is asking the Board to consult the SAS in its entirety when it is making all the decisions; and she noted although Ms. Rezanka mentioned there are only 400 members of the North Merritt Island Homeowners Association, she does work with the membership and there are over 500. She went on to say the Board knows in the past there have been rooms full of people representing North Merritt Island so there is a lot of people who live there and support this; she understands that development is the way things are going and that it is absolutely important, but as the residents have said, please make it the density that is appropriate and limited so those people who live in North Merritt Island have a quality of life; and she explained she knows each Commissioner has a separate District but they are the Board of County Commissioners and she asked that they represent the people of North Merritt Island.

Chris Minerva stated he understands the Board understands all the issues involved with North Merritt Island; regardless of the flooding, the traffic, the congestion, this study was inclusive of all existing properties with the study's boundaries; this included the 300 or so acres that Ms. Rezanka represents; and he asked if they are exempt from the study then why not everyone else. He continued maybe they were grand-fathered in, but then Mr. Dimenna completed his before it happened and they did not; he thanked the Board for acknowledging the SAS; and he commented he would appreciate the Board accepting it as it is.

Mary Sphar stated she has been following this process for quite a while; this has been going on for four years; over four years ago the SAS was authorized; now the Board has the opportunity to acknowledge this study which was very carefully done and not only acknowledge it but provided direction regarding implementing the recommendation; and she urged the Board to start the process for Recommendation No. 3, the right sizing amendment and get it moving tonight. She went on to say what that would mean is to give staff direction to proceed in preparing a Comprehensive Plan Amendment; this is a long process that would only make sense to not exempt certain families properties; they will have all the chance they want once the Board goes through the transmittal and adoption hearings for the Comprehensive Plan Amendments; she does not believe this is the right time to even consider exempting families; but she asked that the Board please start the process immediately as it has been over four years. She continued she would like the Board to get going on Recommendation No. 8 which is the special area of stormwater concern because the day after election day will mark four years since the Commission was authorized to bring back a report in draft ordinance form which would be an ordinance for a special area of stormwater concern for North Merritt Island; four years is a long time to wait, it is a long time for the residents to suffer unnecessarily because some of the flooding concerns were not addressed as they would have been had there been a Special Area Stormwater ordinance; and before what was authorized to come back as special area stormwater area study would have addressed the flood plain management, the cup for cup requirement and the stormwater volumes which addresses the flooding; she believes a lot of progress has been made on the septic tanks; and she expressed her appreciation for that. She asked the Board to please take those steps; she would hate to see this sit on the back burner or fall into a black hole and in four years nothing is done; she thinks the Board needs to authorize staff to start the comprehensive Plan Process about Florida Right Sizing Amendment; at a later date it can address certain families at their requests; and she asked for a fire to be lit under the stormwater staff to let them start the special area of stormwater concern.

John Schantzen stated he has been through flooding events on Pine Island Road in North Merritt Island; not his property because he is on one of the higher roads; his neighbor had to move his horses down to his property because they were belly deep in water; in the last year the density in North Merritt Island by zoning requests has

increased exponentially over what it has been in past years; and he believes it is because people are trying to get ahead of this study. He noted he was a member of this study and he had no agenda while he was on this study; he can see what is happening and he believes it is going to get worse; right now County employees are talking to people who have had multiple flooding events in their homes and asking them to sell out; that is exactly what happened in Houston, they lost complete communities in flood plains; and he believes that is going to happen here as well because the older homes are not built to this standard that new places are built to. He continued they are building retention but those retention ponds are connected to the water aquifer and the water level; he noted water seeks its own level, it may hold it for a little bit, but it is sinking into the ground and raising all of the water levels around it; and the older homes are then being flooded. He quoted Albert Einstein, "If you keep doing what you're doing and expect different results, it's insanity."

Commissioner Tobia stated he appreciates all the work the citizen volunteers contributed to this study, he can tell a lot of time, effort, and care went into this; some of the recommendations require funds the County does not have; depending how Amendment 1 turns out, there may not be any funds in the foreseeable future; and some of the recommendations do not require funds. He went on to say for the past two years he has listened to the people of North Merritt Island and Commissioner Barfield advocate for solutions to the problems that plague their community; this may surprise many, but he has taken this to heart; he does not believe the people of North Merritt Island are lying when they are spending their Thursday nights at the meetings pleading for the Board to understand the issues; he certainly does not think they are lying when they are spending four years to help draft this document; and he thinks it goes without say that he has complete trust in Commissioner Barfield's knowledge of his District. He noted it was Commissioner Smith who opened his eyes at the last meeting when he pointed out that Commissioner Barfield is pretty much equivalent to the Mayor of Merritt Island. He continued what people do not understand is that the Zoning is the trees and Recommendation No. 3 is the forest; for him this is not about being for or against development, it is about the Board not sticking its heads in the sand and pretending there are no serious problems with the County's current map; this recommendation only applies to properties on Agricultural Zoning of two and half acres or more, so it does not take away any rights of the properties owners and what they can legally do right now; he feels very comfortable not only acknowledging receipt of Recommendation No. 3, but beginning to act on it; and after discussion he would like to make a motion to direct staff to initiate a Large Scale Comprehensive Plan Amendment to consider modifying the future land use map for parcels of land greater than or equivalent to two and half acres with a future land use designation of Res 1 and a zoning designation of AU to a future land use designation of RES 1 to 2.5 acres as suggested in the SAS.

Commissioner Smith stated the four years he has been on the Board this has been an ongoing conversation of the people who live on Merritt Island and the developers that want to develop the area; and he thinks it is time for the study to be done so the Board can put all these people in a position where they can make decisions that work for everyone.

Chair Pritchett stated she went through each Item; she agrees with Commissioner Tobia that there are some recommendations that will cost funds from the General Fund that the County does not have right now, like the firehouse; she thinks Recommendation No. 7 was just approved by the Board to move forward with the study, as far as the stormwater model; she does not think Recommendation No. 8 can be done until the County receives something back from Recommendation No. 7; and she asked if that was correct.

John Denninghoff, Assistant County Manager, stated Chair Pritchett is correct; they have begun the process for Recommendation No.7 and with the Board authorization they have started the surveying; they are soon to start the process to select a consulting engineer to do the storm modeling for North Merritt Island; this will become the backbone of most any development considerations with regard to impacts to flood waters that might be generated as a result of that development, not only identify it but also to identify the severity of it, if any; No. 8 is a special area of stormwater concern, that is something that can be developed or could be developed; it is ordinarily a step up in the type of stormwater standards that would have to be adhered to for any future development; for example currently the County has to match 25 year 24 hour storm discharge rates associated with any new development; they could have to meet the discharge quantity as well and that is a significant step upwards in the standard; and they could also change the stormwater storm model frequency and duration requirement that may be required, however the special area of concern, would establish criteria for development. He went on to say the model they are trying to develop will actually identify the impact of any development that takes place based on whatever the criteria is that they would have to meet; and there are really two sides of the same coin, one gives the tools to do what needs to be done to meet what is on the next one. He stated speaking as an engineer and someone who tries to deal with the flooding on North Merritt Island though he does not live there, he is excited that the study is on the horizon and they are getting ready to start it; and the SAS is going to give them the tools they need to be able to really make science based decisions.

Chair Pritchett stated her main concern she believes she is hearing from the residents has a lot to do with the flooding, and with the population control of trying to get on and off the roads for evacuation; she is all on board still for No 7, the County is getting that study done and they have approved \$450,000 towards it; she believes Recommendation No 8 should follow after that; this is the first she has seen of the SAS and it is good, but she is not sure where she will be with it, when they start gathering all the information; Recommendation No. 3 she is not ready for yet, she is going to need more information coming in; she wants proof that it will not cause flooding before she takes away anyone's property rights because one per acre sounds reasonable to her; and if it needs to be less density than that then she is going to need that information to be able to vote on that and be able to have a good conscience when she sleeps at night. She continued she thinks probably the best thing to do is allow the LPA look at it and come back with recommendations as far as No. 3, so the Board has a little more information and education before making such a large decision; not that it might not be the right thing, she does not know; she was planning on acknowledging this tonight and listening to information without getting ahead; and she noted Commissioner Barfield sold her on No. 7, but she has not had time to get there on the rest of these items yet.

Commissioner Barfield acknowledged the people who were on the study. He stated living on Merritt Island and being actively involved the past four years with all the issues on North Merritt Island, this SAS is very important; his concern about Recommendation No. 3 is if it is one to an acre or one to 2.5 acres, how does one know what is right; it could be one to 5 acres or one to 7 acres, how will the density requirement be known until the study is

completed to show what the impact will be; it is not just the impact on that area, this study is going to show the impact downstream for everyone; he thinks that is so much more important; and he does not want to limit the Board to come up with this. He mentioned this is a science based method of identifying how to adjust the density and how to control the drainage and retention; and it drives everything else home; No. 7 they are doing, and Recommendation No. 8 and Recommendation No. 11, all of those recommendations are tied together directly; and he loves this plan. He noted he can see the details going in and what a lot of the aspects are of this; but he wants to carry this a step further and have the Board make decisions based on the science not just saying what it thinks it should be; he stated maybe the Board needs to look at other issues in this, not just agriculture; they are already making a lot of changes, and he knows the County has done some on the drainage and the ditches; a lot of things are in progress; there is another crew coming to the area to work the ditches; and he really does not want to tie it down to No. 3 yet. He stated he understands exactly where people are coming from but he wants to make sure it is right, he does not want to do something that is not right and down the road find out it is not right.

Commissioner Isnardi asked how long the drainage study will take once it gets started.

Frank Abbate, County Manager, stated 18 to 21 months.

Commissioner Isnardi stated Chair Pritchett took the words out of her mouth; she does not know how the Board justifies reducing the density to such a point that is requiring more than have the density without the drainage study because she is all on board; although the Board does not always make decisions that the people agree with, she is all for addressing the drainage and stormwater issues on MI; she thinks that is the Board's responsibility no matter whose District it is in; she would beg to say that a lot more of the Board is scientific than what they are given credit for; she has not spoken with any of the Crisafulli people, so that was probably a remark that was not necessary; and she also agrees with Commissioner Barfield and she is glad he acknowledged that these are areas that need to be justifiably set before changing long term comprehensive plan because they take a long time to change and a long time to undo. She went on to say in a perfect world, there would not be other homes built on MI and she is sure everyone would want that, but at the same time, if the Board is being responsible and addressing the stormwater issues that have been plaguing the area for many years, then it is a 100 percent win, win all around. She noted she wants to make sure this is done responsibly and not just a knee jerk reaction because people do not want development and she is in support of the Board not jumping the gun and modifying the density so quickly.

Commissioner Tobia stated he voted against a septic tank moratorium that included Merritt Island; he argued at the time, that the Board should wait for more evidence; he noted he was wrong, the Board received the evidence and it showed exactly what the people were saying; he fears that he would be making another mistake; the Board is looking at a study that is going to come down the road in 18 to 21 months; and he inquired how long it would take to do a Comprehensive Plan amendment.

Ms. Sterk stated a traditional Large Scale Comprehensive Plan amendment takes six to eight months; it goes through two public hearing processes and then goes to State agencies for review; similar land use changes resulting from SAS have included additional periods of public meetings, workshops, and a variety of processes, but there have been many more opportunities directed by the Board for the public to be able to participate in the evaluation of the properties; therefore, it could take longer.

Commissioner Tobia asked if the Board were to wait for that study and then the science came back positively that it was the right direction to go, is that another 8 months.

Ms. Sterk stated she would average something like this would take a year.

Commissioner Tobia inquired if that is a year on top of the 21 months.

Ms. Sterk replied affirmatively.

Commissioner Tobia noted in other words these flooding concerns, before the Board even begins to deal with them, could be potentially three years down the road.

Ms. Sterk responded affirmatively.

Commissioner Tobia stated he did not realize his motion was this important until he heard those numbers; the wait has been long enough, the people put in the time, and he thinks by just acknowledging the study, the Board is saying thanks for the work but it really is not going to do a darn thing about it; as the individual who has stood up and said yes over and over again, and that is looking at this as quasi-judicial which is completely different than looking at it systemically, he is not willing to stick his head in the sand for the next three years; he is sorry it cannot happen any sooner, but he would like to continue with that motion so the Board can have something ready in eight to 12 months when the science comes back, because it can always be amended; and if the motion does not get a second he fully understands it, but he wants to acknowledge the time and the effort. He noted many of the Board's decisions are not made as people think it should, but it does listen and he would hope to get a second so the County can address the people's concerns today instead of three years down the road, which in his opinion is far too long.

Motion failed due to lack of a second.

Commissioner Isnardi stated she does not think anyone on the Board talked about scrapping the entire plan; she wants to move forward with the stormwater study; she wants to address the stormwater problem; her only concern is the change of the density and that can always be done as the end result of everything else; she is not sure how that is saying the Board is not progressing or moving forward, or doing things that address the issues in Merritt Island, unless she is missing something; and she does not mean to be sarcastic but to imply that the Board does not want to do anything is just incorrect.

Commissioner Smith mentioned as the plan goes forward and is designed, he thinks the Board needs to make particular attention to the intersection of 528 and State Road 3 because with the development that could possibly occur in that area, he thinks the Florida Department of Transportation (FDOT) is going to have to address that intersection and whether it needs to be upgraded or improved; and he believes that needs to be covered as well.

Chair Pritchett stated she agrees with Commissioner Smith; she does not know if what Commissioner Tobia said was fair, but she does understand his passion for what he believes in; she has watched him the past few years and she sees that he does stand strong on what he believes in; and she respects him for that. She noted her situation is she does not believe that the One to 2.5 is the right density; she does not know that one to one acre is not enough; she cannot vote on something she does not believe in or does not have enough information on; and until she is educated she cannot vote on a change in density.

Commissioner Barfield noted he takes serious what Commissioner Tobia just stated and there is no one on the Board who stuck their head in the sand on any of this; he knows he has not; recommendation No 12 says what was done, at West Crisafulli Road the drainage improvements at the intersection; they had added Hall Road pumps, they have done clean out of various different ditches, increased the West Hall Road pipe capacity improvements, which was just recently completed; he noted one of the first battles he had while on the Board was when the Port wanted to put a rail through North Merritt Island; he does not think this Board or a previous Board did not do anything, it was a 5:0 vote; and back then it was very rare to get a 5:0 vote in favor of opposing that. He continued he does not believe anyone has placed their head in the sand; the Board has done everything it said it would; look at the capital improvement plans, it always has something to do with North Merritt Island and the drainage issues, and that is why it is so important to get the study done; otherwise the Board is going to put a band-aid on this and then nothing will happen after that; the study will come in and show all these other issues and it will be said that it has been fixed; he wants it done right; and he asked if the rest of the Board wants to do it right. He stated he believes even after the first phase there will be some good understanding of where they are; the first phase is doing the surveys of all the drainage and every inch of North Merritt Island; from that information there should be some good information; and that is not going to be the whole study, but it will give a good indication of where things are.

Mr. Denninghoff noted staff will have some indication, but the engineering part of it will be what is critical to build off of, to spring board off of the survey.

Commissioner Barfield stated he is just real concerned that the County will go down this road and change just one thing with agriculture and all the other issued will be overlooked as far as drainage; this is a system, it is not one to one; staff is doing what it can on septic tanks; he reiterated he just wants to make sure it is being done right because two or three years down the road someone might say the County went one to every 2.5 acres when really it should have been one to seven acres or something different like that; it is not the same across the board; there needs to be a real understanding; and he believes the science must dictate what needs to be done.

Chair Pritchett stated Recommendation Nos. 9 and 10 have already been done; she thinks the Board will continue working hard getting Merritt Island straightened out; and she believes as long as this Board is here, it will continue to do so.

The Board acknowledged receipt of the North Merritt Island Small Scale Study; and directed staff to address Recommendation Nos. 3, 7, 8, and 11, as part of the approved North Merritt Island Drainage Study.

RESULT:	ADOPTED [4 TO 1]
MOVER:	Jim Barfield, Commissioner District 2
SECONDER:	Curt Smith, Commissioner District 4
AYES:	Rita Pritchett, Jim Barfield, Curt Smith, Kristine Isnardi
NAYS:	John Tobia

ITEM J.1., ACKNOWLEDGEMENT, RE: NORTH MERRITT ISLAND SMALL AREA STUDY (SAS) (CONTINUED)

Commissioner Barfield noted he has another Motion to make; he explained it is a two phase process to do this study; the first part is about \$150,000 which is funded; there is another \$300,000 that the County has not identified a funding source for; and he motioned that the County Manager, Frank Abbate, bring back monthly study updates to the Board as to how the study is going; identify a source for the \$300,000 funding in next year's budget for the stormwater modeling; and to bring the information back to the Board on November 13, 2018.

Chair Pritchett noted she thought the Board already did that.

Commissioner Barfield stated he does not think the funding was brought back.

Mr. Abbate stated he believes that will be \$150,000.

Commissioner Barfield advised this is the \$300,000, the County already has the \$150,000, and it needs another \$300,000.

Mr. Denninghoff explained the County has the first half of the stormwater engineering side of it done; out of the total of \$450,000, they have \$300,000 identified now.

**ADDENDUM TO BOARD OF COUNTY
COMMISSIONERS AGENDA ITEM J.1.
November 1, 2018**

**North Merritt Island Small Area Study (SAS) – Summary
of Local Planning Agency Meeting**

On October 22, 2018, the Local Planning Agency (LPA) acknowledged the North Merritt Island Small Area Study (SAS) and voiced concerns relating to the implementation of Recommendation 3. The concerns were implementing the density reductions in a broad brush manner and representation of large property owners on the Citizen's Committee and during the Citizen's Committee public meeting process. The purpose of this addendum is to provide the Board with information relating to the concerns raised by the LPA. The Board's acknowledgement of the SAS does not reduce the density on any property.

Recommendation 3: The Citizen's Committee proposes that for all parcels ≥ 2.5 acres in size with the Residential 1 (Res 1) Future Land Use designation and Agricultural Residential (AU) Zoning classification, Brevard County should amend the Future Land Use Map to Residential 1:2.5 (Res 1:2.5).

Implementing "broad brush" density reductions

If so directed by the Board of County Commissioners to implement the recommendation, County staff would initiate a Large Scale Comprehensive Plan Amendment (LSCPA) to modify the Future Land Use Map (FLUM). This FLUM change from RES 1 to RES 1:2.5 has the potential to reduce the number of dwelling units that can be built in The Study area by a maximum of 1,492 dwelling units.

The Local Planning Agency acknowledged the study, but voiced concerns about blanketly changing the FLUM in response to the Citizen's Committee's recommendation. During the LSCPA public hearing process, notice will be provided to property owners and a forum for participation and additional evaluation of the parcels included in the Comprehensive Plan amendment. The opportunity to include or remove properties from any potential Future Land Use designation change will come as a part of that subsequent LSCPA process, which could include workshops, coordination with property owners, and multiple public hearings.

Representation of large property owners

In addition to the "broad brush" density reduction the LPA was also concerned about large property owner representation through the SAS process. The Citizen's Committee was appointed in January of 2015 by the District 2 Commissioner and includes Darleen Hunt, Chair; John Schantzen, Vice Chair; Ted Balke; Jack Ratterman and Susan Smith. All Citizen's Committee members live within the study area, with one of the Committee members owning 20 acres. There are 4,146 parcels within the small area study boundary, of which 2.07% of the parcels are greater than 20 acres in size. The study area contains 10,857 acres and 50.54% of the acreage within the study is made up of parcels greater than 20 acres in size. All of the SAS meetings were open to the public and on numerous occasions representatives of small, medium and large property owners attended the public meetings.

Board Consideration

At the August 21, 2018 Board of County Commissioners regularly scheduled meeting, the Board initiated Recommendation 7 authorizing the upgrade of the Federal Emergency Management Agency (FEMA) – Flood Model for North Merritt Island. In addition, Recommendation 8 proposes that Brevard County should create a Special Area of Stormwater Concerns (SASC) within the study area to require development to meet specific stormwater standards tailored for addressing the drainage challenges

and deficiencies within the SASC. Since the FEMA stormwater modeling (Recommendation 7) is already underway and Recommendation 8 will further identify stormwater standards, the Board may wish to consider these additional details and information on the specifics of the flood sensitive areas of North Merritt Island as part of the implementation of Recommendation 3.

Changes to Small Area Study report since LPA Meeting:

- Revisions to Staff Response to Recommendation 12 – status of stormwater projects

NORTH MERRITT ISLAND DENSITY COMPARISON CHART

PLAT NAME/OWNER	PLAT BOOK/ PAGE	TOTAL ACREAGE	TOTAL LOTS	LOT SIZES	DENSITY (upa)	ZONING	FLUM	YEAR
Chase Hammock Lakes	50/43	122.71	61	1 acre	0.50	AU	RES 1	
Citrus Isle	41/48	19.83	51	1/4 to 1/3 ac	2.57	EU-2	RES 4	
Citrus River Groves 1-4	25/133, 28/89,	69.81	94	1/2+/- ac	1.35	SR	RES 4	
Crisafulli Townhomes		12.85	48		3.74	RA-2-4	CC, NC, RES 4	2017
Harvey's Groves/ Copp II, LLC		41.95	56		1.33	EU-2	RES 2	2016
The Groves	32/26	13.96	20	1/4 to 1/2 ac	1.43	RA-2-10 (4)	RES 2	
The Groves Phase 2	39/73	12.91	16	1/2 ac	1.24	SR	RES 2	
Indian Bay Phase 1	26/34	47.1	89	1/3 to 1/2 ac	1.89	EU-2	RES 4	
Indian Bay Phase 2/1	36/41	11.27	21	1/3 ac	1.86	EU-2	RES 4	
Indian Bay 2/2	36/81	30.78	37	1/3 ac	1.20	EU-2	RES 4	
Najjad, Inc.		26.11	40		1.59	EU	RES 2	2017
North Grove	36/82	20.65	41	1/3 ac	1.99	EU-2	RES 4	
Otter Trace	38/28	35.77	37	1/2 to 1-1/2 ac	1.03	SR	RES 1	
Savannahs PUD**	35/56	97	288	0.26-0.29 ac	2.97	PUD	RES 1	
Sun Island Lakes	Mobile Home Pk	71.35	298+/-		4.18	TR-3	RES 2	
Stone Lake Estates	43/33	31.45	20	0.50-0.53 ac	.93	SR	RES 1	
Sunset Lakes 1A	38/58	34.15	41	0.20 ac	1.20	PUD	RES 4	
Sunset Lakes 1B	39/21	21.76	61	0.20 ac	2.80	PUD	RES 4	
Sunset Lakes 2	41/14	14.07	45	0.20-0.28 ac	3.20	PUD	RES 4	
Sunset Lakes 4A	44/19	6.14	20	0.20-0.25 ac	3.26	PUD	RES 4	
Sunset Lakes 4B	44/22	5.04	16	0.20-0.31 ac	3.17	PUD	RES 4	
Sunset Lakes 5	44/93	7.37	26	0.14-0.17 ac	3.53	PUD	RES 4	
Sunset Lakes 6	45/41	8.98	32	0.13-0.15 ac	3.56	PUD	RES 4	
Sunset Lakes 7	46/1	28.21	39	0.14-0.29 ac	1.38	PUD	RES 4	
Sunset Lakes 8	46/43	12.28	31	0.17-0.30 ac	2.52	PUD	RES 4	
Sunset Lakes 9	47/26	29.33	44	0.17-0.19 ac	1.50	PUD	RES 4	
Sunset Lakes 11	50/27	4.37	5	0.51-0.71 ac	1.14	PUD	RES 4	
Egrets's Landing	Phase I & Phase 2	111.0	222	0.25 ac avg.	2.00	EU-2	RES 2	2014

**Excluding Public Golf Course Area

RESOLUTION NO. 18PZ00009

On motion by Commissioner Barfield, seconded by Commissioner Smith, the following resolution was adopted by a unanimous vote:

WHEREAS, HORIZON TITLE COMPANY, INC. - (Kim Rezanka) - requests a change of classification from AU (Agricultural Residential) to PUD (Planned Unit Development), on property described as: SEE ATTACHED

Section 36, Township 23 S, Range 36 E, and,

WHEREAS, a public hearing of the North Merritt Island Dependent Special District Board was advertised and held, as required by law, and after hearing all interested parties and considering the adjacent areas, the North Merritt Island Dependent Special District Board recommended that the application be denied; and,

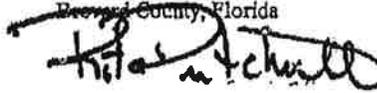
WHEREAS, the Planning and Zoning Board, after considering said application and the North Merritt Island Dependent Special District Board's recommendation, and hearing all interested parties, and after due and proper consideration having been given to the matter, recommended that the application should be approved with the condition that density is restricted to one unit per two acres, and that no townhouses be proposed; now therefore,

WHEREAS, the Board, after considering said application and the North Merritt Island Dependent Special District Board's and the Planning and Zoning Board's recommendations, and hearing all interested parties, and after due and proper consideration having been given to the matter, find that the application be Approved; now therefore,

BE IT RESOLVED by the Board of County Commissioners of Brevard County, Florida, that the requested change of classification from AU to PUD be APPROVED, and the Planning & Development Director, or designee, is hereby directed to make this change on the official zoning maps of Brevard County, Florida.

BE IT FURTHER RESOLVED that this resolution shall become effective as of May 24, 2018.

BOARD OF COUNTY COMMISSIONERS
Brevard County, Florida



by Rita Pritchett, Chair
Brevard County Commission

As approved by Brevard County Commission on May 24, 2018.



(NMI Hearing - April 12, 2018)
(P&Z Hearing - April 23, 2018)

Please note: A Conditional Use Permit will generally expire on the three year anniversary of its approval if the use is not established prior to that date. Conditional Use Permits for Towers and Antennas shall expire if a site plan for the tower is not submitted within one (1) year of approval or if construction does not commence within two years of approval. A PUD Preliminary Development Plan expires if a final development plan is not filed within three years.

THE GRANTING OF THIS ZONING DOES NOT GUARANTEE PHYSICAL DEVELOPMENT OF THE PROPERTY. AT THE TIME OF DEVELOPMENT, SAID DEVELOPMENT MUST BE IN ACCORDANCE WITH THE CRITERIA OF THE BREVARD COUNTY COMPREHENSIVE PLAN AND OTHER APPLICABLE LAWS AND ORDINANCES.

RESOLUTION NO. 18PZ00018

On motion by Commissioner Smith, seconded by Commissioner Barfield, the following resolution was adopted by a unanimous vote:

WHEREAS, CRISAFULLI ENTERPRISES, INC. has requested a change of zoning classification from AU (Agricultural Residential) to EU (Estate Use Residential), on property described as: SEE ATTACHED

Section 35, Township 23 S, Range 36 E, and,

WHEREAS, a public hearing of the North Merritt Island Dependent Special District Board was advertised and held, as required by law, and after hearing all interested parties and considering the adjacent areas, the North Merritt Island Dependent Special District Board recommended that the application be denied; and,

WHEREAS, a public hearing of the Planning and Zoning Board was advertised and held, as required by law, and after considering said application and the North Merritt Island Dependent Special District Board's recommendation, and hearing all interested parties, and after due and proper consideration having been given to the matter, recommended that the application should be approved with a BDP (Binding Development Plan) limiting density to a total of 34 units, and limiting ingress and egress to one access point; now therefore,

WHEREAS, the Board, after considering said application and the North Merritt Island Dependent Special District Board's and the Planning and Zoning Board's recommendations, and hearing all interested parties, and after due and proper consideration having been given to the matter, find that the application be Approved as recommended by the Planning and Zoning Board; now therefore,

BE IT RESOLVED by the Board of County Commissioners of Brevard County, Florida, that the requested change of classification from AU to EU be APPROVED, with a BDP recorded in ORB 8222, Pages 98 - 101, dated July 26, 2018, stipulating a conservation easement over the wetlands on the eastern portion of the property, limiting density to a maximum of 34 units, and limiting ingress and egress to one (1) access point. The Planning & Development Director, or designee, is hereby directed to make this change on the official zoning maps of Brevard County, Florida.

BE IT FURTHER RESOLVED that this resolution shall become effective as of July 26, 2018.

BOARD OF COUNTY COMMISSIONERS
Brevard County, Florida



by Rita Pritchett, Chair
Brevard County Commission

As approved by Brevard County Commission on July 24, 2018.

ATTEST



SCOTT ELLIS O'BRIEN
(SEAL)

(NMI Hearing - May 10, 2018)
(P&Z Hearing - May 21, 2018)
(BCC Zoning Hearing - May 24, 2018)

Please note: A Conditional Use Permit will generally expire on the three year anniversary of its approval if the use is not established prior to that date. Conditional Use Permits for Towers and Antennas shall expire if a site plan for the tower is not submitted within one (1) year of approval or if construction does not commence within two years of approval. A PUD Preliminary Development Plan expires if a final development plan is not filed within three years. THE GRANTING OF THIS ZONING DOES NOT GUARANTEE PHYSICAL DEVELOPMENT OF THE PROPERTY. AT THE TIME OF DEVELOPMENT, SAID DEVELOPMENT MUST BE IN ACCORDANCE WITH THE CRITERIA OF THE BREVARD COUNTY COMPREHENSIVE PLAN AND OTHER APPLICABLE LAWS AND ORDINANCES.

RESOLUTION NO. 18PZ00022

On motion by Commissioner Barfield, seconded by Commissioner Tobia, the following resolution was adopted by a 4:1 vote, with Commissioner Barfield voting nay:

WHEREAS, GRAND LAKE ESTATES, LLC has requested a change of zoning classification from RR-1 (Rural Residential) to SR (Suburban Residential), on property described as: SEE ATTACHED

Section 25, Township 23 S, Range 36 E, and,

WHEREAS, a public hearing of the North Merritt Island Dependent Special District Board was advertised and held, as required by law, and after hearing all interested parties and considering the adjacent areas, the North Merritt Island Dependent Special District Board recommended that the application be denied; and,

WHEREAS, a public hearing of the Planning and Zoning Board was advertised and held, as required by law, and after considering said application and the North Merritt Island Dependent Special District Board's recommendation, and hearing all interested parties, and after due and proper consideration having been given to the matter, recommended that the application should be approved with a BDP (Binding Development Plan) requiring the developer/owner to install higher-functioning septic systems at a minimum of 65% total nitrogen reduction, or per adoption of a septic system ordinance, whichever is more restrictive; now therefore,

WHEREAS, the Board, after considering said application and the North Merritt Island Dependent Special District Board's and the Planning and Zoning Board's recommendations, and hearing all interested parties, and after due and proper consideration having been given to the matter, find that the application be Approved as recommended by the Planning and Zoning Board; now therefore,

BE IT RESOLVED by the Board of County Commissioners of Brevard County, Florida, that the requested change of classification from RR-1 to SR be APPROVED, with a BDP recorded in ORB 8239, Pages 1713 - 1718, dated August 16, 2018, requiring the developer/owner to install higher-functioning septic systems at a minimum of 65% total nitrogen reduction, or per adoption of a septic system ordinance, whichever is more restrictive. The Planning & Development Director, or designee, is hereby directed to make this change on the official zoning maps of Brevard County, Florida.

BE IT FURTHER RESOLVED that this resolution shall become effective as of August 16, 2018.

BOARD OF COUNTY COMMISSIONERS
Brevard County, Florida



by Rita Pritchett, Chair
Brevard County Commission

As approved by Brevard County Commission on August 14, 2018.

ATTEST:



SCOTT ELLIS, CLERK
(SEAL)

(NMI Hearing - May 10, 2018)
(P&Z Hearing - May 21, 2018)
(BCC Zoning Hearing - May 24, 2018)

Please note: A Conditional Use Permit will generally expire on the three year anniversary of its approval if the use is not established prior to that date. Conditional Use Permits for Towers and Antennas shall expire if a site plan for the tower is not submitted within one (1) year of approval or if construction does not commence within two years of approval. A PUD Preliminary Development Plan expires if a final development plan is not filed within three years. THE GRANTING OF THIS ZONING DOES NOT GUARANTEE PHYSICAL DEVELOPMENT OF THE PROPERTY. AT THE TIME OF DEVELOPMENT, SAID DEVELOPMENT MUST BE IN ACCORDANCE WITH THE CRITERIA OF THE BREVARD COUNTY COMPREHENSIVE PLAN AND OTHER APPLICABLE LAWS AND ORDINANCES.

RESOLUTION NO. 18PZ00054

On motion by Commissioner Barfield, seconded by Commissioner Tobia, the following resolution was adopted by a unanimous vote:

WHEREAS, RONALD E. DIMENNA has requested a change of zoning classification from AU (Agricultural Residential) to EU (Estate Use Residential), with a BDP (Binding Development Plan) limited to one unit per acre, and ingress and egress limited to one access on N. Tropical Trail, on property described as follows: (1.) Tax Parcel 2, as recorded in ORB 6615, Pages 2399 – 2400; (2.) Tax Parcel 3, as recorded in ORB 2337, Page 1854; (3.) Tax Parcel 18, as recorded in ORB 4623, Pages 1735 – 1736 (portion north of North Tropical Trail only); (4.) Tax Parcel 28, as recorded in ORB 6091, Pages 1514 – 1515; (5.) Tax Parcel 251, as recorded in ORB 2438, Pages 1359 – 1360; (6.) Tax Parcel 501, as recorded in ORB 3210, Pages 3128 – 3129; (7.) Tax Parcel 752, as recorded in ORB 2514, Pages 2770 – 2771; (8.) Tax Parcel 752.1, as recorded in ORB 2376, Pages 323 – 324, all of the Public Records of Brevard County, Florida. (163.33 acres) Located on the north side of North Tropical Trail, approx. 0.11 mile west of North Courtenay Pkwy. (No assigned address. In the Merritt Island area)

Sections 15 & 22,

Township 23 S,

Range 36 E, and,

WHEREAS, a public hearing of the Brevard County Planning & Zoning Board was advertised and held, as required by law, and after hearing all interested parties and considering the adjacent areas, the Brevard County Planning & Zoning Board recommended that the application be approved with a BDP limited to one unit per acre; ingress and egress limited to one access on N. Tropical Trail; and stipulating that the owner will work with the County and all permitting agencies prior to the final subdivision approval, including right-of-entry, to enhance and improve the historical drainage outfall, and grant a maintenance easement to the County for the purpose of maintenance of the drainage facility.

WHEREAS, the Board, after considering said application and the Brevard County Planning & Zoning Board's recommendation, and hearing all interested parties, and after due and proper consideration having been given to the matter, find that the application should be Approved as recommended; now therefore,

BE IT RESOLVED by the Board of County Commissioners of Brevard County, Florida, that the requested change of zoning classification from AU to EU, be APPROVED with a BDP, recorded in ORB 8261, Pages 2243 - 2249, dated September 13, 2018, limited to one unit per acre; ingress and egress limited to one access on N. Tropical Trail; and stipulating that the owner will work with the County and all permitting agencies prior to the final subdivision approval, including right-of-entry, to enhance and improve the historical drainage outfall, and grant a maintenance easement to the County for the purpose of maintenance of the drainage facility. The Planning & Development Director, or designee, is hereby directed to make this change on the official zoning maps of Brevard County, Florida.

BE IT FURTHER RESOLVED that this resolution shall become effective as of September 13, 2018.

BOARD OF COUNTY COMMISSIONERS

Brevard County, Florida



by Rita Pritchett, Chair
Brevard County Commission

As approved by Brevard County Commission on September 6, 2018.

ATTEST



SCOTT ELLIS, CLERK
(SEAL)

(NMI Hearing – July 12, 2018)
(P&Z Hearing – July 23, 2018)
(BCC Zoning Hearing – August 2, 2018)

Please note: A Conditional Use Permit will generally expire on the three year anniversary of its approval if the use is not established prior to that date. Conditional Use Permits for Towers and Antennas shall expire if a site plan for the tower is not submitted within one (1) year of approval or if construction does not commence within two years of approval. A PUD Preliminary Development Plan expires if a final development plan is not filed within three years. THE GRANTING OF THIS ZONING DOES NOT GUARANTEE PHYSICAL DEVELOPMENT OF THE PROPERTY. AT THE TIME OF DEVELOPMENT, SAID DEVELOPMENT MUST BE IN ACCORDANCE WITH THE CRITERIA OF THE BREVARD COUNTY COMPREHENSIVE PLAN AND OTHER APPLICABLE LAWS AND ORDINANCES.

Law Offices of
CANTWELL & GOLDMAN, P.A.

www.cfglawoffice.com

Bradly Roger Bettin, Sr.
William H. Cantwell, II^{1,2}
Mitchell S. Goldman
J. Wesley Howze
Matthew J. Monaghan
Nina V. Rawal
Kimberly Bonder Rezanka
Michael Sjuggerud³
Jay R. Thakkar

96 Willard Street, Suite # 302
Cocoa, FL 32922-7947
Telephone: (321) 639-1320
Facsimile: (321) 639-9950

474 N. Harbor City Blvd., Suite # 1
Melbourne, FL 32935
(by appointment only)

July 3, 2018

¹ Board Certified Construction Lawyer and
Board Certified Business Litigation Lawyer
² Also Member of West Virginia Bar
³ Also Member of District of Columbia
Bar, New York Bar, and Washington Bar

VIA Email: Frank.Abbate@brevardfl.gov
And U.S. Regular Mail

Brevard County Board of County Commissioners
c/o Mr. Frank Abbate, County Manager
2725 Judge Fran Jamieson Way, Building C
Viera, FL 32940

RE: North, Merritt Island Small Area Study (SAS)
Request to exclude parcels from recommendation re Future Land Use

Dear Mr. Abbate:

Please accept this letter on behalf of Crisafulli Enterprises, Inc., Rcb Family Trust, Estelle K. Crisafulli as Trustee of the Estelle K. Crisafulli Living Trust, Wayne Crisafulli, Joseph Bud Crisafulli, Mary Carol Crisafulli, Wayne Crisafulli, Chuck Crisafulli and 782, LLC. These parties own parcels in the SAS study area and request that the parcels referenced in the attached chart of properties be removed from the list of parcels subject to the SAS recommendation to change the Future Land Use from RES1 to RES1:2.5, and from any proposed change to the FLU.

We have enclosed the Property Appraiser's information for each listed property.

Please include this letter and enclosures in the Planning & Zoning Board Agenda packet and the County Commission Agenda packet when the SAS is brought before those Boards.

If you have any questions or comments, please contact me. Thank you.

Sincerely,



Kimberly B. Rezanka

KBR:plc
enclosures
cc: Clients
Commissioner Jim Barfield
Erin Sterk, Planning Manager

CRISAFULLI PROPERTY INFO

Owner	Account	Parcel	Site Address	Mailing Address	Property Use	Acres	Zoning
Rcb Family Trust; Estate Crisafulli Living Trust; Crisafulli, Wayne	2316456	23-36-23-00-257	Brevard County FL	5515 N Courtenay Pkwy Merritt Island FL 32953	6100 - Grazing Land - Soil Capability Class II - Vacant	30.51	AU
Crisafulli, Bud; Crisafulli, Mary Carol	2316878	23-36-26-00-754	5330 Judson Rd Unit Cell tw Merritt Island FL 32953	5525 N Courtenay Pkwy Merritt Island FL 32953	6900 - Nursery - Vacant	6.12	AU
Crisafulli, Bud; Crisafulli, Mary Carol Etal	2316794	23-36-26-00-6	Not Assigned	5525 N Courtenay Pkwy Merritt Island FL 32953	6100 - Grazing Land - Soil Capability Class II - Vacant	37.96	AU
Crisafulli, Bud; Crisafulli, Mary Carol Etal	2316798	23-36-26-00-9	Not Assigned	5525 N Courtenay Pkwy Merritt Island FL 32953	6100 - Grazing Land - Soil Capability Class II - Vacant	22	AU
Crisafulli, Joseph B; Crisafulli, Mary Carol	2316797	23-36-26-00-8	60 Judson Rd Merritt	5525 N Courtenay Pkwy Merritt Island FL 32953	9909 - Vacant Residential	14.69	AU
Estelle Crisafulli Living Trust; Crisafulli, Wayne; Rcb Family Trust	2316455	23-36-23-00-256	Not Assigned	6270 N Courtenay Pkwy Merritt Island FL 32953	6100 - Grazing Land - Soil Capability Class II - Vacant	14.17	AU
782, LLC	2316605	23-36-24-00-500	Not Assigned	5525 N Courtenay Pkwy Merritt Island FL 32953	6100 - Grazing Land - Soil Capability Class II - Vacant	76.66	AU
782, LLC	2316606	23-36-24-00-501	Not Assigned	5525 N Courtenay Pkwy Merritt Island FL 32953	6120 - Grazing Land - Soil Capability Class II- with BUI	11.11	AU
782, LLC	2316607	23-36-24-00-500	Not Assigned	5525 N Courtenay Pkwy Merritt Island FL 32953	6100 - Grazing Land - Soil Capability Class II - Vacant	36.86	AU
782, LLC	2316617	23-36-24-00-501	Not Assigned	5525 N Courtenay Pkwy Merritt Island FL 32953	6100 - Grazing Land - Soil Capability Class II - Vacant	14.69	AU
Crisafulli, Wayne	2316453	23-36-23-00-254	Not Assigned	6270 N Courtenay Pkwy Merritt Island FL 32953	6920 - Nursery - Non residential	6.83	AU