



MARTIN COUNTY

BOARD OF COUNTY COMMISSIONERS

2401 S.E. MONTEREY ROAD • STUART, FL 34996

Engineering Department

June 21, 2012

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Mr. Guy Bohner
Dredge Committee Chairperson
2376 NW Fork Road
Stuart, FL 34994

Re: North River Shores Dredge Request

Martin County Engineering Department staff has reviewed your request to have the County participate with the North River Shores dredging project. Typically Martin County does not engage in dredging activities in private channels because maintenance of channels is the responsibility of the users of the navigable channel. Sedimentation through the normal life cycle of a canal system is considered maintenance. The exception occurs when sediments are introduced into a canal, lake or ditch from a County owned and operated stormwater facility that has failed (e.g., a broken pipe or leaking pipe joint).

Each of the 5 locations identified as Dredge Areas 4, 5, 5A, 7 and 8 in your maintenance dredging plan were studied by County Engineering staff with two goals; 1) To determine if there is significant sediment transport related to a failure of our drainage system, and 2) To identify if any modifications could be implemented to improve the drainage system. The results of this study follow:

Dredge Area 4: This location is in the canal north of 1194 NW Spruce Ridge Drive. There are two 36" diameter pipes that outfall in this location. There is a large baffle box upstream of this outfall that captures sediments before they can be released into the canal. The sediment in the channel appears to be contributed by the failing adjacent seawall and the improperly tied together seawalls north of the pipes. It also appears that a majority of this sediment is displaced from the lake bottom at the pipe outlets rather than newly deposited material. There is no obvious failure related to the drainage system, and as such the County cannot participate in the proposed dredging at this location.

Dredge Area 5: This dredge location is adjacent to the community park south of 1440 NW Lakeside Trail at the outlet of the Vista Del Lago ditch. There is a concrete weir at the outfall to provide water quality. While there is a control in place to minimize sediment, the weir did fail during Tropical Storm Fay and a small amount of sediment was released when the weir was breached. There is no seawall or bank stabilization present in the park, which is a contributing sediment transport source. We recommend that the HOA consider properly stabilizing this bank. The County will entertain working with the HOA for sediment removal at this location, and will rework the ditch upstream of the weir to provide more detention volume and storage for sediments. Further, we will revise our maintenance program in the Vista Del Lago ditch to reduce the use of chemical weed control.

Dredge Area 5A: This dredge area is located in the same park as Dredge area 5, but is along the south side of the park. A 30" HDPE pipe outfalls into the lake at this location through a stacked rip rap wall. The pipe is connected to a baffle box (sediment trap) at the roadside. There is a group of mature mangroves in the lake at this location, which is indicative of a shallow soil base in the lake. The prop roots from the mangroves retain and accumulate sediment, so it is likely that sediments in the lake will continue to build in this location going forward. The roots from the mangroves have grown into the rip rap wall, and have created voids that have allowed sediment to pass

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through the wall. Subsequent to our onsite meeting, County staff met with Department of Environmental Protection Submerged Lands staff onsite to discuss trimming of the prop roots in this location. We were given approval from DEP to trim the mangrove and rework the rip rap wall to eliminate future sedimentation from this source. Similar to Dredge area 5, we recommend that the HOA consider proper stabilization of the bank to reduce erosion and sedimentation from the park. The County will entertain working with the HOA for sediment removal at this location, but stress the need to be conservative during the dredge process to protect the mangroves in this location.

Dredge Area 7: This dredge area is located between 794 and 804 NW Spruce Ridge Drive. There are two 30" diameter corrugated metal pipes that outfall in this location. The exposed portions of the pipes are degraded at the lake, but were internally inspected using CCTV technology and found to be sound. There are, however, two significant sediment sources present in this location. The seawall has failed at 794 NW Spruce Ridge Drive, with many yards of sediment missing from behind the wall. Additionally, the CCTV inspection revealed that there is an illicit connection in the easternmost pipe adjacent to 804 NW Spruce Ridge Drive that is poorly sealed up. It appears that the property owner may have connected their pool drain directly to the pipe, and soil is being lost through the hole that was made in the drainage pipe. The illicit connection should be removed and the pipe repaired by the homeowner. The County will not participate in the dredge cost share in this location.

Dredge Area 8: This dredge area is located at all four corners of the NW Pine Lake Drive bridge embankment. There is evidence of erosion on the northeast and southwest corners of the bridge, and a recently installed seawall is evident at one of the adjacent residences (1528 NW Lake Pt) which is indicative of a past sedimentation source. The County will entertain working with the HOA for sediment removal at this location, and will sod the disturbed area on the northeast corner of the bridge embankment to reduce future sedimentation.

In summary, we have identified three proposed dredge areas (5, 5A and 8) that may include a percentage of sediments generated from a documented failure of the County stormwater system. The remaining two areas (4 and 7) exhibited sediment sources unrelated to a failure of the County's drainage system. As such, the County would like to meet with you to discuss the mechanism for cooperating with your project for areas that you identified as 5, 5A and 8 only.

Please contact Jim Gorton, Project Manager, at 219-4905 if you have any questions or require clarification.

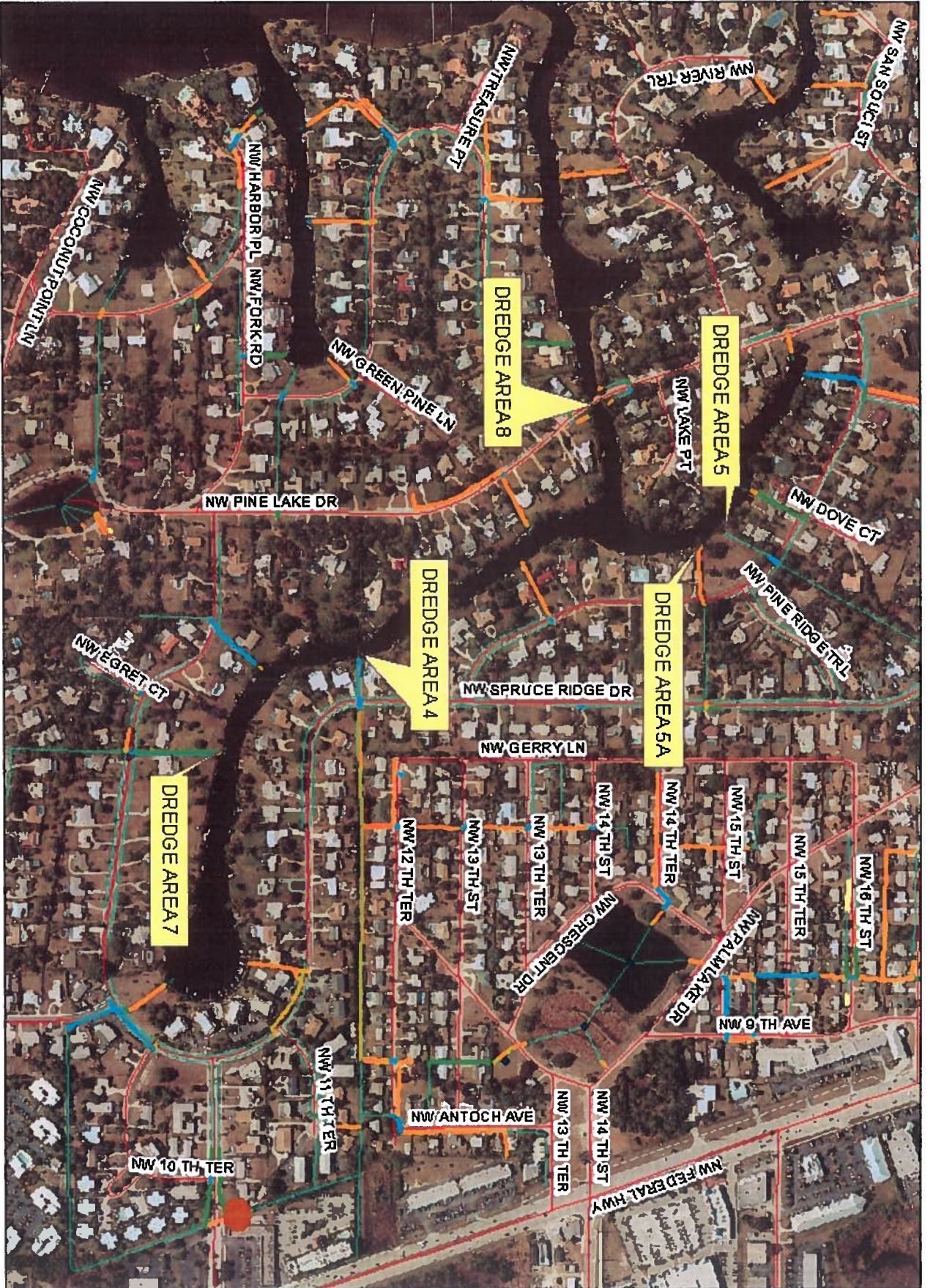
Sincerely,



Don Donaldson, P.E.

Engineering Department Director

Cc: Honorable Board of County Commissioners
Taryn Kryzda, County Administrator
Roger Baltz, Assistant County Administrator
Mark Gavitt, Field Operations & Stormwater Manager



North River Shores
Dredge Request Locations

