CITY OF FORT LAUDERDALE
City Commission Agenda Memo **#14-0280**
REGULAR MEETING

TO: Honorable Mayor & Members of the Fort Lauderdale City Commission

FROM: Lee R. Feldman, ICMA-CM, City Manager

DATE: February 18, 2014

TITLE: Canal Dredging

Purpose

The purpose of this memorandum is to describe the current approach to canal dredging in the City of Fort Lauderdale and to consider future needs and different funding scenarios, as mentioned in both the resiliency and prosperity chapter of the Vision Plan, *Fast Forward*. Additionally, our Strategic Plan, *Press Play*, has a specific objective (proactively maintain our waterways, wastewater, road and bridges infrastructure) and initiative (conduct an analysis of canal dredging needs and examine funding scenarios) included.

Background

Dredging Ordinance and Criteria

Currently the City does not have a dredging ordinance. The City also does not have an ordinance that explicitly details dredging criteria and/or procedures. However, Chapter 8 of the City Code of Ordinances (Article II Section 8-34) does provide that: "THE MARINE ADVISORY BOARD MAY CONSIDER ANY SUBJECT MATTER IT CONSIDERS APPROPRIATE AND IN ADDITION IS SPECIFICALLY DIRECTED TO CONSIDER AND MAKE RECOMMENDATIONS ON THE FOLLOWING SUBJECTS: (1) CONDITIONS OF WATERWAYS AND NEEDED CORRECTIONS, INCLUDING A STUDY OF THE MOST FEASIBLE AND ECONOMICAL METHOD OF MAINTAINING THE DEPTHS OF WATERWAYS WITHIN THE CITY." To that end, the Marine Advisory Board did release a Dredging Policy in 2011 (Exhibit 1).

From 1929 through 2011 the dredging depth requirement was four-feet below the mean low water elevation. Following the release of the 2011 policy, the minimum depth remains at four-feet below the mean low water elevation, and a maximum depth of five-feet below the mean low water elevation was established.

Current Funding Mechanism

Canal dredging is funded from the general fund. The current balance of the fund is $236,802.65. However, there was a $998,000 budget transfer closing out a special

assessment (stormwater fund 472) to the stormwater operating budget (fund 470) on October 11, 2013. Those funds are being transferred to the dredging project via the budget amendment on March 4, 2014, bringing the project balance to $1,234.802.65.

Current Conditions

Inventory

Based on currently available Geographic Information Systems data, the City has 315 canals for a total length of 65 miles. 23 of the canals are restricted (5 miles), while 298 are non-restricted (60 miles). For reference, a restricted canal is a waterway constrained by low-lying fixed bridges or other structures. Moreover, there are currently 1,009 storm outfalls that discharge to City Canals. 962 are owned by the City, 39 are owned by the Florida Department of Transportation, and eight are owned by Broward County. Further research on existing permits and agency responsibilities is being conducted by Staff.

To date, less than one-third of the City canals have been surveyed by the City surveying staff. These canals were surveyed based on documented complaints from Neighbors with the purpose of comparing existing field conditions to the dredging criteria. Of the canals surveyed, 41 (approximately 11.24 miles) are in need of spot dredging. Exhibit 2 outlines the canals selected for dredging this Fiscal Year and includes schedules. These canals were selected based on available funding and need in comparison to the other canals surveyed to date.

Staff is working to develop a master plan for annual canal dredging (Exhibit 3). The plan calls for dredging all City canals in a 7-year time-frame to ensure depth compliance with the established Marine Advisory Board Dredging Policy (exhibit 1). Cost is currently based on linear footage and will be updated based on needed surveying of both outfalls and canals.

Dredging a Canal

The process from identifying a canal for dredging through completing the work is a lengthy process. The City applies for dredging permits (following surveys conducted by City staff) to the following governmental regulatory agencies: 1) Broward County Environmental Protection and Growth Management Department, 2) Florida Department of Environmental Protection, 3) U.S. Army Corps of Engineers, and 4) National Marine Fisheries Services. The permitting process takes an average of six months. After permits are obtained, a work order is then initiated for City Commission approval. Note some permit requirements restrict the long-term planning of canal maintenance dredging work, i.e. presence of sea grass or other biological resources which in turn trigger other specific regulatory requirements (e.g., mitigation, etc.).

Benchmarking & Best Practices

Naples Florida

Naples conducts dredging by phases on a monitored basis. Additionally, property owners are given the option to have their dock area dredged while the dredging

contractor is in their area. Some areas have localized taxing dredging districts with dredging projects paid by special assessments (Exhibit 4).

City of St. Petersburg

The city of St. Petersburg council adopted a resolution to distinguish arterial waterways from local waterways. As a result, payment is made through a special assessment district process for local waterways. The special assessment requires 51% of the abutting property owners expressing interest by signature (Exhibit 5).

City of Tampa

The City of Tampa identified economies of scale in the upfront costs (engineering and mobilization) and the back end costs (digging and disposal costs). Therefore, the city consolidated the dredging of the entire navigable canal system (needed) into one project. This was in-part possible due to grant funding. Currently, the city still does not have a long-term maintenance program in place.

Recommendations

These recommendations and next steps are on the Conference agenda today for Commission consideration and consultation.

Explore Alternative Funding

The City has 10,000 assessable units (+/- 5%) adjacent to City canals. The cost to dredge a canal is a function of several variables (e.g., presence/absence of seagrass; quantity of sediment and how it is distributed along the bottom of the canal; quality of the sediment and associated disposal cost; compliance with specific permitting conditions; etc.). Based on the current dredging activities, the cost to dredge a linear foot of canal is estimated to be approximately $300-$350.

Classification of Waterways

Presently, all City canals are classified by regulatory agency guidelines, including the U.S. Army Corps of Engineers definition of navigable waterways and Broward County's definition of manmade canals. However, other Florida municipalities such as the city of St. Petersburg have adopted resolutions (Exhibit 5) to further distinguish arterial waterways from local waterways to better define the financial responsibilities for dredging maintenance. Based on these classifications, the city of St. Petersburg adopted a resolution to utilize the city's funds to pay for dredging costs of arterial waterways, and enacted special assessments to pay for dredging costs of local waterways. The City of Fort Lauderdale could explore a similar arrangement.

Dredging Policy

The City's current dredging policy (Exhibit 1) requires all waterways to be dredged to a minimum of four-feet below the mean low water elevation. However, the City has many canals with low-fixed bridges, which restrict navigation to small vessels only. The restricted canals may not require the same level of dredging as the non-restricted canals due to this limited access. Further research and bridge data analysis found on

canals bound by low-fixed bridges may determine a lower dredging requirement of restricted canals is needed, reducing the cost for maintenance.

Outfalls and Stormwater Funds
Many dredging complaints are received from canal locations where existing drainage outfall pipes discharge sand and other sediments from stormwater runoff into the canals. Staff recommends exploring what improvements could be implemented to minimize sediment discharges to City canals and lower future maintenance costs.

Dredging Study
One crew can survey two outfalls a day on average. Additionally, one crew can survey one canal a day on average. With current resources, staff estimates that it will take between six months to a year to complete the surveying needed to ensure the validity of the master schedule for annual dredging (Exhibit 4) being developed. Alternatively, an outside contractor can be procured to expedite the evaluation and provide a study.

Next Steps
Staff will continue to work to ensure that all canals to be dredged this Fiscal Year (exhibit 3) are completed. Additionally, staff will continue surveying all outfalls, as well as canals as directed.

Resource Impact
There is no fiscal impact associated with this item.

Funds available as of					
ACCOUNT NUMBER	**INDEX NAME (Program)**	**OBJECT CODE/ SUB-OBJECT NAME**	**AMENDED BUDGET (Object Code)**	**AVAILABLE BALANCE (Object Code)**	**PURCHASE AMOUNT**
N/A	N/A	N/A	$	$	$
			PURCHASE TOTAL ►		$

Strategic Connections:
This item is a *Press Play Fort Lauderdale Strategic Plan 2018* initiative, included within the Infrastructure Cylinder of Excellence, specifically advancing:

- Goal 2: Be a sustainable and resilient community.
- Objective 1: Proactively maintain our water, wastewater, road and bridge infrastructure.
- Initiative 3: Conduct an analysis of canal dredging needs and examine funding scenarios.

This item advances the Fast Forward Fort Lauderdale 2035 Vision Plan: We Are Ready

Attachments: Exhibit 1 – Marine Advisory Board Dredging Policy
Exhibit 2 – Fiscal Year 2014 Dredging Projects
Exhibit 3 – Draft Master Schedule for Annual Dredging

Exhibit 4 – City of Naples Tax Dredging Districts Resolution 09-12430
Exhibit 5 – St. Petersburg Dredging Assessment Resolution

Prepared by: Talal Abi-Karam, Assistant Public Works Director – Engineering

Department Director: Hardeep Anand, P.E, Public Works