PORT ORANGE CITY COUNCIL WORKSHOP

Council Chambers

Tuesday, February 23, 2016 @ 6:30 PM

WORKSHOP AGENDA

Pursuant to Section 3.06 of the Charter of the City of Port Orange, the Mayor has called a **Workshop** of the City Council to be held for the following purposes:

OPENING

1. Pledge of Allegiance
2. Silent Invocation
3. Roll Call
4. Rules of Procedure

DISCUSSION ITEMS

5. Possible options for use of $1.3 million to be received from the sale of City property behind Lowes (3875 Yorktowne Blvd. Lot 8, Port Orange Gateway Center Replat for proposed Assisted Living Facility)
6. Administration of Solid Waste Collection Services
7. Discussion on options and procurement strategy for biosolids management at the Reclaimed Water Plant
8. Monthly Financial Report

ADJOURNMENT

ANY PERSON WHO DECIDES TO APPEAL ANY DECISION MADE BY THE CITY COUNCIL WILL NEED A RECORD OF THE PROCEEDINGS, AND FOR SUCH PURPOSE HE OR SHE MAY NEED TO ENSURE AT HIS OR HER OWN EXPENSE FOR THE TAKING AND PREPARATION OF A VERBATIM RECORD OF ALL TESTIMONY AND EVIDENCE OF THE PROCEEDINGS UPON WHICH THE APPEAL IS TO BE BASED.

NOTE: IF YOU ARE A PERSON WITH A DISABILITY WHO NEEDS ANY ACCOMMODATION IN ORDER TO PARTICIPATE IN THIS PROCEEDING, YOU ARE ENTITLED, AT NO COST TO YOU, TO THE PROVISION OF CERTAIN ASSISTANCE. PLEASE CONTACT THE CITY CLERK FOR THE CITY OF PORT ORANGE, 1000 CITY CENTER CIRCLE, PORT ORANGE, FLORIDA 32129, TELEPHONE NUMBER 386-506-5563, WITHIN 2 WORKING DAYS OF YOUR RECEIPT OF THIS NOTICE OR 5 DAYS PRIOR TO THE MEETING DATE; IF YOU ARE HEARING OR VOICE IMPAIRED, CONTACT THE RELAY OPERATOR AT 1-800-955-8771.

CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 02/23/2016

Consent item: No

SUBJECT: Possible options for use of $1.3 million to be received from the sale of City property behind Lowes (3875 Yorktowne Blvd. Lot 8, Port Orange Gateway Center Replat for proposed Assisted Living Facility)

DEPARTMENT: Community Development

GOAL: 1 - Infrastructure Preservation and 3 - Economic Development

OBJECTIVE: 1 - Develop shovel ready projects in preparation for funding opportunities and 1 - Continue the implementation of Riverwalk

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RECOMMENDED MOTION: Provide Direction

SUMMARY: Attached is a list of possible options to consider for use of the funds to be received from the upcoming sale of the City property on Yorktowne Boulevard. This initial list of options includes funding for Riverwalk Park construction, design of future phases of Riverwalk Park, construction of the Yorktowne Boulevard extension, flood mitigation projects and the City match for a variety of Transportation Planning Organization projects. Additional projects may also be discussed.

Project No.:	Funding Account No.:

ATTACHMENTS:

1.	CIP Funding Options	CIP Funding Options.pdf

Schmotzer, Melanie — Created/Initiated - 02/18/2016
Clark, Wayne — Final Approval - 02/18/2016

Potential Uses of $1.3 million to be received from sale of City property behind Lowes

Riverwalk Park Phase 1B construction:

- Current Phase 1B Cost Estimate - $3.6 million (this does not include contingency) ***Initial rough estimate***
- Current Funding Available - $2.9 million
- Potential other funding sources:
  - Fill dirt from Public Utilities - $100,000 savings
  - Historic Tree Mitigation Bank - $100,000
- Shortfall - $500,000

Riverwalk Park southern section design:

- Estimated cost of design - $70,000 to $100,000

Yorktowne north extension (final design, permits and construction):

- Yorktowne North (Nautica Lakes portion):
- Engineers Cost Estimate dated 10/1/2007: $860,000 (see projected extended cost table below)
- Estimated cost to revise the stormwater permit: $10,000
- Shortfall - $1,154,539.60 (this does not include any costs associated with acquiring the land)

2007	2016	2017	2018	2019
$ 860,000.00	$1,057,800.00	$1,084,245.00	$1,113,863.40	$1,144,539.60
The costs for years 2016 through 2019 were generated using FDOT's Highway Construction Cost "Inflation Factors" dated 9/9/2015 and "Advisory Inflation Factors for Previous Years (1987-2015)" dated 7/21/2015.				

Yorktowne Central:

- Current budgeted amount: $1,725,000
- Engineers Cost Estimate dated 3/3/2010: $1,575,000 (see projected extended cost table below)
- Estimated cost to refresh the stormwater permit: $2,000
- Shortfall - $219,731

2007	2016	2017	2018	2019
$1,575,000.00	$1,795,500.00	$1,840,387.50	$1,890,661.50	$1,942,731.00
The costs for years 2016 through 2019 were generated using FDOT's Highway Construction Cost "Inflation Factors" dated 9/9/2015 and "Advisory Inflation Factors for Previous Years (1987-2015)" dated 7/21/2015.				

Flood Mitigation Projects:

- Begin replacement of corrugated metal pipes in District 1 flooding areas:
  - Estimated cost $1 million

- Purchase Gradall to maintain proper drainage and swales in the city:
  - Estimated Cost $300,000

Additional Options at Lower Cost

- **City match for other TPO projects (typically funded by impact fees or gas tax):**
  - Victoria Garden Sidewalk – estimated design $10,000 and estimated construction $39,000 (Per 2015 Feasibility study)
  - McDonald Sidewalk – estimated design $8,000 and estimated construction $28,500 (Per 2015 Feasibility study)
  - Dunlawton Turn Lane at City Center – estimated design $4,000 and estimated construction $21,000 (Feasibility study is currently being prepared)
  - Spruce Creek Road from Nova Road to North of Angelina Court - estimated design $7,500 and estimated construction $41,000 (Per 2015 Feasibility study)

CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 02/23/2016

Consent item: No

SUBJECT: Administration of Solid Waste Collection Services

DEPARTMENT: Public Works

GOAL: N/A

OBJECTIVE: N/A

RECOMMENDED MOTION: None.

SUMMARY: A Solid Waste Manager position was requested in the fiscal year 2016 solid waste budget to provide full-time, in-house administration of solid waste collection services by Waste Pro, the City's contracted hauler. The cost to fund the position was $63,500, including salary and benefits.

However, during budget discussions, the City Council directed staff to look into acquiring the services of a private vendor to provide such oversight. RCG Consulting, Inc. ("RCG") was recommended.

A meeting was held with RCG on September 30, 2015, to discuss the City's proposed scope of services. Subsequent to the meeting, a scope of service (Attachment 2) was sent to RCG. A second meeting was held with RCG on November 24, 2015. During the meeting, RCG submitted a scope of service (Attachment 1).

The purpose of the workshop is to discuss the pros and cons of the services offered by an in-house Solid Waste Manager as compared to those offered by the private firm, RCG Consultant, Inc..

Project No.:	Funding Account No.:

ATTACHMENTS:

1.	City Scope - Attachment 2	City Scope - Attachment 2.pdf
2.	RCG Scope - Attachment 1	RCC Scope - Attachment 1.pdf
3.	Administration of Solid Waste Services	Administration of SW Collection Services.ppt

Adumuah, Branford	Created/Initiated - 02/11/2016
Adumuah, Branford	Approved - 02/11/2016

Attachment 2

Adumuah, Branford

From: Adumuah, Branford
Sent: Thursday, October 08, 2015 6:26 PM
To: 'Bill Redman'
Cc: Rivera, Cynthia; Silvey, Michael; Cockcroft, Kynah
Subject: Scope of Services - Solid Waste and Recycling Program

Mr. Redman:

As a follow up to our meeting last week, the following is the proposed scope of service for maintaining and improving our current solid waste and recycling collection services:

Route and Collection Checks
Perform daily inspections or audits of routes to ensure garbage, recyclable material, bulk items, and yard waste have been properly and timely collected in accordance to contract requirements.

Service Issues and Complaints
Follow up via field visits, telephone calls, and/or emails on service issues to satisfactorily address concerns and complaints.
Maintain record of service issues, complaints, reports, and resolutions in the computer work management system.

Commercial Container Accounts
Maintain container inventory and update as necessary to the Commercial Master Listing.
Monitor cleaning and swap-out schedule.
Periodically inspect all containers and submit list for cleaning, markings, and swap-outs to franchisee and Public Works.
Submit requests for changes or adjustments in service to Public Works.

Multifamily and Residential Recycling
Report, log, and maintain all recycling tickets including comingle tickets..

Tonnage Reports
Maintain monthly commercial and residential tonnage logs.
Received, summarize, and submit the following reports:
Commercial Route Summary
Commercial Recycling Route Summary
Residential Fuel Usage
Commercial Fuel Usage
Handicap (backdoor service) Summary
Compactor Report

Equipment
Periodically verify equipment inventory and allocation including spares to ensure availability in accordance with contract requirements.

Landfill
Record all landfill tickets to verify monthly usage.
Prepare monthly billing to include deductions (liquidated damages).

Franchised Demolition and Construction Collection Services
Verify quantity of roll-off dumps to ensure franchised payments ($20 per dump) to the city.

Household Hazardous Waste Collection Events
Organize collection and disposal of minor household hazardous at least once a year.

Educational Events
Provide regular public information and education on solid waste and recycling programs.

Solid Waste and recycling Ordinances
Update city ordinances relating solid waste and recycling to meet changing local, state, and federal regulatory requirements.

I realize you may not provide all the above listed service but these are the things we had wanted our full time Solid Waste Manager to do. If there are other services you provide that I have not listed but you feel could benefit us, please let me know so we can discuss them. If you have any questions, please do not hesitate to let me know.

Branford N. Adumuah
Director of Public Works

RCG Consulting, Inc.

Attachment 1

November 24, 2015

Mr. Bradford Adumuah
Public Works Director
407 Virginia Ave.
Port Orange, Florida 32127

RE: Solid Waste Contract Administrative Services Proposal

Dear Mr. Adumuah:

As per your request, please let this letter serve as clarification for the scope of services for our firm to provide solid waste contract oversight services for the City of Port Orange. Listed below are the services which RCG, Inc. provides for the City of Daytona Beach and I believe the same services would be applicable to the City of Port Orange.

Contract Administrative Services - Services A

The contract administrative services are further described as follows:

- Submit to the Department Account Clerk all figures needed for calculating the monthly contract payment to the Contractor as follows:

  1. number of cubic yards of un-compacted and compacted front load dumpsters and roll off containers serviced,
  2. number of commercial toters emptied,
  3. number of houses and apartments collected,
  4. number of residential curbside recycling customers,
  5. number of customers with centralized recycling,
  6. number of dumpster rentals,
  7. number of dumpsters with optional wheels
  8. number of dumpsters with optional lock bars.
  9. Administrative charges / liquidated damages to be assessed to hauler monthly.
  10. landfill billing adjustments...(send copy to Finance)

- Review, insert rate code, and return to Utility Billing any commercial waste service change forms originated by the Contractor or the City Solid Waste Division. Rate codes on the forms shall be pro-rated, as needed, to properly bill customer and also pay hauler their entitled amount. Change of Service Forms.
- Calculate monthly the "landfill not to exceed figure" per the contract with Contractor and prepare the year to date (YTD) cumulative landfill cost calculations.
- Calculate quarterly, or semi-annually or annual fuel, whichever the City prefers or requires, component adjustment for all waste and recycling rate codes and provide to Utility Billing.
- Calculate the waste and recycling rate increase/decrease based on annual CPI change as per the contract with Contractor and provide report to Utility Billing. .

7017 S. Atlantic Avenue • New Smyrna Beach, FL 32169 • Office: 386-427-9339 • Fax: 386-427-4549
www.rcgusaonline.com

- Calculate any special account billing rates annually, or as needed, based on volume and frequency fluctuations and provide to Utility Billing.
- Analyze spreadsheet reports provided monthly by The City of Port Orange Utility Billing Department to identify and resolve large solid waste or recycling billing errors. This is subject to the City's billing having standardized and uniform billing codes for the various types of services to be rendered.
- Prepare a monthly Compactor and Roll off billing report for Utility billing detailing service level changes from the previous month. Report shall be submitted in time for the Utility billing print deadlines.

Note:

The above scope does not require the firm to:

- Provide office staff to answer complaint calls or commercial service calls from citizens. These tasks will continue to be provided by the City or the Contractor's office staff. The contract currently requires the contractor to provide these services by the contractor personnel which must be on site at the City's Public Works Department offices.
- Make field inspections. The City Inspector and Contractor supervisors will continue these tasks.
- RCG will provide spot check inspections of the contractors equipment and personnel to insure the equipment meets the requirements of the contract as well as the personnel providing those services.
- RCG will prepare a written report monthly to the Public Works Director and the City Manager which will outline the activities of the previous month. The report will outline the various collection issues, specific troubled spots and routes, any services provided by the contractor that may be above and beyond the contract requirements is any, review the TracEz tracking system for customer complaints, compliments and request for extra services and report any administrative charges / liquidated damages to be assessed by the City to the contractor.
- RCG would make it associates and officers available to assist the City in determining any recommendations or request for alternative services to be delivered by the Contractor to the City.

Additional Services - Services B - Billed separately at a rate of $115.00 per hour.

Upon the City's issuance of a purchase order, the CONTRACTOR shall provide services to the CITY not included within the contract administrative services above, that the CITY may from time to time determine as necessary for the delivery of Solid Waste and Public Works related services in the CITY.

Examples:

- Provide additional manpower after a hurricane for monitoring, truck inspections, etc.
- Assist CITY staff with the transition to contracted services from CITY staff contract administration.
- Provide contractor site inspection.
- Provide Truck Fleet inspections.
- Perform city-wide route inspections.
- Perform fleet, equipment, and accounting records inspections for other permitted haulers who obtain a non-exclusive waste hauling license.
- Solid Waste, Composting and Recycling program comparisons and analysis.

The annual fee for the primary scope of services would be one hundred seven thousand seven hundred seventy five dollars annually ($107,775.00) and Additional Services would be billed at the rate of One Hundred Fifteen Dollars ($115.00) per hour.

If you would kindly review and advise and if you have any questions please do not hesitate to call on me.

Sincerely,

Jean S. Redman
President

cc: William Redman, Sr. Vice President
David Hand, Associate

file name: Port Orange Contract Oversight Proposal III 10 21 2015

Department of Public Works

Administration of Solid Waste Services

Presented By

Branford N. Adumuah
Director of Public Works

February 23, 2016

Background

- City of Port Orange's solid waste and recycling services are contracted to Waste Pro, a private hauler
- Contract and service delivery administration are currently handled in-house by the Department of Public Works
- No current full-time position dedicated to properly manage performance and service outcomes

Background

- City Council directed staff during FY2016 budget discussions to explore the services of a private vendor to provide such administrative services
- RCG Consulting, Inc. (“RCG”) was recommended.
- Meeting was held on September 30, 2015, with RCG to discuss City’s proposed scope of services
- Meeting was held with RCG on November 24, 2015, to discuss RCG’s submitted scope of services

Scope of Services

- ✓ Perform daily inspections or audits of routes to ensure garbage, recyclable material, bulk items, and yard waste have been properly and timely collected
- ✓ Follow up with residents via field visits, telephone calls, and/or emails to satisfactorily address service concerns and complaints
- ✓ Maintain a record of service issues, complaints, reports, and resolutions in the Public Works computer work management system

Scope of Services

- ✓ Maintain solid waste container inventory and update as necessary
- ✓ Monitor container cleaning and swap-out schedule
- ✓ Periodically inspect containers and submit list for cleaning, markings, and swap-outs to franchisee
- ✓ Report, log, and maintain all recycling tickets including comingle tickets

Scope of Services

- ✓ Record landfill tickets to verify monthly usage
- ✓ Process monthly reconciliation of submitted landfill tickets and contract liquidated damages
- ✓ Verify number of commercial roll-off dumpsters in the field to ensure accuracy of franchise payments ($20 per dump) to the city

Scope of Services

- ✓ Periodically verify equipment inventory and allocation including spares to ensure availability in accordance with contract requirements
- ✓ Organize minor household hazardous material collection and disposal events at least once a year
- ✓ Provide regular public information and education on solid waste and recycling collection programs
- ✓ Update city ordinances on solid waste and recycling collection to meet changing local, state, and federal regulatory requirements

RCG Consulting, Inc.

Pros

- ✓ Established record in auditing services provided by private solid waste haulers
- ✓ Immediate impact based on industry experience

Cons

- ✓ Only an estimated 35% of required the scope of services will be provided
- ✓ Relatively high annual cost of $107,775 to provide basic administrative services

RCG Consulting, Inc.

Cons

- ✓ Relatively high hourly billing rate of $115 to provide additional services outside of basic scope of services
- ✓ Transfer of accountability, authority, and responsibility
- ✓ No assured value added services
- ✓ City resources still required to manage a contract with RCG

Solid Waste Manager.

Pros

- ✓ An estimated 90% of required scope of services will be provided
- ✓ Relatively low annual cost of $63,500 (salary and benefits) to provide basic administrative services
- ✓ Hourly rate of $0 to provide additional services outside of basic scope of services by salaried employee
- ✓ City staff accountability, authority, and responsibility

Solid Waste Manager

Pros

- ✓ Assured value added services

Solid Waste Manager

Cons

- ✓ Perception of growing government bureaucracy
- ✓ No immediate impact for at least 6 months as the new Solid Waste Manager will need time to familiarize with operations, processes, and systems

Intent of Staff

Based on RCG's higher costs, inability to meet the majority of the required scope of services, transfer of authority and accountability, and others discussed, staff intends to move forward in the hiring of an in-house and salaried Solid Waste Manager.

END

CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 02/23/2016

Consent item: No

SUBJECT: Discussion on options and procurement strategy for biosolids management at the Reclaimed Water Plant

DEPARTMENT: Public Utilities

GOAL: 1 - Infrastructure Preservation

OBJECTIVE: 4 - Enhance the infrastructure maintenance programs in order to extend the full life of capital investments

RECOMMENDED MOTION:

SUMMARY: Currently the City utilizes a piggyback contract arrangement to provide hauling and stabilization for disposal of biosolids produced at the Reclaimed Water Plant. The City has exposure to future cost increases and potential interruption of service under the present arrangement.

This discussion involves potential options the City may have to manage and dispose of biosolids and how best to approach these options from a procurement perspective. In view of the differences in potential options, emerging technologies and financial impacts , a flexible procurement strategy is warranted. Staff is recommending an Invitation to Negotiate (ITN) procurement strategy for the most flexibility enabling negotiations simultaneously with multiple venders to determine the best alternative for the City.

Project No.:	Funding Account No.:

ATTACHMENTS:

1.	Biosolids Presentation	Biosolids Workshop Presentation - revised.pptx
2.	Invitation to Negotiate	Biosolids ITN 2-13-16.docx
3.	Biosolids Report	PortOrange_ BioSolids_Report.pdf

Wiggins, Julia	Created/Initiated - 02/15/2016
Neff, Andrew	Approved - 02/15/2016
Fye, Diana	Approved - 02/18/2016
Riehm, Tracey	Approved - 02/18/2016
Johansson, M. Jake	Final Approval - 02/18/2016

Biosolids Management
Invitation to Negotiate

Public Utilities Dept. and Purchasing Division

Andrew Neff and Diana Fye

February 23, 2016

Purpose / Agenda

- **Purpose:** Provide background current biosolids management, need for options centered on long term cost control and risk management and discuss the invitation to negotiate process.
- **Agenda:**
  - Background
  - Alternatives
  - Invitation to Negotiate Procurement Process
  - Recommendation

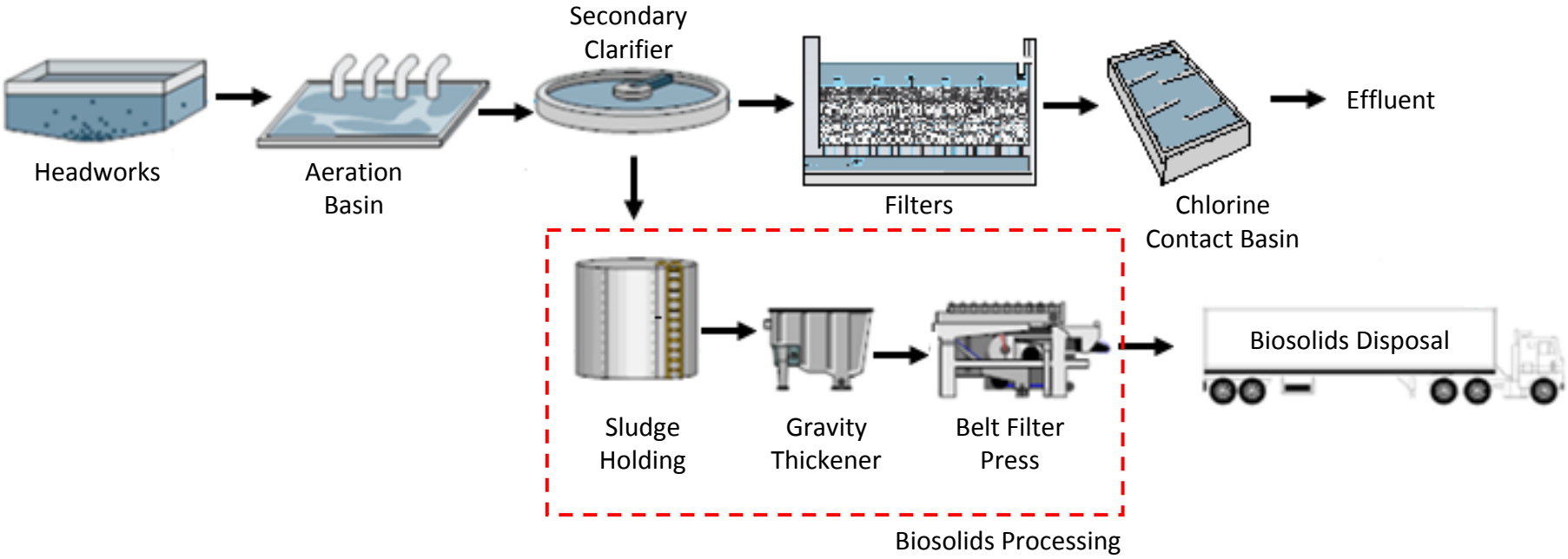
Background

What are Biosolids?

- Biosolids are solid material remaining after the biological treatment process which must be removed in accordance with FDEP regulations
- Stabilization- different levels of stabilization can be employed to reduce public health concerns for disposal
  - None (current process)
  - Class B lowest classification for land application (current vendor does this)
  - Class A higher level of treatment, opens add'l disposal locations
  - Class AA highest level, allows for public use as fertilizer
- Dewatering- City is satisfied with current Belt Filter Presses
- Hauling/Disposal
  - Cost of hauling depends on location of disposal
  - Disposal sites can require a level of stabilization
  - Can include off site stabilization
  - Future regs may limit untreated land application

Background

Current Wastewater Treatment and Biosolids Process



Background

Reclaimed Plant contracted for hauling of biosolids since 1993

- Plant produces less than Class B biosolids—must be stabilized
- FY15 Budget: $456,239
- Licensed contractor transports 2 to 3 loads/day; about 10,138 wet tons annually (422 trailer loads) to be land applied per regulations
- Contractor charges $45/ton to transport and stabilize

Concerns:

- Contractor can not land apply biosolids during wet weather or long duration storm events
- Land application locations diminishing (stricter regulations)

Background

Additionally….

- Current Biosolids Hauling contract term is only 1-year
  - Cost Inflation
  - Reliability Concerns
- Potential for future regulatory restrictions- meeting higher standards
- Looking for the most economical and sustainable long-term solution for the City
- Idea is to improve reliability at or below current costs

Cost and Risk Management

Alternatives

Possible Stabilization Alternatives:

Anaerobic Digestion

Aerobic Digestion

Composting

Thermal Drying

Chemical Stabilization

Cost Drivers in Biosolids Management

- Stabilization: Capital investment and O&M costs (energy, chemicals, etc.)
- Hauling Costs
  - Price per wet ton
  - Location—future availability/capacity of disposal locations (risk)
  - Level of stabilization (AA , A, B, Unstabilized)
- Some stabilization processes can reduce the amount of material to be hauled.

Alternatives

Future Biosolids Treatment Solution:

- Stabilization technology is ever changing
- Best solution may be a combination of stabilization/hauling solutions

Invitation to Negotiate

- Wide variety of alternatives
- Potential options for separate proposals
    1. Stabilization only
    2. Hauling/disposal only
    3. Stabilization and hauling/disposal
    4. Continue with current operation
- Evaluate proposals to determine best option for City in the long term

Invitation to Negotiate

Why Invitation to Negotiate Instead of Request for Proposals:

- RFP contract negotiation is restricted to negotiating only with the top selected vendor. If no agreement move to next vendor.
- ITN contract negotiations simultaneously with multiple vendors so the benefits of each process can be compared more effectively to meet long-term goals:
  - Cost control
  - Improve reliability
- Negotiating with multiple vendors will provide the flexibility that will result in the best optimum process being identified that will benefit the City

Recommendations

- Proceed with ITN procurement process for potential biosolids management solutions
- Determine optimum solution for biosolids management

Port Orange Biosolids Processing Evaluation

THE CITY OF PORT ORANGE, FLORIDA

Prepared for:

The City of Port Orange

Prepared by:

Kimley-Horn and Associates, Inc.

142325002
November 2015
© Kimley-Horn and Associates, Inc.
Suite 200
1823 SE Fort King Street
Ocala, Florida 34471
352 438 3000

Kimley»Horn

Port Orange Biosolids Processing Evaluation

THE CITY OF PORT ORANGE, FLORIDA

Prepared for:

The City of Port Orange

Prepared by:

Kimley-Horn and Associates, Inc.

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November 2015
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Ocala, Florida 34471
352 438 3000

THIS IS TO CERTIFY THAT THE ENCLOSED ENGINEERING CALCULATIONS WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION.

MALCOLM L. BRYANT, P.E.
No. 65582
STATE OF FLORIDA
PROFESSIONAL ENGINEER

MALCOLM L. BRYANT, P.E.
Florida Registration Number #65582
CA No. 00000696

DATE: 2/16/16

EXECUTIVE SUMMARY

The City of Port Orange (City) operates a Wastewater Treatment Facility (WWTF) that contract hauls unstabilized sludge. Shelley's Environmental collects, transports, treats, and land applies the unstabilized biosolids generated at the WWTF. Due to unpredictable service and uncertain price escalations, the City is considering an alternative biosolids stabilization process. This report provides a review of currently available alternative stabilization technologies and hauling methods along with a life cycle cost comparison to the current treatment methodology.

Biosolids stabilization is classified by pathogen reduction and vector attraction reduction methods stated in 40 CRF 503 and Chapter 62-640 FAC. These regulations set forth the criteria that biosolids must meet to be classified as Class A or Class B. According to the Water Environment Federation Solids Process Design and Management manual, five general technologies for solids stabilization exist: (1) anaerobic digestion, (2) aerobic digestion, (3) composting, (4) thermal drying, and (5) chemical stabilization. Some of the technologies have been in use for decades. Other technologies are emerging that have demonstrated success in some locations; however, they do not have a track record in commercial applications that would warrant significant consideration. Further, some technologies are more applicable to certain size facilities, or facilities using certain liquid stream treatment processes.

After a thorough review of the available stabilization alternatives, it is recommended that the City does not rule out any stabilization alternative based on cost, but continue the stabilization review process by issuing a Request for Qualifications (RFQ) to the public. This approach allows the City to select the best available stabilization alternative.

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INTRODUCTION

Background

The City of Port Orange (City) operates a Wastewater Treatment Facility (WWTF) to treat raw wastewater from the City's collection system. The permitted WWTF capacity is 12 million gallons per day (mgd) with current flow rates averaging approximately 6 mgd. The WWTF design includes aerobic digesters, a gravity thickener, and belt filter presses for stabilizing, thickening, and dewatering the biosolids produced at the WWTF. However, the City is not currently using the digesters to meet Class B stabilization requirements. Instead, the City has a sludge hauling agreement with Shelley's to receive, transport, treat, and land apply the unstabilized biosolids generated at the WWTF.

As an alternative to the present biosolids treatment methodology, the City is considering an alternative biosolids stabilization process. This report provides a review of alternative stabilization and hauling methods along with a life cycle cost comparison to the current treatment methodology.

Biosolids Regulations

Kimley-Horn investigated current biosolids regulations to identify rules and industry trends that might affect the City's decision to select an alternative biosolids stabilization method. This section discusses the current state of biosolids regulations in Florida and analyzes current biosolids management trends.

In recent history, biosolids management has changed. Regulations in Florida are becoming more stringent with a focus on the potential impacts the disposal of biosolids can have on Florida's ecosystems. The predominant form of biosolids disposal in the State is still land application of Class B solids. Port Orange currently does not treat to Class B. Instead, the contract hauler transports the City's biosolids to a processing facility that treats the biosolids to a minimum Class B status prior to land application.

Regulatory and policy trends are the key drivers behind current and future changes in biosolids management. Biosolids are regulated at a federal level by Title 40 of the Code of Federal Regulations Part 503 (40 CFR 503) and at a state level by Chapter 62-640 of the Florida Administrative Code (62-640 FAC). Although there have not been recent changes to 40 CFR 503, several states have moved forward with significant changes to regulations regarding land application of biosolids. Florida approved changes to 62-640 FAC in 2010 that focused heavily on planning, permitting, monitoring, record keeping, and reporting of biosolids management.

At the WWTF, the biosolids are picked up by Shelley's Environmental and the City is required to maintain hauling logs detailing the quantity and nature of the biosolids hauled off-site. It becomes the biosolids hauler's responsibility to transport the solids to a processing facility and treat to a Class B minimum prior to land application on an approved site. However, it is prudent for the City to maintain a contingency plan should short term access to the hauling or disposal be impaired in any way. Should biosolids need to be hauled to a site not currently in the facility's permit, it may do so on an emergency basis; but, the facility must submit for a permit modification to add the site within 30 days of the event. Commonly, additional storage is provided at the WWTF to handle emergency situations.

Biosolids must meet specific storage and odor requirements detailed in the State and Federal regulations. The biosolids must be capable of being stored under adverse weather conditions or other conditions which preclude the disposal of biosolids. Alternative methods of disposal can be considered or additional storage space in the facility digesters or holding tanks can be used to meet this requirement. As stated in 62-640.400(6) "the treatment, management, transportation, use, land application, or disposal of biosolids shall not cause a violation of the odor prohibition..." This requirement can clearly impact the biosolids processing at the WWTF through the ultimate disposal. In recent years, the Florida Department of Environmental

Protection (FDEP) has been more stringent in their focus on the biosolids management plan and potential odor control issues than they have in the past.

The City is currently not under nutrient restrictions for biosolids management. The State does not have regulations drafted for implementation of nutrient restrictions in the Port Orange area and therefore the City can continue to dispose of biosolids without process alteration. However, the cost of biosolids disposal is expected to increase due to the more restrictive regulations and the diminishing available sites for the land application of biosolids. Consideration should be given to alternatives which could stabilize operation costs and provide a reliable long term disposal option. This allows the City to better plan for the future.

Class A and Class B Biosolids

Biosolids stabilization is classified by pathogen reduction and vector attraction reduction methods stated in 40 CFR 503 and Chapter 62-640 FAC. Biosolids must meet certain criteria to be classified as Class B or Class A biosolids. If pathogens are below detectable levels, then the biosolids meet Class A designation. Biosolids are designated Class B if pathogens are detectable but have been reduced to levels that do not pose a threat to public health and the environment. In the State, an additional Class AA classification is provided in 62-640 FAC. However, the pathogen and vector attraction requirements for Class AA biosolids is also included in the 40 CRF 503 pathogen and vector attraction reduction alternatives.

Any one of the following six alternatives may be met for the sewage sludge to be Class A with respect to pathogens in accordance with 40 CFR 503. However, 62-640 FAC does not allow the use of Alternative 4 for meeting Class A pathogen reduction. The implicit objective of all these requirements is to reduce pathogen densities to below detectable limits which are: (1) *Salmonella* sp. less than 3 MPN per 4 grams total solids biosolids (dry weight basis), (2) Enteric viruses less than 1 PFU per 4 grams total solids biosolids (dry weight basis), and (3) Viable helminth ova less than 1 viable helminth ova/4 gram total solids biosolids (dry weight basis).

Alternative 1. Thermally treated biosolids, subjected to meet one of four time-temperature regimes.
Alternative 2. Biosolids Treated in High-pH- High Temperature Process, must meet specific pH, temperature, and air-drying requirements.
Alternative 3. Biosolids Treated in Other Processes, demonstrate the process can reduce enteric viruses and viable helminth ova. Maintain operating conditions used in the demonstration after pathogen reduction demonstrated is completed.
Alternative 4. Biosolids Treated in Unknown Processes- Biosolids must be tested for pathogen at the time the biosolids are used or disposed. (Not permissible in the State of Florida)
Alternative 5. Biosolids Treated in the Processes to Further Reduce Pathogens (PFRP) List.
Alternative 6. Biosolids Treated in the Process Equivalent to a PFRP.

Any one of the following three alternatives may be met for the sewage sludge to be Class B with respect to pathogens.

Alternative 1. The Monitoring of Indicator Organisms, Test for fecal coliform density as an indicator for all pathogens. The geometric mean of seven samples shall be less than 2 million MPNs per gram per total solids or less than 2 million CPUs per gram of total solids at the time of disposal.
Alternative 2. Biosolids Treated with Processes to Significantly Reduce Pathogens (PSRP).
Alternative 3. Biosolids Treated in a Process Equivalent to PSRP.

Vectors, which include flies, mosquitoes, fleas, rodents, and birds, can transmit pathogens to humans and other hosts physically through contact or biologically by playing a specific role in the life cycle of the pathogen. Reducing vector attraction lowers the potential for transmitting diseases from pathogens in biosolids. 40 CFR 503 requires both Class A and B biosolids to meet one of the vector attraction reduction

options listed below. However, the State of Florida (62-600 FAC) does not allow the use of options 11 or 12.

Summary of Options for Meeting Vector Attraction Reduction:

Option 1. Meet 38% reduction in volatile solids content.
Option 2. Demonstrate vector attraction reduction with additional anaerobic digestion in a bench-scale unit.
Option 3. Demonstrate vector attraction reduction with additional aerobic digestion in a bench-scale unit.
Option 4. Meet a specific oxygen uptake rate (SOUR) for aerobically digested biosolids.
Option 5. Use aerobic processes at greater than 40 degrees Celsius for 14 days or longer.
Option 6. Alkali addition under specified conditions.
Option 7. Dry biosolids with no unstabilized solids to at least 75% solids
Option 8. Dry biosolids with unstabilized solids to at least 90% solids.
Option 9. Inject biosolids beneath the soil surface.
Option 10. Incorporate biosolids into the soil within 6 hours of application to or placement on the land.
Option 11. Cover biosolids placed on a surface disposal site with soil or other material at the end of each operation day. (Not permissible in the State of Florida)
Option 12. Alkaline treatment of domestic septage to pH12 or above for 30 minutes without adding more alkaline material. (Not permissible in the State of Florida)

SOLIDS STABILIZATION TECHNOLOGIES AND METHODS

According to the Water Environment Federation Solids Process Design and Management manual, five general technologies for solids stabilization exist: (1) anaerobic digestion, (2) aerobic digestion, (3) composting, (4) thermal drying, and (5) chemical stabilization. Some of the technologies have been in use for decades. Other technologies are emerging that have demonstrated success in some locations; however, they do not have a track record in commercial applications that would warrant significant consideration. Further, some technologies are more applicable to certain size facilities, or facilities using certain liquid stream treatment processes.

Anaerobic Digestion

Anaerobic digestion is a biological process that uses bacteria that function in an oxygen-free environment to convert volatile solids into methane, carbon dioxide, and ammonia. These reactions occur in an enclosed tank that may or may not be heated. The biological activity consumes most of the volatile solids needed for further bacterial growth; the microbial activity in the digesters is limited. Most anaerobic digestion systems are classified as either standard-rate or high-rate systems. In standard-rate systems, mixing is caused by gases rising to the surface. Standard-rate operation can be carried out at ambient temperature or heat can be added to speed the biological activity. High-rate systems use a combination of active mixing and temperature control to increase the rate of volatile solids destruction. Pre-thickened sewage sludge is introduced at a uniform rate to maintain constant conditions in the reactor to foster more efficient sewage sludge digestion thus increasing the rate of volatile solids destruction and methane production. The methane produced during anaerobic digestion can be used as a fuel source for digester heating or other plant electrical needs. Anaerobic digestion is typically considered at facilities with primary clarification and flows greater than 5 mgd.

Class B Stabilization Options:

- Thermophilic Anaerobic Digestion occurs at temperatures 50 degrees to 58 degrees C and is considered a Class B stabilization process when sludge is fed almost continuously into the digester and biosolids are simultaneously discharged from the digester.

Class A Stabilization Options:

- Thermophilic Anaerobic Digestion meets Class A standards when operated in a batch process where every particle meets time-temperature requirements and volatile solids reduction.
- Temperature-Phased Anaerobic Digestion (TPAD) occurs with a thermophilic digestion followed by a mesophilic digestion.
- Acid/Gas Phased Digestion (A/G) operates two digesters: an acid phase with low HRT, acidic pH, and high volatile acids concentration followed by a gas phase, either thermophilic or mesophilic anaerobic digestion.
- Recuperative Thickening process involves separating the hydraulic and solids retention times by using sludge recycle thickening.

Aerobic Digestion

Aerobic digestion involves biologically stabilizing sludge in an open or closed vessel or lagoon. This environment is conducive to the multiplication of aerobic bacteria that convert the organic solids content to carbon dioxide, water, and nitrogen. Pathogens and odors are reduced in the process. Aerobic digestion extends decomposition of solids and regrowth of organisms to a point in which available energy in active cells and storage of waste materials are sufficiently low to permit waste sludge to be considered stable.

The WWTF currently has the infrastructure for aerobic digestion, but uses the basins as sludge holding tanks instead of digesters. The sludge is not digested long enough to obtain Class B biosolids. Aerobic digestion typically is considered for smaller plants that only produce secondary sludge.

Class B Stabilization Options:

- Conventional aerobic digestion aerates waste sludge for an extended period of time in unheated tanks, using air diffusers or surface aeration equipment to meet Class B requirements.
- The P-Uptake Digester process is an alternative operating procedure to conventional aerobic digestion. During conventional aerobic digestion, bacteria are exposed to extended periods of aerobic conditions. Aerobic bacteria consume alkalinity and when the alkalinity is fully consumed, phosphorus is released. The P-Uptake process utilizes facultative anaerobic bacteria to reduce phosphorus by operating the digesters with an anaerobic cycle. The P-Uptake process operates in an anaerobic state approximately 90% of the cycle time and operates in aerobic conditions the other 10% of the time. The longer anaerobic state reduces phosphorous and significantly reduces operating costs. The P-Uptake process monitors levels of ammonia and phosphorous to control cycle times.

Class A Stabilization Options:

- Autothermal Thermophilic Aerobic Digestion (ATAD) meets Class A standards by volatile solids reduction. Thickened sludge is fed into a digester with sufficient energy density to be self-heating by the degradation of organic solids.
- The ThermAer™ process is a two stage process including a thermophilic aerobic digester followed by a storage nitrification denitrification reactor (SNDR) prior to dewatering. The digester is covered and insulated to reduce heat loss and create a more efficient environment for volatile solids destruction. During sludge transfer from the thermophilic digester to the SNDR, ammonia gas goes into solution by the cooling process. The SNDR is a digester that operates in the mesophilic range. Nitrification and denitrification are controlled in the SNDR by the monitoring of pH, temperature, and oxidation-reduction potential (ORP) and sequencing the aeration phased on those parameters. Enough cell lysis, or breakdown, occurs through the jet mixing that no supplemental carbon source is added for the denitrification process and the removal of nitrogen. This two-stage batch process reduces solids and increases dewatering efficiency and results in lower solids disposal costs.

Composting

The process of composting decomposes organic matter by microorganisms in an environment in which the size and the porosity of the pile is strictly controlled, thereby facilitating an increase in temperature to destroy most pathogens. The moisture and oxygen levels of this process are also controlled to reduce or prevent odor formation. Covered and fully enclosed variations use large structures either open on the sides (covered) or with walls (enclosed) to protect the compost operation from the elements. Because of the abundant rainfall in Florida, some type of cover is required for consistent, day-to-day operations. Since a large footprint is required for composting, the City cannot compost the biosolids at the WWTF. The biosolids will need to be hauled to an off-site composting facility for stabilization.

Class B Stabilization Options:

- Short-term composting meets Class B standards by meeting temperature requirements for only five days. A bulking agent is still used to control moisture and oxygen levels.

Class A Stabilization Options:

Three major types of composting exist to meet Class A standards by meeting time-temperature requirements.

- Aerated Static Pile (ASP) is constructed of biosolids piled 6 to 12 feet deep over an aeration floor, plenum, or perforated piping. The pile is insulated with wood chips or unscreened finished compost to meet temperature requirements.
- Within-Vessel composting incorporates a type of automatic material movement in an enclosed system combined with aeration. There are many variations of within-vessel systems.
- Windrow composting involves compost formed into long parallel rows with trapezoidal or triangular cross sections. The compost is periodically turned by a front loader to expose the compost to air and release moisture.

Thermal Drying

Thermal drying involves using heat to evaporate water from biosolids. The end product is a pellet that can be distributed and marketed as fertilizer. This technology requires dewatering the biosolids to at least 18% total solids (TS). The drier the dewatered biosolids are, the less energy is needed to dry the biosolids since less water will be evaporated. The thermal drying process involves the use of heat from a direct or indirect source to evaporate water from biosolids. The major differences in thermal drying technology are as follows:

- In direct drying systems the materials to be dried (biosolids in this case) are directly exposed to the heat source
- With indirect drying the heat is transferred from one form, such as heated oil or fluid, to the material through a conducting medium.

Class B Stabilization Options:

- Most drying technologies operate at high temperatures and can continually meet Class A requirements. However, some newer dryers operate at lower temperatures and may not meet Class A requirements.

Class A Stabilization Options:

Direct and Indirect dryers are designed to meet Class A standards by temperature requirements. There are many different technologies that implement thermal drying. There are two major types of direct dryers: rotary drum dryers and belt dryers.

- Rotary drum dryers consist of a cylindrical drum that rotates while solids pass through the drum. Gas flows through the drum to dry the solids.
- Belt dryers operate by placing sludge on a porous conveyor belt and heat is blown through the layer of solids on the belt.

Four major types of indirect dryers exist: fluidized-bed dryer, paddle dryer, rotary drum dryer, and tray dryer.

- Fluidized bed dryers create sufficient air to lift, or ‘fluidize’, the bed of material allowing intimate contact with each particle. The bed shakes to transport material over the length of the dryer. Moisture is carried away by the air into a dust recovery system, whereby the hot air can be recycled in a closed loop back to the process.
- Paddle dryers consist of a horizontal jacketed vessel containing agitator paddles. Heat is transferred to the sludge by conduction through the surface of the paddles.

- Rotary drum dryers are batch processes where sludge is fed into a drum and heat is circulated through the rotor to dry biosolids.
- Tray dryers are vertical disc dryers that feed sludge mixed with recycled dry products to form granules. The central shaft with a rotating arm moves granules from one heated stationary tray to another and exit at the bottom as a dried product.

Chemical Stabilization

Chemical stabilization is the process of applying chemicals to biosolids. The two major types of chemical stabilization are alkali addition and chlorine addition. In alkali addition, lime is primarily used as the alkali substance. Lime stabilizes biosolids by increasing the pH enough to eliminate most microorganisms and limit odor productions. Chlorine stabilization is used to oxidize biosolids. The reaction of chlorine stabilization is almost instantaneous, but there is very little volatile solids reduction in the sludge.

Class B Stabilization Options:

- Class B standards can be met by the addition of lime to meet time- pH requirements. Sludge should be treated in a liquid state, and lime should be added to maintain a 12.45 pH for 30 minutes to ensure the 2-hour pH of 12 is met.
- The BCR Clean B™ sludge stabilization system is a single stage process to chemically stabilize the waste activated sludge (WAS) to meet Class B stabilization requirements. The Clean B™ technology uses sulfuric acid and sodium chlorite to produce chlorine dioxide on-site. Chlorine dioxide is then injected into the sludge stream to disinfect and deodorize the WAS. After passing through the Clean B™ treatment unit, stabilized sludge would then be pumped to the existing gravity thickener and thence to the belt filter presses for dewatering

Class A Stabilization Options:

There are many technologies that stabilize sludge through chemical stabilization that meet Class A standards. Two proven technologies are described below.

- The Schwing Bioset process reliably achieves Class A biosolids via the time and temperature equation and pH adjustment. The Bioset process is a fully enclosed system reducing the production of odors. The Bioset process mechanically mixes dewatered sludge between 6% to 35% total solids by weight with calcium oxide (quicklime) to achieve a pH of 12 or greater. Sulphamic acid is then mixed with the sludge/quicklime to cause an exothermic reaction which increases the temperature of the mixture to equal to or greater than 55 degrees C. The sludge/quicklime/Sulphamic acid mixture is then directed to a pressurized plug flow reactor for a minimum solids retention time of forty minutes at a minimum temperature of 55 degrees C.
- The N-Viro Lime stabilization process uses cement kiln dust and lime kiln dust to treat the sludge to Class A biosolids. Cement or lime kiln dust is added to the sludge to raise the pH to 12 or greater. Sufficient amounts of cement or lime kiln dust is added to achieve a pH of 12 for a period of 72 hours. During the initial 12 hours, the temperature within the biosolids is raised between 52 degrees C and 62 degrees C by the exothermic reaction.

The tables below summarize the technologies available for Class B and Class A biosolids stabilization. The tables were assembled using information gathered from a literature review of journal articles, wastewater treatment design textbooks, and manufacturer's reference material.

Table 1: Class B Technology Alternatives						
Technology	**Pathogen Reduction**	**Vector Reduction**	**Advantages**	**Disadvantages**	**Marketable Technologies**	**Estimated Cost**
Aerobic Digestion	Alternative 2 - aerobic conditions maintained for a specific mean cell residence time at a specified temperature. 40 days at 20°C (68°F) and 60 days at 15°C (59°F).	Option 1 - volatile solids reduction Option 3 - bench scale Option 4 - SOUR	• Low initial cost • Simple operational control • No odors • Reduces total sludge mass	• High energy cost, blowers • Less volatile solids reduction than anaerobic digestion • Reduced pH and alkalinity • Potential for pathogen spread through aerosol drift • Biosolids difficult to dewater through mechanical means • Temperature sensitive • Foaming potential	Conventional aerobic digestion	**Initial Capital Cost:** N/A **Annual O&M Cost:** Approximately $65/ wet ton
Anaerobic Digestion	Alternative 2 - anaerobic conditions maintained for a specific mean cell residence time at a specified temperature. 15 days at 35°C - 55°C (95°F - 131°F) and 60 days at 20°C (68°F).	Option 1 - volatile solids reduction	• Good volatile solids destruction • Net operational cost can be low if biogas is used • Reduces total sludge mass	• Requires skilled operators • Foaming potential • Supernatant high in ammonia and phosphorus • Difficult to clean • High initial cost • Safety issues-flammable gas	Standard-rate digestion Continuous Feed/Removal Digestion	**Initial Capital Cost*:** Approximately $2-5 million **Annual O&M Cost:** Approximately $80-100/ wet ton *Assumes greenfield site
Air Drying	Alternative 2 - The sewage sludge dries for a minimum of 3 months. Ambient average daily temperature for 2 months is above 0°C (32°F).	Option 1 - volatile solids reduction by the sequential steps of digestion and drying	• Low initial cost	• Usually need digestion process prior to air drying • High operation cost • Large footprint required • Potential odors	Sand beds Paved/unpaved basins	**Initial Capital Cost:** Approximately $1-2 **Annual O&M Cost:** Approximately $20-40/ wet ton
Composting	Alternative 2 - the temperature of the sludge is raised to 40°C (104°F) or higher and remains at 40°C (104°F) or higher for 5 days. For 4 hours during the 5-day period, the temperature in the compost pile exceeds 55°C (131°F).	Option 5 - aerobic processes at greater than 40 degrees C for 14 days Option 10 -incorporated into soil when land applied.	• High quality, potentially marketable product • Can be combined with other processes • Low initial cost	• Requires bulking agent • Potential pathogen spread through dust • High operation cost • Large footprint required • Potential odors	Short-term composting	**Initial Capital Cost:** Approximately $ 0.6-1 million **Annual O&M Cost:** Approximately $40/ wet ton
Lime/ Chemical Stabilization	Alternative 2 - pH is raised to 12 after 2 hours of contact.	Option 6 - land application of biosolids as soon as possible after vector attraction reduction is completed and while pH remains elevated.	• Low capital cost • Simple operational control	• Biosolids may not always be appropriate for land application • Chemical-intensive • Volume of biosolids increases • pH drop after treatment may lead to odors	Dry/liquid lime addition BCR Clean B	**Initial Capital Cost:** Approximately $900,000 **Annual O&M Cost:** Approximately $65/ wet ton

Table 2: Class A Technology Alternatives						
Technology	**Pathogen reduction**	**Vector reduction**	**Advantages**	**Disadvantages**	**Marketable Technologies**	**Estimated Cost**
Thermophilic Aerobic Digestion	Alternative 5 - Liquid sewage sludge is agitated with air or oxygen to maintain aerobic conditions and the mean cell residence time of the sewage sludge is 10 consecutive days at 55°C to 60°C (131°F to 140°F).	Options 1 and 3 which involve the demonstration of volatile solids loss	• Shorter retention times • Greater reduction in pathogens as compared with conventional aerobic digestion	• Poor dewatering characteristics • Potential for odors • Lack of nitrification and denitrification • High capital cost • Foaming potential	ATAD	**Initial Capital Cost:** Approximately $1-2 **Annual O&M Cost:** Approximately $70/ wet ton
Anaerobic Digestion	Alternative 1 - Thermally treated biosolids, meet a time-temperature requirement	Option 1 - volatile solids reduction	• Good volatile solids destruction • Net operational cost can be low if biogas is used • Reduces total sludge mass	• Requires skilled operators • Foaming potential • Supernatant high in ammonia and phosphorus • Difficult to clean • High initial cost • Safety issues-flammable gas	Primary-Secondary Digestion Staged Digestion Temperature Phased Digestion Two-Phased Digestion	**Initial Capital Cost*:** Approximately $2-5 million **Annual O&M Cost:** Approximately $80-100/ wet ton *Assumes greenfield site
Composting	Alternative 5 - Within-vessel or the static aerated pile, temperature maintained at 55°C (131°F) for 3 consecutive days. Windrow, temperature maintained at 55°C (131°F) for 15 consecutive days or longer with a minimum of five turnings of the windrow.	Option 5 - aerobic treatment	• High quality, potentially marketable product • Can be combined with other processes • Low initial cost	• Requires bulking agent • Requires forced air or turning • Potential pathogen spread through dust • High operation cost • Large footprint required • Potential Odors	Aerated Static Pile Windrow In-Vessel	**Initial Capital Cost*:** Approximately $ 2-3 million **Annual O&M Cost*:** Approximately $40/ wet ton *Based on Aerated Static Pile
Heat Drying	Alternative 5 - Either the temperature of the sewage sludge particles exceeds 80°C (176°F) or the wet bulb temperature of the gas in contact with the sewage sludge as it leaves the dryer exceeds 80°C (176°F)	Option 8 - 90% solids before mixing the sludge with other materials	• Generates a readily marketable end product • Relatively small footprint compared with other stabilization processes • Design flexibility to accept a variety of feed materials	• High capital investment • Requires high amount of energy. Thermal drying systems can require 1,400-1,700 BTU/lbH2O evaporated • Potential of dust production and odor generation • Complex system and requires special skills for reliable operation	Rotary Drum Dryer Batch Dryer Tray Dryers Steam Dryers Fluid Bed Dryers Belt Dryers	**Initial Capital Cost:** Approximately $2-5 million **Annual O&M Cost:** Approximately $500/ wet ton
Lime Stabilization	Alternative 6 - Biosolids Treated in the Process Equivalent to a PFRP	Option 6 - land application of biosolids as soon as possible after vector attraction reduction is completed and while pH remains elevated.	• Low capital cost • Simple operational control	• Biosolids may not always be appropriate for land application • Chemical-intensive • Volume of biosolids increases • pH drop after treatment may lead to odors	En-Vessel™ N-Viro™ Bioset™	**Initial Capital Cost*:** Approximately $1-2 million **Annual O&M Cos*t**: Approximately $50-70/ wet ton *Based on En-vessel technology

STABILIZATION ALTERNATIVES

Existing Solids Treatment

The City's WWTF currently uses two 750,000 gallon digester tanks, a 140,000 gallon gravity thickener, and 5 belt filter presses for biosolids treatment. A third 750,000 gallon digester tank is available but it is currently out of service. WAS is pumped from the secondary clarifiers to digester tanks #1 and #2. According to plant operation data for the period of January 2014 through December 2014, the WAS flows to the digester tanks averaged approximately 133,000 gallons per day with an average total suspended solids (TSS) concentration of 10,454 mg/L (1.04%).

WAS is then pumped from digester tanks #1 and #2 to the gravity thickener. The gravity thickener is mixed by a blower operating approximately 5.5 hours per day. The supernatant is removed from the gravity thickener through a telescoping valve (TSV) that conveys the liquid back to the plant drain for return to the headworks. Daily grab samples of the supernatant were taken on May 18 – 22, 2015 and resulted in an average TSS concentration of 66.4 mg/L (0.007%). Daily grab samples of the gravity thickener flows to the belt filter presses during the same time frame resulted in an average TSS concentration of 20,000 mg/L (2.0%).

The final stage of solids treatment at the WWTF is sludge dewatering by belt filter presses. Polymer is added to the sludge before the belt filter presses to increase dewatering capabilities. The solids concentration of the sludge coming off of the belt filter presses averaged 139,000 mg/L (13.9%) TSS in 2014.

The dewatered sludge is then hauled by a licensed hauling company to a residuals management facility (RMF) for treatment to a minimum of Class B. The resultant biosolids are disposed of through land application to their sites. In 2014, the City records show that 9,558 wet tons were hauled off with an average solids concentration of 13.9%. The City currently pays $45 per wet ton for hauling and disposal of unstabilized sludge.

Alternatives Overview

The following list describes applicable alternatives for the Port Orange WWTF for biosolids disposal. These biosolids disposal alternatives range in product classifications from unstabilized solids to Class AA biosolids.

1. Continue current biosolids processes- dewater unstabilized biosolids and contract for off-site hauling, stabilized and disposal (Alternative 1).
2. Upgrade current biosolids treatment equipment to produce Class B or Class A biosolids and land-application disposal practice (Alternative 2).
3. Use chemical stabilization technologies to produce Class B or Class A biosolids and dispose of via land application (Alternative 3).
4. Use drying technologies to produce Class A/AA biosolids and dispose of via land application or marketable product (Alternative 4).

Alternative 1

For Alternative 1, the Port Orange WWTF would continue to operate the aerobic digesters as sludge storage tanks, thicken, and dewater sludge. This alternative requires the Port Orange WWTF to make no changes to their current operating procedures. Unstabilized biosolids would be contract-hauled and stabilized by a contractor. Many contractors have the ability to accept unthickened, thickened or dewatered biosolids for stabilization and disposal, so having the flexibility to produce any one would be desirable. To reduce the

long-term hauling and disposal costs, installing more efficient dewatering units that can maximize the dryness of the biosolids and minimize hauling water would be advantageous since tipping fees are based on wet weight.

Based on the market research, there are currently no other companies besides Shelley's that hauls unstabilized sludge in the Port Orange area. However, Synagro and BCR have discussed placing a stabilization facility in the Port Orange area if other sources of biosolids were made available to process.

Alternative 2

Under this alternative, the existing aerobic digesters would be operated to stabilize sludge to either Class B or Class A standards. An assessment of aerobic basins, blowers, and diffuser system would be conducted to determine if rehabilitation of the basins or replacement of any of the equipment is necessary. When operating the existing equipment, the digester can be operated with conventional treatment or in an alternative process, including the P-Uptake process and ThermAer™. Multiple sludge hauling companies are available in the Port Orange area to haul stabilized sludge. The City can solicit bids and award a hauling contract to the lowest bidder.

Alternative 3

In this Alternative, the Port Orange WWTF can use chemical stabilization technologies that meet the Class B biosolids requirements, such as the BCR Clean B™, or Class A biosolids requirements, such as the Schwing Bioset. As with Alternative 2, multiple sludge hauling companies are available in the Port Orange area to haul stabilized sludge. The City can solicit bids and award a hauling contract to the lowest bidder.

Alternative 4

For Alternative 4, the Port Orange WWTF could construct a new biosolids facility to produce Class A/AA biosolids for land application or distribution and marketing as a fertilizer. A number of biosolids treatment technologies can produce Class A/AA biosolids including the biosolids-thermal drying systems. The City can issue a request for proposals (RFP) for biosolids stabilization and hauling services. The RFP can include options to provide stabilization solutions, hauling solutions, and/or turnkey solutions.

Cost Evaluation

Cost is an important factor when selecting a solids-stabilization method. Capital costs and operation and maintenance (O&M) costs need to be taken into account during selection. Annual O&M costs include labor, chemical costs, fuel, utilities, maintenance costs, and transportation. Other costs to consider are public education, biosolids marketing, soil testing, and analyses. In order to compare O&M costs between different stabilization methods, the costs need to be normalized to the amount of solids treated. Dollars per dry ton is a way to represent relative O&M costs between biosolids stabilization methods. A total life-cycle analysis via present worth is a way to compare total costs between stabilization technologies. A literature review was done to determine the relative cost per dry ton of solids stabilization technologies. EPA published the Estimating Sludge Management Costs Handbook that contains cost curves based on solids produced per year. These curves were used to determine capital and annual O&M costs for each stabilization alternative as well as costs found in case studies. These costs are an order of magnitude estimate and may vary based on the specific technology selected for the stabilization alternative.

Present worth costs were calculated for a 20-year planning period based on a 3.0% inflation rate for the operating costs and a 5.0% discount rate. Annual residual production rates were estimated based on a 1.0% annualized growth rate starting from 2014 total production. Costs were estimated for a 7 dry tons per day (dtpd) biosolids build-out capacity. The build-out capacity was determined by assuming a constant influent flow to biosolids production ratio. The WWTF currently treats 6 mgd of flow and produces about 3.5

dtpd of biosolids; the plant has a design capacity of 12 mgd therefore the build-out solids stabilization facility is approximately 7 dtpd. These costs do not take into account the possibility of a revenue source of Class A biosolids.

Many site-specific factors influence cost and make economic evaluation and comparison more difficult. Tipping fees, local biosolids market, power costs, and local climate are subject to change and can result in an increase/decrease of annual O&M costs.

Table 3: 20-Year Cost Evaluation

Stabilization Alternative	Capital Costs ($MM)	O&M costs ($/dry ton)	Net Present Cost ($MM)
Status Quo	$0	$250	$10
Aerobic Digestion	$0	$470	$18
Alkaline Stabilization	$1.4	$430	$18
Chemical Stabilization (BCR Clean B)	$0.75	$290	$12
Thermal Drying	$6.5	$630	$82

Based on the 20-year life cycle assessment, aerobic digestion and chemical and alkaline stabilization are the most economical alternatives to the status quo. Aerobic digestion has no capital cost because the infrastructure is currently on-site, assuming no equipment needs to be replaced and the tanks are in good condition. The O&M costs are driven by power for the blowers. The O&M costs will fluctuate with the cost of electricity.

The capital costs for chemical and alkaline stabilization are from the installation of chemical storage tanks, chemical mixing equipment, and feed pumps. Safety components also need to be put in place around the chemical storage areas. O&M costs are primarily from the costs of chemicals and the blowers will need to be operated for the sludge holding tanks. The life expectancy of chemical equipment is lower due to the harsh environment of where the equipment is located. The costs of chemical feed equipment replacement is not accounted for in the analysis.

Hauling Costs

In addition to O&M costs of each stabilization alternative, cost of hauling material for final disposal needs to be considered. Cost of hauling is dependent on the type of material to be hauled, the distance the product needs to be hauled, and whether additional treatment will be done to the product at the final disposal location. Current hauling costs for unstabilized sludge is about $45 per wet ton. Future cost of hauling are influenced by disposal regulations, available market of final product, and costs of fuel and hauling equipment. After researching some sludge hauling and disposal companies, unstabilized sludge hauling can be about $70 per wet ton for hauling and off-site stabilization.

RECOMMENDATION

After a thorough review of the available stabilization alternatives, it is recommended that the City does not rule out any stabilization alternative based on cost, but continue the stabilization review process by issuing a Request for Qualifications (RFQ) to the public. Cost is a major factor when selecting a stabilization alternative. Costs presented in this literature review have significant variability within each alternative due to technologies and economies of scale, do not reflect specific circumstances of the Port Orange WWTF, and cost values taken from case studies were scaled both up and down to account for the size of the WWTF. These reasons account for inaccuracies in stabilization costs and issuing a RFQ allows contractors and manufacturers to propose a solids stabilization solution with a detailed approach, cost estimate, and life cycle evaluation for the Port Orange WWTF. This approach allows the City to select the best available stabilization alternative.

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The City of Port Orange
Finance Department

MEMORANDUM

TO: Michael H. Johansson, City Manager
FROM: Tracey Riehm, Finance Director
DATE: February 18, 2016
SUBJECT: **Highlights of the January 2016 Financial Report**

Attached are interim financial reports and highlights of activity for the City's five major funds for the period ending January 31, 2016, which represents 33% of the fiscal year. Also attached are the financial reports from Cypress Head Golf Course and the YMCA. Detailed reports for all funds are available on the City's website at: http://www.port-orange.org/finance/?p=budget_and_financial_reports. Highlights of these funds are as follows:

GENERAL FUND (Fund 001)

Revenues: During the first four months of the current fiscal year, the General Fund received a total of $15,196,699 in revenues, of which $14,658,565 reflected operating revenue and $538,134 account for contributions from the enterprise funds. These revenues include $9,769,298 or 90% of the annual estimated ad valorem tax revenue. The majority of ad valorem taxes are collected in the first few months of the fiscal year. General fund revenues are 45% of the budget compared with 44% at this point last year, however after allowing for the budgeted use of appropriated equity, the percent collected increases to 47%. Ad-valorem taxes account for approximately 65% of the overall increase in revenue of $967,398 compared with this time last year.

Expenditures: The first four months operating expenditures amounted to $9,685,747 or 28% of the estimated expenditures for the year, with an additional encumbered amount of $1,518,649. Actual expenditures are $212,984 higher than at this time last year.

Please also see the attached financial statement for additional detail.

BUILDING SPECIAL REVENUE FUND (Fund 109)

Revenues: During the first four months of the current fiscal year, the Building Special Revenue Fund received $384,981 in operating and non-operating revenues, inclusive of transfers. This equates to 28% of the annual budget, and is $62,927 (19.5%) more than last year. Revenues in this fund are typically received in a sporadic nature.

Expenditures: Year-to-date expenditures in the Building Special Revenue fund are $315,732 or approximately 23% of estimated expenditure for the year. On a percent of budget basis, year-to-date expenditures are 7% lower than this time last year; with actual expenditures $22,795 higher than this time last year.

Year to date, the Building Special Revenue Fund's net position has increased by $69,249.

Please also see the attached financial statement for additional detail.

WATER & SEWER FUND (Fund 401)

Revenues: The Water and Sewer Fund collected $6,893,108 in operating revenues during the first four months, which is 28% of projected revenues for the year. This is $113,174 higher than last year and $126,186 more than in 2014.

Expenses: The first four months operating expenses excluding depreciation amounted to $4,023,139 or 27% of estimated expenses for the year, with an additional $1,939,971 encumbered. Non-operating activity reports a net loss of $89,115, compared to a net loss of $20,753 reported at the same time last year. Currently, the water and sewer fund is reporting an income of $2,780,854, but after transfers the fund is posting a loss of $514,068 which is $40,911 more than this time last year.

The attached financial statement provides additional detail.

SOLID WASTE FUND (Fund 410)

Revenues: The Solid Waste Fund's total operating revenues for the first four months were $1,899,170, which is 27% of the annual budget and $33,347 less than this time last year.

Expenses: The Solid Waste Fund's first four months operating expenses excluding depreciation total $1,677,903 or 25% of estimated expenses for the year, with an additional encumbered amount of $4,490,878. The Solid Waste Fund currently is reporting an income before transfers of $228,377 and a change in net position of $160,235 after allowing for transfers. The change in net position is $144,949 less than at this time last year.

The attached financial statement provides additional detail.

DRAINAGE UTILITY FUND (Fund 412)

Revenues: The Drainage Utility Fund's first four months operating revenues amount to $3,269,285, or 82% of the annual budget and $32,120 higher than this time last year. Revenues in this fund represent the collection of Drainage fees by the non-advalorem method.

Expenses: For the first four months, operating expenses totaled $440,930 which is 24% of the annual budget and $47,745 less than last year. An additional $665,423 is encumbered. After allowing for non-operating expenses, transfers in lieu of taxes and

debt service payment transfers, the Drainage fund is reporting an increase in net position for the first four months of $1,674,225 which is $334,371 less than at this time last year.

The attached financial statement provides additional detail.

YMCA REPORT

The financial reports for the period ending December 31, 2015 for the YMCA are attached.

GOLF COURSE REPORT

The financial report for the period ending January 31, 2016 for the Cypress Head Golf Course is attached. Detailed statements are available in the Finance Department.

IN SUMMARY:

As appropriations lapse at the end of each year, City Council re-appropriates funding for open purchase orders and existing funded projects. Total budget projections as they are presented in the attached reports incorporate current year appropriations plus prior year carryover pertaining to open and in process projects. Available liquid equity has been evaluated and is adequate to meet or exceed revenue policies as established by City Council.

Should you have any questions as they relate to this report or its attachments, please feel free to contact me.

Thank you,

Tracey Riehm
Finance Director

TR/lb

City of Port Orange
Revenue Comparison - General Fund (001)
Period Ending: January 31 (33% of the Fiscal Year)

Sub Activity	2014			2015			2016		
	FYTD Actual	Audited Annual Receipts	FYTD14 % of Total	FYTD Actual	Unaudited Annual Receipts	FYTD15 % of Total	FYTD Actual	Total Current Budget	FYTD16 % of Budget
ADVALOREM TAXES	9,093,167	10,360,132	88%	9,141,501	10,443,031	88%	9,769,298	10,807,883	90%
SALES & USE TAXES	0	717,597	0%	0	736,939	0%	0	717,597	0%
UTILITY SERVICE TAXES	1,303,710	5,002,091	26%	1,319,974	5,153,922	26%	1,316,086	4,944,127	27%
COMMUNICATIONS SERVICE TX	336,402	1,972,034	17%	318,734	1,886,648	17%	315,646	1,862,251	17%
LOCAL BUSINESS TAX	32,884	122,860	27%	30,304	113,499	27%	38,943	123,000	32%
FEES & PERMITS	509,428	3,200,700	16%	557,294	3,318,422	17%	555,457	3,510,499	16%
INTER GOVT	1,076,167	4,784,473	22%	1,126,467	5,152,711	22%	1,198,258	5,172,006	23%
CHARGES FOR SERVICE	721,664	2,273,583	32%	751,162	1,923,034	39%	757,068	2,348,669	32%
FINES & FORFEITS	46,649	165,185	28%	57,501	866,833	7%	138,140	137,400	101%
MISC REVENUE	449,662	1,208,274	37%	377,612	1,152,775	33%	569,670	1,066,462	53%
INTERFUND TRANSFER	0	65	0%	0	63,649	0%	0	0	0%
CONTRB FROM ENTERPRISE FD	552,124	1,656,372	33%	548,753	1,646,259	33%	538,134	1,614,401	33%
APPROPRIATED EQUITY	0	0	0%	0	0	0%	0	1,747,821	0%
GENERAL FUND REVENUE:	**$14,121,857**	**$31,463,366**	**45%**	**$14,229,301**	**$32,457,722**	**44%**	**$15,196,699**	**$34,052,116**	**45%**

City of Port Orange
Expense Comparison - General Fund (001)
Period Ending: January 31 (33% of the Fiscal Year)

Department Description	2014			2015			2016		
	FYTD Actual	Audited Annual Expenditures	FYTD14 % of Total	FYTD Actual	Unaudited Annual Expenditures	FYTD15 % of Total	FYTD Actual	Total Current Budget	FYTD16 % of Budget
NON DEPARTMENTAL	570,998	2,264,450	25%	925,535	3,770,091	25%	633,144	2,694,699	23%
MAYOR & COUNCIL	80,500	198,686	41%	59,354	199,746	30%	67,592	216,897	31%
CITY MANAGER	149,891	476,171	31%	107,967	456,549	24%	182,594	584,932	31%
LEGAL SERVICES	140,727	515,978	27%	134,967	499,708	27%	162,088	706,423	23%
CITY CLERK	76,841	255,705	30%	84,364	291,702	29%	97,188	321,677	30%
FINANCE	233,384	740,966	31%	272,095	870,178	31%	308,391	1,092,777	28%
PERSONNEL	78,531	276,184	28%	100,289	352,949	28%	110,927	345,631	32%
COMMUNITY DEVELOPMENT	424,512	1,298,459	33%	399,986	1,266,317	32%	432,710	1,471,700	29%
FIRE SERVICES	2,674,809	8,268,579	32%	2,483,256	7,646,521	32%	2,707,906	8,292,999	33%
POLICE	3,663,638	11,095,306	33%	3,607,936	11,622,625	31%	3,600,903	12,319,928	29%
PUBLIC WORKS	552,712	1,875,210	29%	526,484	1,960,595	27%	526,609	2,536,100	21%
PARKS MAINTENANCE	619,912	1,830,748	34%	493,507	1,738,032	28%	523,306	2,148,954	24%
RECREATION	178,584	684,616	26%	175,084	718,415	24%	190,705	857,343	22%
ATHLETICS	106,485	287,958	37%	100,449	312,346	32%	140,747	443,886	32%
POGTV	2,464	6,313	39%	1,490	3,133	48%	938	18,170	5%
GENERAL FUND EXPENSES:	**$9,553,988**	**$30,075,329**	**32%**	**$9,472,763**	**$31,708,907**	**30%**	**$9,685,747**	**$34,052,116**	**28%**
Excess of Revenue over(under) Expenditures	**$4,567,869**	**$1,388,037**		**$4,756,538**	**$748,815**		**$5,510,952**	**$ -**	

Note: minor variances in totals may exist due to rounding

CITY OF PORT ORANGE

STATEMENT OF REVENUE, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL - BUILDING SPECIAL REVENUE FUND (109)
Period Ending: January 31 (33% of the Fiscal Year)

	FY2014			FY2015			FY2016		
	FYTD Actual	Audited Annual	%	FYTD Actual	Unaudited Annual (Preliminary)	%	FYTD Actual	Budgeted Annual	%
Revenues									
Permits and fees	434,927	1,176,045	37%	321,291	1,250,378	26%	382,080	1,136,200	34%
Miscellaneous	-	83	0%		140	0%	-		0%
Total operating revenues	**434,927**	**1,176,128**	**37%**	**321,291**	**1,250,518**	**26%**	**382,080**	**1,136,200**	**34%**
Expenditures									
General government:									
Planning and community development	269,768	863,069	31%	292,937	982,921	30%	315,732	1,389,621	23%
Total operating expenses - w/o depreciation	**269,768**	**863,069**	**31%**	**292,937**	**982,921**	**30%**	**315,732**	**1,389,621**	**23%**
Operating income (loss)	**165,159**	**313,059**	**53%**	**28,354**	**267,597**	**11%**	**66,348**	**(253,421)**	**-26%**
Non-operating revenues (expenses)									
Interest earnings	2,176	3,180		763	9,047		2,901	7,000	
Other income (expense)									
Interest and amortization expense									
Total nonoperating revenue (expenses)	**2,176**	**3,180**	**68%**	**763**	**9,047**	**8%**	**2,901**	**7,000**	**41%**
Income (loss) before contributions and transfers	**167,335**	**316,239**	**53%**	**29,117**	**276,644**	**11%**	**69,249**	**(246,421)**	**-28%**
Appropriated Fund Balance								246,421	
Transfers									
Transfers in					2,613				
Transfers (out) - In Lieu of Tax									
Transfers (out) - Debt Service									
Change in net position	**167,335**	**316,239**		**29,117**	**279,257**		**69,249**	**-**	

Note: minor variances in totals may exist due to rounding

CITY OF PORT ORANGE

STATEMENT OF REVENUE, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL - UTILITIES OPERATING FUND (401)
Period Ending: January 31 (33% of the Fiscal Year)

	FY2014			FY2015			FY2016		
	FYTD Actual	Audited Annual	%	FYTD Actual	Unaudited Annual (Preliminary)	%	FYTD Actual	Budgeted Annual	%
Operating revenues									
Charges for services:									
Water sales	2,944,151	10,957,095	27%	2,962,924	11,274,678	26%	2,927,794	10,984,280	27%
Hydrant rentals	11,742	35,235	33%	27,112	36,164	75%	36,865	46,010	80%
Sewer charges	3,456,275	12,893,433	27%	3,547,629	13,639,841	26%	3,695,609	13,058,784	28%
Connections service, and cut-off charges	317,078	937,684	34%	235,261	796,698	30%	225,572	891,308	25%
Other revenues	37,676	309,840	12%	7,008	59,104	12%	7,268	36,253	20%
Total operating revenues	**6,766,922**	**25,133,286**	**27%**	**6,779,934**	**25,806,485**	**26%**	**6,893,108**	**25,016,635**	**28%**
Operating expenses									
Personal services	1,938,693	5,696,318	34%	1,839,974	5,707,856	32%	1,793,430	6,395,260	28%
Contractual services (Professional & Other)	101,395	2,230,218	5%	253,846	981,098	26%	297,427	1,494,564	20%
Utilities	409,623	1,349,753	30%	337,937	1,321,225	26%	303,952	1,411,503	22%
Maintenance and repairs	104,874	1,933,414	5%	70,327	420,325	17%	104,039	697,119	15%
Other supplies and expenses	1,244,677	2,906,828	43%	1,393,620	4,804,077	29%	1,524,291	5,050,499	30%
Total operating expenses - w/o depreciation	**3,799,262**	**14,116,531**	**27%**	**3,895,704**	**13,234,581**	**29%**	**4,023,139**	**15,048,945**	**27%**
Operating income (loss)	**2,967,660**	**11,016,755**	**27%**	**2,884,230**	**12,571,904**	**23%**	**2,869,969**	**9,967,690**	**29%**
Non-operating revenues (expenses)									
Interest earnings	11,069	53,444		4,618	51,414		38,253	54,500	
Other income (expense)	(82,188)	445,747		(25,371)	(16,234)		(126,101)	(1,693,428)	
Interest and amortization expense	(3,728)	(1,361,091)		-	(154,398)		(1,267)	(259,793)	
Total nonoperating revenue (expenses)	**(74,847)**	**(861,900)**	**9%**	**(20,753)**	**(119,218)**	**17%**	**(89,115)**	**(1,898,721)**	**5%**
Income (loss) before contributions and transfers	**2,892,813**	**10,154,855**	**28%**	**2,863,477**	**12,452,686**	**23%**	**2,780,854**	**8,068,969**	**34%**
Appropriated Fund Balance							-	1,815,798	
Capital Contributions					1,115,281				
Transfers									
Transfers in	59,332	-		-	5,413,587		-	-	
Transfers (out) - In lieu of tax	(425,373)	(1,276,118)		(420,181)	(1,260,543)		(408,468)	(1,225,404)	
Transfers (out) - debt service[1]	(3,249,786)	-		(2,916,453)	(8,749,359)		(2,886,454)	(8,659,363)	
Change in net position	**(723,014)**	**8,878,738**		**(473,157)**	**8,971,651**		**(514,068)**	**-**	

[1] Proprietary Debt Service transfers zero out as part of the year-end funds consolidation process.

Note: minor variances in totals may exist due to rounding

CITY OF PORT ORANGE

STATEMENT OF REVENUE, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL - SOLID WASTE OPERATING FUND (410)
Period Ending: January 31 (33% of the Fiscal Year)

	FY2014			FY2015			FY2016		
	FYTD Actual	Audited Annual	%	FYTD Actual	Unaudited Annual (Preliminary)	%	FYTD Actual	Budgeted Annual	%
Operating revenues									
Charges for services:									
Waste Disposal Fees	1,936,919	6,943,255	28%	1,925,057	7,037,066	27%	1,896,705	6,982,050	27%
Other revenues	8,905	41,749	21%	7,460	15,315	49%	2,465	67,100	4%
Total operating revenues	**1,945,824**	**6,985,004**	**28%**	**1,932,517**	**7,052,381**	**27%**	**1,899,170**	**7,049,150**	**27%**
Operating expenses									
Personal services	70,077	226,705	31%	68,046	220,933	31%	73,063	236,419	31%
Contractual services (Professional & Other)	1,407,131	4,805,927	29%	1,317,186	5,782,795	23%	1,426,289	5,981,244	24%
Utilities	59	1,014	6%	190	858	22%	206	890	23%
Maintenance and repairs	735	6,843	11%	-	1,970	0%	(455)	2,250	-20%
Other supplies and expenses	142,485	1,414,561	10%	178,449	563,466	32%	178,800	523,725	34%
Total operating expenses (w/o depreciation)	**1,620,487**	**6,455,050**	**25%**	**1,563,871**	**6,570,023**	**24%**	**1,677,903**	**6,744,528**	**25%**
Operating income (loss)	**325,337**	**529,954**	**61%**	**368,646**	**482,358**	**76%**	**221,267**	**304,622**	**73%**
Non-operating revenues (expenses)									
Interest earnings	3,240	6,580		1,163	13,809		7,110	14,000	
Other income (expense)								(114,197)	
Interest and amortization expense					-				
Total nonoperating revenue (expenses)	**3,240**	**6,580**	**49%**	**1,163**	**13,809**	**8%**	**7,110**	**(100,197)**	**-7%**
Income (loss) before contributions and transfers	**328,577**	**536,534**	**61%**	**369,809**	**496,166**	**75%**	**228,377**	**204,425**	**112%**
Appropriated Fund Balance								-	
Transfers									
Transfers in					888		-	-	
Transfers (out) - In lieu of taxes	(64,659)	(193,978)		(64,625)	(193,875)		(68,142)	(204,425)	
Transfers (out) - debt service									
Change in net position	**263,918**	**342,556**		**305,184**	**303,179**		**160,235**	**-**	

Note: minor variances in totals may exist due to rounding

CITY OF PORT ORANGE

STATEMENT OF REVENUE, EXPENDITURES AND CHANGES IN FUND BALANCE
BUDGET AND ACTUAL - STORMWATER OPERATING FUND (412)
Period Ending: January 31 (33% of the Fiscal Year)

	FY2014			FY2015			FY2016		
	FYTD Actual	**Audited Annual**	**%**	**FYTD Actual**	**Unaudited Annual (Preliminary)**	**%**	**FYTD Actual**	**Budgeted Annual**	**%**
Operating revenues									
Charges for services:									
Drainage Fees	3,189,622	3,805,631	84%	3,237,165	3,860,256	84%	3,269,285	3,978,063	82%
Other revenues		127	0%	-	218	0%	-		0%
Total operating revenues	**3,189,622**	**3,805,758**	**84%**	**3,237,165**	**3,860,474**	**84%**	**3,269,285**	**3,978,063**	**82%**
Operating expenses									
Personal services	241,140	721,017	33%	228,629	723,007	32%	219,831	929,554	24%
Contractual services (Professional & Other)[1]	10,498	613,143	2%	16,835	105,965	16%	12,966	144,002	9%
Utilities	-	-	0%	-	-	0%	-	-	0%
Maintenance and repairs	19,675	93,595	21%	51,459	141,756	36%	23,058	118,191	20%
Other supplies and expenses	197,112	65,509	301%	191,752	574,911	33%	185,075	615,434	30%
Total operating expenses (w/o depreciation)	**468,425**	**1,493,264**	**31%**	**488,675**	**1,545,639**	**32%**	**440,930**	**1,807,181**	**24%**
Operating income (loss)	**2,721,197**	**2,312,494**	**118%**	**2,748,490**	**2,314,835**	**119%**	**2,828,355**	**2,170,882**	**130%**
Non-operating revenues (expenses)									
Interest earnings	7,137	20,586		2,714	22,783		36,144	26,700	
Other income (expense)	(70,739)	500,000		(65,352)	44,403		(616,418)	(2,277,361)	
Interest and amortization expense	-	(460,404)		-	(20,054)		-	(42,686)	
Total nonoperating revenue (expenses)	**(63,602)**	**60,182**	**-106%**	**(62,638)**	**47,132**	**-133%**	**(580,274)**	**(2,293,347)**	**25%**
Income (loss) before contributions and transfers	**2,657,595**	**2,372,676**	**112%**	**2,685,852**	**2,361,966**	**114%**	**2,248,081**	**(122,465)**	**-1836%**
Appropriated Fund Balance								1,844,034	
Transfers									
Transfers in					2,187,969		0	0	
Transfers (out) - General Fund					(63,649)		0	0	
Transfers (out) - In Lieu of Tax	(62,092)	(186,277)		(63,947)	(191,841)		(61,524)	(184,572)	
Transfers (out) - debt service[1]	(493,174)	(83,520)		(613,309)	(1,839,926)		(512,332)	(1,536,997)	
Change in net position	**2,102,329**	**2,102,879**		**2,008,596**	**2,454,519**		**1,674,225**	-	

[1] Proprietary Debt Service transfers zero out as part of the year-end funds consolidation process. The remaining balance of Transfer (Out) - Debt Service represents governmental debt.

Note: minor variances in totals may exist due to rounding

Financial Reports
for period ending
December 31, 2015
Provided by
YMCA

Statement Of Activities Report

Interim Statements - Subject to Audit

Volusia Flagler Family YMCA

Period 12 December 2015

Branch: Port Orange 07

		Period 12 December 2015					Year to Date 2015				
Account Group Number	**Account Group Name**	**Actual**	**Budget**	**$ Variance**	**Last Year**	**$ Variance**	**Actual**	**Budget**	**$ Variance**	**Last Year**	**$ Variance**
Revenue											
01	Contributions	29,182	7,000	22,182	2,500	26,682	107,363	75,800	31,563	68,351	39,012
03	Special Events	250	0	250	740	-490	29,148	27,900	1,248	24,582	4,566
08	United Way	3,466	3,411	55	3,466	0	41,594	41,262	332	41,262	332
10	Grants	3,862	2,240	1,622	2,582	1,280	38,092	30,495	7,597	34,792	3,300
11	Membership	65,704	112,900	-47,196	102,844	-37,140	1,289,474	1,530,045	-240,571	1,487,572	-198,098
13	Program Fees	46,797	29,362	17,435	32,915	13,882	626,058	616,215	9,843	598,191	27,867
14	Other - Merchandise/Vending	3,170	6,800	-3,630	2,624	546	16,837	22,000	-5,163	13,343	3,494
15	Investment Income	0	0	0	5,225	-5,225	0	0	0	5,225	-5,225
16	Late Fees/Misc Income	180	0	180	150	30	2,969	0	2,969	150	2,819
19	Release from Restriction	0	0	0	-2,873	2,873	-5,077	0	-5,077	-2,873	-2,204
Total Revenue		152,611	161,713	-9,102	150,173	2,438	2,146,458	2,343,717	-197,259	2,270,595	-124,137
Expenses											
21	Salaries & Wages	76,671	66,654	-10,017	62,019	-14,652	905,172	919,781	14,609	885,036	-20,136
22	Employee Benefits	7,741	4,492	-3,249	3,062	-4,679	61,525	59,333	-2,192	49,786	-11,739
23	Payroll, Taxes & W/C	10,843	7,015	-3,828	6,484	-4,359	85,625	96,652	11,027	83,568	-2,057
24	Contract Services	2,692	3,526	834	5,204	2,512	45,696	55,811	10,115	53,784	8,088
25	Supplies	3,136	3,192	56	4,069	933	48,536	38,800	-9,736	49,081	545
26	Telephone	934	1,278	344	950	16	11,328	13,248	1,920	12,359	1,031
27	Postage & Shipping	20	83	63	0	-20	94	1,000	906	9,134	9,040
28	Facility Costs	28,856	42,102	13,246	50,617	21,761	466,028	503,165	37,137	498,578	32,550
29	Equipment Costs	5,738	5,652	-86	7,832	2,094	56,576	71,424	14,848	71,680	15,104
30	Program Expenses	4,431	3,145	-1,286	6,525	2,094	72,138	73,382	1,244	81,664	9,526
31	Marketing & Promotion	95	0	-95	-1,302	-1,397	727	1,250	523	910	183
32	Travel & Mileage	118	144	26	0	-118	447	1,825	1,378	691	244
33	Conference & Training	1,053	25	-1,028	265	-788	2,832	1,115	-1,717	3,405	573
34	Fundraising Expense	381	1,000	619	0	-381	1,071	1,000	-71	236	-835
35	National & Other Dues	2,505	2,725	220	5,103	2,598	30,199	31,095	896	30,311	112
37	Financing Costs	0	33	33	0	0	0	396	396	0	0
38	Insurance	2,244	2,424	180	2,218	-26	27,152	27,112	-40	45,137	17,985
39	Miscellaneous Expense	13,034	3,879	-9,155	8,588	-4,446	13,040	3,879	-9,161	8,789	-4,251
40	Depreciation & Amortization	2,264	2,372	108	1,839	-425	26,181	28,460	2,279	33,129	6,948
48	Metro Services	23,529	23,529	0	25,230	1,701	341,011	341,011	0	334,196	-6,815
Total Expenses		186,285	173,270	-13,015	188,703	2,418	2,195,378	2,269,739	74,361	2,251,474	56,096
Change in Net Assets		**-33,674**	**-11,557**	**-22,117**	**-38,530**	**4,856**	**-48,920**	**73,978**	**-122,898**	**19,121**	**-68,041**

Financial Report
for period ending
January 31, 2016
provided by
Golf Course

The Golf Club at Cypress Head
Comparative Income Statement
For the Four Months Ending January 31, 2016

	MTD Prior Year	YTD Prior Year	Audited Prior Year	Percent of Total	MTD Actual	YTD Actual	Annual Budget	Percent of Total
REVENUES								
Green Fees & Cart Fees	112,269	345,763	714,869	48%	100,423	312,625	1,023,426	31%
Merchandise	4,476	19,547	53,694	36%	4,884	16,400	61,281	27%
Other Pro Shop	951	2,042	10,198	20%	1,214	2,460	10,769	23%
Range	1,959	8,544	16,885	51%	2,877	9,107	35,044	26%
Food and Beverage	21,470	109,506	182,967	60%	0	0	0	
Membership Initiation Fees	0	0	750		0	0	0	
Other Operating Revenues	3,777	12,329	24,901	50%	3,243	10,636	35,106	30%
Other G&A Income	0	0	(866)		0	0	0	
TOTAL REVENUE	144,902	497,731	1,003,396	50%	112,641	351,227	1,165,626	30%
COST OF SALES								
Merchandise	2,568	12,959	44,543	29%	3,581	13,662	33,672	41%
Food & Beverage	6,468	42,931	72,592	59%	0	0	0	
TOTAL COGS	9,035	55,891	117,135	48%	3,581	13,662	33,672	41%
COGS - Merchandise %	57.4%	66.3%	83.0%	79.9%	73.3%	83.3%	54.9%	151.6%
COGS - Food %	30.1%	39.4%	39.8%	99.0%				
PAYROLL								
Course and Grounds	25,918	96,726	291,280	33%	28,053	119,062	302,225	39%
Carts, Range, Starters, Etc.	6,366	21,584	39,741	54%	6,797	24,050	73,469	33%
Pro Shop	4,852	18,756	33,566	56%	4,388	20,243	53,508	38%
Food and Beverage	13,338	58,023	94,245	62%	0	0	0	
General and Administrative	11,403	41,797	126,613	33%	11,139	42,684	127,761	33%
Marketing	4,663	17,956	45,103	40%	3,896	16,322	45,604	36%
TOTAL PAYROLL	66,540	254,843	630,548	40%	54,272	222,360	602,567	37%

The Golf Club at Cypress Head
Comparative Income Statement
For the Four Months Ending January 31, 2016

	MTD Prior Year	YTD Prior Year	Audited Prior Year	Percent of Total	MTD Actual	YTD Actual	Annual Budget	Percent of Total
OPERATING EXPENSES								
Course and Grounds	13,504	72,710	220,151	33%	13,029	65,407	194,632	34%
Carts, Range, Starters, Etc.	11,174	37,662	113,365	33%	6,599	29,471	85,831	34%
Pro Shop	210	2,650	10,087	26%	416	990	11,155	9%
Food and Beverage	2,055	15,055	30,128	50%	0	185	0	
General and Administrative	18,788	78,252	182,159	43%	16,122	71,644	197,717	36%
Marketing	1,113	6,517	29,588	22%	2,192	18,976	39,686	48%
TOTAL OPERATING EXPENSES	46,843	212,846	585,477	36%	38,359	186,673	529,021	35%
TOTAL EXPENSES	122,419	523,579	1,333,159	39%	96,212	422,696	1,165,260	36%
OTHER INCOME (EXPENSE)								
MANAGEMENT FEES	(7,370)	(29,378)	(66,226)	44%	(5,713)	(24,508)	(65,296)	38%
Depreciation & Amortization	(535)	(2,140)	(9,405)	23%	(381)	(1,524)	(6,420)	24%
TOTAL OTHER INCOME (EXPENSE)	(7,904)	(31,518)	(75,631)	42%	(6,094)	(26,032)	(71,716)	36%
NET INCOME	14,578	(57,366)	(405,394)	14%	10,335	(97,501)	(71,350)	137%
Paid Rounds	3,879	13,005	25,909	50%	2,908	9,691	38,507	25%
Annual Pass Rounds	496	1,634	2,970	55%	866	2,581	4,295	60%
Other Rounds	255	1,055	1,772	60%	196	663	2,819	24%
Total Rounds	4,630	15,694	30,651	51%	3,970	12,935	45,621	28%
Revenue/Paid Rounds	$ 37.36	$ 38.27	$ 38.76	99%	$ 38.73	$ 36.24	$ 30.27	120%
Revenue/Total Rounds	$ 31.30	$ 31.71	$ 32.76	97%	$ 28.37	$ 27.15	$ 25.55	106%